Original instructions



Order pickers and tow tractors



OPX 20/25
OPX 20/25 PLUS
OPX-L 12/16/20
OPX-L 20 S
OPX-D 20
LTX 50
LTX-FF 05/10
LTX-T 06
OXV 07/08/10



0089 0615 0617 1075 1076 1077
1078 1079 1080 1081 1082 1084
1085 1086 1087 1088 2553 2554
2555 2556 2557 2558

first in intralogistics

Address of manufacturer and contact details

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Rules for the operating company of industrial trucks

In addition to these operating instructions, a code of practice containing additional information for the operating companies of industrial trucks is also available.

This guide provides information for handling industrial trucks:

- Information on how to select suitable industrial trucks for a particular area of application
- Prerequisites for the safe operation of industrial trucks
- Information on the use of industrial trucks
- Information on transport, initial commissioning and storage of industrial trucks

Internet address and QR code

The information can be accessed at any time by pasting the address **https://m.still.de/vdma** in a web browser or by scanning the QR code.

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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 truck and in order to avoid accidents, the operator is obliged to read, understand and apply the contents of this manual and the designation plates and stickers applied to the truck.
- The manufacturer assumes no responsibility for any accidents to persons or damage to things due to failure to observe the contents of this manual and the designation plates and stickers applied to the truck.
- The truck must not be used for any use other than those 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.

Using 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 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 truck.

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.

Date of edition and latest update of this manual

The publication date of these operating instructions is printed on the cover sheet.

The manufacturer makes continuous efforts to improve its industrial trucks with modifications. The manufacturer reserves the right to make such additions to the contents of the truck's operating instructions in a timely manner.

To receive technical assistance, please contact the service centre authorised by your closest manufacturer.

Copyright and trademark rights

These instructions, including excerpts thereof, must not be reproduced, translated or made accessible to third parties, except with the express written approval of the manufacturer.

Delivery of the forklift and documentation

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

- Original instructions
- Declaration of conformity

If the truck has been delivered with a traction battery and/or a battery charger, ensure that these products conform to the order and that the corresponding operating and maintenance manuals are included, as well as the declaration of conformity for the battery charger.

If there is applied equipment or other equipment or devices, ensure that these products conform to the order and that the corresponding operating and maintenance manual and the corresponding declaration of conformity (if required by the applicable regulations) are included.

All of the above documentation must be kept for the entire operational life of the truck

In the event that the operating instructions are lost or damaged, the operator must replace them immediately. The operator can obtain the operating instructions in digital format. See the Digital operating instructions section.

Digital operating instructions

According to the latest revision of the guidelines for the application of machinery directive 2006/42/EC, the original operating instructions no longer have to be supplied in paper form.

The operating instructions for the industrial truck and other relevant documents (e.g. spare parts catalogue) are available in the customer portal.

Procedure:

- Scan the QR code on the nameplate of the industrial truck, or
- Enter the address **still-smart.com/QR/ms/XXXXXXXXXXXX** in an Internet browser.

NOTE

XXXXXXXXXXXX is a placeholder for the serial number.

NOTE

To locate the QR code, see the section entitled "Nameplate".

Spare parts list

You can request to download the spare parts list by copying and pasting the address **https://sparepartlist.still.eu** into a web browser or by scanning the QR code shown to the side.

On the web page, enter the following password: **Spareparts24!**

On the next screen, enter your email address and truck serial number to receive an email with the link and download the spare parts list.


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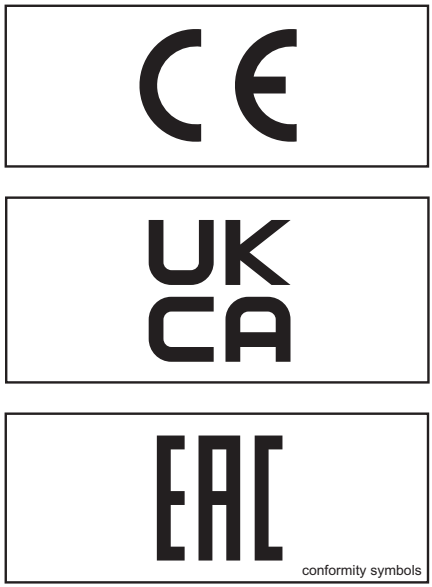
Conformity marking

The manufacturer uses the conformity marking to document the conformity of the industrial truck with the relevant directives at the time of placing on the market:

- CE: in the European Union (EU)
- UKCA: in the United Kingdom (UK)
- EAC: in the Eurasian Economic Union

The conformity marking is applied to the nameplate. A declaration of conformity is issued for the EU and UK markets.

An unauthorised structural change or addition to the industrial truck can compromise safety, thus invalidating the declaration of conformity.



conformity symbols

Declaration that reflects the content of the declaration of conformity

Declaration

STILL GmbH
Berzeliusstraße 10
22113 Hamburg Germany

We declare that the specified machine conforms to the most recent valid version of the directives specified below:

Industrial truck type	**corresponding to these operating instructions**
Model	**corresponding to these operating instructions**

– "Machinery Directive 2006/42/EC" [1)]
– "Supply of Machinery Safety Regulations 2008, 2008 No. 1597" [2)]

Personnel authorised to compile the technical documents:

See declaration of conformity

STILL GmbH

[1)] For the markets of the European Union, the EU candidate countries, the EFTA States and Switzerland.
[2)] For the United Kingdom market.

The declaration of conformity document is supplied with the industrial truck. The declaration shown explains the conformity with the provisions of the EC Machinery Directive and the Supply of Machinery Safety Regulation 2008, 2008 No. 1597.

An unauthorised structural change or addition to the industrial truck can compromise safety, thus invalidating the declaration of conformity.

The declaration of conformity must be carefully stored and made available to the responsible authorities if necessary. It must also be

handed over to the new owner if the industrial truck is sold on.

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.

Type of use

"Normal use conditions" of the forklift are understood as:

- Lifting and/or transport of loads using the forks with weight and load 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 loads that are stable and 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 truck 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 incorrect use of the forklift truck:

- Transport on uneven (irregular or non-compact) ground
- Loads that exceed the limits for weight and/or load centre of gravity
- Transporting loads that are not stable
- Transporting loads that are not equally distributed on the forks
- Transporting swinging loads
- Transporting loads where the load centre of gravity is considerably displaced with respect to the truck'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 onto the operator in the event of accidental tipping
- Travelling with a load over 300 mm off the ground
- Transporting and/or lifting people
- Pushing loads
- Moving upwards or downwards on a slope with the load facing downwards
- Turning at high speed
- Turning and/or moving sideways on slopes (upwards or downwards)
- Colliding with stationary and/or mobile structures

⚠ DANGER

Improper use of the truck could cause the truck and/or the load to overturn.

Working conditions

All trucks described in this manual are designed and built for indoor transport.

The tow tractors can also be used outside if the floor conditions are adequate. The

following paragraphs describe the floor requirements.

For use outdoors and in bad weather, it is strongly recommended to use the tow tractor with a protective cab.

The truck must not be used outside 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 truck in dusty environments.

Using the truck in environments with high concentrations of salty air or water could cause problems with the truck and cause corrosion of metallic parts.

If the truck must be used in conditions outside of 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 usage precautions are necessary. Contact the authorised sales network for information.

⚠ DANGER

The truck must not be used in environments where there is a risk of explosion and the truck must not be used to handle explosive loads.

Trucks that must operate in environments where there is a risk of explosion or trucks that must handle explosive loads require the appropriate equipment, which must be accompanied by a specific declaration of conformity that replaces that of the standard truck, and by the corresponding operating and maintenance manual.

Contact the authorised sales network for further 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, only if provided by the manufacturer
- Assembly of applied equipment, only if provided by the manufacturer

⚠ WARNING

Before installing optional or additional equipment, please exclusively contact the sales network authorised by the manufacturer.

⚠ 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).

Modifications and retrofitting

If the industrial truck will be used for work that is not listed in the directives or in these instructions, the industrial truck must be converted or retrofitted for this purpose as required. Any structural modification can impair the handling and stability of the industrial truck, and can result in accidents.

Any modifications that adversely affect stability, load capacity and the circumferential view from the industrial truck require written approval by the manufacturer.

The following components may only be modified with prior written approval from the manufacturer:

- Brakes
- Steering
- Operating devices
- Safety systems
- Equipment variants
- Attachments

The industrial truck may be converted only with written approval by the manufacturer. If necessary, obtain approval from the relevant authorities.

– Only the authorised service centre is permitted to perform welding work on the industrial truck.

We warn against installing and using restraint systems that have not been approved by the manufacturer.

– Contact the authorised service centre before converting or retrofitting the truck.

Only the authorised service centre is permitted to perform welding work on the industrial truck.



⚠ DANGER

Risk of explosion from additional holes in the area surrounding the battery!

Explosive gases can escape and can lead to potentially fatal injuries if they explode. Sealing bores with plugs is not sufficient to prevent gas from escaping.

– Do not drill holes in the area surrounding the battery.

The operating company is permitted to make modifications to the industrial truck independently only if the manufacturer goes into liquidation and is not taken over by another legal person.

The operating company must also fulfil the following prerequisites:

- Design documents, test documents and assembly instructions associated with the modification must be permanently archived and remain accessible at all times.
- The capacity rating plate, the decal information, the hazard warnings and the operating instructions must be checked to ensure that they are consistent with the modifications and must be amended if required.
- Modifications must be designed, checked and implemented by a design office that specialises in industrial trucks. The design office must comply with the standards and directives valid at the time that modifications are made.

Decal information with the following data must be permanently affixed to the industrial truck so that it is clearly visible:

- Type of modification
- Date of modification
- Name and address of the company that carried out the modification

Applied equipment

To apply additional equipment after purchasing, you must contact the sales network authorised by the truck manufacturer, which will:

- verify feasibility
- install the equipment
- add a label with the new residual capacity
- provide documentation on the equipment (operating and maintenance manual and declaration of conformity)

⚠ CAUTION

The truck user must be trained in the operation and correct use of the equipment

The user must check that the equipment is working correctly before use.

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.

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 guidelines

General safety guidelines

- Only allow qualified, trained and authorised personnel to use the truck.
- Do not install equipment on the forklift unless supplied or indicated by the manufacturer.
- Maintain the truck in full working condition in order to keep any type of risk to the minimum.
- Do not use the truck with hoods or doors open or with protective 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.
- Ensure that there is sufficient free space above the truck, both during travel (beams, gates) and when lifting (low ceiling, bridge crane etc.).
- Do not park in front of fire-fighting devices or fire escapes or anywhere that obstructs traffic.
- If the truck shows signs of fault or breakage and there is reason to consider it unsafe, park the truck and notify your employer/manager. Only use the truck if it functions correctly and allows safe operation after repair.
- 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 rail or in such a way that the load centre of gravity is as close as possible to the fork carriage rail.
- The load must be placed on the forks so that the load centre of gravity is on the median plane between the forks.
- Do not drive with loads off-centre laterally with respect to the truck'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 rough or uneven ground or on steps.
- Do not travel with loads raised more than 300 mm from the ground.
- Stacking or de-stacking on ramps or slopes is prohibited.
- Reduce speed on slopes.
- Do not overload the truck beyond the capacity limits indicated on the designation plates.
- Individuals under the influence of drugs and alcohol are not permitted to use the truck.
- Use of a telephone or radio in the truck is permitted. However, do not use these devices when driving as they could be a distraction.

Flooring requirements

The work floor must be even and free of holes or dips, which can be difficult to get around. Any steps must be equipped with ramps to prevent impacts with the wheels, which affect the entire structure of the truck.

⚠ CAUTION

Passing over cracks or damaged parts of the floor with the truck is prohibited. Dirt and any objects in the work path must be removed immediately. The employer must ensure that the flooring requirements are met. For this reason, the manufacturer cannot be held liable for any damage to the truck (especially to wheels, hubs etc.) caused by use on unsuitable surfaces.

Battery connection cables

⚠ CAUTION

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

External electrical connections

⚠ CAUTION

Only batteries specified by the manufacturer may be connected to the truck. Only use battery chargers specified by the manufacturer when charging the battery. Do not exceed specified charging current values. Check the integrity of connection cables and connectors.

Requirements for the lead-battery charging area

When the battery is being charged, the area must be sufficiently ventilated in order to dilute or eliminate the gases produced (in compliance with current national regulations).

Safety guidelines for using the truck

- The operator must be trained and qualified according to national regulations. The operator must have knowledge of the operation and performance of the truck. The operator must use the truck with due care in accordance with their driving ability and experience.
- Any defect (squeaking, leaks etc.) must be promptly reported because, if neglected, it could cause more serious malfunctions.
- Carry out the checks indicated in the "Daily checks" chapter.

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 truck and press the emergency stop button.

Safety guidelines relating to consumables

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.

Oils

- Avoid contact with skin.
- Do not inhale oil vapours.
- Wear appropriate personal protective equipment during truck 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 they must be disposed of according to current regulations. We advise you to contact the authorised service network.

⚠ DANGER

High-pressure oil jets can cause serious harm. Promptly locate and report any leaks.

Leakage of pressurised hydraulic oil can cause injuries (to skin or eyes). In the event that injuries are contaminated by oil leaking from the truck system, seek medical advice immediately.

Battery acid

- Do not inhale the steam: it is very harmful to health.
- Wear appropriate personal protective equipment 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 62485-3 etc.).
- DO NOT smoke or use open flames and lights within a 2-m radius of the charged battery or in the battery charging area.

NOTE

For more 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 risk

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 if floors are wet or icy or when consumables are leaking.
- Danger of fire and explosion 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
- Service intervals not observed.

The manufacturer shall not be held responsible for accidents involving the truck caused by the failure of the customer or the end user to comply with regulations.

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.

The risks caused by improper use, and which are therefore prohibited, may 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.

⚠ WARNING

These risks are caused by improper use.

Improper use (e.g. swinging loads, transporting liquids etc.) is PROHIBITED unless specifically approved in writing by the manufacturer.

Electromagnetic radiation

The limit values for the truck's electromagnetic emissions and immunity are those set out in the EN 12895 standard.

If an electric and/or electronic device is subsequently attached to the outlet of the forklift truck ex-works, this could affect the truck's electromagnetic compatibility and thereby invalidate the original certificate. Any electric and/or electronic attachments must be installed in accordance with technical regulations by specially trained personnel. In any case, the manufacturer CANNOT be held liable for the truck malfunctioning or for any injuries and/or damage inflicted on objects and/or persons as a result of modifications made to the original forklift truck ex-works.

Non-ionised radiation

If the truck 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).

Electrostatic charge

If an electrostatic charge occurs as a result of the model of the tyres and the type of floor, then you must ensure that the voltage is properly eliminated. Contact the manufacturer's authorised service network for more information.

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 Harmonised European Standard EN 12053 and declared according to EN ISO 4871 with weighted time percentages of the operating modes.

⚠ CAUTION

The value expressed above can be used to compare forklift trucks of the same category. This cannot be used to determine the noise level in workplaces (daily personal noise exposure). Noise values that are lower or higher than those indicated above can occur during actual truck use, for example following different operating modes, different environmental conditions and additional noise sources.

Vibrations

Vibrations to which the hands and arms are exposed

The following value is valid for all truck models:

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

NOTE

It is mandatory to specify the hand-arm vibrations, even where the values do not indicate any danger, as in this case.

General comments: Vibrations to which the body (legs) is exposed

The values to which the body (legs) is exposed apply to driving with the operator on board the truck.

The value complies with Harmonised European Standard EN 13059 (Safety of industrial trucks — methods for measuring vibration).

CAUTION

The value expressed above can be used to compare forklift trucks of the same category. It cannot be used to determine the operator's daily exposure to vibrations during real operation of the truck; these vibrations depend on the conditions of use (floor conditions, method of use etc.) and therefore daily exposure must be calculated using data from the place of use.

OPX: Vibrations to which the body (legs) is exposed

The following value is valid for standard trucks (WITHOUT sprung operator platforms):

- $\bar{a}_{w,zF} = 0.84\ m/s^2$
  Uncertainty $K = \pm 0.25\ m/s^2$

The following values are specifically for trucks with sprung operator platforms (optional):

- Operator weight between 70 kg and 90 kg
  $\bar{a}_{w,zF} = 0.68\ m/s^2$
  Uncertainty $K = \pm 0.20\ m/s^2$
- Operator weight between 90 kg and 110 kg
  $\bar{a}_{w,zF} = 0.60\ m/s^2$
  Uncertainty $K = \pm 0.18\ m/s^2$

LTX: Vibrations to which the body (legs) is exposed

The following value is valid for standard trucks (WITHOUT sprung operator platforms):

- $\bar{a}_{w,zF} = 0.95\ m/s^2$
  Uncertainty $K = \pm 0.28\ m/s^2$

The following values are specifically for trucks with sprung operator platforms (optional):

- Operator weight between 70 kg and 90 kg
  $\bar{a}_{w,zF} = 0.68\ m/s^2$
  Uncertainty $K = \pm 0.20\ m/s^2$
- Operator weight between 90 kg and 110 kg
  $\bar{a}_{w,zF} = 0.60\ m/s^2$
  Uncertainty $K = \pm 0.18\ m/s^2$

OXV: Vibrations to which the body (legs) is exposed

- $\bar{a}_{w,zF} = 0.6\ m/s^2$
  Uncertainty $K = \pm 0.2\ m/s^2$

Modifications and retrofitting

If the industrial truck will be used for work that is not listed in the directives or in these instructions, the industrial truck must be converted or retrofitted for this purpose as required. Any structural modification can impair the

handling and stability of the industrial truck, and can result in accidents.

Any modifications that adversely affect stability, load capacity and the circumferential view from the industrial truck require written approval by the manufacturer.

The following components may only be modified with prior written approval from the manufacturer:

- Brakes
- Steering
- Operating devices
- Safety systems
- Equipment variants
- Attachments

The industrial truck may be converted only with written approval by the manufacturer. If necessary, obtain approval from the relevant authorities.

– Only the authorised service centre is permitted to perform welding work on the industrial truck.

We warn against installing and using restraint systems that have not been approved by the manufacturer.

– Contact the authorised service centre before converting or retrofitting the truck.

Only the authorised service centre is permitted to perform welding work on the industrial truck.



⚠ DANGER

Risk of explosion from additional holes in the area surrounding the battery!

Explosive gases can escape and can lead to potentially fatal injuries if they explode. Sealing bores with plugs is not sufficient to prevent gas from escaping.

– Do not drill holes in the area surrounding the battery.

The operating company is permitted to make modifications to the industrial truck independently only if the manufacturer goes into liquidation and is not taken over by another legal person.

Modifications and retrofitting

The operating company must also fulfil the following prerequisites:

- Design documents, test documents and assembly instructions associated with the modification must be permanently archived and remain accessible at all times.
- The capacity rating plate, the decal information, the hazard warnings and the operating instructions must be checked to ensure that they are consistent with the modifications and must be amended if required.
- Modifications must be designed, checked and implemented by a design office that specialises in industrial trucks. The design office must comply with the standards and directives valid at the time that modifications are made.

Decal information with the following data must be permanently affixed to the industrial truck so that it is clearly visible:

- Type of modification
- Date of modification
- Name and address of the company that carried out the modification

Safety tests

Regular safety inspection of the truck ▷



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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!

Safety devices

Damage, defects and misuse of safety devices

The driver must report any damage or other defects to the truck or attachment immediately to the supervisory personnel.

Trucks and attachments that are not functional or safe may not be used until they have been properly repaired.

Do not remove or deactivate safety devices and switches.

Fixed set values may only be changed with the approval of the manufacturer.

Work on the electrical system (e.g. connecting a radio, additional headlights etc.) is only permitted with the manufacturer's written approval. All electrical system interventions must be documented.

3

Overview

Overview of the various models

General features

The trucks described in this manual OPX20, OPX25, OPX20 PLUS, OPX25 PLUS, OPX-L12, OPX-L16, OPX-L20S OPX-L20, OPX-D20, LTX50 and OXV 07/08/10 trucks are designed for transporting and order picking goods in shops, warehouses and factories.

Every truck in the range is equipped with an ergonomic steering wheel with screen and integrated controls. When released, the steering wheel automatically returns to its initial position.

Three-phase alternating current traction motor with a power rating of 3 kW.

Lift motor with a power rating of 2.2 kW.

Capacities vary depending on the model up to a maximum load capacity of 2500 kg.

The vehicles are equipped with Blue-Q mode, which brings energy savings of up to 7%.

A range of customisation options allow you to adapt the vehicles to meet your specific requirements. Examples include:

- Height-adjustable steering wheel
- Reduced vibrations for the operator thanks to a pneumatically damped step plate
- An elevating operator step plate
- Folding step
- An ergonomic folding seat that is height-adjustable and pneumatically damped for long journeys
- A narrower seat backrest for a more spacious operator compartment
- Lithium-ion batteries
- A wide range of lights for improved operator safety and visibility in all environmental conditions

OPX 20, OPX 25, OPX 20 PLUS, OPX 25 PLUS



Vehicles for transporting goods horizontally and standard order picking. Can transport up to two Euro pallets lengthwise for order picking or for horizontal transport of goods.

Capacity:

- The OPX 20 and the OPX20 PLUS have a maximum capacity of 2000 kg
- The OPX 25 and the OPX25 PLUS have a maximum capacity of 2500 kg

Speed:

- The OPX 20/25 can reach a maximum speed of 12 km/h
- OPX 20/25 PLUS vehicles, equipped with a special 5-wheel chassis for enhanced stability and optimum traction, can reach a maximum speed of 14 km/h.

OPX-L 20 S



Capacity: 2000 kg

Speed: 12 km/h

Fork length: 2390 mm

The OPX-L 20 S truck's scissor-lift forks can lift two pallets weighing up to 1000 kg each, and can lift them to an ergonomic working height. This variant makes it easy to order pick and transport even long or large goods, such as those used in the furniture industry. Maximum lift height: 785 mm

OPX-L 12



Capacity: 1200 kg

Speed: 12 km/h

Fork length: 1190 mm

The OPX-L 12 variant has a mast for order picking heavy goods at an ergonomic height. The pallet can be loaded up to a weight of 1200 kg and lifted to a working height of 786 mm. The vehicle's compact size makes it particularly suitable for narrower working aisles.

OPX-L 16

Capacity: 1600 kg

Speed: 12 km/h

Fork length: 2390 mm

The OPX-L 16 can be used to pick two pallets weighing up to 800 kg each at an ergonomic working height. The smaller wheelbase of the vehicle allows very small turning radii, so you can manoeuvre in confined spaces. The counterbalanced forks to the rear of the vehicle enable both stacking and unstacking of pallets. Maximum lift height: 790 mm



OPX-L 20

Capacity: 2000 kg

Speed: 12 km/h

Fork length: 2390 mm

A stand-out feature of the OPX-L 20 is its centre of gravity, which is optimised for faster cornering. The ability to vary height for ergonomic working brings advantages.



OPX-D 20

Capacity: 2000 kg

Speed: 12 km/h

Double the efficiency with the OPX-D 20. The vehicle can be used to transport two pallets stacked on top of one another, with a load of 1000 kg per pallet. This makes it possible to safely transport fragile goods or goods that cannot be stacked. The vehicle has a small turning radius of just 2440 mm. If you are transporting just one pallet with the initial lift, the load can weight up to 2000 kg.



LTX50

Towing capacity: 5000 kg

Speed: 14 km/h

LTX 50 is a towing vehicle. The tow tractor has been designed to hold various towing hooks at the rear. LTX50 is compatible with Liftrunner, a complete system of hydraulic trailers for collecting loaded trolleys simply and safely.



LTX-FF

Lifting capacity: 1000 kg

Maximum towing capacity: 5000 kg

Maximum speed: 13 km/h

With its foldable forks, LTX-FF is a towing or lifting vehicle. The tow tractor has been designed to hold various towing hooks at the rear. LTX-FF is compatible with LiftRunner, a complete system of hydraulic trailers for collecting loaded trolleys simply and safely.



LTX-T

Maximum towing capacity: 5000 kg

Maximum speed: 10 km/h

LTX-T is a towing vehicle. The tow tractor has been designed to hold various towing hooks at the rear. LTX-T has the unique feature of a rear load bed onto which you can load objects.



OXV 07/08/10

Fast, efficient and safe — three words that perfectly sum up the features of the OXV.

The OXV 07 can lift up to 700 kg on a pallet to the first or second level of a storage area. With OXV 10, this amount is up to 1000 kg.

The height-adjustable driver's working area is a real strong point and allows a reach height of up to 2800 mm.

For quick order picking, the driver's platform can also be raised and lowered during travel.

Features such as an intuitive steering wheel and speed reduction when turning help ensure comfortable, safe and enjoyable driving.

The OXV 08 can lift a total of 800 kg effortlessly. The platform also includes an auxiliary lift, which allows the forks to be raised to a total height of 1877 mm.

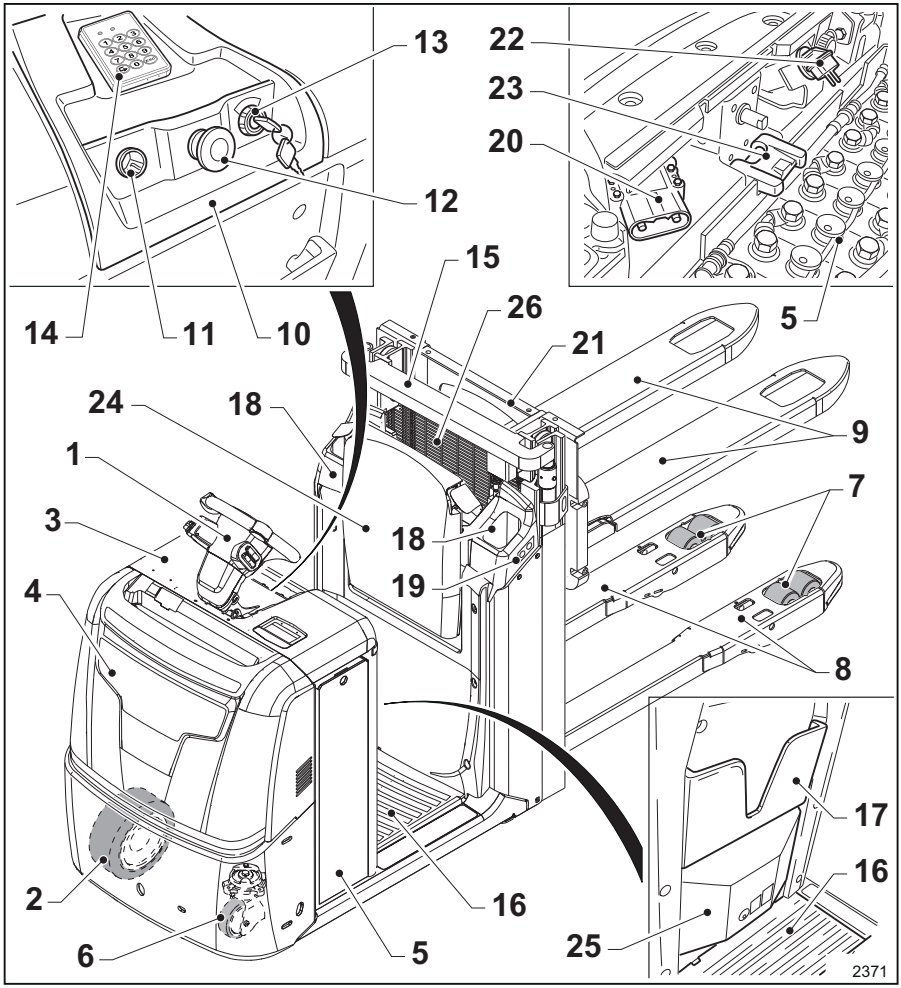


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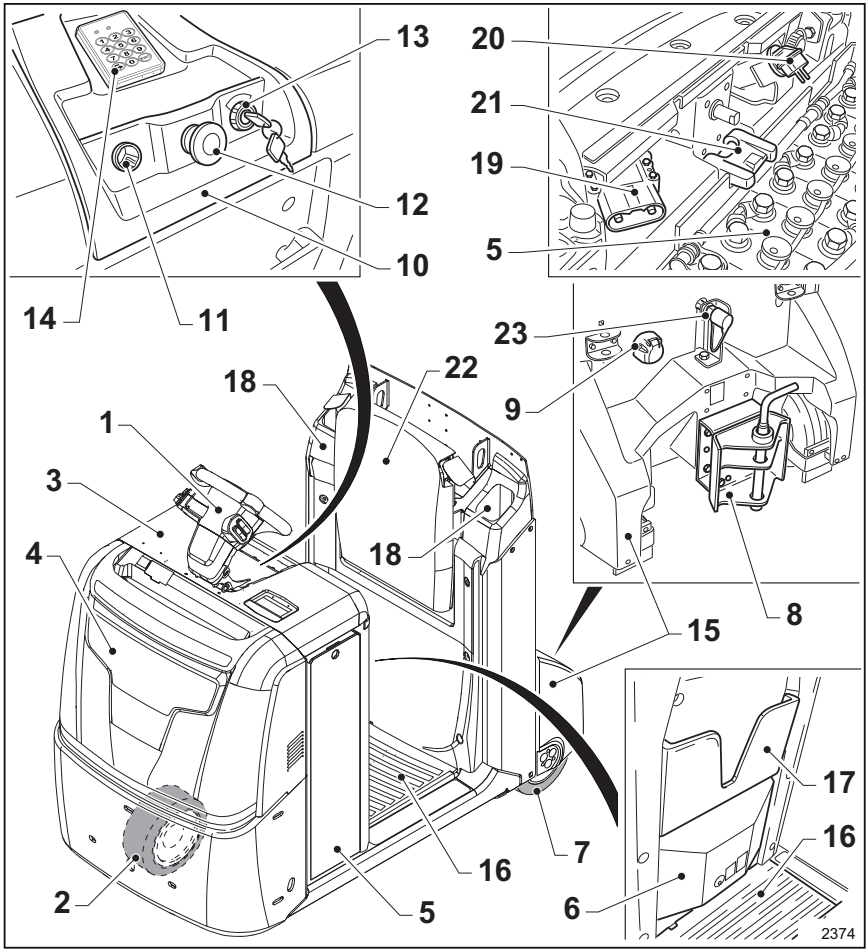
OPX range general overview



1	Steering wheel with integrated controls	12	Emergency stop button
2	Drive wheel	13	On/off key
3	Hood for accessing the battery compartment	14	Digicode - Numerical Keypad
4	Motor compartment cover	15	Lift mast
5	Battery	16	Operator platform
6	Pivoting wheel	17	Document holder
7	Load castor	18	Glove compartment
8	Straddles	19	Seat backrest push buttons
9	Forks	20	Battery plug/socket
10	Dashboard	21	Fork carriage
11	12/24 V cigarette lighter socket		

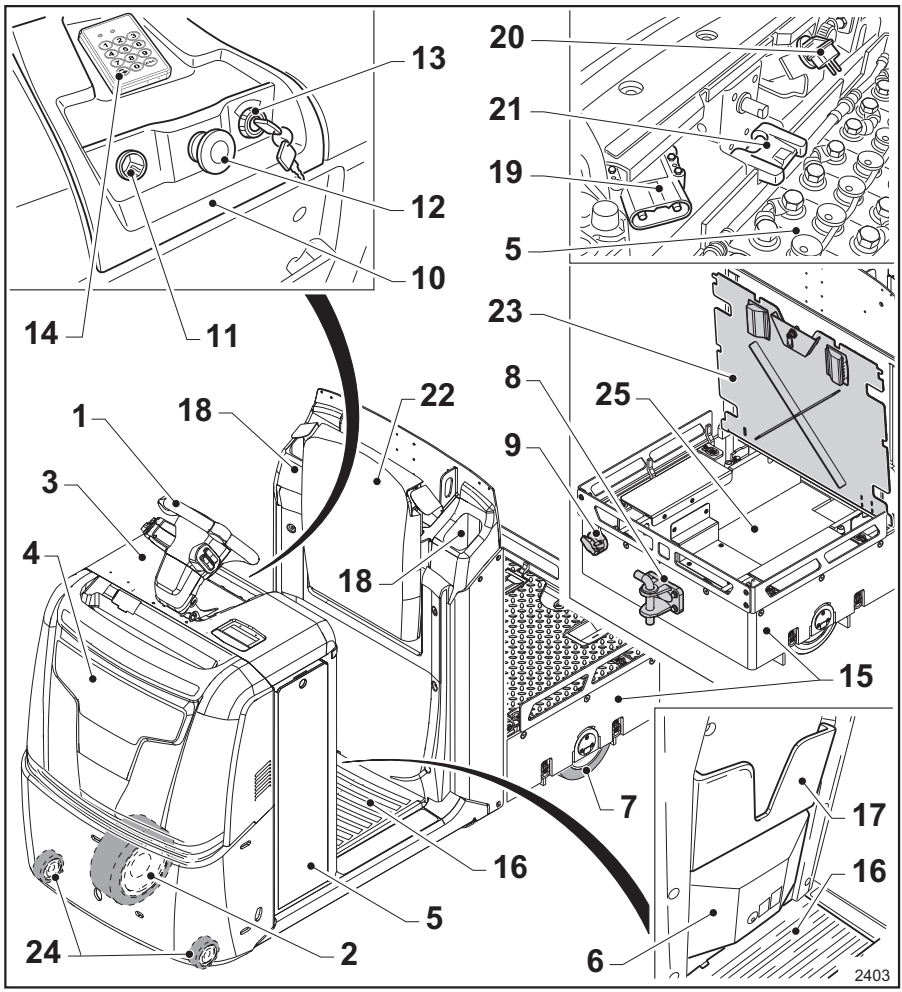
22 Power current plug of the on-board battery charger
23 Mechanical battery lock clasp
24 Seat backrest
25 Platform damping system
26 Operator protective guard

LTX50 general overview



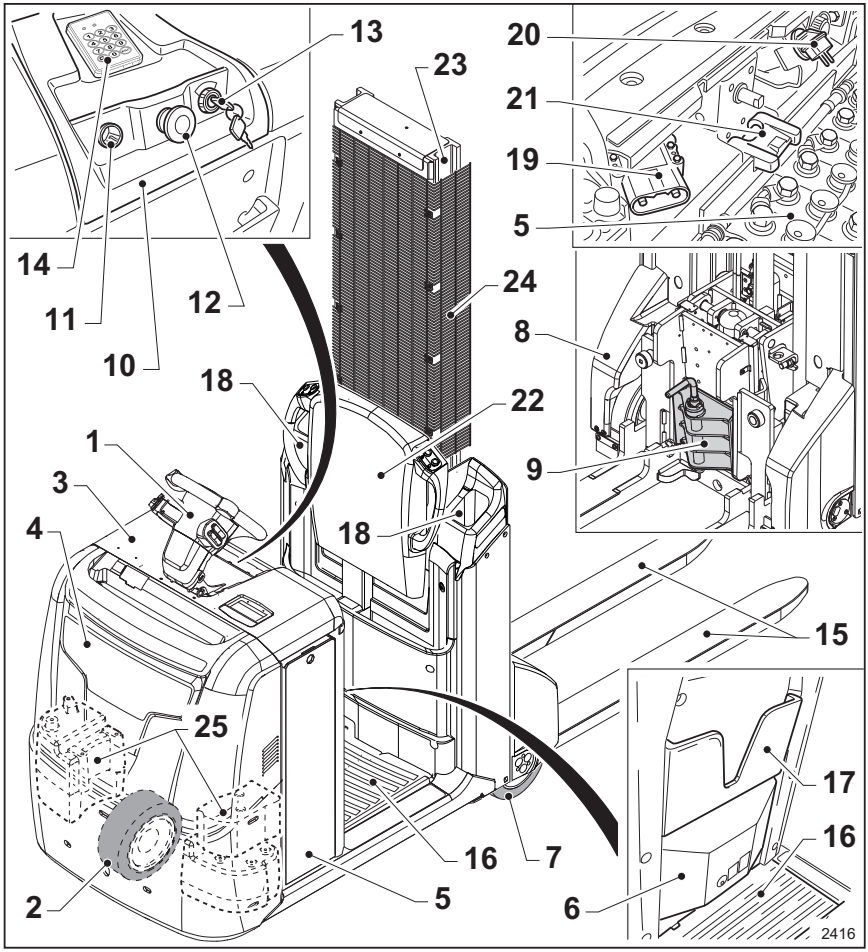
1	Steering wheel with integrated controls	13	On/off key
2	Drive wheel	14	Digicode - Numerical Keypad
3	Hood for accessing the battery compartment	15	Ballast
4	Motor compartment cover	16	Operator platform
5	Battery	17	Document holder
6	Platform damping system	18	Glove compartment
7	Rear wheels	19	Battery plug/socket
8	Tow coupling	20	Power current plug of the on-board battery charger
9	Trailer lighting socket	21	Mechanical battery lock clasp
10	Dashboard	22	Seat backrest
11	12/24 V cigarette lighter socket	23	LiftRunner system hydraulic coupling
12	Emergency stop button		

General overview LTX-T



1	Steering wheel with integrated controls
2	Drive wheel
3	Hood for accessing the battery compartment
4	Motor compartment hood
5	Battery
6	Platform damping system
7	Rear wheels
8	Tow coupling
9	Trailer lighting socket
10	Dashboard
11	12/24 V cigarette lighter socket
12	Emergency stop button
13	On/off key
14	Digicode - Numerical keypad
15	Ballast
16	Operator platform
17	Document holder
18	Storage compartment
19	Battery plug and socket
20	Power current plug of the on-board battery charger
21	Mechanical battery lock clasp
22	Seat backrest
23	Rear cover
24	Front pivot wheels
25	Storage compartment

General overview LTX-FF



1	Steering wheel with integrated controls	13	On/off key
2	Drive wheel	14	Digicode - Numerical keypad
3	Hood for accessing the battery compartment	15	Forks
4	Motor compartment hood	16	Operator platform
5	Battery	17	Document holder
6	Platform damping system	18	Storage compartment
7	Rear wheels	19	Battery plug and socket
8	Ballast	20	Power current plug of the on-board battery charger
9	Tow coupling	21	Mechanical battery lock clasp
10	Dashboard	22	Seat backrest
11	12/24 V cigarette lighter socket	23	Lift mast
12	Emergency stop button		

24	Anti-shearing guard grille	25	Ballasts

Markings

Labels and designation plates

⚠ CAUTION

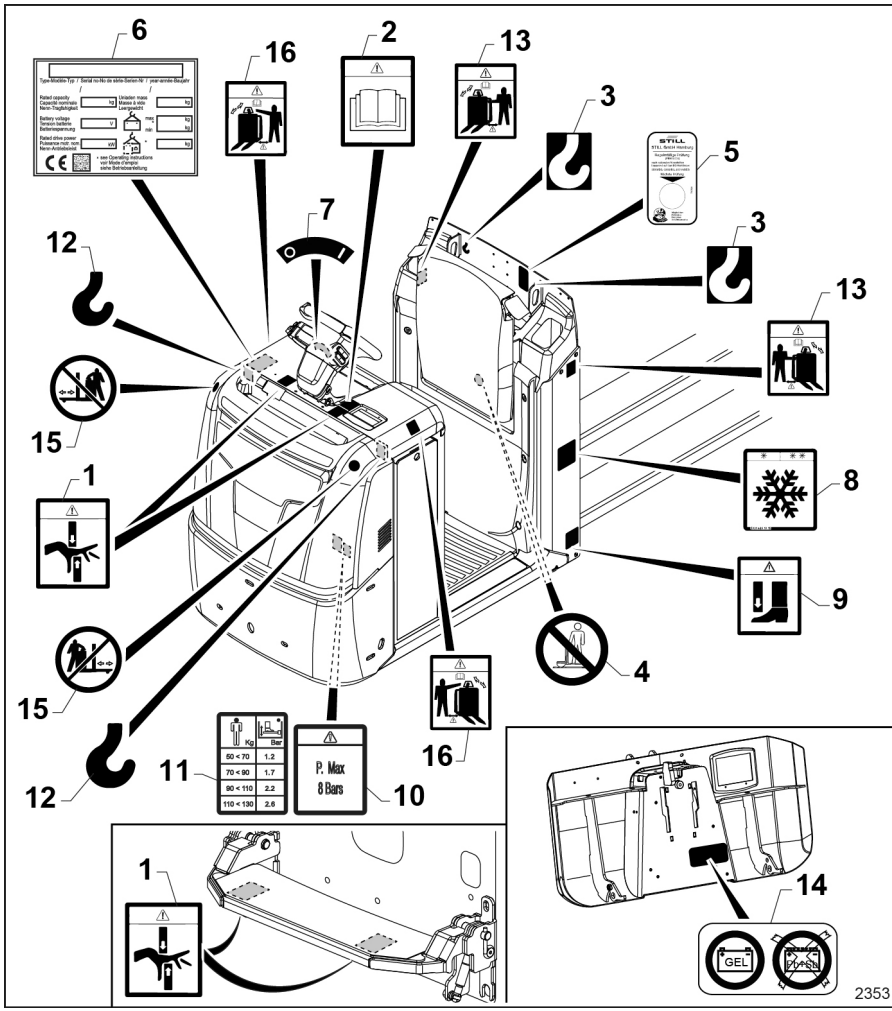
Observe the information on the following labels and designation plates.

The labels indicate information and warnings about bans and danger. They inform the operator about the residual risks on the truck.

Removing labels and designation plates is forbidden.

There may be options on your truck with the same labels placed in different zones of the truck. For this reason, the explanations on the labels shown on the following pages should be read and taken into consideration, even if the label is located in a different area to the one in the following illustrations.

OPX 20/25 and OPX 20/25 PLUS label location



1 "Danger of crushing hands" label
2 "Operating and maintenance manual" label
3 "Hook" symbol
4 "Do not climb on the forks" label
5 "Yearly safety inspection" label (Germany only)
6 "Nominal value" designation plate
7 Label "ON/OFF"
8 "Cold store" label (for cold-store equipment only)
9 "Danger of crushing feet" label
10 "Maximum permissible pressure" label
11 "Operator platform capacity schematic view" label
12 "Hook" symbol
13 "Pedestrian mode with buttons warning" label (only in pedestrian mode with buttons option)
14 Version set up for gel batteries
15 "Positioning yourself in front of the truck is prohibited" label (only in pedestrian mode with steering wheel option)

16 "Pedestrian mode with steering wheel warning" label (only in pedestrian mode with steering wheel option)

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

(3) This label indicates where to attach the truck's lifting hook.

(4) This label indicates that you must not climb on the forks or transport people on the forks.

(5) This label is only present on trucks that are sold in Germany. This label indicates the date of the truck's periodic safety inspection.

(6) Designation plate showing the truck's nominal values.

(7) "ON/OFF" label. Switching the truck on and off using a key.

(8) This symbol, where present, indicates that the truck is set up as the "cold-storage" version (optional).

(9) This label indicates danger of crushing feet under the forks (present only on certain versions).

(10) This label indicates the maximum setting pressure for the operator platform. Caution: The setting system must not be inflated to pressures above 8 bar (only present on versions with platform damping).

(11) This label indicates the setting pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 kg and 90 kg; 2.2 bar: between 90 kg and 110 kg; 2.6 bar: between 110 kg and 130 kg (only present on versions with platform damping).

(12) This label indicates where to attach the truck's lifting hook.

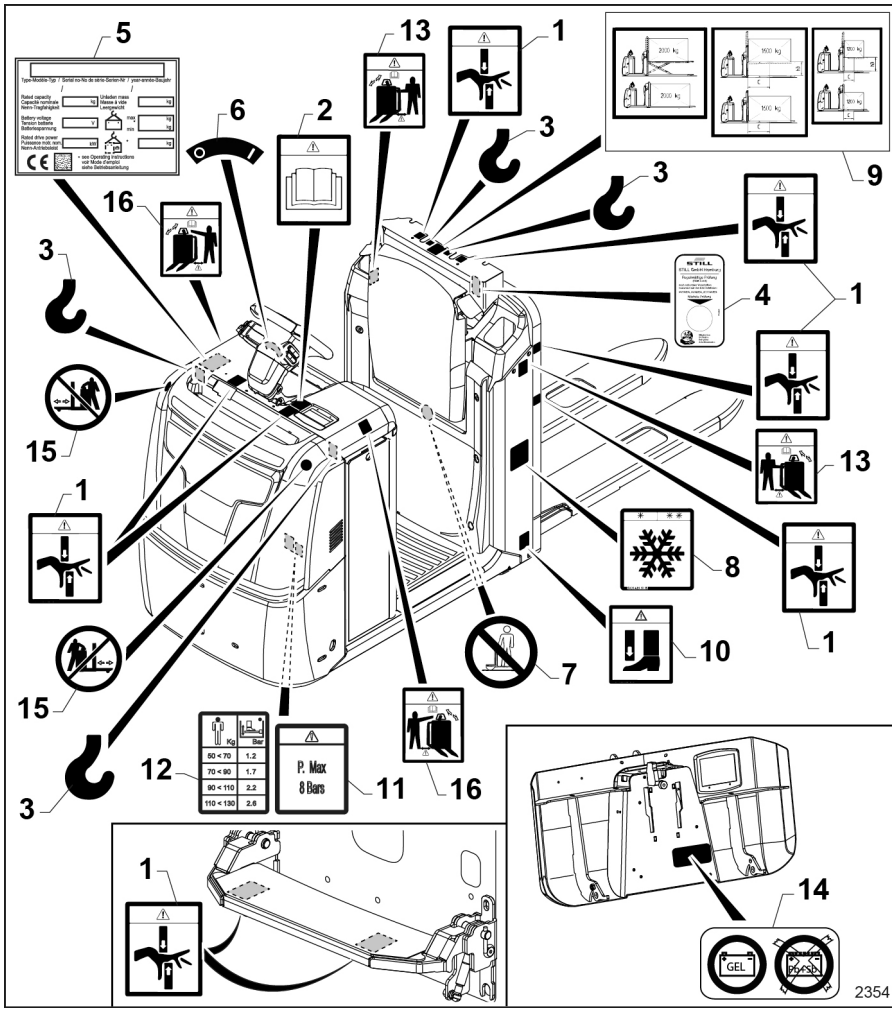
(13) This label, where present, indicates that you should exercise caution while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

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

(15) This label, where present, indicates that positioning yourself in front of the truck whilst using the truck in pedestrian mode with the steering wheel function is forbidden. Failure to comply with this instruction may lead to the operator being hit and injured by the truck.

(16) This label, where present, indicates that you should pay attention while using the truck in pedestrian mode with the steering wheel function. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

Location of OPX-L (12/16/20S) labels



1	"Danger of crushing hands" label	11	"Maximum permissible pressure" label
2	"Operating and maintenance manual" label	12	"Operator platform capacity schematic view" label
3	"Hook" symbol	13	"Pedestrian mode with buttons warning" label (only in pedestrian mode with buttons option)
4	"Yearly safety inspection" label (Germany only)	14	Version set up for gel batteries
5	"Nominal value" designation plate	15	"Positioning yourself in front of the truck is prohibited" label (only in pedestrian mode with steering wheel option)
6	Label "ON/OFF"		
7	"Do not climb on the forks" label		
8	"Cold store" label (for cold-store equipment only)		
9	Truck capacity label		
10	"Danger of crushing feet" label		

16 "Pedestrian mode with steering wheel warning" label (only in pedestrian mode with steering wheel option)

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

(3) This label indicates where to attach the truck's lifting hook.

(4) This label is only present on trucks that are sold in Germany. This label indicates the date of the truck's periodic safety inspection.

(5) Designation plate showing the truck's nominal values.

(6) "ON/OFF" label. Switching the truck on and off using a key.

(7) This label indicates that you must not climb on the forks or transport people on the forks.

(8) This symbol, where present, indicates that the truck is set up for use in cold storage (optional).

(9) This label indicates the permissible load on the forks depending on load centre of gravity and lift height. The label varies depending on the truck capacity and is explained in more detail in the following section.

(10) This label indicates danger of crushing feet under the forks (present only on certain versions).

(11) This label indicates the maximum setting pressure for the operator platform. Caution: The setting system must not be inflated to pressures above 8 bar (only present on versions with platform damping).

(12) This label indicates the setting pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 kg and 90 kg; 2.2 bar: between 90 kg and 110 kg; 2.6 bar: between 110 kg and 130 kg (only present on versions with platform damping).

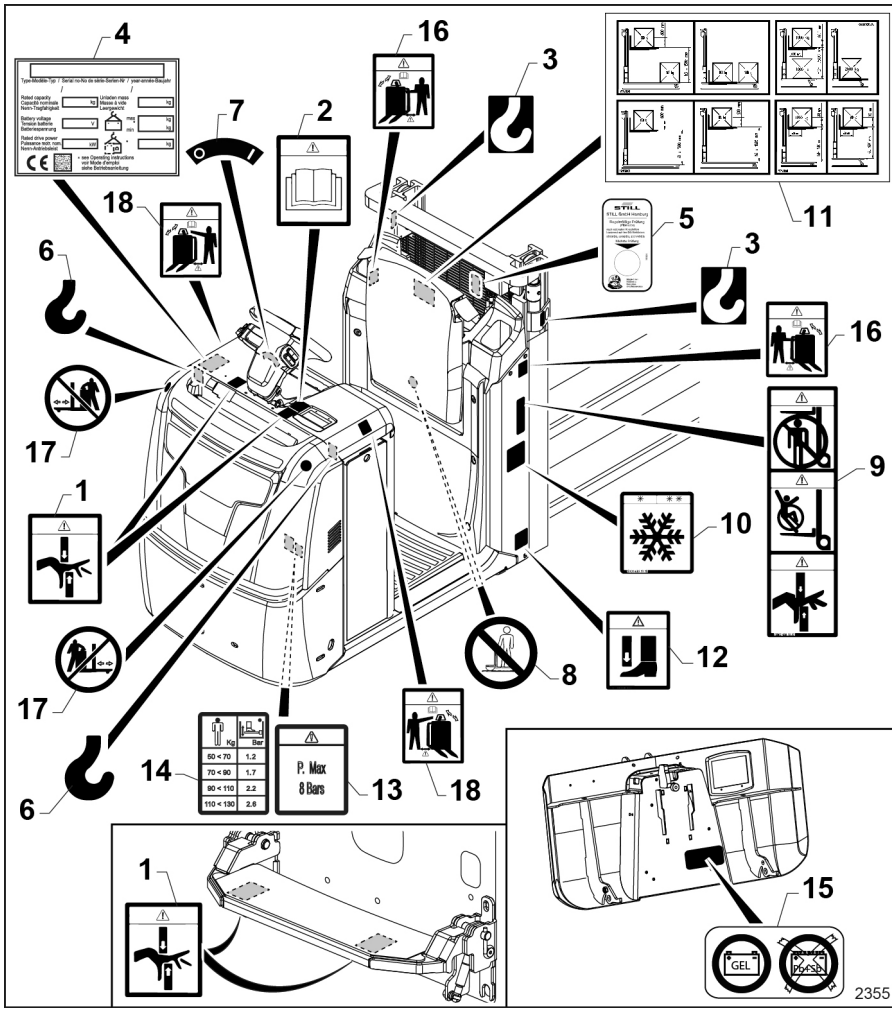
(13) This label, where present, indicates that you should exercise caution while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

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

(15) This label, where present, indicates that positioning yourself in front of the truck whilst using the truck in pedestrian mode with the steering wheel function is forbidden. Failure to comply with this instruction may lead to the operator being hit and injured by the truck.

(16) This label, where present, indicates that you should pay attention while using the truck in pedestrian mode with the steering wheel function. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

Location of OPX-L20 and OPX-D20 labels



1	"Danger of crushing hands" label	11	Truck capacity label
2	"Operating and maintenance manual" label	12	"Danger of crushing feet" label
3	"Hook" symbol	13	"Maximum permissible pressure" label
4	"Nominal value" designation plate	14	"Operator platform capacity schematic view" label
5	"Yearly safety inspection" label (Germany only)	15	Version set up for gel batteries
6	"Hook" symbol	16	"Pedestrian mode with buttons warning" label (only in pedestrian mode with buttons option)
7	Label "ON/OFF"	17	"Positioning yourself in front of the truck is prohibited" label (only in pedestrian mode with steering wheel option)
8	"Do not climb on the forks" label		
9	Warning label		
10	"Cold store" label (for cold-store equipment only)		

18 "Pedestrian mode with steering wheel warning" label (only in pedestrian mode with steering wheel option)

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

(3) This label indicates where to attach the truck's lifting hook.

(4) Designation plate showing the truck's nominal values.

(5) This label is only present on trucks that are sold in Germany. This label indicates the date of the truck's periodic safety inspection.

(6) This label indicates where to attach the truck's lifting hook.

(7) "ON/OFF" label. Switching the truck on and off using a key.

(8) This label indicates that you must not climb on the forks or transport people on the forks.

(9) This symbol indicates danger of cutting due to the mast's moving parts, that transporting people on the truck is forbidden and that standing or passing under the raised forks is forbidden.

(10) This symbol, where present, indicates that the truck is set up for use in cold storage (optional).

(11) Truck capacity label

(12) This label indicates danger of crushing feet under the forks (present only on certain versions).

(13) This label indicates the maximum setting pressure for the operator platform. Caution: The setting system must not be inflated to pressures above 8 bar (only present on versions with platform damping).

(14) This label indicates the setting pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 kg and 90 kg; 2.2 bar: between 90 kg and 110 kg; 2.6 bar: between 110 kg and 130 kg (only present on versions with platform damping).

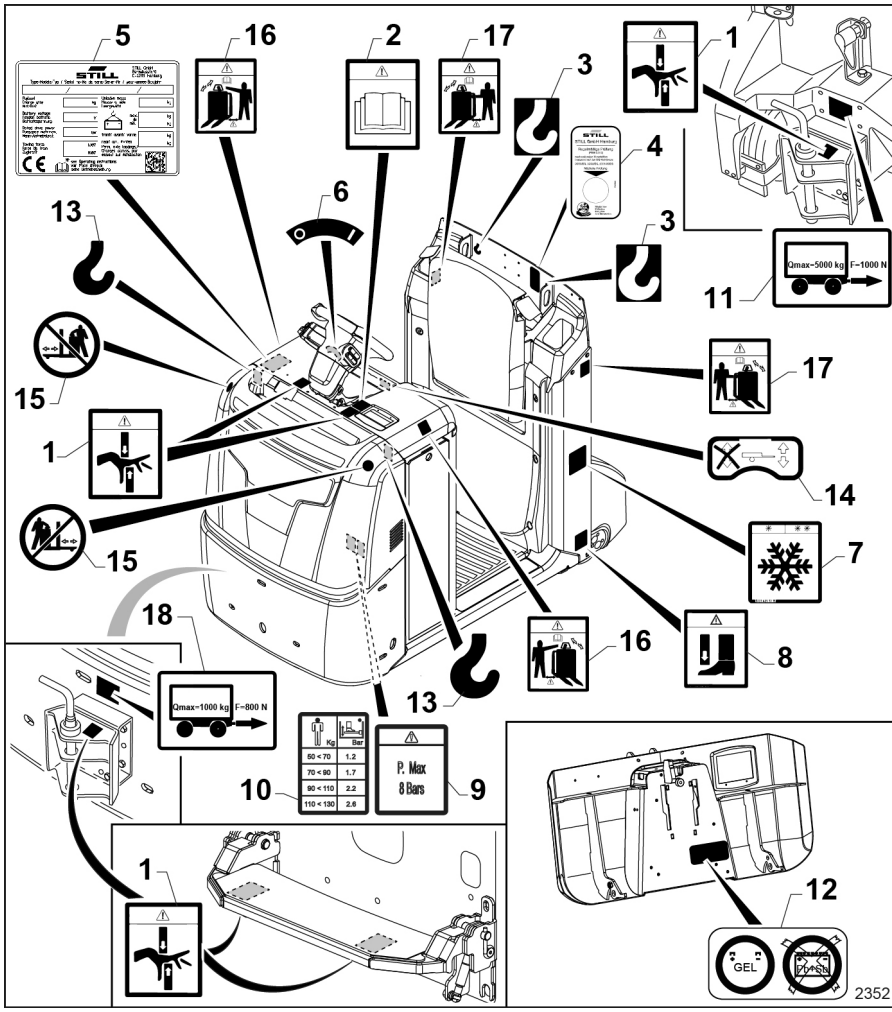
(15) This symbol, where present, indicates that the truck is set up for the gel battery version. Do not use other types of battery.

(16) This label, where present, indicates that you should exercise caution while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(17) This label, where present, indicates that positioning yourself in front of the truck whilst using the truck in pedestrian mode with the steering wheel function is forbidden. Failure to comply with this instruction may lead to the operator being hit and injured by the truck.

(18) This label, where present, indicates that you should pay attention while using the truck in pedestrian mode with the steering wheel function. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

Location of LTX50 labels



1 "Danger of crushing hands" label
2 "Operating and maintenance manual" label
3 "Hook" symbol
4 "Yearly safety inspection" label (Germany only)
5 "Nominal value" designation plate
6 Label "ON/OFF"
7 "Cold store" label (for cold-store equipment only)
8 "Danger of crushing feet" label
9 "Maximum permissible pressure" label
10 "Operator platform capacity schematic view" label
11 "Rear tow coupling capacity" label (optional)
12 Version set up for gel batteries
13 "Hook" symbol
14 "Handling trailers" label
15 "Positioning yourself in front of the truck is prohibited" label (only in pedestrian mode with steering wheel option)
16 "Pedestrian mode with steering wheel warning" label (only in pedestrian mode with steering wheel option)

17 "Pedestrian mode with buttons warning" label (only in pedestrian mode with buttons option)

18 "Front tow coupling capacity" label (optional)

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

(3) This label indicates where to attach the truck's lifting hook.

(4) This label is only present on trucks that are sold in Germany. This label indicates the date of the truck's periodic safety inspection.

(5) Designation plate showing the truck's nominal values.

(6) "ON/OFF" label. Switching the truck on and off using a key.

(7) This symbol, where present, indicates that the truck is set up as the "cold-storage" version (optional).

(8) This label indicates danger of crushing feet under the forks (present only on certain versions).

(9) This label indicates the maximum setting pressure for the operator platform. Caution: The setting system must not be inflated to pressures above 8 bar (only present on versions with platform damping).

(10) This label indicates the setting pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 kg and 90 kg; 2.2 bar: between 90 kg and 110 kg; 2.6 bar: between 110 kg and 130 kg (only present on versions with platform damping).

(11) This label, if present, informs you of the limits for the capacity and pulling force on the hook. For more information, see the section on the following pages that describes the label.

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

(13) This label indicates where to attach the truck's lifting hook.

(14) This "ON/OFF" label relates to handling trailers. Switching the " Lift Runner" system on and off (optional).

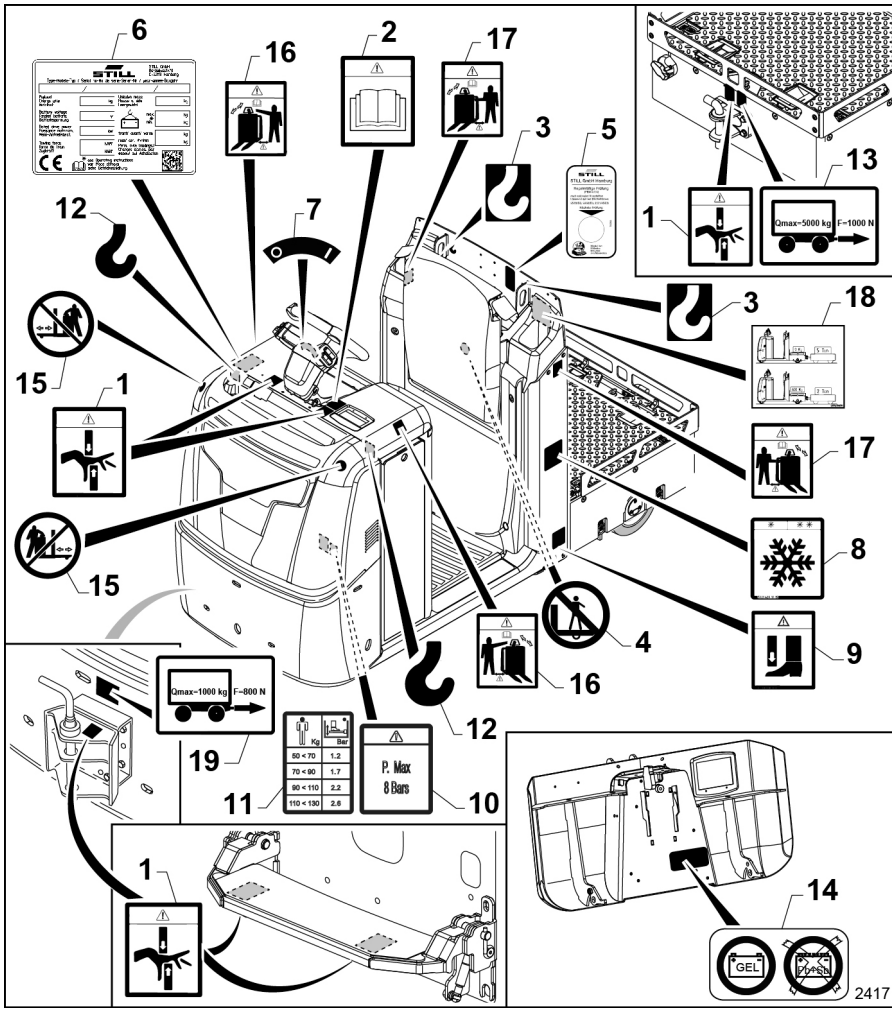
(15) This label, where present, indicates that positioning yourself in front of the truck whilst using the truck in pedestrian mode with the steering wheel function is forbidden. Failure to comply with this instruction may lead to the operator being hit and injured by the truck.

(16) This label, where present, indicates that you should pay attention while using the truck in pedestrian mode with the steering wheel function. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(17) This label, where present, indicates that you should exercise caution while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(18) This label, if present, informs you of the limits for the capacity and pulling force on the hook. For more information, see the section on the following pages that describes the label.

Location of labels LTX-T



1 "Danger of crushing hands" label
2 "Operating and maintenance manual" label
3 "Hook" symbol
4 "Do not climb on the rear load bed" symbol
5 "Yearly safety inspection" label (Germany only)
6 "Nominal value" designation plate
7 Label "ON/OFF"
8 "Cold store" label (for cold-store equipment only)
9 "Danger of crushing feet" label
10 "Maximum permissible pressure" label
11 "Operator platform capacity schematic view" label
12 "Hook" symbol
13 "Rear tow coupling capacity" label (optional)
14 Version set up for gel batteries
15 "Positioning yourself in front of the truck is prohibited" label (only in pedestrian mode with steering wheel option)
16 "Pedestrian mode with steering wheel warning" label (only in pedestrian mode with steering wheel option)

17 "Pedestrian mode with buttons warning" label (only in pedestrian mode with buttons option)

18 Label stating the truck capacity

19 "Front tow coupling capacity" label (optional)

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

(3) This label indicates where to attach the truck's lifting hook.

(4) "Do not climb on the rear load bed" symbol

(5) This label is only present on trucks that are sold in Germany. This label indicates the date of the truck's periodic safety inspection.

(6) Designation plate showing the truck's nominal values.

(7) "ON/OFF" label. Switching the truck on and off using a key.

(8) This symbol, where present, indicates that the truck is set up as the "cold-storage" version (optional).

(9) This label indicates danger of crushing feet under the forks (present only on certain versions).

(10) This label indicates the maximum setting pressure for the operator platform. Caution: The setting system must not be inflated to pressures above 8 bar (only present on versions with platform damping).

(11) This label indicates the setting pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 kg and 90 kg; 2.2 bar: between 90 kg and 110 kg; 2.6 bar: between 110 kg and 130 kg (only present on versions with platform damping).

(12) This label indicates where to attach the truck's lifting hook.

(13) This label, if present, informs you of the limits for the capacity and pulling force on the hook. For more information, see the section on the following pages that describes the label.

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

(15) This label, where present, indicates that positioning yourself in front of the truck whilst using the truck in pedestrian mode with the steering wheel function is forbidden. Failure to comply with this instruction may lead to the operator being hit and injured by the truck.

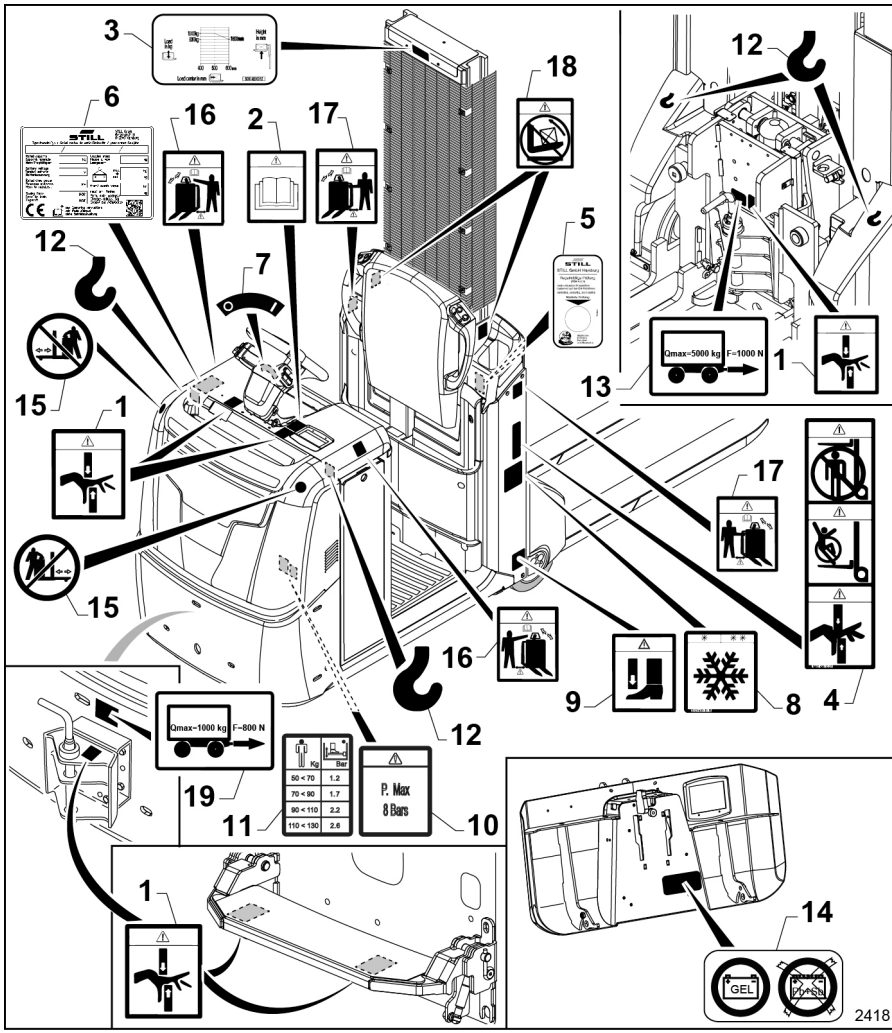
(16) This label, where present, indicates that you should pay attention while using the truck in pedestrian mode with the steering wheel function. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(17) This label, where present, indicates that you should exercise caution while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(18)This label indicates the permissible load that can be transported and towed by the truck.

(19) This label, if present, informs you of the limits for the capacity and pulling force on the hook. For more information, see the section on the following pages that describes the label.

Location of labels LTX-FF



1 "Danger of crushing hands" label
2 "Operating and maintenance manual" label
3 Truck capacity label
4 Warning label
5 "Yearly safety inspection" label (Germany only)
6 "Nominal value" designation plate
7 Label "ON/OFF"
8 "Cold store" label (for cold-store equipment only)
9 "Danger of crushing feet" label
10 "Maximum permissible pressure" label
11 "Operator platform capacity schematic view" label
12 "Hook" symbol
13 "Rear tow coupling capacity" label (optional)
14 Version set up for gel batteries
15 "Positioning yourself in front of the truck is prohibited" label (only in pedestrian mode with steering wheel option)

16 "Pedestrian mode with steering wheel warning" label (only in pedestrian mode with steering wheel option)
17 "Pedestrian mode with buttons warning" label (only in pedestrian mode with buttons option)
18 "It is prohibited to close the forks while there is a load on the forks" label
19 "Front tow coupling capacity" label (optional)

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

(3) Truck capacity label

(4) This symbol indicates danger of cutting due to the mast's moving parts, that transporting people on the truck is forbidden and that standing or passing under the raised forks is forbidden.

(5) This label is only present on trucks that are sold in Germany. This label indicates the date of the truck's periodic safety inspection.

(6) Designation plate showing the truck's nominal values.

(7) "ON/OFF" label. Switching the truck on and off using a key.

(8) This symbol, where present, indicates that the truck is set up as the "cold-storage" version (optional).

(9) This label indicates danger of crushing feet under the forks (present only on certain versions).

(10) This label indicates the maximum setting pressure for the operator platform. Caution: The setting system must not be inflated to pressures above 8 bar (only present on versions with platform damping).

(11) This label indicates the setting pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 kg and 90 kg; 2.2 bar: between 90 kg and 110 kg; 2.6 bar: between 110 kg and 130 kg (only present on versions with platform damping).

(12) This label indicates where to attach the truck's lifting hook.

(13) This label, if present, informs you of the limits for the capacity and pulling force on the hook. For more information, see the section on the following pages that describes the label.

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

(15) This label, where present, indicates that positioning yourself in front of the truck whilst using the truck in pedestrian mode with the steering wheel function is forbidden. Failure to comply with this instruction may lead to the operator being hit and injured by the truck.

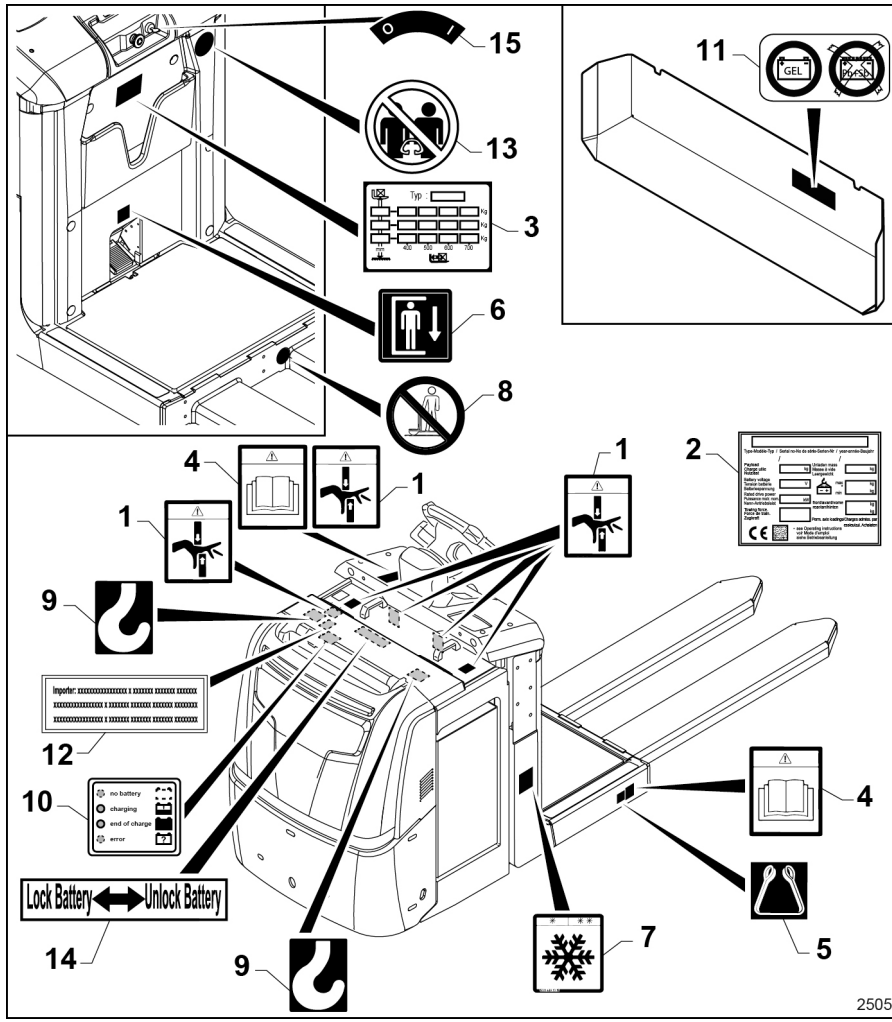
(16) This label, where present, indicates that you should pay attention while using the truck in pedestrian mode with the steering wheel function. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(17) This label, where present, indicates that you should pay attention while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(18) This label indicates that closing the forks is forbidden if there is a load on the forks. Closing the forks is only permitted when there are no loads.

(19) This label, if present, informs you of the limits for the capacity and pulling force on the hook. For more information, see the section on the following pages that describes the label.

Location of labels (OXV 07 - OXV 10)



1 "Danger of crushing hands" label
2 "Nominal value" designation plate
3 "Truck capacity" label
4 "Operating and maintenance manual" label
5 "Sling strap" symbol
6 "Operator platform lowering pedal" label
7 "Cold store" label (for cold-store equipment only)
8 "Do not climb on the forks" label
9 "Hook" symbol
10 "Battery charge status" label
11 Version set up for gel batteries
12 British (UK) importer label
13 "Two or more persons prohibited on board the truck" label
14 Lock Battery - Unlock Battery label

15 O/I (OFF-ON) label

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) Designation plate showing the truck's nominal values.

(3) This label indicates the permissible load on the forks depending on the load centre of gravity and lift height.

(4) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

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

(6) This label indicates the function of the pedal required to lower the operator platform.

(7) This symbol, where present, indicates that the truck is set up for use in cold storage (optional).

This label, where present, indicates that you should exercise caution while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(8) This label indicates that you must not climb on the forks or transport people on the forks.

(9) This label indicates where to attach the truck's lifting hook.

(10) This label is the legend for interpreting the battery charge status, as represented by the LED.

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

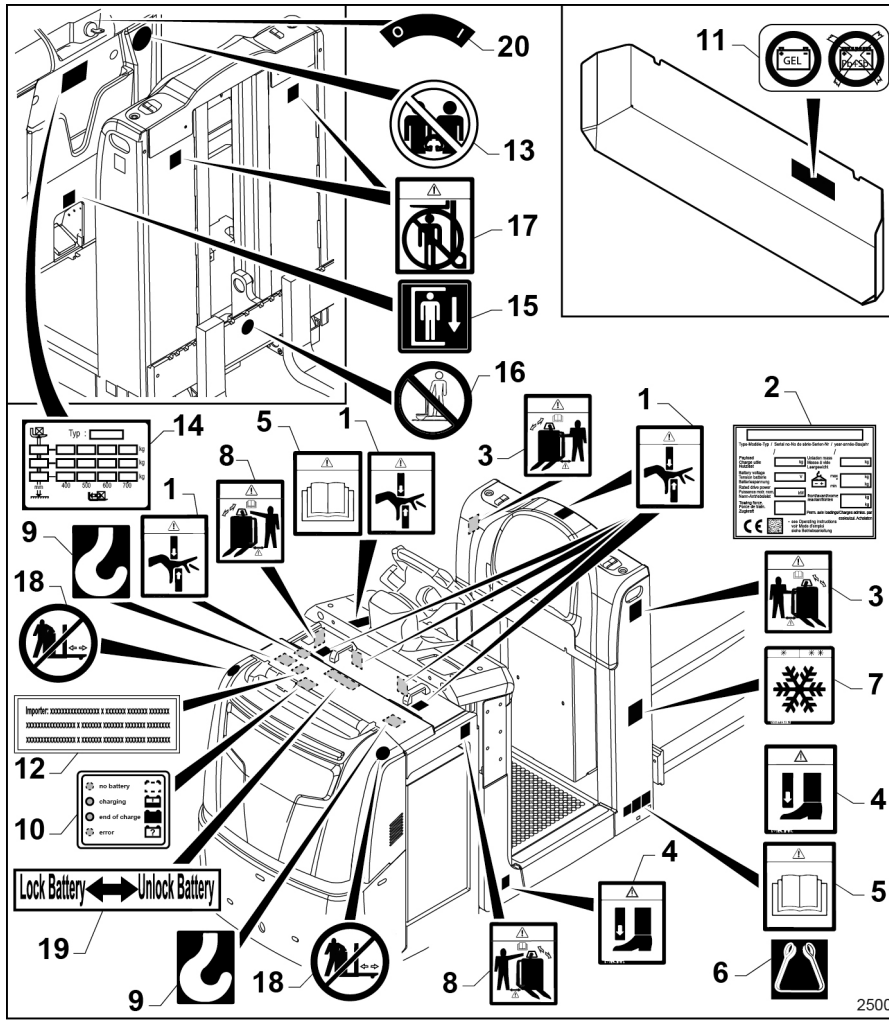
(12) This label indicates the importer for the British (UK) market

(13) This label indicates that it is prohibited for two or more people to be on board the truck. Only one person must be present on the truck.

(14) This label is located on the lever that allows you to lock and/or unlock the battery. The label indicates the battery's lock status:(Lock Battery) battery locked - (Unlock Battery) battery unlocked

(15) Switching the truck on and off using a key: O = off - I = on

Location of OXV 08 labels



1 "Danger of crushing hands" label
2 "Nominal value" designation plate
3 "Pedestrian mode with buttons warning" label (only in pedestrian mode with buttons option)
4 "Danger of crushing feet" label
5 "Operating and maintenance manual" label
6 "Sling strap" symbol
7 "Cold store" label (for cold-store equipment only)
8 "Pedestrian mode with steering wheel warning" label (only in pedestrian mode with steering wheel option)
9 "Hook" symbol
10 "Battery charge status" label
11 Version set up for gel batteries
12 British (UK) importer label
13 "Two or more persons prohibited on board the truck" label
14 "Truck capacity" label
15 "Operator platform lowering pedal" label

16 "Do not climb on the forks" label
17 "Forbidden to pass beneath the forks" label
18 "Positioning yourself in front of the truck is prohibited" label (only in pedestrian mode with steering wheel option)
19 Lock Battery - Unlock Battery label
20 O/I (OFF-ON) label

Description of labels

(1) This symbol indicates danger of crushing and cutting hands.

(2) Designation plate showing the truck's nominal values.

(3) This label, where present, indicates that you should exercise caution while using the travel buttons in pedestrian mode with the operator on the ground. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(4) This label indicates danger of crushing feet under the forks (present only on certain versions).

(5) This label indicates that you should consult the operating and maintenance manual before using the truck and before carrying out any maintenance work.

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

(7) This symbol, where present, indicates that the truck is set up for use in cold storage (optional).

(8) This label, where present, indicates that you should exercise caution while using the truck in pedestrian mode with the steering wheel function. During use, position yourself at the side of the truck and maintain a safe distance between yourself (particularly your feet) and the truck.

(9) This label indicates where to attach the truck's lifting hook.

(10) This label is the legend for interpreting the battery charge status, as represented by the LED.

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

(12) This label indicates the importer for the British (UK) market

(13) This label indicates that it is prohibited for two or more people to be on board the truck. Only one person must be present on the truck.

(14) This label indicates the permissible load on the forks depending on the load centre of gravity and lift height.

(15) This label indicates the function of the pedal required to lower the operator platform.

(16) This label indicates that you must not climb on the forks or transport people on the forks.

(17) This label indicates that it is prohibited to stand or walk underneath the raised fork arms.

(18) This label, where present, indicates that positioning yourself in front of the truck whilst using the truck in pedestrian mode with the steering wheel function is forbidden. Failure to comply with this instruction may lead to the operator being hit and injured by the truck.

(19) This label is located on the lever that allows you to lock and/or unlock the battery. The label indicates the battery's lock status: (Lock Battery) battery locked - (Unlock Battery) battery unlocked

(20) O = off - I = on

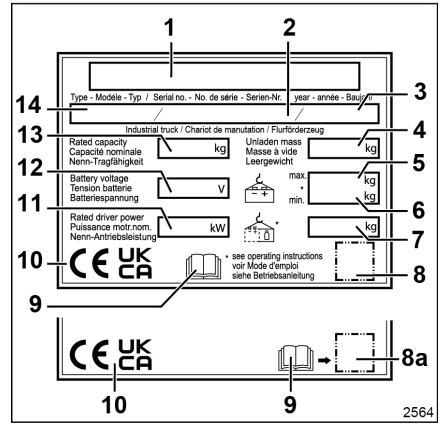
Nominal value designation plate ▷

⚠ DANGER

Danger! To avoid compromising the stability of the truck, it is strictly forbidden to use batteries that weigh less than the minimum weight (11) indicated on the designation plate.

NOTE

- *Please indicate the serial number for all technical enquiries.*
- *The EAC mark may also be located near to the nameplate.*
- *In addition to the UKCA mark, trucks sold in the United Kingdom will also have a label identifying the importer.*
- *On trucks sold for airports in the United Kingdom, the designation plate will read Aircraft ground support equipment instead of Industrial truck.*

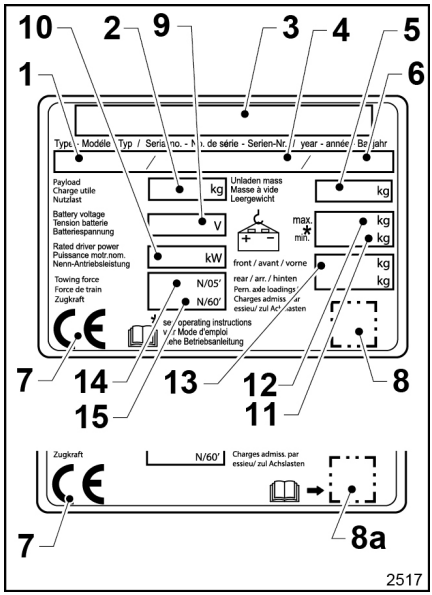


1	Manufacturer
2	Production number
3	Year of manufacture
4	Unladen weight (without battery) in kg
5	Maximum battery weight in kg
6	Minimum battery weight in kg
7	Additional weight (ballast) in kg
8	Data-Matrix-Code code
8a	QR code (see the " Digital operating instructions" section in the "Introduction" chapter)
9	For more detailed information, please refer to the technical data in the operating manual.
10	In this zone, there may be one or more marks including: the CE mark; the UKCA mark for the United Kingdom market; the EAC mark for the Eurasian Economic Union market.
11	Nominal power in kW
12	Battery voltage in V
13	Rated capacity in kg
14	Model

Specific nominal value designation plate for: LTX and LTX-T ▷

NOTE

- *Please indicate the serial number for all technical enquiries.*
- *The EAC mark may also be located near to the nameplate.*
- *In addition to the UKCA mark, trucks sold in the United Kingdom will also have a label identifying the importer.*
- *On trucks sold for airports in the United Kingdom, the designation plate will read Aircraft ground support equipment instead of Industrial truck.*

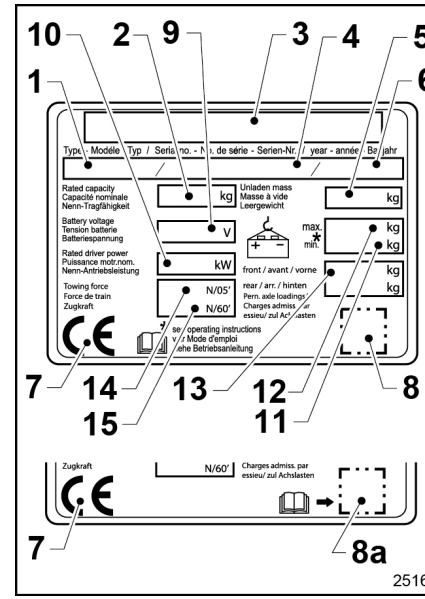


1	Model
2	Load (kg) that can be transported on the truck (this is not the weight of the load that can be towed)
3	Manufacturer
4	Serial number
5	Unladen weight (without battery) in kg
6	Year of manufacture
7	In this zone, there may be one or more marks including: the CE mark; the UKCA mark for the United Kingdom market; the EAC mark for the Eurasian Economic Union market.
8	Data-Matrix-Code code
8a	QR code (see the " Digital operating instructions" section in the "Introduction" chapter)
9	Battery voltage V
10	Nominal power in kW
11	Minimum battery weight
*	Danger! To avoid compromising the stability of the truck, it is strictly forbidden to use batteries that weigh less than the minimum weight indicated on the designation plate.
12	Maximum battery weight
13	Additional weight (ballast) in kg
14	Pulling force (Newton) of the tow tractor for a duration of 5 minutes
15	Pulling force (Newton) of the tow tractor for a duration of 60 minutes

Specific nominal value designation plate for: LTX-FF ▷

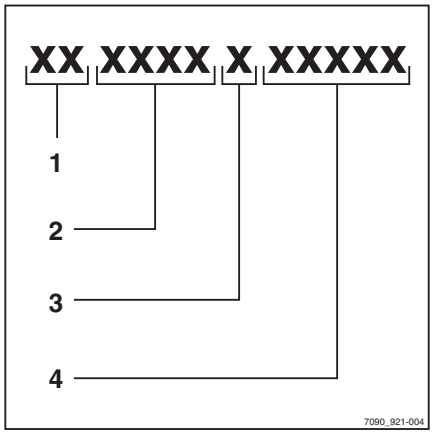
NOTE

- *Please indicate the serial number for all technical enquiries.*
- *The EAC mark may also be located near to the nameplate.*
- *In addition to the UKCA mark, trucks sold in the United Kingdom will also have a label identifying the importer.*
- *On trucks sold for airports in the United Kingdom, the designation plate will read Aircraft ground support equipment instead of Industrial truck.*



1	Model
2	Rated capacity in kg
3	Manufacturer
4	Serial number
5	Unladen weight (without battery) in kg
6	Year of manufacture
7	In this zone, there may be one or more marks including: the CE mark; the UKCA mark for the United Kingdom market; the EAC mark for the Eurasian Economic Union market.
8	Data-Matrix-Code code
8a	QR code (see the " Digital operating instructions" section in the "Introduction" chapter)
9	Battery voltage V
10	Nominal power in kW
11	Minimum battery weight
*	Danger! To avoid compromising the stability of the truck, it is strictly forbidden to use batteries that weigh less than the minimum weight indicated on the designation plate.
12	Maximum battery weight
13	Additional weight (ballast) in kg
14	Pulling force (Newton) of the tow tractor for a duration of 5 minutes
15	Pulling force (Newton) of the tow tractor for a duration of 60 minutes

Serial number



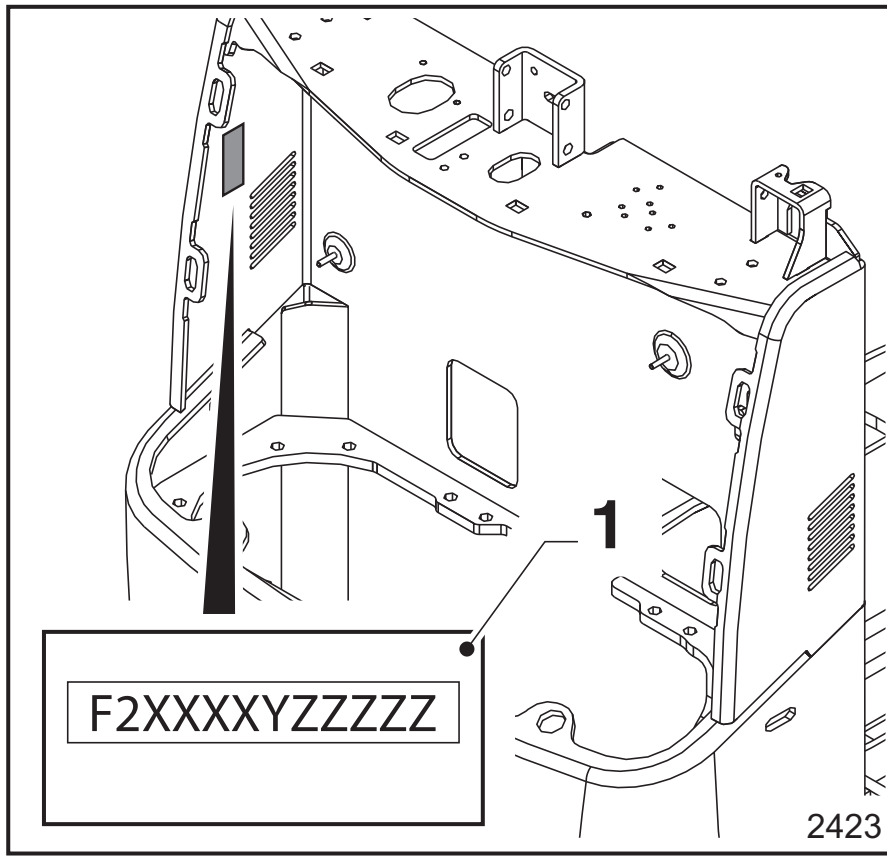
NOTE

Please quote the truck's serial number for all technical questions.

The serial number contains the following information:

1. Production site
2. Model
3. Year of production
4. Sequential number

The serial number is marked on the frame



The truck's serial number is on the label (1) on the chassis frame.

OPX-L (12/16/20S) capacity plate

⚠ DANGER

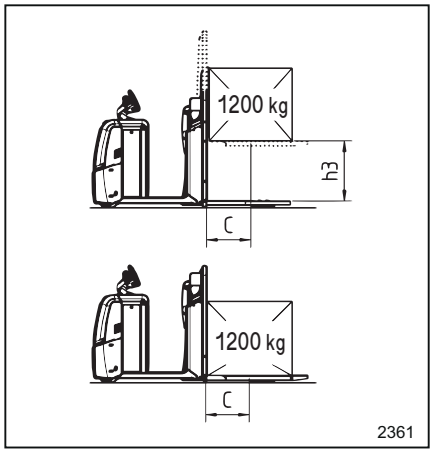
The values indicated on the capacity plate refer to compact and homogeneous loads and must not be exceeded — otherwise the stability of the truck and the load-bearing capacity of the structures may be compromised.

OPX-L 12

The plate indicates the following data:

- **C** = distance from the centre of gravity of the load on the forks to the fork carriage (mm)
- **h3** = maximum lift stroke of the forks (mm)
- **total permitted load** = 1200 kg

  As you can see from the chart, the maximum capacity for this truck does not vary depending on the lift height of the forks.

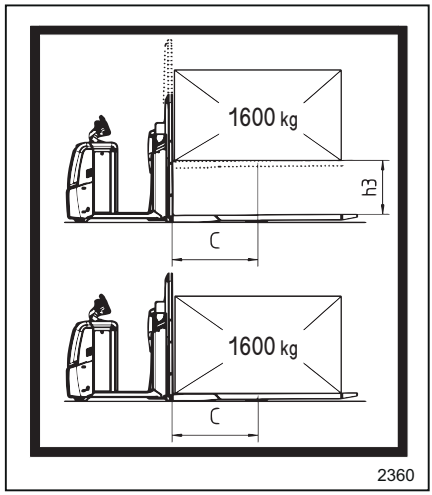


OPX-L 16

The plate indicates the following data:

- **C** = distance from the centre of gravity of the load on the forks to the fork carriage (mm)
- **h3** = maximum lift stroke of the forks (mm)
- **total permitted load** = 1600 kg

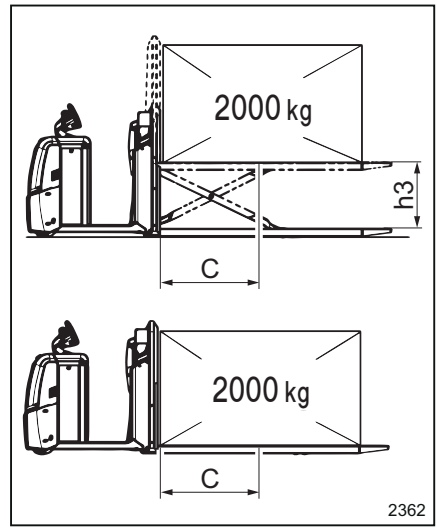
  As you can see from the chart, the maximum capacity for this truck does not vary depending on the lift height of the forks.



OPX-L 20S

The plate indicates the following data:

- **C** = distance from the centre of gravity of the load on the forks to the fork carriage (mm)
- **h3** = maximum lift stroke of the forks (mm)
- **total permitted load** = 2000 kg
  As you can see from the chart, the maximum capacity for this truck does not vary depending on the lift height of the forks.



OPX-L20 capacity plate ▷

⚠ DANGER

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

– Using the truck with a **single load on the forks**.

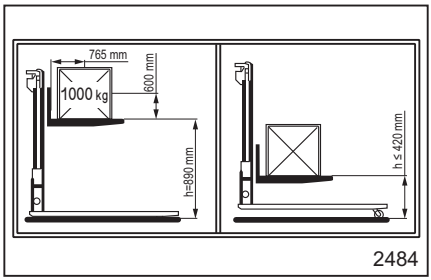
The capacity plates indicate the following:

- The heights shown on the plates, h=890 mm (illustration 2484) or h=1670 mm (illustration 2482), are customised according to the truck purchased and indicate the maximum height that the forks can reach with the straddles fully lowered There is a certain tolerance with the height values indicated due to the wear of the components and to the geometric tolerance of the individual components of the truck
- With the straddles fully lowered and the forks at the maximum height from the ground, the maximum capacity of the truck is 1000 kg
- With the straddles raised, it is prohibited to reach heights greater than 420 mm from the ground with the forks As a result, with the straddles raised, the maximum permissible fork height is 420 mm from the ground.
- Do not change the position of the load's centre of gravity beyond the maximum permitted limits (height 600 mm and depth 765 mm from the fork face)

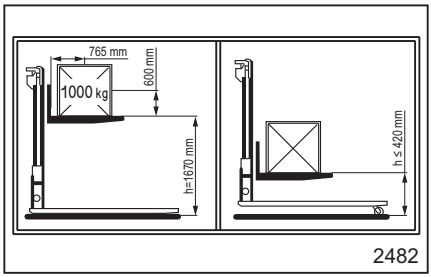
– Capacity plate for **transporting two loads (double pallet stacker)**.

The capacity plates indicate the following:

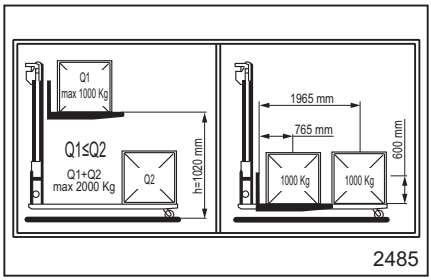
- The heights shown on the plates, h=1020 mm (illustration 2485) or h=1800 mm (illustration 2483), are customised according to the truck purchased and indicate the maximum height that the forks can reach with the straddles fully raised There is a certain tolerance with the height values indicated due to the wear of the components and to the geometric tolerance of the individual components of the truck
- When carrying two loads, one on the forks and one on the straddles, the maximum capacity of the truck is 2000 kg (Qmax)



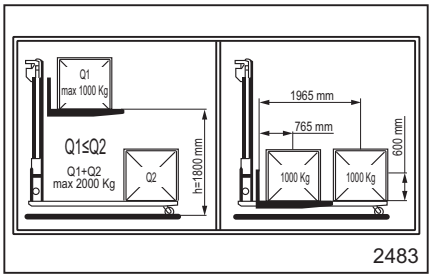
2484



2482



2485



2483

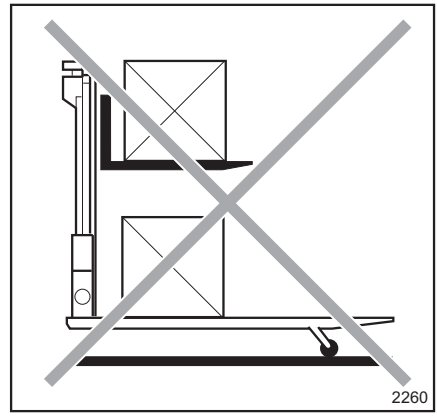
- The load placed on the forks must be lighter than or at most equal to the weight of the load placed on the straddles (Q1≦Q2)
- The maximum permissible load that can be carried is 1000 kg on the forks and 1000 kg on the straddles (Q1+Q2=2000 kg max.)
- Do not change the position of the centre of gravity beyond the maximum permitted limits

  - Height 600 mm and depth 765 mm from the fork face, for the load placed on the forks.

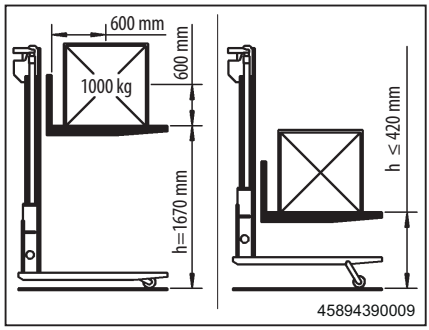
  - Height 600 mm and depth 1965 mm from the fork face, for the load placed on the straddles.

– **Forbidden!** There must be no loads under the forks. It is strictly prohibited to carry two loads as shown in the illustration to the side.

▷



OPX-D 20 capacity plates



⚠ DANGER

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

The capacity plates indicate the following:

- Using the truck with a **single load on the forks** (illustration 2488).

  - With the straddles fully lowered and the forks at the maximum height from the ground (1670 mm), the maximum capacity of the truck is 1000 kg. The height value of 1670 mm is subject to a certain tolerance due to wear of the components and the geometric tolerance of the individual components of the truck.

  - With the straddles raised, it is forbidden to reach heights greater than 420 mm from the ground with the forks. As a result, with the straddles raised, the maximum permissible fork height is 420 mm from the ground.

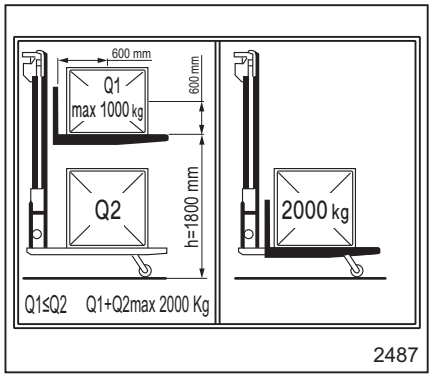
  - With the forks up against the straddles, and the straddles raised from the ground, the maximum capacity of the truck is 2000 kg (Qmax).

- Using the truck as a **double pallet stacker** (illustration 2487).

  - When transporting two loads, with one on the forks and one on the straddles, the maximum capacity of the truck is 2000 kg (Qmax).

  - The load placed on the forks must be lighter than or at most equal to the loading weight placed on the straddles (Q1≦Q2).

  - The maximum load that can be transported is 1000 kg on the forks and 1000 kg on the straddles (Q1+Q2=2000 kg max.).



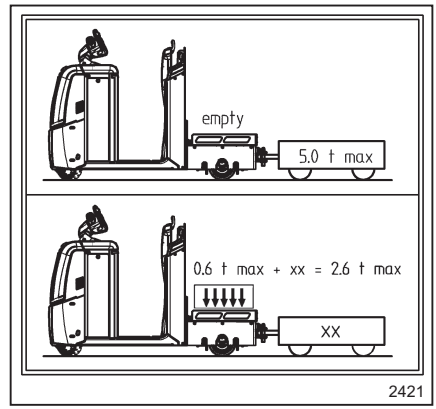
⚠ CAUTION

When used as a double pallet stacker, do not crush the load being transported on the straddles by lowering the forks.

There are no automatic safety systems.

Leave a small gap between the top part of the load on the straddles and the bottom part of the forks.

Capacity plate LTX-T



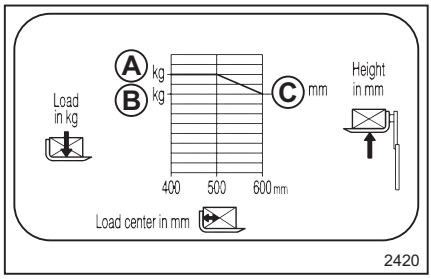
⚠ DANGER

The values indicated on the capacity plate refer to compact and uniform loads and must not be exceeded — otherwise the stability of the truck, the trailer and the load-bearing capacity of the structures may be compromised.

The plate contains the following information:

- Maximum permissible load that can be transported on the rear load bed = 600 kg. In this case the maximum permissible load that can be towed by trailers = 2 tonnes / 2000 kg.
- In general, if you are transporting a load on both the rear load bed (up to 600 kg) and the trailers, the sum of the two loads must not exceed the maximum permissible capacity of 2600 kg.
- Maximum permissible load that can be towed by trailers = 5 tonnes / 5000 kg. This load is only permitted if the rear load bed is completely empty with no load.

Capacity plate LTX-FF



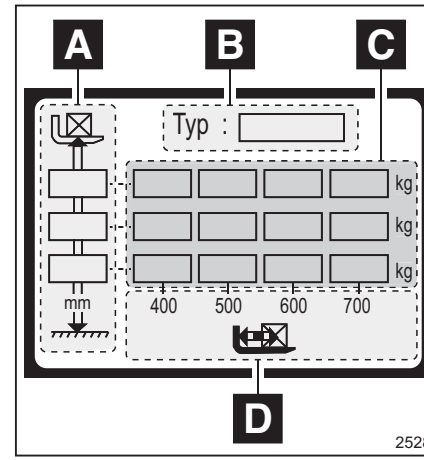
⚠ DANGER

The values indicated on the capacity plate refer to compact and uniform loads and must not be exceeded — otherwise the stability of the truck, the trailer and the load-bearing capacity of the structures may be compromised.

Capacity plate for lifting a load on the forks. The plate contains the following information:

- (A) Shows the maximum capacity of the truck (kg) with the load centre of gravity up to 500 mm and with the forks at the maximum height of 1800 mm (C).
- (B) Shows the maximum capacity of the truck (kg) with the load centre of gravity at 600 mm and with the forks at the maximum height (C).

Capacity plate (OXV) ▷



⚠ DANGER

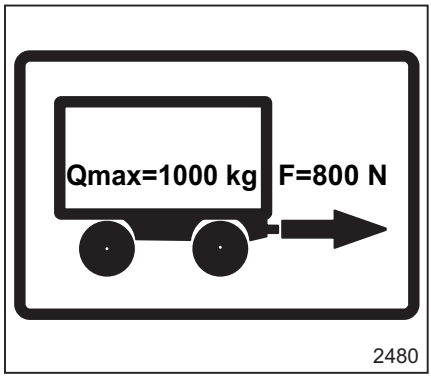
The values indicated on the capacity plate refer to compact and homogeneous loads and must not be exceeded — otherwise the stability of the truck and the load-bearing capacity of the structures may be compromised.

The plate contains the following information:

- **A**= maximum lift height of the forks (mm)
- **B**= truck model
- **C**= maximum permissible load on the forks (kg) depending on the distance of the forks from the ground and the centre of gravity of the raised load.
- **D**= distance from the centre of gravity of the load on the forks to the fork carriage (mm)

Capacity label for tow tractors (LTX50, LTX-FF, LTX-T) with front coupling

The label is only present on tractors equipped with a front tow coupling.

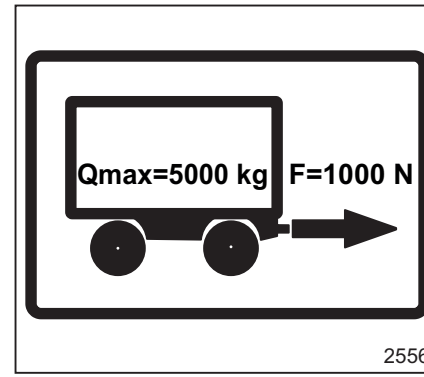


NOTE

*The values indicated refer to the towing limits with the truck in **reverse travel** and must not be exceeded, otherwise the stability of the truck and the load-bearing capacity of the structures may be compromised.*

The trailer coupled to the truck must not exceed the maximum permissible weight of 1000 kg. The maximum permissible pulling force on the coupling during towing is 800 N.

Capacity label for tow tractors (LTX50, LTX-FF, LTX-T) with rear coupling



The label is only present on tow tractors fitted with a rear tow coupling.

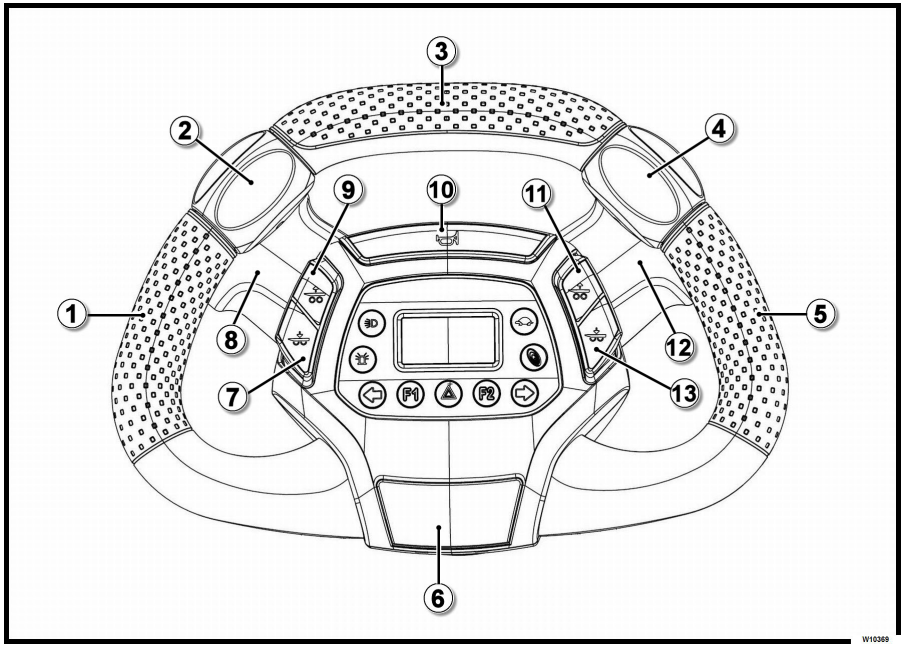
NOTE

*The values indicated refer to the towing limits with the truck in **forward travel** and must not be exceeded, otherwise the stability of the truck and the load-bearing capacity of the structures may be compromised.*

The trailer coupled to the truck must not exceed the maximum permissible weight of 5000 kg. The maximum permissible pulling force on the coupling during towing is 1000 N.

Instruments and controls

Comandi volante - Parte 1



1	Left-hand handle
2	Travel control
3	Handle
4	Travel control
5	Right-hand handle
6	Service braking button
7	Initial lowering button (where present)
8	Optional control turret (where present)
9	Initial lifting button (where present)
10	Horn button
11	Initial lifting button (where present)
12	Optional control turret (where present)
13	Initial lowering button (where present)

Description

NOTE

The following controls are active with the truck switched on and the operator in the correct "working position".

(1) Knob

- Area for gripping the steering wheel with the left hand during use

(2) Travel control

- When travel control (2) or (4) is turned, the truck starts in forward or reverse travel For more information, see the "Truck travel" paragraph in "Chapter 4"

(3) Knob

- Area for gripping the steering wheel with one hand during reverse travel

(4) Travel control

- For operation, see point (2)

(5) Knob

- Area for gripping the steering wheel with the right hand during use

(6) Service braking button

- When the button is pushed, service braking is actuated

(7) Straddle or fork initial lowering button (where present)

- The functionality of the button depends on the model of truck used. The operation can be divided into two groups:

  - Functionality for all trucks excluding OPX-L 12/16/20S and LTX-FF models

  - Specific functionality for OPX-L 12/16/20S and LTX-FF models only

(7) Explanation of the functionality for all trucks **excluding OPX-L 12/16/20S and LTX-FF models**

- In this case, the control moves the straddles
- On the version with the adjustable straddle, when the button (7) is pressed, the straddles lower fully to the ground

(7) Explanation of the specific functionality for **OPX-L 12/16/20S and LTX-FF models only**

- In this case, the command moves the forks
- When the push button (7) is pressed, the forks are lowered (the control always works regardless of the fork height)
- Fork movement can be stopped at any time by releasing the push button (7). The forks will stop in the position reached

(8) Control turret (where present)

- Control turrets are present on the version of the truck with an adjustable operator step plate and/or fork lift (pallet stacker truck with lift mast)

(9) Straddle or fork initial lifting button (where present)

- The functionality of the button depends on the model of truck used. The operation can be divided into two groups:

  - Functionality for all trucks excluding OPX-L 12/16/20S and LTX-FF models

  - Specific functionality for OPX-L 12/16/20S and LTX-FF models only

(9) Explanation of the functionality for all trucks **excluding OPX-L 12/16/20S and LTX-FF models**

- In this case, the control moves the straddles
- On the version with adjustable straddles, when the button is pressed, the forks are raised fully to the maximum height of the initial lift

(9) Explanation of the specific functionality for **OPX-L 12/16/20S and LTX-FF models only**

- In this case, the control moves the forks
- When the button (9) is pressed, the forks are raised (the control always works regardless of the fork height)
- Fork movement can be stopped at any time by releasing the button (9) The forks will stop in the position reached

(10) Horn push-button

- Press the button to operate the horn. This device allows the driver to signal his presence when necessary.

(11) Straddle or fork initial lifting button (where present)

- For operation, see point (9)

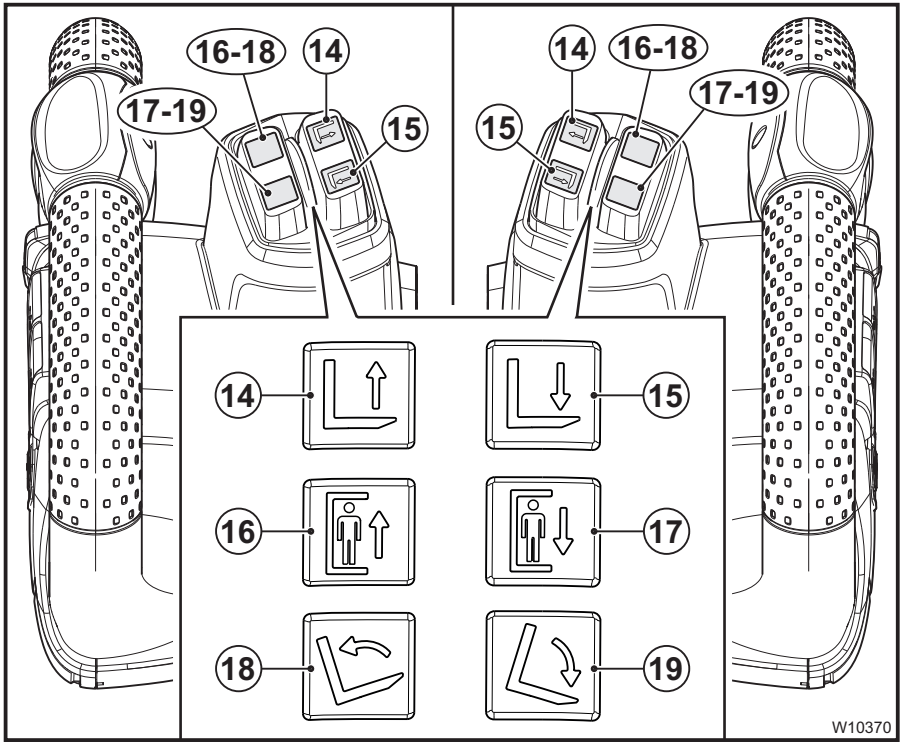
(12) Control turret (where present)

- For operation, see point (8)

(13) Straddle or fork initial lowering button (where present)

- For operation, see point (7)

Steering wheel controls - Part 2



14 Fork lifting button (where present)
15 Fork lowering button (where present)
16 Adjustable operator step plate lifting button (where present)
17 Adjustable operator step plate lowering button (where present)
18 Fork upward tilt button (where present)
19 Fork downward tilt button (where present)

⚠ WARNING

The buttons in the illustration may have different positions depending on the version. Pay attention to the markings on the button itself.

NOTE

The following controls are active with the truck switched on and the operator in the correct "working position", only if the control has not already reached the end position.

NOTE

The speed of movement of the forks and the platform is proportional to the pressure exerted on its control button.

(14) Fork lifting button (where present)

- When the button is pressed, the forks lift to the maximum height
- Fork movement can be stopped at any time by releasing the button The forks will stop in the position attained.

(15) Fork lowering button (where present)

- When the button is pressed, the forks lower
- Fork movement can be stopped at any time by releasing the button The forks will stop in the position attained.

(16) Mobile platform lifting button (where present)

- When the button is pressed, the movable step plate lifts up to the maximum height
- Movement of the movable step plate can be stopped at any time by releasing the button The movable step plate stops at the position reached

(17) Mobile platform lowering button (where present)

- When the button is pressed, the movable step plate lowers
- Movement of the movable step plate can be stopped at any time by releasing the button The movable step plate stops at the position reached

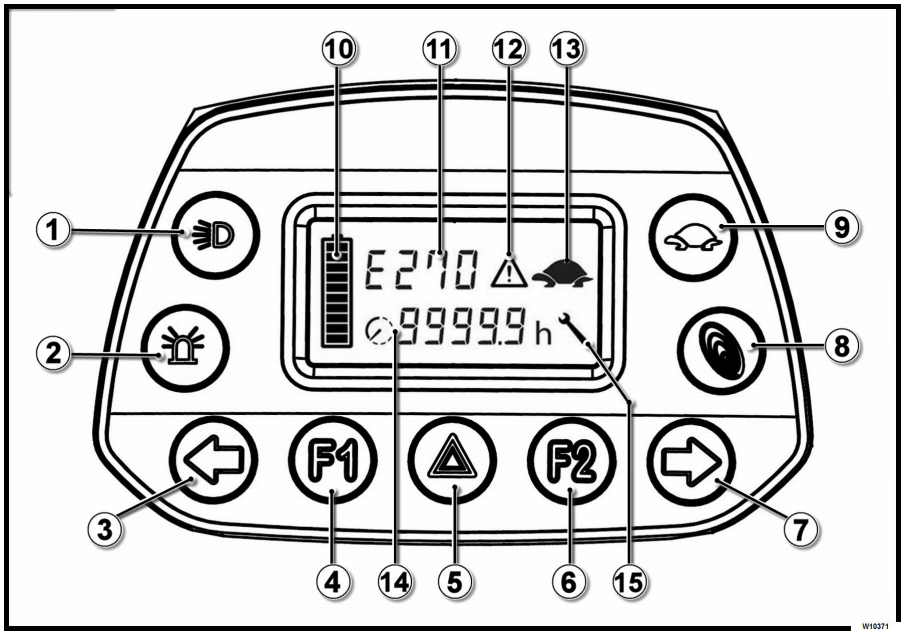
(18) Fork upward tilt button (where present)

- When the button is pressed, the forks tilt upwards
- Fork movement can be stopped at any time by releasing the button The forks will stop in the position attained.

(19) Fork downward tilt button (where present)

- When the button is pressed, the forks tilt downwards
- Fork movement can be stopped at any time by releasing the button The forks will stop in the position attained.

Steering wheel controls - Part 3



1	Dipped-beam headlights
2	Flashing beacon
3	Left indicator (where present)
4	F1 - Indicator light
5	Hazard warning signal (where present)
6	F2 - Indicator light
7	Right indicator (where present)
8	Blue-Q function
9	Tortoise function
10	Battery charge level indicator
11	Type of alarm
12	Warning triangle
13	Tortoise indicator
14	Hour meter
15	Service reminder

Description of the keys

- **(1) Dipped-beam headlights**

  The dipped-beam headlights are optional. The button (1) is always present but only works if the optional dipped-beam headlights are fitted.

  When the key (1) is pressed, the button lights up and the dipped beam-headlights turn on.

  When the key (1) is pressed again, the button and the dipped-beam headlights turn off.

- **(2)Flashing beacon**

  The flashing beacon is optional. The button (2) is always present but only works if the optional flashing beacon is fitted.

  When the key (2) is pressed, the button lights up and the beacon starts to flash.

  When the key (2) is pressed again, the button and the flashing beacon turn off.

- **(3)Left indicator (where present)**

  The button (3) is only present on certain truck versions.

  When the key (3) is pressed, the button lights up and the left indicator turns on.

  When the key (3) is pressed again, the button and the left indicator turn off.

  Turn on the indicator (3) before turning left.

- **(4) F1 - Indicator light**

  F1 acts exclusively as an indicator light and does not enable or disable any functions if pressed:

  Indicator flashing with the operator on the ground

  Indicator switched off with the operator on board the truck
- **(5)Hazard warning signal (where present)**

  The button (5) is only present on certain truck versions.

  When the key (5) is pressed, the button lights up and the four arrows start to flash.

  When the key (5) is pressed again, the button and the four arrows turn off.
- **(6) F2 - Indicator light**

  F2 acts exclusively as an indicator light and does not enable or disable any functions if pressed:

  Indicator flashing with the operator on the ground

  Indicator switched off with the operator on board the truck
- **(7) Right indicator (where present)**

  The button (7) is only present on certain truck versions.

  When the key (7) is pressed, the button lights up and the right indicator turns on.

  When the key (7) is pressed again, the button and the right indicator turn off.

  Turn on the indicator (7) before turning right.
- **(8)Funzione Blue-Q**

  The Blue-Q function enables maximum optimisation of battery consumption.

  When the key (8) is pressed, the button lights up and the Blue-Q system switches on. The Blue-Q function remains active even after the truck is turned off and turned on again.

  To deactivate the Blue-Q system, press the key (8) again. The button turns off and the Blue-Q system is deactivated.
- **(9)Tortoise function**

  The tortoise function activates the truck's creep speed.

  When the key (9) is pressed, creep speed is activated. The button lights up and the tortoise symbol (13) appears simultaneously. The function remains active even when the truck is turned off and turned on again.

  When the key (9) is pressed again, the tortoise function is deactivated. The button (9) turns off and the tortoise symbol (13) disappears.

Describing the screen

- **(10) Battery charge level indicator**

  The battery charge level indicator is made up of ten status bars. When the battery is fully charged (100%), the ten status bars are all lit. As the battery capacity decreases, the battery status bars decrease. If the amount of charge reaches 30%, only three status bars will remain lit and the battery must be recharged. When the amount of charge reaches 20%, two status bars will remain lit and the truck's performance will be automatically limited.
- **(11)Type of alarm**

  The truck alarms are displayed in this area. Each alarm is identified by a letter followed by three digits.

⚠ CAUTION

Contact the manufacturer's authorised sales network.

- **(12)Warning triangle**

  The warning triangle (12) appears in the following cases:

  - Incorrect switch-on sequence

  - Active truck alarms In this case, the warning triangle turns on together with the type of alarm (11).

  - Flashing light when the battery reaches 30% charge. Recharge the battery.

  - Steady light when the battery reaches 20% charge. In this case, the truck's performance will be automatically limited if you continue to use the truck.
- **(13)Tortoise indicator**

  The tortoise symbol indicates that the truck is operating at creep speed. Creep speed is controlled by the button (9).
- **(14)Hour meter**

  The information displayed by the hour meter is linked to the activation or deactivation of the Blue-Q function (8).

  - When the Blue-Q function (8) is deactivated, the hour meter (four digits) indicates

the number of operating hours of the machine. The meter is activated as soon as the machine is turned on.

- When the Blue-Q function (8) is activated, the hour meter (four digits) displays a circular frame to the left. In this case, the hour meter indicates the number of working hours remaining before the battery runs out.

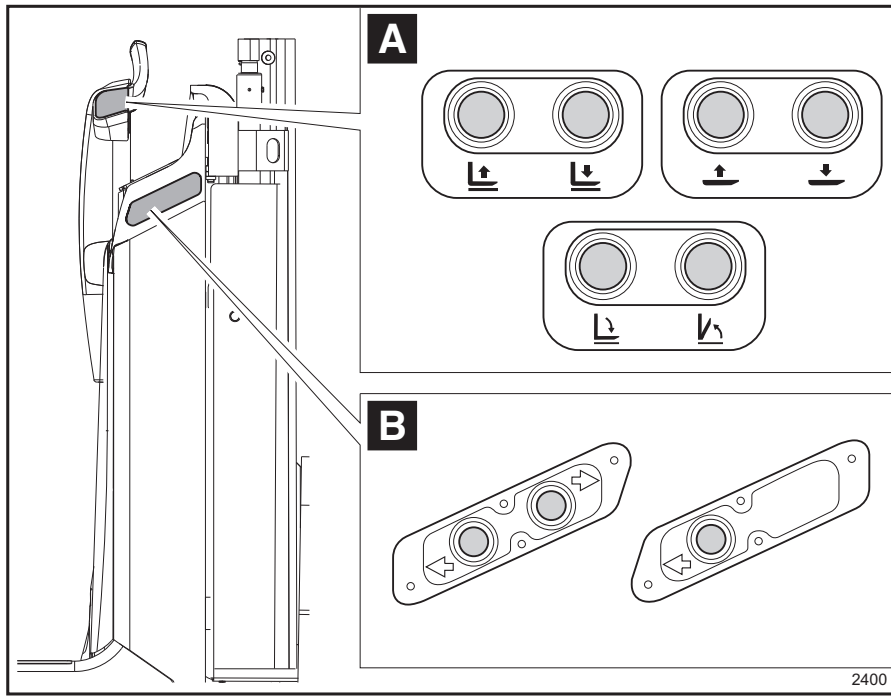
- **(15)Adjustable spanner**

The adjustable spanner reminds the operator that a service is due:

- The symbol (15) starts to flash when a service is almost due.

- The symbol (15) shows a steady light when the scheduled service must be carried out on the truck (contact the manufacturer's authorised technical service centre).

Backrest controls



Description

Seat backrest controls, where present, vary according to the version of truck and the options installed on the truck.

Seat backrest controls, where present, are used to move the truck or move the forks.

The image above shows the full range of backrest controls that the customer may find on their truck.

NOTE

- *The image above refers to the left-hand side of the truck. The same controls on the left-hand side will also be present on the right-hand side.*
- *For correct use and a detailed description of the controls, consult the following chapters*

Fork controls (A)

The fork controls, where present, are installed in the zone (A):

- If the truck is equipped with a single central handle, as shown in the illustration, the (A) controls are located to the side of the handle.
- If the truck is equipped with two side handles, the (A) controls are located above the handles.
- The fork controls vary depending on the model of truck chosen. The fork controls available are:

  - Fork lifting and lowering for versions WITH a lift mast.

  - Fork lifting and lowering for versions WITHOUT a lift mast.

  - Fork opening and closing.

The individual controls are explained in detail in the following chapter.

Travel controls (B)

Creep speed controls, where present, are installed in the (B) zone, for use with the operator on the ground in pedestrian mode.

- The travel controls vary depending on the model of truck chosen. The creep speed controls available are:
  - Travel in both directions of travel.
  - Travel in only one direction of travel.

The individual controls are explained in detail in the following chapter.

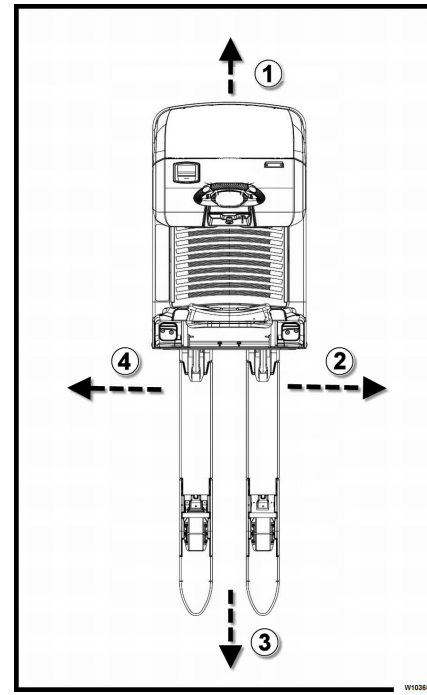
Definition of directions

Direction of movement defined by the regulations:

- Forward travel (1) (Preferred direction of travel)
- Right (2)
- Reverse travel (3)
- Left (4)

NOTE

The image of the truck is an example. It is valid for all trucks described in this manual.



Lift

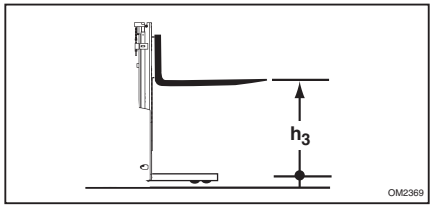
Types of lift masts (where present)

Some trucks in the OPX range are equipped with a lift mast:

- Simplex (OPX-L20S and OPX-L12/16)
- Telescopic (OPX-L20 and OPX-L20D)

Simplex (OPX-L20S and OPX-L12/16) ▷

When the "lift" button is pressed, the fork carriage is raised to the height h3 by the central cylinder via a chain.

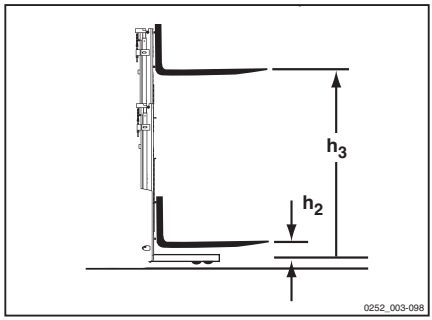


Telescopic (OPX-L20 and OPX-L20D) ▷

When the "lift" button is pressed, the internal mast is raised by the lateral cylinders and drives the fork carriage (h3) via the chains (the lifting speed of the fork carriage rail is twice that of the internal mast).

⚠ CAUTION

In locations with a low ceiling, be aware that the load height may be greater than the mast height.



Options and variants

List of options and variants

⚠ CAUTION

After buying the truck, contact the technical service network authorised by the manufacturer for information on assembly of the options.

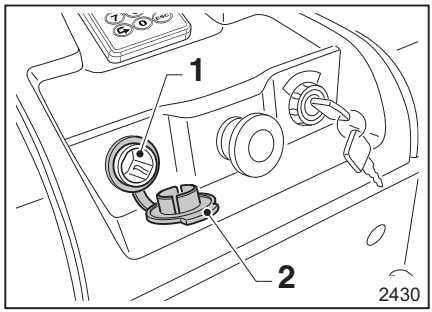
NOTE

The following list is purely indicative. Some options are NOT available on all models. For more information, please refer to the price list and contact the authorised sales network.

List:

- Driving seat with narrow seat backrest
- Steering wheel height adjustment
- Gas-sprung driving platform
- Foldaway seat
- Various types of brackets for attachments
- Control panel
- Narrow (slim) operator seat backrest
- 12 V cigarette lighter socket
- Electrical socket for 12 V or 24 V data terminal
- Electrical socket for the rear to supply power to the trailer
- Command push buttons positioned to the sides of the seat backrest
- Command push buttons positioned on the steering wheel turrets
- Various fork gauge measures
- Lithium-ion battery (see the operating manual for further information)
- On-board charger
- Autolift
- Various types of traction chassis protective guard
- Mobile platform
- Foldaway step and support handle
- Cold store version down to –30°C for alternate use
- Roll holder
- Various heights of load guard grilles
- Speed limitation with the forks lowered
- Various types of safety lights
- Using the seat backrest travel controls with the operator on the ground in pedestrian mode
- Using the steering wheel travel controls with the operator on the ground in pedestrian mode
- FleetManager™ (see the operating manual for further information)
- Adapters for battery carrier for various types of batteries
- Wheel legs for inserting the forks into the pallet sideways
- Various bumper guards
- Rear-view mirrors
- Earthing
- Locking fork or straddle movement during travel (OPX range only)
- Various types of tow coupling (for tow tractors only)

Electrical socket for the cigarette lighter located on the dashboard (optional) ▷



The electrical socket for the cigarette lighter (1) is located on the truck's dashboard.

The socket has the following specifications:

- 12 V voltage and 10 A current

⚠ WARNING

If the electrical socket (1) is not being used, protect it from the weather, dust, etc. using the cap (2).

Do not leave the electrical socket (1) uncovered.

Accessory mounting bar with data socket (optional) ▷

The optional data socket (6 and 7) is fitted on the relevant accessories mounting bar (3).

The pre-wired data socket (6) is connected to the truck and may have one of the following two characteristics depending on the choice made by the customer during purchase:

- 24 V voltage and 5 A current
- 12 V voltage and 10 A current

⚠ WARNING

If you are not using the data socket (6), protect it from the weather, dust etc. using the cap (5).

Do not leave the data socket (6) uncovered.

In addition to the optional "accessories mounting bar with data socket" the customer is also provided with a plug (4).

If necessary, wire the plug (4) to be connected to the customer's data terminal as follows:

- Connect the positive to terminal (1)
- Connect the negative to terminal (2)

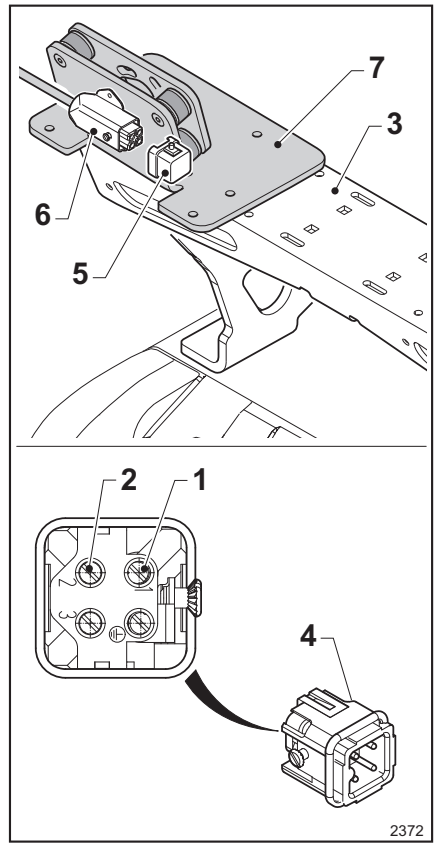
⚠ DANGER

Always respect the connections mentioned above (1 and 2)

Reversing the polarity is dangerous and strictly prohibited.

⚠ WARNING

The instructions provided are for information only. Installation must be carried out precisely and in accordance with technical regulations. Only the manufacturer's own approved sales network is authorised to assemble and install accessories. The manufacturer will NOT be liable for any personal injury or damage caused by unauthorised third parties. Contact the manufacturer's authorised service network.



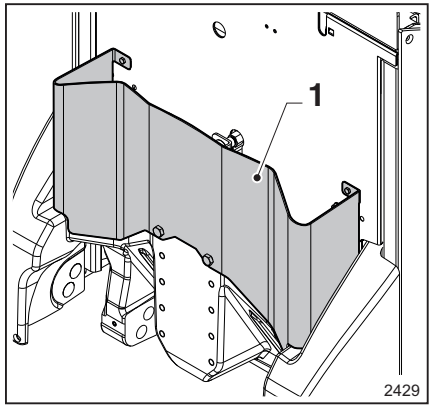
1 Positive
2 Negative
3 Accessories mounting bar
4 Plug to be wired
5 Plug
6 Data socket
7 Data terminal support

⚠ CAUTION

Fasten the data terminal used to the relevant support (7) precisely and in accordance with technical regulations.

Do not allow the data terminal used to fall from the support (7).

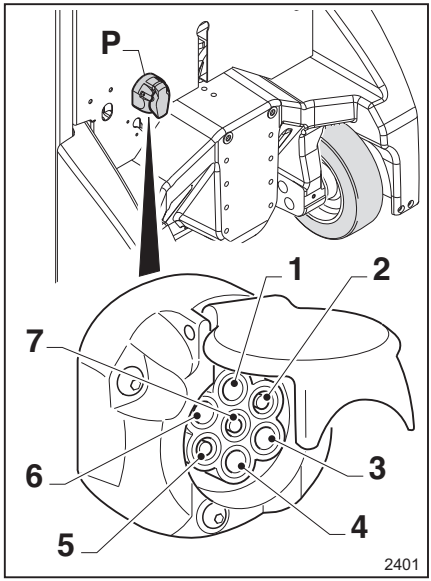
Rear storage compartment (optional)



The truck can be equipped with an optional rear storage compartment (1):

- Stow items in accordance with the size of the compartment
- Stow items securely so that they do not fall out while moving.

Electrical socket for trailer lighting (optional)



P Electrical socket for trailer lighting
1 Electrical contact for the left-hand indicator
2 Electrical contact for the rear lights of the trailer
3 Earth/battery electrical contact
4 Electrical contact for the right-hand indicator.
5 Electrical contact for the right-hand side light
6 Electrical contact for the brake lights
7 Electrical contact for the left-hand side light

The electrical socket (P) is fitted to the rear part of the truck. Technical features of the socket:

- 7 pins
- 12 V
- ISO 1724/3732 standard

⚠ DANGER

Risk of short circuit

Before you connect the trailer plug to the socket (P), and before use in any case, check that the socket and the plug are fully intact and do not show any signs of damage.

⚠ WARNING

If you are not using the socket (P), protect it from the weather, dust, etc. by keeping the cap closed.

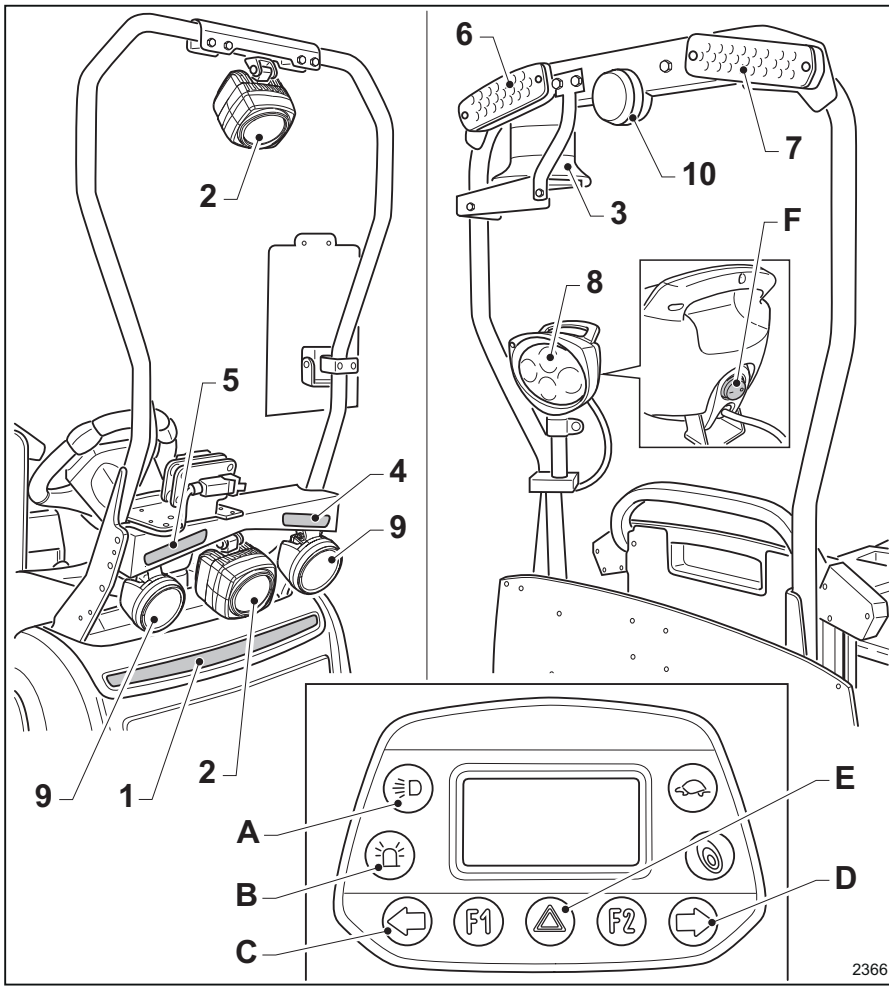
Do not leave the socket (P) uncovered.

⚠ WARNING

Risk of malfunction

The socket (P) can provide up to 10 A at 12 V. Lighting operation is not guaranteed for trailers that have lighting with energy consumption exceeding 10 A

Sistemi di illuminazione



1	LED light bar	10	Reverse lights
2	Blue safety spotlights	A	Dipped-beam lights and light bar push button
3	Flashing beacon	B	Flashing beacon push button
4–5	Arrows (direction indicators)	C–D	Arrow push buttons (direction indicators)
6–7	Multifunction lights	E	Hazard lights push button
8	Working spotlight	F	Working spotlight switch
9	Dipped-beam lights		

NOTE

This section describes all the optional lights that the customer may find on the truck depending on the equipment purchased.

⚠ WARNING

Some of the lights supplied are very bright and may seem very harsh to the human eye.

To avoid being dazzled, do not look directly at the lights, especially from a close distance.

⚠ WARNING

Risk of burns

Do not touch the headlights during or after operation.

Check that the lights function correctly. Inform your supervisor of any faults encountered.

(1) LED light bar

- When the push button (A) is pressed, the LED bar turns on (the push button lights up). When the push button (A) is pressed again, the LED bar turns off (the push button turns off). If the truck also has dipped-beam headlights (available only on LTX50), the operation is slightly different, as follows:
  When the push button (A) is pressed, the LED bar turns on.
  When the push button is pressed a second time, the dipped-beam headlights also turn on.
  When the push button is pressed a third time, both the LED bar and the dipped-beam headlights turn off.

In addition to turning the LED bar on and off using the push button (A), the LED bar can also operate automatically, according to customer requirements, as follows:

- The LED bar turns on automatically with the operator in the correct driving position on board the truck. The LED bar turns off automatically when the operator climbs off the truck.
- The LED bar turns on when the truck is turned on. The LED bar turns off when the truck is turned off.
- The LED bar turns on only during forward travel of the truck.
- Additional LED-bar functions can be activated on the truck. In these cases, the LED bar flashes to warn the operator in the following instances:
  Warning signal upon expiry of maintenance (contact the manufacturer's authorised technical service centre)
  Warning signal when the truck is stationary
  Warning signal when the battery is low
  Warning signal for alarm linked to the truck (contact the manufacturer's authorised technical service centre)

(2) Blue safety spotlights

The blue safety spotlights (Blue spot light) with LED technology improve safety in the workplace, as they allow the truck to be detected in good time in driving zones with poor visibility or at blind junctions. The spotlights come on automatically when the truck is travelling forward. Two types of lights are available:

- (Safety light front) Consisting of a circular steady light
- (Safety light 4Plus front) Consisting of four lights that turn on in sequence one after the other

⚠ CAUTION

Danger of eye irritation! Risk group 2 in accordance with standard IEC/EN 62471

Do not look directly into the blue safety spotlights (Blue spot light)

(3) Flashing beacon

The flashing beacon improves safety in the workplace:

- It turns on automatically at power-up and during use of the truck.
- If you want to turn off the flashing beacon when the truck is stationary, press the push button (B). The flashing beacon will turn on again automatically after activating truck travel or moving the forks.
- An additional flashing-beacon function can be activated on the truck:

Automatic turning off of the flashing beacon a few seconds after the operator climbs off the platform with the truck turned on.

Automatic turning on again of the flashing beacon a few seconds after the operator climbs back on the platform with the truck turned on.

(4 -5 - 6 - 7) Arrows (available only on LTX50)

The arrows (direction indicators) indicate the turning direction. To activate them:

- Turning on the arrows on the left-hand side

  When the key (C) is pressed, the push button lights up and the arrows (4 e 6) on the left-hand side turn on.
- Turning off the arrows (4 e 6) on the left-hand side

  The arrows turn off automatically when the steering wheel is brought back to the neutral position after turning.

  Alternatively, when the key (C) is pressed again, the push button and the arrows on the left-hand side turn off.
- Turning on the arrows on the right-hand side

  When the key (D) is pressed, the push button lights up and the arrows (5 e 7) on the right-hand side turn on.
- Turning off the arrows (5 e 7) on the right-hand side

  The arrows turn off automatically when the steering wheel is brought back to the neutral position after turning.

  Alternatively, when the key (D) is pressed again, the push button and the arrows on the right-hand side turn off.

The arrows turn on automatically in the following cases:

- If there is an alarm on the truck (the arrows turn on in intermittent mode). See "Problems and Resolutions" section.
- While in pedestrian mode, when the steering wheel is turned at an angle greater than the permitted value set by the manufacturer. In this case, the arrows turn on in intermittent mode. The arrows turn off automatically when the steering wheel is turned within the permitted angle (about 10°).

The simultaneous activation of all the arrows (hazard lights) (4 -5 - 6 - 7) is designed to signal an emergency situation due to a malfunction or other reason:

- When the push button (E) is pressed, the hazard lights turn on. The hazard lights and the push button (E) start to flash.
- When the push button (E) is pressed again a second time, the hazard lights turn off. The hazard lights and the push button (E) turn off.

(6 e 7) Multifunction lights (available only on LTX50)

The multifunction lights (6 e 7) turn on in three cases:

- Brake lights. They turn on automatically during braking.
- Side lights. They turn on automatically when the dipped-beam lights (9) are turned on
- Arrows (direction indicators). For more information, read the description above (4 -5 - 6 - 7)

(8) Working spotlight (available only on LTX50)

The working spotlight is turned on or off via the switch (F).

(9 - 6 - 7) Dipped-beam lights (available only on LTX50)

The dipped-beam lights improve safety in the workplace. The front lights (9) illuminate the truck's route; the rear lights (6 e 7) make the truck more visible to other operators.

- The dipped-beam lights are turned on via the push button (A). For operation, read the information above about the LED light bar (1).

(10) Reverse lights (available only on LTX50)

The reverse lights (10) warn that the truck is travelling in reverse:

- The reverse lights turn on automatically and only when the truck is travelling in reverse.

Lithium-ion battery (Li-Ion)

Lithium-ion batteries are provided as an option instead of standard batteries. A description of and information on their operation can be found in the lithium-ion battery instruction manual, supplied separately.

FleetManager (Option)

FleetManager is optional and can be fitted on the truck in several versions. A description of and information on its operation can be found in the FleetManager specific instruction manual, supplied separately.

Foldaway step (option)

The foldaway step is optional and allows the operator to occasionally climb on the step to increase the picking height.

⚠ DANGER

Risk of crushing fingers! See label (2)

While opening (from A to B) and closing (from B to A) the foldaway step, keep fingers away from hinges

⚠ DANGER

Risk of injury to the operator! Close the step after use

It is forbidden to keep the step open while the truck is travelling.

Use the step only when the truck is stationary.

To open the step:

- Hold it with one hand
- Rotate it from (A) to (B).

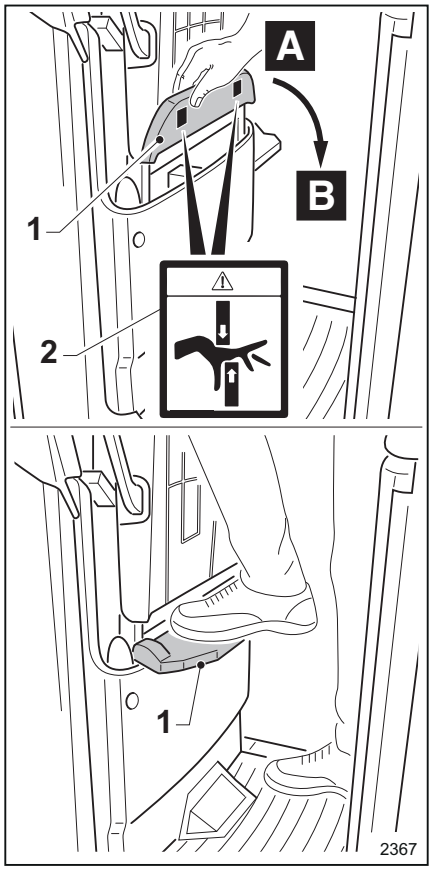
To close the step:

- Hold it with one hand
- Rotate it from (B) to (A).

⚠ DANGER

Risk of slipping and falling from the step!

To ensure an adequate hold and to maintain balance while using the step, use the attachment mounting bar as a support handle.



Locking fork or straddle lowering during travel (option)

With this option, the fork or straddle lowering command is inactive during travel of the truck. The fork or straddle lowering command is deliberately active only when the truck is stationary.

NOTE

For changes and/or further information, please contact the manufacturer's authorised service centre.

Battery electrolyte level indicator ▷ LED (optional)

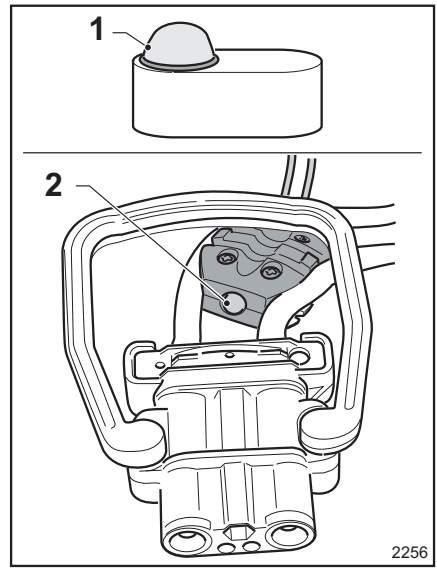
There are two versions of the LED:

- 1) Located on the battery
- 2) Located next to the battery plug.

The LED indicates whether it is necessary to top up the distilled water in the battery.

Operation:

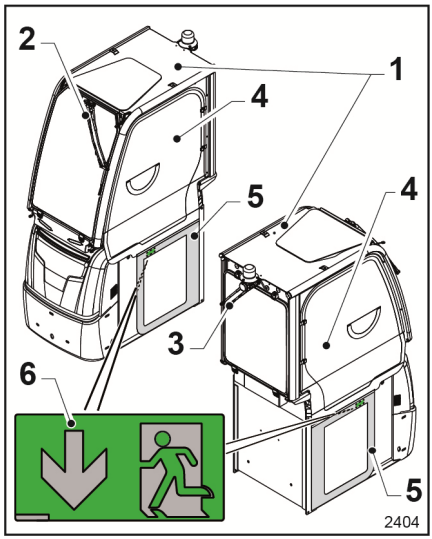
- If the LED (1) or (2) is green, there is a sufficient level of electrolyte in the battery. The battery must not be topped up with distilled water.
- If the LED (1) or (2) is red, there is an insufficient level of electrolyte in the battery. The battery must be topped up with distilled water.



Cab (optional)

The tow tractor may be equipped with a cab (1).

The cab can be supplied with or without plastic side doors (4) for protection against bad weather. The doors close and open by means of special hinges that slide along the perimeter of the doors.



Emergency exit

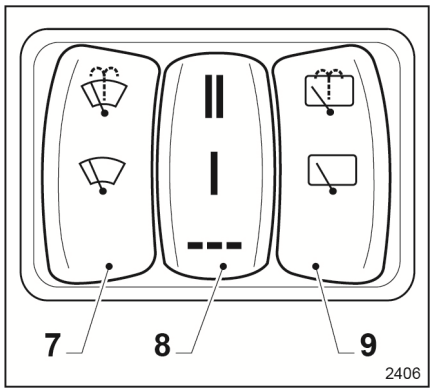
The bottom parts of the plastic doors close by means of magnets that stick to the truck chassis. The zone marked in grey (5) is the escape route in case of an emergency when driving with the doors closed.

The sticker (6) inside of the cab doors indicates the escape route in case of an emergency.

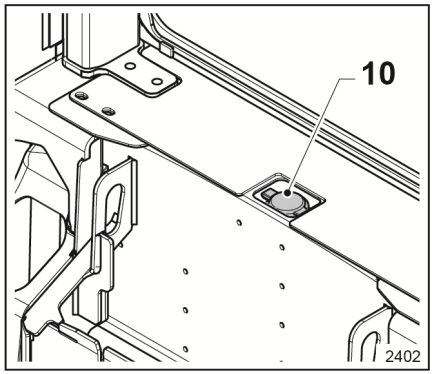
Cab-specific controls

The following three controls are located inside the cab:

- (7) Front windscreen wiper The button's first position activates the front windscreen wiper (2) Pressing the button again activates the front washer water jet
- (8) Windscreen wiper speed regulation The button is used to adjust the speed of the front windscreen wiper (intermittent, speed one and speed two)
- (9) Rear windscreen wiper The button's first position activates the rear windscreen wiper (3) Pressing the button again activates the rear washer water jet If the button (9) is activated, the rear windscreen wiper is activated automatically when travelling in reverse



– To check the washer fluid level and/or to fill the washer fluid tank, open the cap (10) located inside the cab to the rear.



General warnings for using trucks with a cab

⚠ WARNING

Risk of accident

Ensure that the windscreen and windows are always kept clean and in good condition to maintain visibility.

NOTE

Before using the windscreen wiper, check that the tank contains washer fluid. Make sure that the windscreen wipers are in good condition to ensure good visibility and prevent damage to the glass.

The cab must not be considered as equivalent to an overhead guard in any circumstances. Therefore, it is essential that the loads transported are positioned correctly, regardless of the equipment fitted on the tow tractor or on the truck.

⚠ WARNING

Risk of accident

Before driving through access passageways, make sure that the height of the tow tractor or truck fitted with a cab is compatible with that of the passageway.

⚠ CAUTION

On the cab version with plastic side doors (if present) and when using the ground controls (if present), the operator must leave the plastic door open on the side where the operator is using the special ground controls located on the side of the truck.

This means that, if required, the operator can press the emergency stop button located on the dashboard inside the cab.

Lock lever for competitor batteries (optional) ▷

The battery lock lever is optional and is used to lock the various types of battery. The lock can be used with various types of battery by adjusting the fastening.

⚠ DANGER

Risk of damage to the lever and the battery!

If, when closing the lever (1), you encounter any problems, do not try to resolve them yourself — contact the service network authorised to adjust the lever. Such problems may be due to incomplete and imprecise closing of the lever or incompatibility between the fastening points of the lever and the chassis.

⚠ DANGER

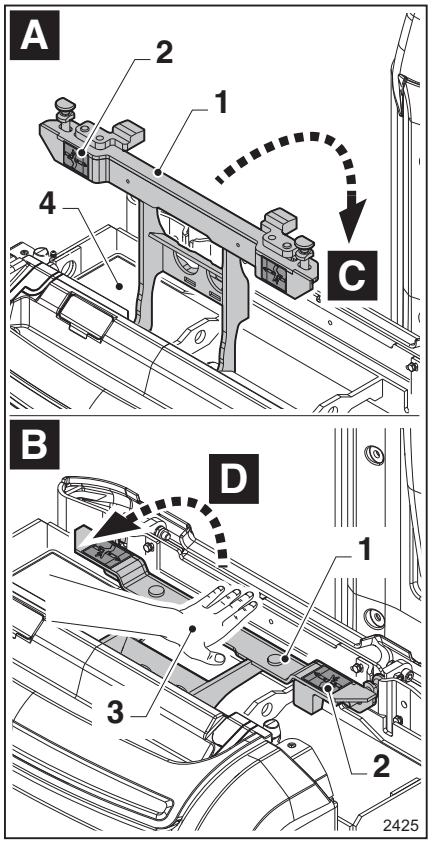
Risk of crushing fingers! See label (2)

When closing the lever (1), keep fingers away from the closing area. The lever should be locked by pushing it with the palm of your hand (3).

⚠ DANGER

Risk of the battery falling out during travel and subsequent risk of injury!

The adjustment of the battery lock lever and the installation of the battery must be performed precisely and in accordance with technical regulations. Only the manufacturer's own approved sales network is authorised to install the lock lever and the battery. The lever must be adjusted each time a new battery is installed and in accordance with the intervals highlighted in the routine maintenance table. Protect battery cables from friction and crushing that can wear and cut the cables. The manufacturer will NOT be liable for any personal injury or damage caused by unauthorised third parties. Contact the manufacturer's authorised service network.



To open the lever:

- Park the truck on a flat surface and turn it off.
- Open the battery cover.
- Pull the lever (1) towards (D) until it unlocks and the lever (A) opens.

To lock the lever:

- Place the palm of your hand against it (3) and push (C) the lever until it is fully locked (B).
- Check that the lever is completely and correctly fitted in its seating on the chassis.
- Close the battery hood.

4

Operation

Authorised and safe use

Intended use of the trucks

⚠ CAUTION

This machine is intended for the transport of loads packed on pallets or in industrial containers designed for this purpose, as well as for placing pallets on shelves and removing pallets from shelves.

To ensure stability, only loads within the limits of weight and centre of gravity as indicated on the designation plates present on the truck can be transported.

The table of characteristics and performance attached to this user manual gives you some of the information you need to check that the equipment is suitable for the work being carried out.

Any specific usage must be authorised by the site manager; an analysis of the potential risks associated with this usage will enable them to put in place any necessary additional safety measures.

Safety instructions for using the truck

Behaviour when driving

The operator must obey the same rules within the plant as on the road. The operator must drive at a speed appropriate for the driving conditions. For example, the operator should drive slowly around corners, when entering and travelling through narrow passageways, when driving through swing doors, at blind spots or on uneven surfaces. The operator must always maintain a safe distance from vehicles and persons in front of him, and must always have the truck under control. The operator must choose a travel speed suitable for the work environment that ensures sufficient space for braking. Be aware that the braking distance increases disproportionately to the speed of the truck and that the wheels can skid on the floor when braking sharply. The operator must avoid sudden stops, making fast U-turns and overtaking other vehicles in potentially dangerous areas or areas with poor visibility. The operator must face the direction of travel and have sufficient visibility of the

path in front. Travel in the opposite direction when transporting goods that impair visibility.

⚠ WARNING

Driving while seated is allowed only in the correct position on the relevant optional seat (where present)

Driving the truck while sitting on any other part of the truck is forbidden

Please remember the following:

- Drive the truck in the correct position as described in the following sections.
- The truck must not be used as a stepladder.
- The truck has not been designed to transport anyone other than the operator and must not be used for this purpose.
- The operator must always stay close to the truck.
- Stay in the safety area (working area defined by the manufacturer).
- Pay attention to protruding objects (e.g. on shelves)

NOTE

Using a telephone or radio in the truck is permitted, but avoid using these devices when driving as they may distract you.

While driving, it is forbidden to:

- Stick out your arms and legs
- Lean outside the edge of the truck
- Move from one truck to another or from the truck to stationary structures (shelving, etc.)

Specific risks: for trucks equipped with forks only

⚠ DANGER

Risk of injury! There is a risk of physical injury inside the danger area. Danger of death from falling loads!

Do not stand on the forks! (where present)

Stopping or walking under the forks is strictly forbidden, even when they are not loaded!

Danger area

⚠ DANGER

Risk of injury! There is a risk of physical injury inside the danger area.

The danger area is the area in which people are in danger from the forklift truck movements, from its work equipment and from its load lifting devices (e.g. accessories) or from the load. The danger area also includes areas in which a load could fall or in which work equipment could lower or fall.

People in the danger area: Before starting the truck and while you are working, ensure that no one is in the danger area. If people are in danger, warn them well in advance. Stop operations with the truck immediately if people do not leave the danger area despite warnings.

Traffic route conditions

The surface of traffic routes must be sufficiently level, clean and clear of objects. Drainage channels, railway crossings and other similar obstacles must be levelled and, if necessary, fitted with ramps so that the truck can cross without jolting.

There must be sufficient distance between the highest part of the truck or the load and the surrounding fixed installations. The height depends on the lift height and the load dimension. Refer to the technical characteristics.

Maintain a suitable distance from any protruding objects and shelves.

Regulations regarding the traffic routes and the manoeuvring areas

Only traffic routes authorised by the operator or his agent may be used. Traffic routes must be free of obstacles. Loads may only be unloaded and stored in places designed for this purpose. The operator or his agent must ensure that no unauthorised person approaches the working area.

Hazards

Hazards on the traffic routes must be signalled by standard road signs or possibly by additional warning notices.

Order picker trucks: Description of intended use

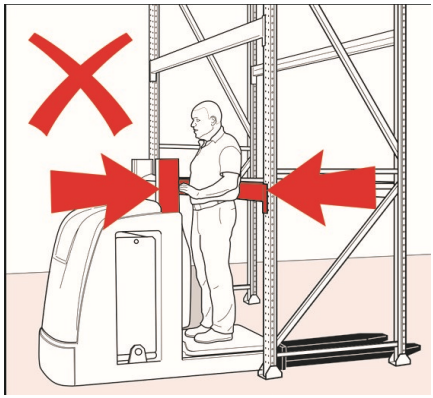
The order picker trucks described in this manual are designed for picking up and depositing goods manually from the aisles and/or shelves of the storage area (picking).

⚠ CAUTION

Risk of serious injury or death!

There is a risk of the operator becoming severely crushed between the shelves and the steering wheel (cockpit) or of being injured by collisions with the shelving cross pieces, cross bars or any other components of the load-bearing structure of the storage area.

– The picture to the side shows an example of the danger present during an incorrect manoeuvre, and which thus must not be emulated. When driving in reverse, the operator is in danger of colliding with the metal cross piece at the entrance to the shelving.



It is the responsibility of the employer of the truck operating company to:

- Identify and eliminate any risks present
- Eliminate risks present in any hazardous areas
- Consider prohibiting any use of the truck in applications other than those covered by the specific risk analysis, if necessary
- Inform operators who use the truck of the correct operating procedures by issuing specific instructions

Forklift Use in Cold-Storage Rooms.

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

A truck equipped for working in cold climates and cold-storage rooms may be used:

- Up to -5°C for **continuous service**
- From -5°C to -32°C for **non-continuous service**

⚠ CAUTION

The truck must always be switched 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 any condensation to evaporate (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 truck!

⚠ CAUTION

Never enter the cold-storage room when condensation has formed on the truck!

Transporting and lifting the truck

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.

Loading and unloading the truck

To load and unload the truck, use a loading bridge or a lift (with a slope and structural strength that are compatible with the performance and weight of the truck as stated by the manufacturer, and which must be suitably positioned and anchored). See the relevant section. Alternatively, a crane or a bridge crane may be used.

The truck must be suitably protected against the weather during transport and storage.

Lifting with a crane or a bridge crane

⚠ CAUTION

Always switch off the truck and disconnect the battery.

Never secure or sling the truck using points that are not designed for this purpose.

– Insert the rope sling into the suitable eyelets. The lifting capacity of the hook and the rope sling must be sufficient to bear the weight of the truck (with its battery). The position is indicated by the hook symbol. See Chapter 2 for the location of the labels for each model of truck.

⚠ DANGER

Use a crane with a suitable lifting capacity for the weight of the truck, which is indicated on its data plate. Also take into account the weight of the battery fitted (if applicable) by referring to the relevant identification plate. Lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the truck. Do not stand in the danger area below suspended loads. Use NON-METALLIC rope slings. Use safety hooks. Make sure that the lifting capacity of the rope slings is suitable for the weight of the truck with its battery.

⚠ DANGER

The rope slings should be long enough so as to not graze the casings or any additional equipment during lifting. Use a lifting beam if necessary. The rope slings must be pulled vertically.

⚠ CAUTION

Slings may damage the truck's paintwork.

Slings may damage the paintwork by rubbing or compressing the surface of the truck. Particularly hard or sharp-edged slings, such as cables or chains, may damage the surface.

– If necessary, use textile slings, e.g. lifting straps, with edge protectors or similar protective devices.

Loading and unloading the truck ▷ — Specific additional notes for the LTX-FF model

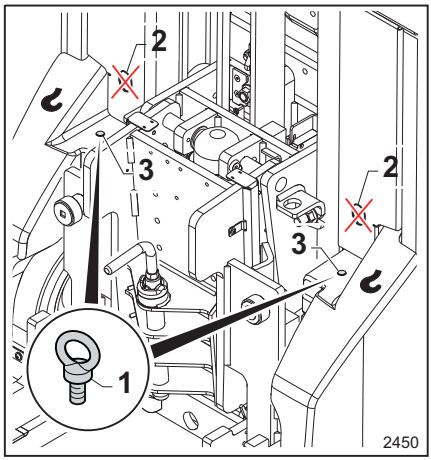
For lifting with a crane or a bridge crane, this truck model is not equipped with suitable eyelets on the fork side for inserting the rope sling for lifting.

There are threaded holes at the two points (3). Fully screw an M16 eye bolt into each of the two holes.

⚠ CAUTION

After the special eyelets have been properly secured, only insert the rope sling into the eyelets of the eye bolt (1).

It is forbidden to hook onto points (2) to lift the truck.



Breaking-In

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

Sequence to follow for using the truck

- Meticulously perform the mandatory safety checks before use (see list of checks on the following pages). Only if there are NO faults, proceed to the following points.
- Adjust the height of the steering wheel, the seat backrest, the operator's seat and the pressure of the sprung platform according to the operator's build (only where present — any adjustment is optional). See the detailed instructions on how to make the adjustments correctly in the following sections.
- Climb on the platform (see the detailed instructions in the following sections).
- Position yourself correctly in the driving seat (see the relevant instructions on correct driving positions in the following sections).
- Make sure that the emergency push button is not pressed (see the instructions for shutting off the emergency push button in the following sections)
- Switch on the truck (see the detailed instructions for switching the truck on and off in the following sections)
- Check the battery charge on the relevant indicator on the display and charge the battery if necessary.

Checks and actions prior to commissioning

List of checks before use

⚠ WARNING

Damage or other faults on the truck or attachments (special equipment) can result in accidents.

If damage or other faults are noticed on the truck or attachments (special equipment) during the following checks, do not use the truck until it has been properly repaired. Do not remove or disable the safety systems and switches. Do not change the pre-set values.

⚠ CAUTION

Only use the truck if all of the covers are fitted correctly and the covers and doors are closed correctly.

⚠ CAUTION

Perform checks on a flat surface. Make sure that there are no people or objects in the test area in front of and/or behind the truck.

⚠ CAUTION

Drive very slowly during the operational tests.

Ensure that the vehicle is in good working condition prior to start-up. These checks supplement and do not replace the scheduled maintenance operations.

- Check that there are NO oil leakages in the area under the truck
- Visually check the uncovered sections of hydraulic hoses and pipes to ensure that they are in good condition and to detect any oil leakages
- Check that there are no objects (wires of various types, nails, screws, pieces of tape etc.) impeding the operation of the wheels and rollers The wheels and the load rollers must roll freely
- The wheels must not show any sign of damage or heavy wear. They must be correctly mounted
- Check that the battery hood is properly and fully closed
- Check that all of the hoods and protective guards are present and check that they are correctly mounted
- There must be no objects on the truck that may limit visibility
- Check that NO stickers are missing or damaged Replace damaged or missing stickers in compliance with the marking position table
- Visually check that the forks or other load-carrying equipment show NO obvious damage (e.g. bends, cracks, significant wear)
- Check that the battery male connector and socket are fully intact and in good condition Check that they are working correctly
- Check that the start/stop key works correctly
- Check the indications on the display
- Check that the horn works correctly
- Check that all the buttons and the travel controls on the steering wheel are operating correctly
- Turn the steering wheel from both sides and test that, when released, it automatically returns to the centre position
- One at a time, push the buttons and then release them Check that the buttons return automatically to their initial positions The buttons must not remain activated or stuck
- Turn the travel control and then release the travel control Check that the travel control returns automatically to its initial position when it is released The travel control must not remain activated and locked
- Test that the truck brakes to a stop when the travel control is released
- Check that the emergency brake button on the steering wheel is operating correctly Perform the test when you are travelling very slowly and are away from dangerous areas
- Test that the electromagnetic brake works effectively
- Check that the battery harness is in good condition
- Check the electrolyte level and density as indicated in the battery instructions (check

only to be carried out if lead batteries are used)

- The operator must be qualified to drive the truck The operator must be able to reach and operate the controls Do not obstruct access to the controls
- Check the operator platform:

  Visually check that the platform is in good condition

  Check that it is operating correctly

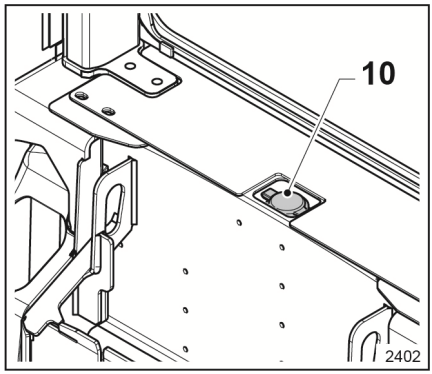
  In the absence of the pedestrian mode with steering wheel option, perform the following check. Switch on the truck. Then, the operator must get down from the driver's compartment and stand on the ground next to the truck. Leaving the steering straight, turn the steering wheel travel controls slightly. Check that the truck is operating correctly. The truck must remain stationary and must not be driven.
- Check that the battery retainer is in good condition and correctly positioned and secured
- Check that the battery is stable and properly secured in the appropriate compartment
- Check that the lift chain holding bracket (where present) is in good condition and properly fastened
- The roller tracks of the mast (where present) must be coated in a visible film of grease
- The chains must be undamaged and must be evenly and adequately tensioned (where present)
- The mast's protective screen must be intact and correctly mounted (where present)
- Visually check that the towing hook is in good condition and correctly secured to the truck Test that the towing hook is working properly (where present)
- Visually check that the adjustable seat is in good condition (where present). Check that the seat is operating correctly:

  Do not drive the truck with the fold-away seat down without the operator seated.

  When the operator gets up from the fold-away seat, the seat must close automatically.
- Check that the buzzer signalling when the truck is travelling in the direction of the fork arms works correctly (where present)
- Operational check for pedestrian mode with steering wheel option (if present):

  Switch on the truck. Then, climb down from the truck (leaving it switched on) and check that the indicators (F1) and (F2) are activated and flashing correctly.

Checking and refilling the windscreen washer tank (only present on version with cab)



⚠ CAUTION

Temperatures close to zero may damage the windscreen washer system.

– Always use washer fluid that contains anti-freeze.

The windscreen washer tank for the front and rear windscreen is located behind the operator seat backrest (1).

Proceed as follows:

- Open the windscreen washer tank cap
- If the level of washer fluid is visibly high, there is no need to top up the fluid. Close the tank cap (1)
- If the level of washer fluid is visibly low, fill the tank, then close the windscreen washer cap (1)

Ergonomic dimensions

From the correct driving position, operators must be able to reach and operate all the controls in the truck and also the safety/emergency devices. Furthermore, they must have good visibility to ensure that loads are picked up correctly, as well as adequate control over the truck while driving.

Consequently, the truck has been designed in accordance with the EN ISO 3411 standard:

- Operator height (including shoes) between 1550 mm and 1905 mm.
- Operator weight between 51.9 kg and 114.1 kg.

Driving ergonomics may be sub-optimal for operators whose physical characteristics differ from those specified above.

In any case, Directive 2009/104/EC of the European Parliament and of the Council states that "the employer shall take the measures necessary to ensure that the work equipment made available to workers in the undertaking or establishment is suitable for the work to be carried out or properly adapted for that purpose and may be used by workers without impairment to their safety or health".

"In selecting the work equipment which he proposes to use, the employer shall pay attention to the specific working conditions and characteristics and to the hazards which exist in the undertaking or establishment, in particular at the workplace, for the safety and health of the workers, and any additional hazards posed by the use of the work equipment in question".

⚠ WARNING

Trucks with a protective roof (optional): Risk of head injuries.

There must be sufficient space for the tallest operator not to hit their head on the bottom part of the roof.

Optional driver's seat adjustments

Safety guidelines for driver's seat adjustment work (described in the following sections)

⚠ WARNING

Never make adjustments while driving, as this may cause you to lose control of the truck.

Do not make adjustments when the truck is switched on, to avoid inadvertently activating the truck controls.

Make adjustments on a flat surface and only when the truck is switched off.

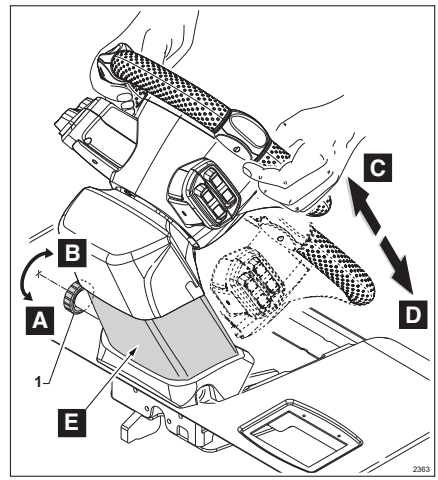
After completing the adjustment, check that the component is correctly positioned and secured.

Height-adjustable steering wheel ▷ (option)

The optional height-adjustable steering wheel can be individually tailored to the height of the driver and ensures an ergonomic operator position

Procedure for adjusting the height of the steering wheel:

- Unscrew the knob (1) by turning it anti-clockwise (B)
- Holding the steering wheel with both hands, push it up (C) if you want to raise it and push it down (D) if you want to lower it.
- To secure the steering wheel in the desired position, tighten the knob (1) by turning it clockwise (A)

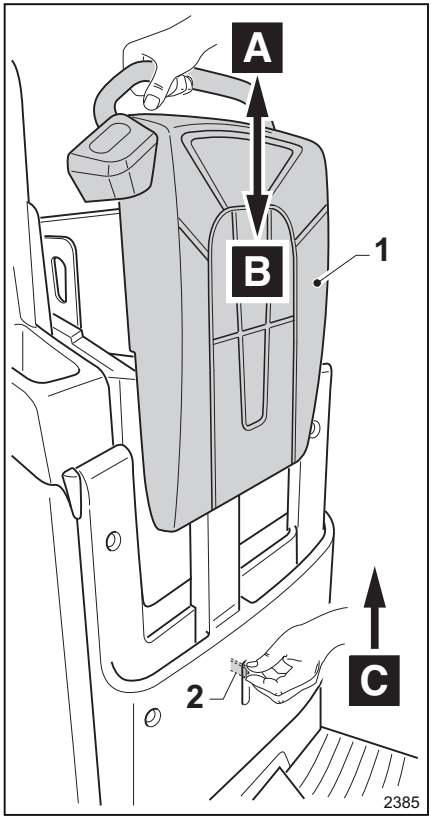


⚠ WARNING

Risk of crushing fingers and hands while adjusting the height of the steering wheel

Do not place your hands in the area (E) of the slide guides of the base of the steering wheel.

Height-adjustable STANDARD seat backrest (option)



The height-adjustable seat backrest is optional and allows the operator to adjust the seat backrest according to their height to improve driving ergonomics.

⚠ DANGER

Risk of injury to the operator!

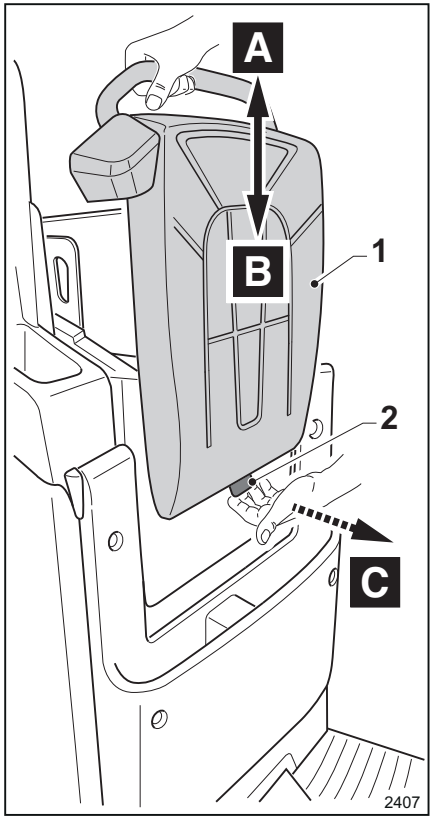
The operator must remain inside the truck. Putting your hands, arms, legs etc. outside the truck is forbidden, as they could hit shelves or other obstacles.

Positioning yourself correctly in the driver's compartment is compulsory. Positioning objects (e.g. screwdrivers, adjustable spanners etc.) between the seat backrest and the operator's back is forbidden.

The seat backrest is adjustable as follows:

- To raise the seat backrest, push the toggle lever (2) upwards (C) and, at the same time, pull the seat backrest (1) slightly upwards (A) with the other hand Release the toggle lever (2) once the desired height has been reached
- To lower the seat backrest, push the toggle lever (2) upwards (C) and, at the same time, push the seat backrest (1) downwards (B) with the other hand Release the toggle lever (2) once the desired height has been reached

Height-adjustable SLIM seat backrest (option)



The height-adjustable seat backrest is optional and allows the operator to adjust the seat backrest according to their height to improve driving ergonomics.

⚠ DANGER

Risk of injury to the operator!

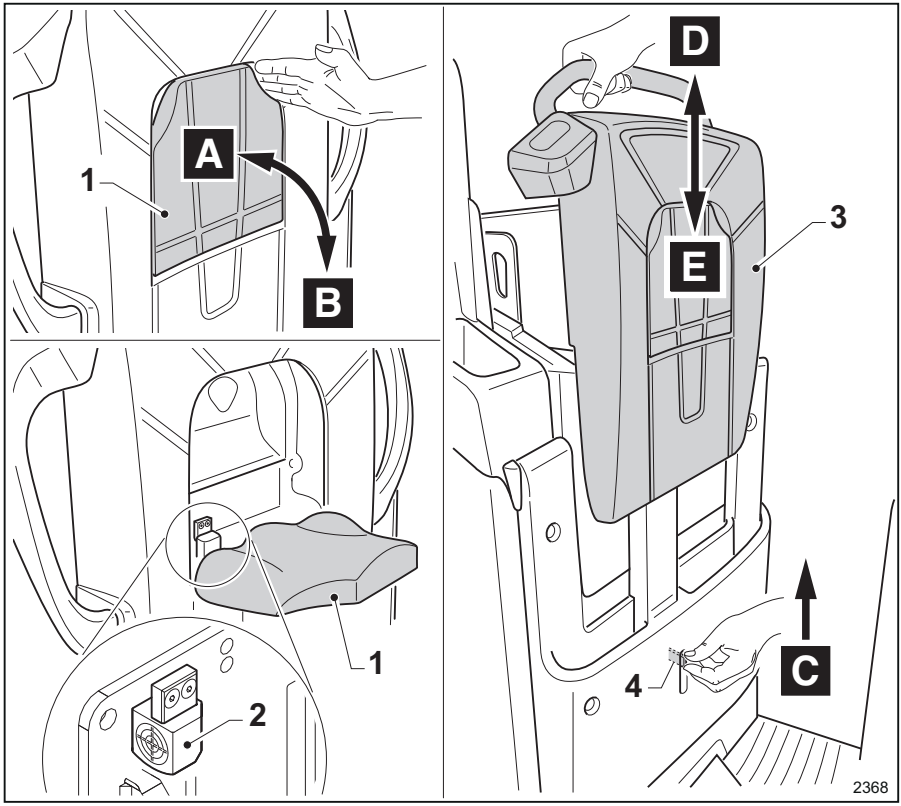
The operator must remain inside the truck. Putting your hands, arms, legs etc. outside the truck is forbidden, as they could hit shelves or other obstacles.

Positioning yourself correctly in the driver's compartment is compulsory. Positioning objects (e.g. screwdrivers, adjustable spanners etc.) between the seat backrest and the operator's back is forbidden.

The seat backrest is adjustable as follows:

- To raise the seat backrest, pull the toggle lever (2) towards(C) and, at the same time, pull the seat backrest (1) slightly upwards (A) with the other hand Release the toggle lever (2) once the desired height has been reached
- To lower the seat backrest, pull the toggle lever (2) towards (C) and, at the same time, push the seat backrest (1) downwards (B) with the other hand Release the toggle lever (2) once the desired height has been reached

Foldaway seat (option)



The foldaway seat is optional and allows the operator to drive while seated.

- To open the seat, turn the seat manually from (A) to (B).
- The seat (1) closes automatically from (B) to (A) upon release.
- After opening the seat, sit correctly in the driving position. The sensor (2) verifies that the seat (1) is properly open.

⚠ DANGER

Risk of injury to the operator!

The operator must remain inside the confines of the truck. Putting your hands, arms, legs etc. outside the truck is forbidden as they could hit shelves etc.

Seating yourself correctly in the driving seat is mandatory. Locking the seat in the open position (B) with objects or anything else is forbidden. Tampering with the sensor (2) that verifies that the seat is properly open is strictly forbidden.

⚠ CAUTION

Seat operation

With the seat fully closed (A), the operator must drive the truck standing on the platform.

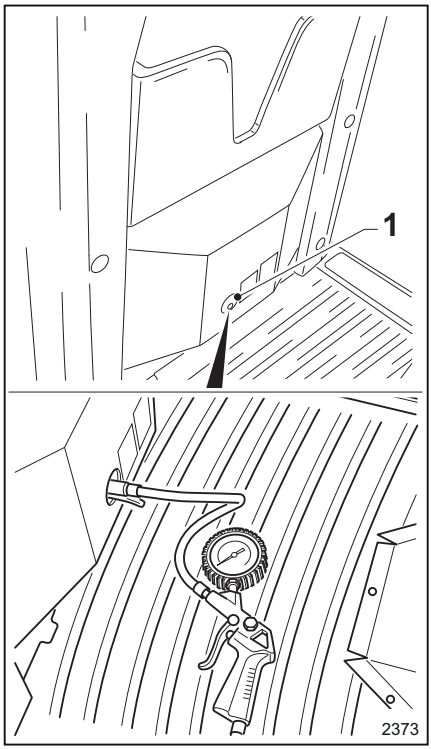
With the seat fully open (B), the operator must drive the truck sitting on the seat.

When the seat is in the intermediate positions between (A) and (B), the truck is immobilised.

The seat is height-adjustable to improve operator ergonomics:

- To raise the seat, push the toggle lever (4) upwards (C) and, at the same time, pull the seat backrest (3) slightly upwards (D) with the other hand. Release the toggle lever (4) once the desired height has been reached.
- To lower the seat, push the toggle lever (4) upwards (C) and, at the same time, push the seat backrest (3).down (E) with the other hand. Release the toggle lever (4) once the desired height has been reached.

Adjusting the sprung operator platform (optional) ▷



To improve driving comfort and to reduce the vibrations felt by the operator, adjust the pressure in the damping system in accordance with the weight of the operator.

Use a suitable compressor and adjust the pressure using the valve (1).

Adjustment is optional and only available on trucks with gas-sprung operator platforms. Read ⇒ Chapter "Safety guidelines for driver's seat adjustment work (described in the following sections)", Page 116

Near the valve is a label that shows the adjustment pressure depending on the weight of the operator:

- 1.2 bar: below 70 kg
- 1.7 bar: between 70 and 90 kg
- 2.2 bar: between 90 and 110 kg
- 2.6 bar: between 110 and 130 kg

Climbing on and off the truck

⚠ CAUTION

Risk of injury when climbing on and off the truck due to slipping, or risk of becoming trapped.

Risk of injury due to the operator **hitting** parts of the truck when climbing on and off.

– Assess the size of the operator access compartment when climbing on and off the truck.

– Before climbing off the truck, check that there is a clear pathway free of moving trucks, other vehicles or operators.

– To avoid tripping on the platform step, make sure that you lift your feet high enough off the ground when getting onto and off the platform.

– To avoid injury and sprains when climbing off the truck, consider the height of the platform from the ground and plant your feet firmly and securely when climbing down.

Risk of injury to the operator due to **slipping** when climbing on and off the platform.

– Ensure that the platform is free of oil or other slippery substances. Ensure that you have a secure grip on the truck.

– The operator must not climb down when the truck is still moving. The operator must only climb down when the truck has come to a complete stop. Do not jump into or out of the truck. Always climb onto the truck in a forwards motion.

Wearing **items of clothing or accessories that could get caught** poses a risk of injury to the operator. If items of clothing or accessories (e.g. watches, necklaces, rings, etc.) get caught in a truck component when climbing on or off the truck, this could cause serious injuries (e.g. the operator could fall, injure a finger etc.)

– Do not wear accessories in the workplace.

– Do not wear loose-fitting or damaged workwear.

Risk of damaging the truck if **components are not used correctly**. Truck components such as the steering wheel, emergency stop button, key, etc. are not designed to be used by the operator for climbing on or off the truck and may be damaged by misuse.

– Use only the handle(s) on the seat backrest for climbing on and off the truck.

Climbing onto the truck

- Position yourself in front of either the right- or left-hand access side of the truck.
- For increased operator stability, we recommend holding onto the handle on the seat backrest or the cab with one hand
- Put one foot on the non-slip side strip of the platform and then climb all the way onto the truck.
- Always climb onto the truck in a forwards motion.
- Get into the correct driving position (see specific information in the following sections).

Climbing off the truck

- Climb off from the right- or left-hand access side of the truck.
- For increased operator stability, we recommend holding onto the handle(s) on the seat backrest with one hand.

⚠ CAUTION

Before climbing off the truck, wait until it has completely stopped and check that the exit path is free of vehicles, objects and people, whether stationary or moving.

Do not climb down from a moving truck.

Drive modes and positions

Drive modes and positions

The following drive modes and positions may be used for the truck (depending on the options chosen at the time of purchase). For more information on use, please refer to the specific sections that follow.

Driving with the operator on board the truck:

- Operator standing
- Operator seated on the seat (optional)

Driving in pedestrian mode, with the operator on the ground alongside the truck:

- Using the drive controls on the seat backrest of the truck (optional)
- Using the drive controls on the steering wheel (optional)

Driving position with the operator on board the truck

General information for driving with the operator on board the truck

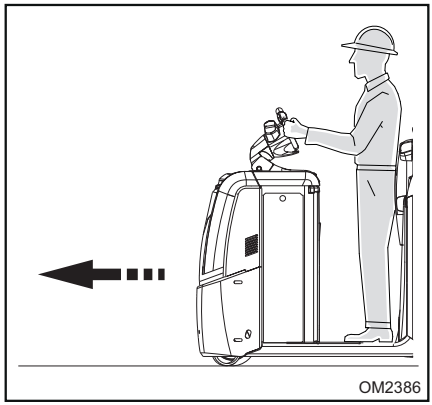
The operator should drive the truck using the controls located on the steering wheel and on the dashboard.

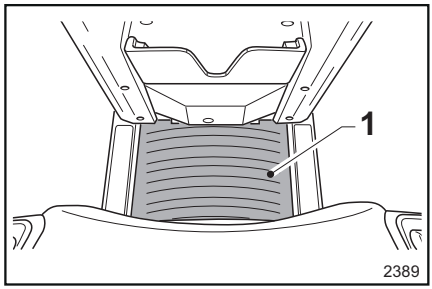
⚠ DANGER

Risk of hitting shelving or objects during travel.

Keep all body parts inside the truck while driving.

Operator STANDING on board the truck





⚠ DANGER

Disabling or tampering with protective and safety devices is strictly prohibited.

The mat (1) that detects the presence of the operator must function correctly.

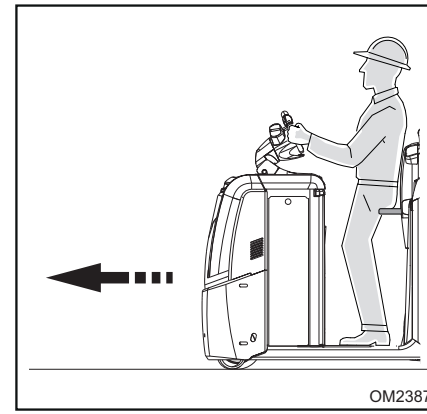
Do not place any objects on the platform mat (1) that are heavy enough to activate the operator presence detection switch.

The platform mat (1) must only be activated when the operator is on board the truck. It is prohibited to activate the platform mat (1) with body parts or objects while the operator is on the ground.

The correct driving position is:

- Operator standing on board the machine
  The seat (optional) must be fully closed.
  The seat backrest must be at the correct height (only if the seat backrest adjustment option is fitted) for optimum ergonomics
  Operator facing the truck front
  Both of the operator's feet must be on the operator presence detection mat (1) on the platform.
  Operator's back resting against the seat backrest
  Hands firmly on the steering wheel knob (if one hand is required to hold packages, items etc. then the other hand must be firmly on the steering wheel).

Operator SEATED on the truck seat (optional)



⚠ DANGER

It is strictly prohibited to disable protective and safety devices.

The seat must not be locked in the open position with objects or anything else. Tampering with the seat sensor that checks whether the seat is open properly is strictly prohibited.

For the version with a folding seat (optional), as well as standing on board the truck, the operator may also sit on board the truck.

The correct driving position is:

- Operator seated on the seat on board the truck

  The seat must be fully open

  Seat at the correct height for optimum ergonomics

  The seat backrest must be at the correct height (only if the seat backrest adjustment option is fitted) for optimum ergonomics

  Operator facing the truck front

  Both of the operator's feet must be on the platform.

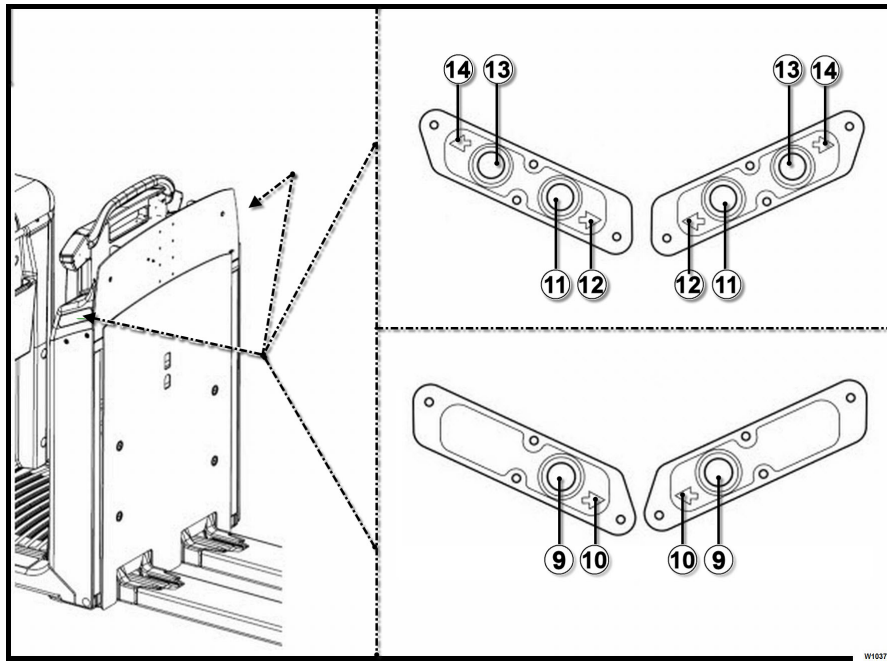
  Operator's back resting against the seat backrest

  Hands firmly on the steering wheel knob (if one hand is required to hold packages, items etc. then the other hand must be firmly on the steering wheel).

NOTE

For more information, refer to the section on the folding seat on the following pages.

Operator position and driving mode with operator on the ground next to the truck: using seat backrest controls (optional feature)



Types of travel controls installed on the backrest (where present on the truck)

The travel controls installed on the backrest vary according to the model of truck:

- The controls and relevant symbols (9 - 10) are specific to trucks that can only be driven in forward travel
- The controls and relevant symbols (11 - 12 - 13 - 14) are specific to trucks that can be driven in both forward travel and reverse travel

NOTE

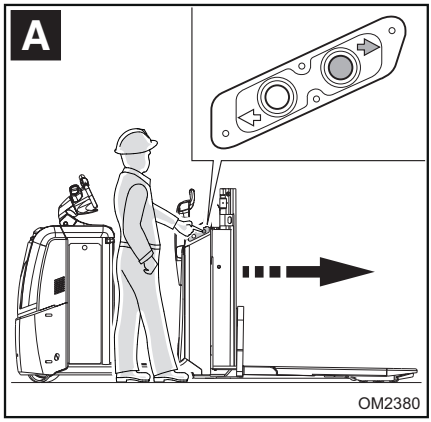
- *The buttons (9), or alternatively the buttons (11 - 13), are installed on both sides of the seat backrest. This enables the truck to be driven in pedestrian mode from either side of the truck.*
- *Take care when using the travel controls, especially if you are not familiar with using this function*

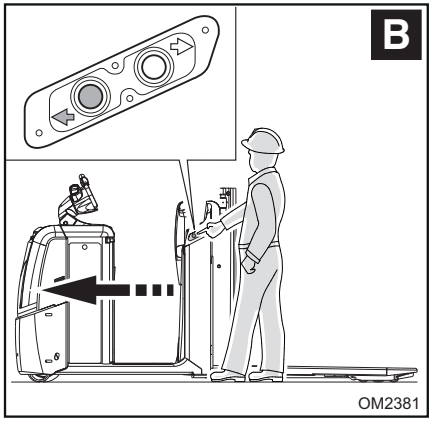
Using the travel controls with the operator on board

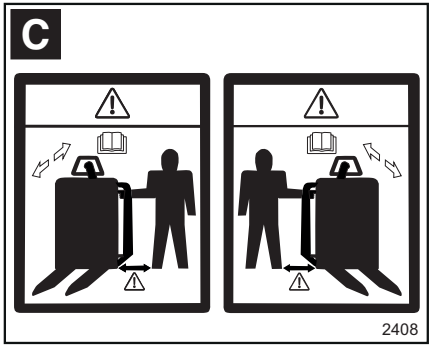
NOTE

The travel controls installed on the seat backrest (9 - 11 - 13) DO NOT work with the operator on board the platform on the truck.

Using the travel controls with the operator on the ground in pedestrian mode







Images (A) and (B) show the operator's position in both directions of travel.

⚠ DANGER

Risk of injury (see the labels in C).

With both feet on the ground, push the travel controls, keeping both your feet and your body at a safe distance from the edge of the truck to avoid crushing your feet or bumping your body against the moving truck.

When using the controls, the operator must walk alongside the truck. It is strictly prohibited to use the controls when you are in front of or behind the truck. In any case, it is strictly prohibited to use the controls in a different way than the way described.

- Position yourself correctly on the ground alongside the truck, then:

  - To move the truck in the direction indicated by the arrow (10), press the key (9). Release the key to stop the truck.

  - To move the truck in the direction indicated by the arrow (12), press the key (11). Release the key to stop the truck.

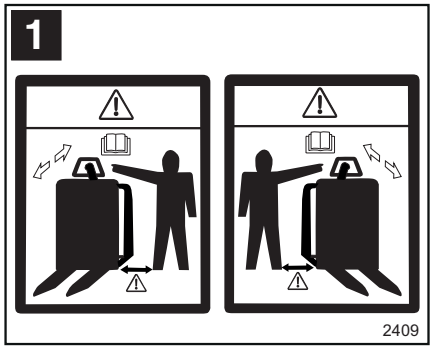
  - To move the truck in the direction indicated by the arrow (14), press the key (13). Release the key to stop the truck.

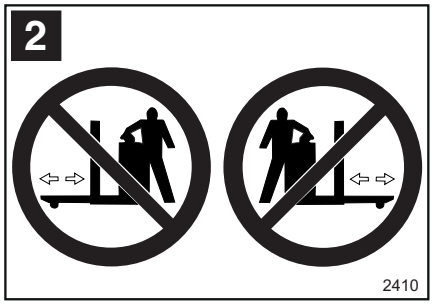
NOTE

- *If the travel control buttons are pressed for about 10 seconds, a safety circuit immobilises the truck. If this occurs, simply release the button and then press the travel control again.*
- *Only minor steering corrections are permitted when using the travel controls. The operator must consider that if the steering wheel is turned to a steering angle greater than the permitted value set by the manufacturer, the truck is immobilised. If the truck is immobilised because the permissible steering angle is exceeded, travel can be restarted instantaneously by reducing the steering angle of the steering wheel with one hand and holding down the travel button with the other hand.*
- *Using the travel controls will move the truck in the chosen direction at creep speed to allow the operator to accompany the truck by walking alongside it.*

Driving using the steering wheel controls (optional feature) with the operator on the ground alongside the truck

Precautions for use





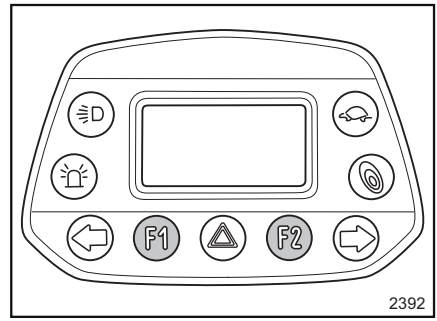
⚠ DANGER

Risk of injury (see labels 1 and 2)

With both feet on the ground, push the travel controls, keeping both your feet and your body at a safe distance from the edge of the truck to avoid crushing your feet or bumping your body against the moving truck.

When using the controls, the operator must walk alongside the truck. It is strictly prohibited to use the controls when you are in front of or behind the truck. In any case, it is strictly prohibited to use the controls in a different way than the way described.

Indicator lights (F1) and (F2)

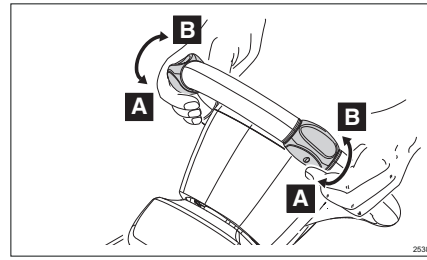


- The indicator lights (F1) and (F2) are off when driving with the operator on board the truck
- The indicator lights (F1) and (F2) flash when the truck is switched on but the operator is not in the driver's compartment on board the truck (operator platform disabled)

NOTE

When (F1) and (F2) flash, this indicates that the steering wheel travel controls are enabled for pedestrian mode operation. Be careful not to activate the steering wheel travel controls unintentionally.

Travel controls



- When the travel controls are turned in direction (A), the truck travels forward
- When the travel controls are turned in direction (B), the truck travels backwards

NOTE

The truck will move in direction (A) or (B) only if you use a single travel control on the steering wheel. The truck will NOT move if both steering wheel travel controls are used at the same time.

Travel speed

- Using the travel controls from the ground will move the truck in the chosen direction at creep speed to allow the operator to accompany the truck by walking alongside it.

Limits of use and resolution

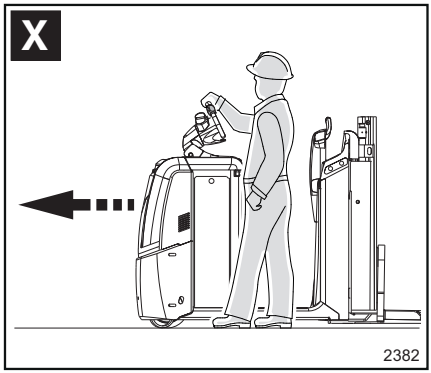
- If the ground travel controls function is used continuously for approximately ten seconds, a safety circuit will immobilise the truck. In this case, simply release the travel control and then rotate it twice in quick succession.
- Only minor steering corrections are permitted when using the travel controls. The operator must consider that if the steering wheel is turned to a steering angle greater than the permitted value set by the manufacturer, the truck is immobilised. If the truck is immobilised because the permissible steering angle is exceeded, travel can be restarted instantaneously by reducing the steering angle of the steering wheel and turning the travel control continuously.

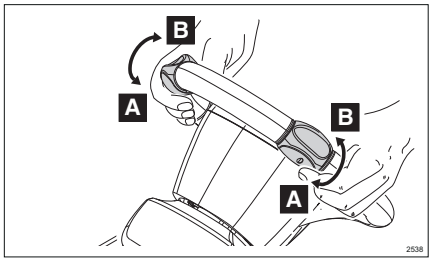
⚠ WARNING

As described in this section, to ensure an adequate level of safety when driving the truck, the travel controls must be operated and/or turned manually during both the acceleration phase and the deceleration phase, and when stopping the truck.

The automatic return of the travel controls to the neutral position is not to be considered as a feature of normal driving for the truck. The automatic return of the travel controls is only to ensure that they return to the neutral position in any situation where unintentional operations that fall outside of the truck's proper and intended use may occur.

Forward travel with the operator on the ground alongside the truck





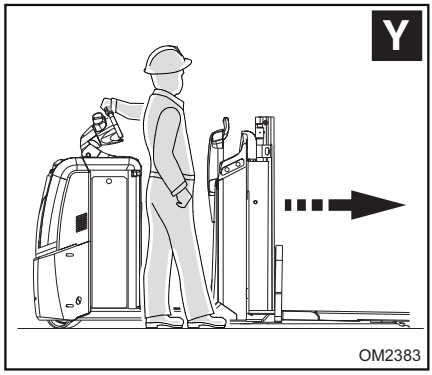
- Position yourself correctly on the ground alongside the truck (X)
- Grip the steering wheel sideways using the hand closest to the truck
- Turn the travel control that is closest to the side of the truck where the operator is stood twice in quick succession. It is necessary to turn it twice in succession in order to prevent unintentionally activating the travel control.

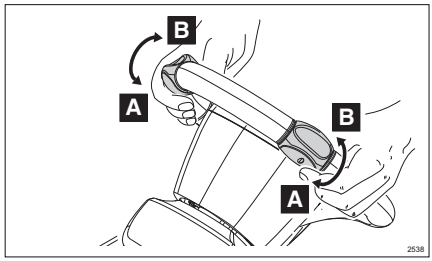
  - Perform a first full turn of the travel control in direction (A)

  - Turn the travel control to the neutral position

  - Perform a second turn of the travel control in direction (A) and the truck will start in forward travel
- To stop the truck from moving, turn the travel control until it reaches the neutral position

Reverse travel with the operator on the ground alongside the truck





- Position yourself correctly on the ground alongside the truck (Y)
- Grip the steering wheel sideways using the hand closest to the truck
- Turn the travel control that is closest to the side of the truck where the operator is stood twice in quick succession. It is necessary to turn it twice in succession in order to prevent unintentionally activating the travel control.

  - Perform a first full turn of the travel control in direction (B)

  - Turn the travel control to the neutral position

  - Perform a second turn of the travel control in direction (B) and the truck will start in reverse travel
- To stop the truck from moving, turn the travel control until it reaches the neutral position

Stopping the truck in EMERGENCIES

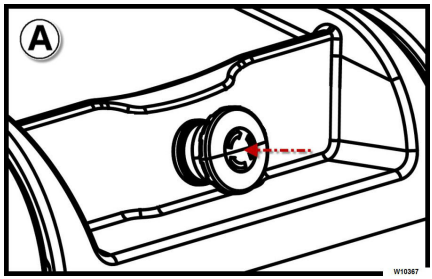
In an emergency, the power supply to all functions on the truck can be shut down through the emergency stop button.

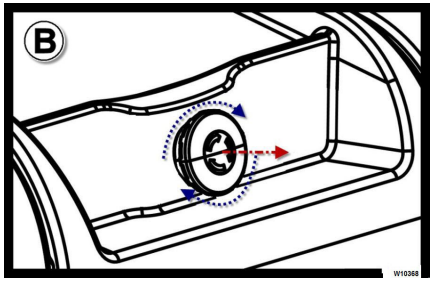
⚠ CAUTION

The EMERGENCY stop button should be activated only and exclusively when absolutely necessary. If the button (1) is activated, all the truck functions will lock.

Positions of the emergency stop button :

- (A) - Button deactivated (not pressed)
- (B) - Button activated (pressed)





Activating the EMERGENCY stop button

To activate the button and lock all truck functions:

- Starting from position (A), when the emergency stop button (1) is pressed, the button locks in position (B)

Deactivating the EMERGENCY stop button

To deactivate the button and restore operating conditions:

- Eliminate the cause of the emergency
- Then, starting from position (B), unlock the emergency stop button (1) by turning it clockwise and lifting it The button returns to its initial position (A)

On/off systems

List of on/off systems

The truck can be fitted with one of the following on/off systems:

- Using a key

  I = To switch on the truck

  0 = To switch off the truck
- Using a numerical keypad (Pin Code)
- The truck can be fitted with the FleetManager system for monitoring operating statuses. With the FleetManager system, the truck is switched on and off using a key. In addition to the key, the truck functions can be activated as follows:

  Using a numerical keypad (Pin Code)

  Using a transponder (chip or chip card)

On/off key

The key has two positions:

I = To switch on the truck, turn the key to position **I**. Circuit powered.
0 = To switch off the truck, turn the key to position **0**. No voltage to the circuit (Key removal position).

NOTE

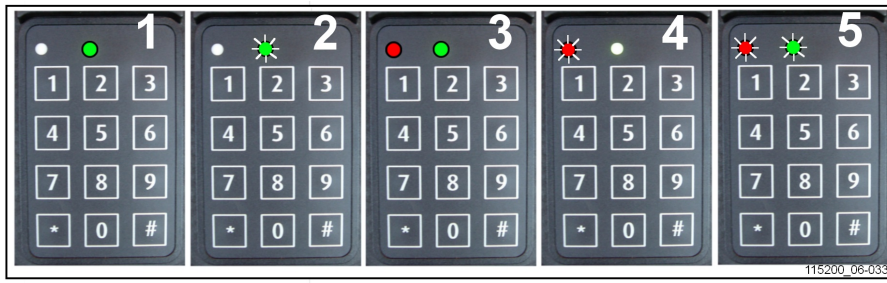
Switch off the truck after each use and every time you move away from it. For more information, see ⇒Chapter "Parking and stopping the truck", Page 146 .

⚠ WARNING

Switching on and off the truck using the key is only permitted when the truck is stationary.

It is forbidden to turn off the truck using the key when the truck is still moving. For emergency shutdown, you must only use the special emergency stop button.

Numeric keypad — Start-up using a PIN (option)



1 SWITCH ON (operating mode)
2 SWITCH OFF and awaiting code
3 Programming mode active
4 Faulty key or incorrect code
5 Delay of automatic switch-off

OPERATING MODE			
Operation	Key	LED	Warning
ON	[*][1][2][3][4][5][#] (by default)	○ red off ● continuous green (1)(correct PIN) ● red flashing ○ green off (4)(PIN incorrect)	[1][2][3][4][5] default PIN code
OFF	[#] (3 seconds)	○ red off ● green flashing (2)	Turn off the truck

PROGRAMMING MODE — to be carried out with the truck switched off (2)			
Operation	Key in	LED status	Warning
THE ADMINISTRATOR CODE IS IMPORTANT FOR ALL DIGICODE SETTINGS	[*][0][0][0][0][0][0][0][0][#] (by default)	● continuous red ● continuous green (3)	Once the diodes have been switched off, the electronic key automatically reverts to "operating mode"
New operator code	[*][0][*][4][5][6][7][8][#]	○ red off ● green flashing (2) (code accepted)	Example of a new operator code: 45678
Allocating operator codes	[*][2][*][5][4][3][2][1][#]	○ red off ● green flashing (2) (code accepted)	*2*: operator reference 10 options from 0 to 9
Deleting operator codes	[*][2][*][#]	○ red off ● green flashing (2) (deletion accepted)	*2*: operator reference (between 0 and 9)
Modifying administrator codes	[*][*][9][*][1][2][3][4][5][6][7][8][#]	○ red off ● green flashing (2) (code accepted)	

PROGRAMMING MODE — to be carried out with the truck switched off (2)			
Restoring the initial administrator code			To reactivate the default administrator code (00000000), please contact your agent or nearest dealer.
Activating the automatic switch-off	[*][*][2][*][1][#]	● red flashing ● green flashing (5) (5 s before switch-off)	The power supply switches off automatically after 10 min. (600 s by default) if the truck is not being used.
Setting the delay of the automatic switch-off	[*][*][3][*][6][0][#]	○ red off ● green flashing (2) (value accepted)	Example: automatically switches off after 1 min. (60 s) if not used. Minimum setting = 10 s / maximum = 3000 s
Deactivating the automatic switch-off	[*][*][2][*][0][#]	○ red off ● green flashing (2) (command accepted)	

Stand-by

NOTE

The stand-by function is only available with the Digicode option.

To prolong battery life, the truck can be put into energy-saving mode when it is not in use.

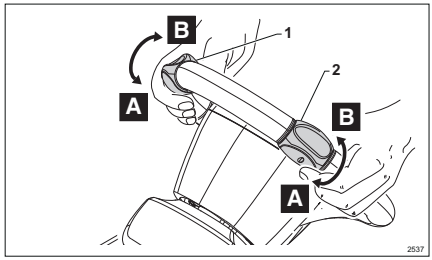
After a certain period of downtime, the truck switches off.

This time period can be configured between 0 and 10 minutes. This function is disabled by default.

Timeout can be adjusted. Contact the Technical Service Department authorised by the manufacturer.

Driving

Truck travel



Introduction

You can use the steering wheel controls (1 and 2) to:

- Select the direction of movement (forwards or backwards) for the truck
- Vary the truck's speed of travel.

Before carrying out the following steps, follow the correct sequence for using the truck. ⇒Chapter "Sequence to follow for using the truck", Page 111

The operating instructions for starting and accelerating the truck in forward/reverse travel are as follows:

Starting and accelerating the truck in forward travel

- While holding the steering wheel firmly at the designated points, use your thumb on the same hand to turn the travel controls (1) or (2) in direction (A) and increase the angle of rotation compared to the neutral position. The truck will start moving forwards at a speed proportional to the angle of the control.

Starting and accelerating the truck in reverse travel

- While holding the steering wheel firmly at the designated points, use your thumb on the same hand to turn the travel controls (1) or (2) in direction (B) and increase the angle of rotation compared to the neutral position. The truck will start moving backwards at a speed proportional to the angle of the control.

Decelerating and stopping the truck

- The following section describes the systems for braking and stopping the truck using the steering wheel controls (1 and 2) (⇒Chapter "Truck brake systems", Page 138).

NOTE

- When both travel controls (1) and (2) are turned in the same direction (A or B), the control with the greatest angular range will take precedence.
- Turning both travel controls (1) and (2) in opposite directions to each other is improper use and is therefore prohibited. In this case, the truck will stop and the warning triangle indicator light will light up on the display at the same time. To turn off the indicator light and start driving the truck again, return the travel controls to the neutral position.

⚠ CAUTION

If there are difficulties starting the truck, do not persist but look for the cause of the problem.

To ensure good operation, keep the travel controls clean of any foreign bodies such as dust and dirt.

⚠ WARNING

As described in this section, to ensure an adequate level of safety when driving the truck, the travel controls must be operated and/or turned manually during both acceleration and deceleration, and when stopping the truck.

The automatic return of the travel controls to the neutral position is not to be considered as a feature of normal driving for the truck. The automatic return of the travel controls is only to ensure that they return to the neutral position in any situation where unintentional operations that fall outside of the truck's proper and intended use may occur.

Truck brake systems

⚠ WARNING

The condition of the floor surface considerably affects the braking distance of the truck.

A slippery floor will increase the braking distance of the truck. The operator must consider this factor while driving.

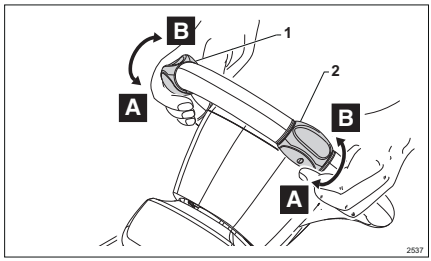
While driving, braking can be performed in the following ways:

- By turning the travel controls, which allows two different types of braking

  For more gradual deceleration, the operator can manually reduce the angle of rotation of the travel controls compared to the neutral position.

  For more rapid deceleration, the operator can turn the travel control beyond the neutral position in the opposite direction to the direction of travel.
- By using the service braking button

Braking using the travel controls



Description of deceleration and stopping the truck by manually reducing the angle of rotation of the travel controls compared to the neutral position

- While holding the steering wheel firmly at the designated points, reduce the angle of rotation (applies to both forward travel A and reverse travel B) of the travel controls (1) or (2) compared to the neutral position. This will gradually reduce the travel speed of the truck. The truck will come to a stop (zero speed) when the travel control is put in the neutral position

Description of braking achieved by turning the travel control beyond the neutral position in the opposite direction to the direction of travel

- When driving the truck, turn the travel control beyond the neutral position in the opposite direction to the truck's direction of travel. The truck will decelerate more forcefully but will come to a gradual stop. When the truck stops (zero speed), put the travel control in the neutral position. Caution: If you do not put the travel control in the neutral position, the truck will resume travel in the opposite direction. For more information, see also the section ⇒Chapter "Reversing the direction of travel", Page 140

⚠ CAUTION

Risk of load tipping. Do not use braking by reversing when driving **with** a load on the forks.

⚠ CAUTION

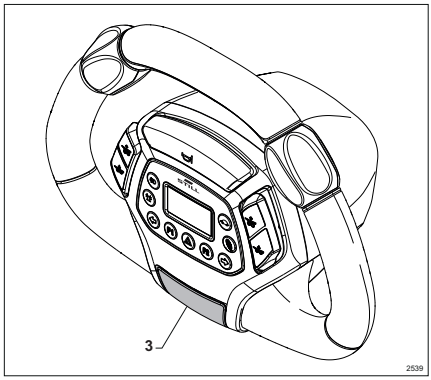
The operator must regulate the travel control by adapting truck braking to the type of load being carried in order to avoid losing the load.

⚠ WARNING

To ensure an adequate level of safety when driving the truck, the travel controls must be operated and/or turned manually during both the acceleration phase and the deceleration phase, and when stopping the truck.

The automatic return of the travel controls to the neutral position is not to be considered as a feature of normal driving for the truck. The automatic return of the travel controls is only to ensure that they return to the neutral position in any situation where unintentional operations that fall outside of the truck's proper and intended use may occur.

Service braking



⚠ CAUTION

In dangerous situations, always brake using service braking.

- During travel, press the button (3) for service braking. The truck will decelerate very sharply to a stop.

NOTE

- *Service braking stops the truck even with the travel controls turned*
- *To resume travel after stopping the truck using the service brake, first turn the travel controls to the neutral position. Only then can you activate them again.*

Parking brake

– The electromagnetic brake operates when the truck is stationary, after having put the travel controls in the neutral position.

Reversing the direction of travel

Reverse direction without a load on the forks

- To reverse direction when travelling without a load on the forks, turn the drive control throttle in the opposite direction to the direction of travel. The truck will stop with energetic but gradual braking and will start to move again in the opposite direction.

Reverse direction with a load on the forks

- To reverse direction with a load on the forks, put the drive control throttle in the neutral position and wait for the truck to stop.
- Then turn the drive control throttle in the opposite direction of travel to the previous one.

⚠ CAUTION

The operator must regulate the travel control by adapting truck braking to the type of load being carried in order to avoid losing the load.

Speed restrictions

The speed values of the truck when driving indicated in the "Datasheet (VDI)" section of the "Technical data" chapter represent the maximum theoretical speeds that can be reached with and without a load. The operator must take into account that the actual performance of the truck may be reduced due to wear of the truck or its parts, or to friction between the wheels of the truck and the floor.

⚠ DANGER

It is strictly prohibited to disable protective and safety devices.

It is strictly prohibited to tamper with the manufacturer-installed components that automatically limit the speed.

The trucks have various automatic speed limitation systems, as described below.

Standard speed limitations

- On the OPX 20 / 25 and OPX 20 / 25 PLUS models, the truck limits the driving speed when carrying a load on the forks. The automatic limitation is only activated if the load on the forks exceeds the permitted weight for the hydraulic system of the truck.
- On the OPX-L12 / L16 / L20S models, the truck limits the driving speed in the following cases:

  • When driving with the forks at a height of more than approximately 300 mm from the ground. The driving speed limitation is activated both with a load and when empty (without a load on the forks); with a load on the forks, there will be a greater automatic speed limitation than when carrying no load.

  • When carrying a load on the forks. The automatic limitation of the speed of the truck is reduced proportionally to the weight of the load carried on the forks; the greater the weight, the greater the limitation.
- On the OPX-L20 / D20 models, the truck limits the driving speed in the following cases:

  • When driving with the forks at a height of more than approximately 300 mm from the ground. The driving speed limitation is activated both with a load and when empty (without a load on the forks); with a load on the forks, there will be a greater automatic speed limitation than when carrying no load.

  • When carrying a load on the forks. The automatic limitation of the speed of the truck is reduced proportionally to the weight of the load carried on the forks; the greater the weight, the greater the limitation.

  • When carrying a load on the straddles.

On the LTX-FF models, the truck limits the driving speed in the following cases:

• When driving with the forks at a height of more than approximately 300 mm from the ground. The driving speed limitation is activated both with a load and when empty (without a load on the forks); with a load on the forks, there will be a greater automatic speed limitation than when carrying no load.

• When carrying a load on the forks. The automatic limitation of the speed of the truck is reduced proportionally to the weight of the load carried on the forks; the greater the weight, the greater the limitation.

Optional speed limitations

Other speed limitations may apply to the truck depending on the optional extras fitted:

- With the elevating step plate (where present), the driving speed is automatically limited with the step plate raised to a height greater than approximately 300 mm from the ground.
- With the travel controls with the operator on the ground (where present), the driving speed is automatically limited when the buttons are pressed.
- With the forks lowered sensor (where present), the driving speed is automatically limited when the forks are positioned at a height of less than approximately 75 mm from the ground.

Aftersales speed limitations

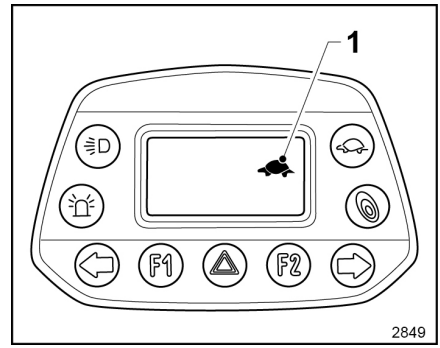
The following may be present on or added to the truck:

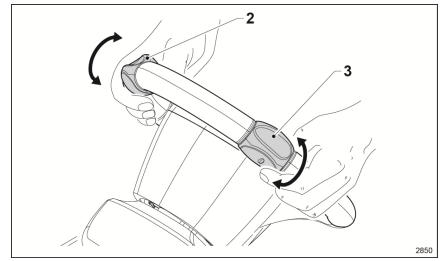
- Additional limitations on the driving speed of the truck.
- Stricter speed limitations than the standard limitations.

NOTE

Contact the manufacturer's authorised technical service centre for more information.

Speed limitations and specific operation for trucks equipped with both of the following options:
- Elevating platform
- Driving using the steering wheel controls with the operator on the ground alongside the truck





Automatic activation of the truck's creep speed function

- After switch on, this truck version automatically activates the creep speed function
- The tortoise indicator (1) lights up and flashes
- When either of travel control (2) or (3) is turned, the truck starts in creep speed mode. Creep speed means a reduced maximum speed compared to the standard; as such the truck is automatically limited electronically

Deactivation of the truck's creep speed function

- When both travel controls (2) and (3) are turned, the truck deactivates the creep speed function
- The tortoise indicator (1) goes out

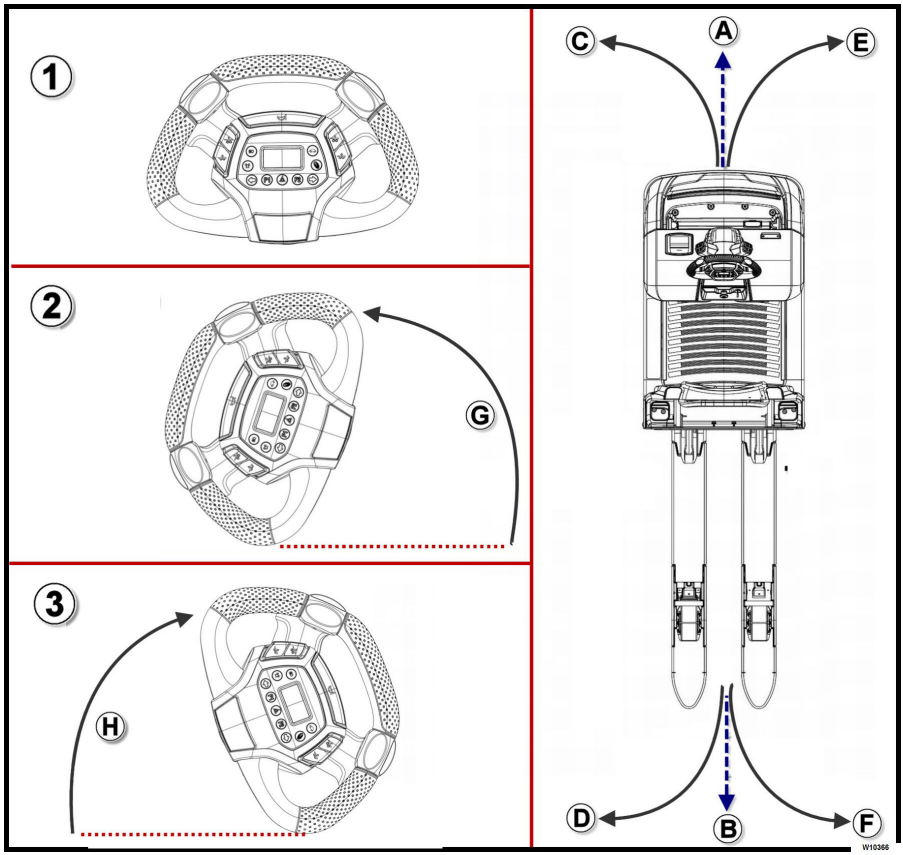
Automatic reactivation of the truck's creep speed function

- The creep speed function is reactivated in two scenarios:

  - Stopping the truck (without switching it off) for a few seconds (approx. three seconds).

  - Each time the truck is switched on.

Steering



NOTE

Before changing direction, always check the surrounding area and consequently that it is possible to turn without hindrance. If the truck is equipped with turn indicators (arrows), turn on the relative turn indicator before turning.

The steering wheel is used to steer. The image above shows:

- (1) steering wheel in neutral position
- (2) steering wheel turned fully anti-clockwise
- (3) steering wheel turned fully clockwise

NOTE

When the steering wheel is released after having been turned, the steering wheel automatically returns to neutral position (1)

To turn during travel:

- When the steering wheel is turned anti-clockwise (G) in forward travel (A), the truck turns towards (C)
- When the steering wheel is turned anti-clockwise (G) in reverse travel (B), the truck turns towards (D)

- When the steering wheel is turned clockwise (H) in forward travel (A), the truck turns towards (E)
- When the steering wheel is turned clockwise (H) in reverse travel (B), the truck turns towards (F)

⚠ WARNING

To facilitate driving, the truck automatically reduces the speed when cornering.

Despite this automatic feature, the operator must adjust the cornering speed, limiting it in relation to the load being transported and the steering angle.

Parking and stopping the truck

- Park in pre-arranged and designated areas.
- Lower the forks to the ground (if present)
- Switch off the truck:

  - by turning the key to position "0", then remove it from the truck to prevent unauthorised people from using it

  - alternatively, where present, switch off the truck using the numeric keypad.

⚠ DANGER

Park the truck in such a way that it does not obstruct passageways and/or render unusable emergency equipment (e.g. fire extinguishers and fire hydrants). Do not park the truck on slopes. Without explicit instructions, the operator must not leave the switch key, or other alternative systems for starting the truck, with other people.

⚠ DANGER

Never leave the truck with the forks raised (if present), whether loaded or not.

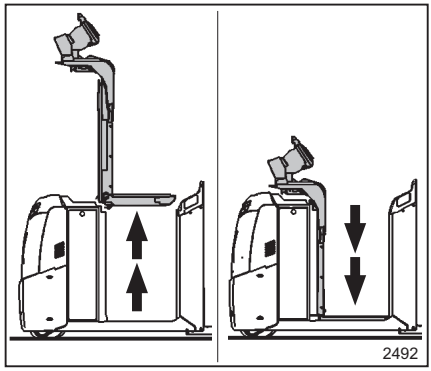
⚠ DANGER

Do not park on ramps!

In the event of an emergency, if you have to do so, apply the parking brake and block the wheels with wheel chocks.

Mobile platform

General precautions for using the mobile platform (where present)



⚠ DANGER

Risk of impact and crushing

When lifting and lowering the mobile platform, make sure that no part of your body is outside the truck. Keep all parts of your body inside the truck.

When using the mobile platform, keep both feet on the platform mat, inside the truck.

When using the platform, be careful not to hit objects that may be protruding from the shelving or objects hanging from the ceiling, such as lights or bridge cranes. Stop lifting and lowering the platform in case of danger.

Only one operator may climb onto the platform. It is forbidden to use the truck and platform for a greater number of people.

Do not place objects under the mobile platform.

Do not place parts of your body under the mobile platform and always keep them away from the moving parts of the truck.

⚠ DANGER

Risk of falling from the platform

Do not step off the truck when the platform is raised and the truck is moving. The operator must step off the truck only after fully lowering the platform and when the truck is at a standstill.

Keep your centre of gravity inside the platform and take care not to overbalance.

Use the controls to adjust the lifting and lowering speed of the platform to maintain balance on the platform.

When lifting the mobile platform, keep a firm grip on the steering wheel with at least one hand.

Do not move onto other trucks or onto structures such as shelving.

Loads moved manually must comply with the national regulations in force.

⚠ DANGER

Risk associated with the manual handling of goods

When moving goods manually, be careful not to activate controls (buttons, key, etc.)

Loads moved manually must comply with the national regulations in force.

⚠ WARNING

Limits of use

When driving with the platform raised, avoid sharp turns and sudden changes of direction. Drive carefully to avoid risking the stability of the operator, the truck and the transported load.

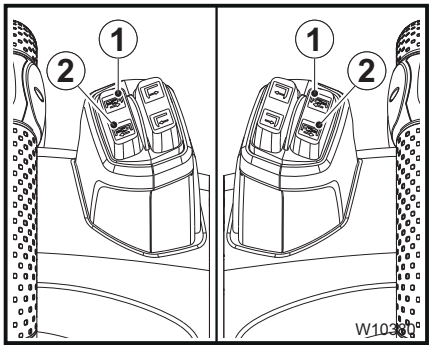
The elevating platform has been designed to work in the aisles for picking up and depositing goods on the shelves. For this reason, the truck must be used with the mobile platform fully lowered when not in the aisles of storage areas with shelving.

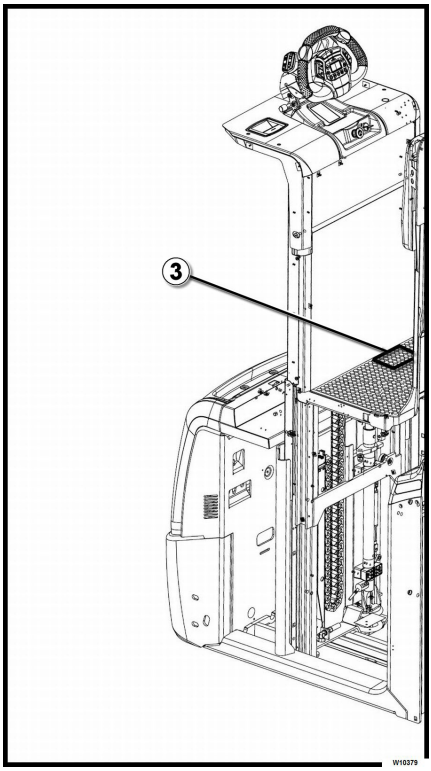
(OPX20/25) (OPX 20/25 PLUS): Using the mobile platform (where present)

⚠ WARNING

The buttons in the illustration may have different positions depending on the version. Pay attention to the symbol on the button itself.

Description





NOTE

- *The following controls are active with the truck switched on and with the operator standing on board the truck in the correct working position*
- *The speed of the platform is proportional to how hard the button is pressed*

Raising the mobile platform

- When the button (1) is pressed, the mobile platform rises to the maximum height
- Movement of the mobile platform can be stopped at any time by releasing the button (1) The mobile platform stops at the position reached

Operating the truck with the platform raised

- When the steering wheel travel controls are used with the platform raised, the truck will move in the chosen direction at a reduced speed

Lowering the mobile platform

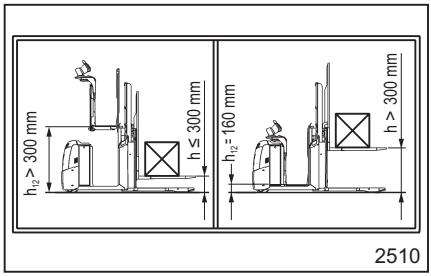
- The platform can be lowered in the two ways outlined below:

- Press the key (2) with your fingers. Release the key to stop the platform at the position reached.

- Press the coloured area (3) of the platform with your foot twice consecutively and hold. Remove your foot from the coloured area (3) to stop the platform in the position reached.

(OPX-L12 / L16 / L20 / L20S) (OPX-D20): Using the mobile platform (where present)

Precautions for use



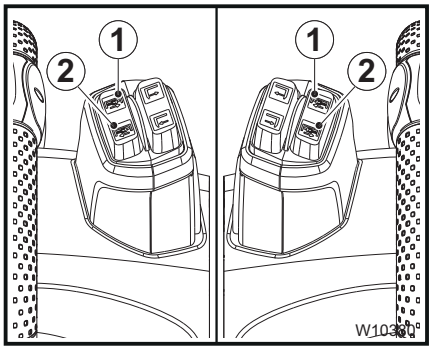
⚠ WARNING

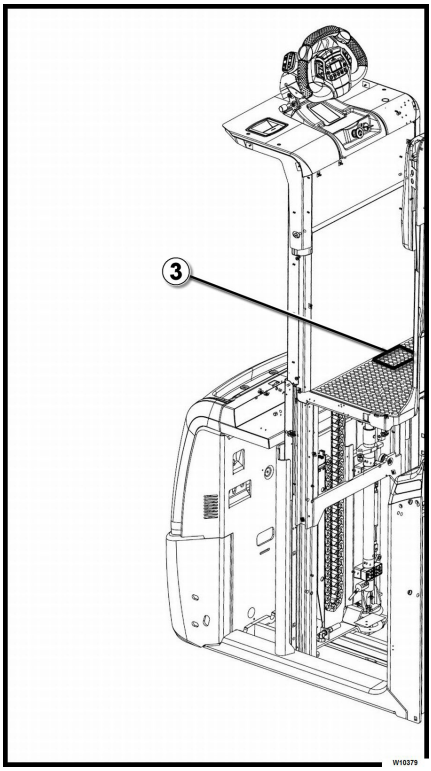
Limits of use

Before raising the platform to more than 300 mm from the ground, check that the forks are at a height of less than 300 mm from the ground. If the fork height exceeds 300 mm from the ground, before raising the platform, lower the forks to a height of less than 300 mm from the ground.

Before raising the forks to more than 300 mm from the ground, check that the platform is fully lowered. If the platform is raised from the ground, lower the platform fully before raising the forks to more than 300 mm from the ground.

Description





⚠ WARNING

The buttons in the illustration above may have different positions depending on the version. Pay attention to the symbol on the button itself.

NOTE

- *The following controls are active with the truck switched on and with the operator standing on board the truck in the correct working position.*
- *The speed of the platform is proportional to how hard the button is pressed*

Raising the mobile platform

- When the button (1) is pressed, the mobile platform rises to the maximum height
- Movement of the mobile platform can be stopped at any time by releasing the button (1) The mobile platform stops at the position reached

Operating the truck with the platform raised

- When the steering wheel travel controls are used with the platform raised, the truck will move in the chosen direction at a reduced speed

Lowering the mobile platform

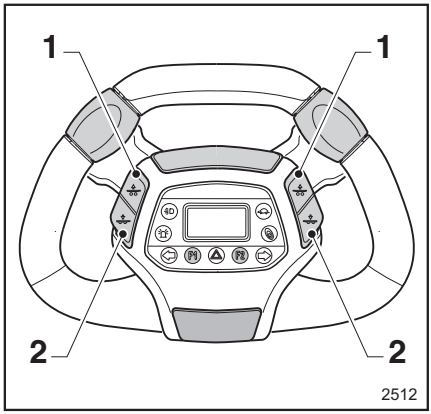
- The platform can be lowered in the two ways outlined below:

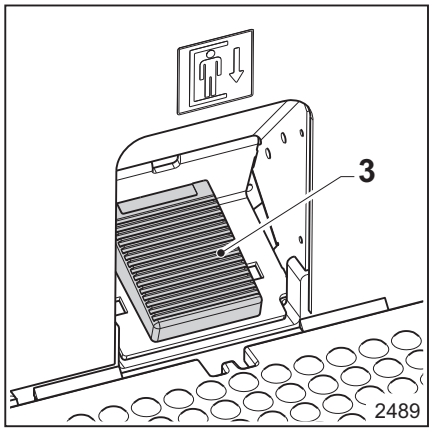
  - Press the key (2) with your fingers. Release the key to stop the platform at the position reached.

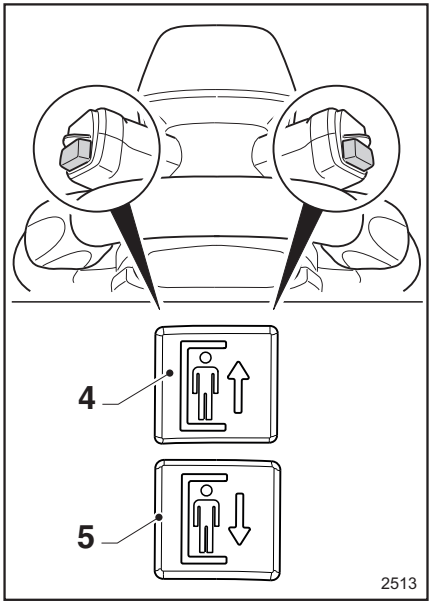
  - Press the coloured area (3) of the platform with your foot twice consecutively and hold. Remove your foot from the coloured area (3) to stop the platform in the position reached.

OXV: Using mobile platforms

Description







NOTE

- *The following controls are active with the truck switched on and with the operator standing on board the truck in the correct working position*

Platform lifting

- When the button (1) is pressed, the mobile platform rises to a maximum height of around 300 mm from the ground.
- When the button (4) is pressed, the mobile platform rises and can reach the maximum height. The lifting speed achieved via the button (4) will be proportionate to the pressure applied to it.
- The movement of the mobile platform can be stopped at any time by simply releasing the button you are using to lift it, (1) or (4). The mobile platform stops at the position it has reached.

Operating the truck with the platform raised

- When the steering wheel travel controls are used with the platform raised, the truck will move in the chosen direction at a reduced speed

Lowering the mobile platform

- The lowering of the platform is permitted regardless of the platform's position. The platform can be lowered in the following two ways:

  - Press the key (2) with your fingers. Release the key to stop the lowering of the platform.

  - Press the pedal (3) on the platform with your foot. Remove your foot from the pedal (3) to stop the platform at the desired position.

  - Press the key (5) with your fingers. The speed of lowering using the key (5) will be proportionate to the pressure applied to it. Release the key to stop the platform at the desired position.

Moving the load

Safety guidelines for handling loads

General rules

⚠ WARNING

Closely observe the following instructions before picking up loads. Never touch moving parts of the truck (e.g. lifting devices, equipment or devices for picking up loads). Do not stand near moving parts of the truck.

⚠ WARNING

Danger of crushing hands and feet when using the lift (if present).

When using the lift (if present), keep hands and feet away from moving parts.

⚠ DANGER

It is not permitted to pass below the forks. It is not permitted to transport or lift people on the forks.

If there are people under or on top of the forks, do not move the truck. Do not move the forks and do not drive the truck.

⚠ DANGER

Wear protective footwear. Always keep a suitable distance between your feet and the truck.

Risk of crushing feet when manoeuvring the truck.

⚠ CAUTION

The transport of people or passengers is strictly prohibited.

⚠ CAUTION

Driving or turning with the forks raised above 300 mm from the ground is forbidden (only for trucks with a lift mast).

It is only allowed at reduced speed when depositing a load and/or picking up a load from shelving.

⚠ DANGER

Before picking up the load, make sure that its dimensions and weight fall within the truck 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. In order to guarantee load stability, make sure that the load is balanced and centred on the forks. Before moving the truck or forks (if present), the operator must ensure that the load is correctly positioned and stable while the truck is stationary. While driving with the truck and lifting the forks (if present), the operator must ensure that the load is stable, preventing the it from tipping over onto the ground.

⚠ DANGER

Standing or walking under the raised load is strictly prohibited. Make sure that nobody stands under the raised load and in the truck's area of operation.

⚠ DANGER

Never leave the truck with the forks raised, whether loaded or not.

⚠ WARNING

When lifting the load, pay attention to the dimensions of the mast and the load.

Do not strike the ceiling, the shelving, loads or other objects in the vicinity during collection operations.

Checks to be carried out before lifting a load

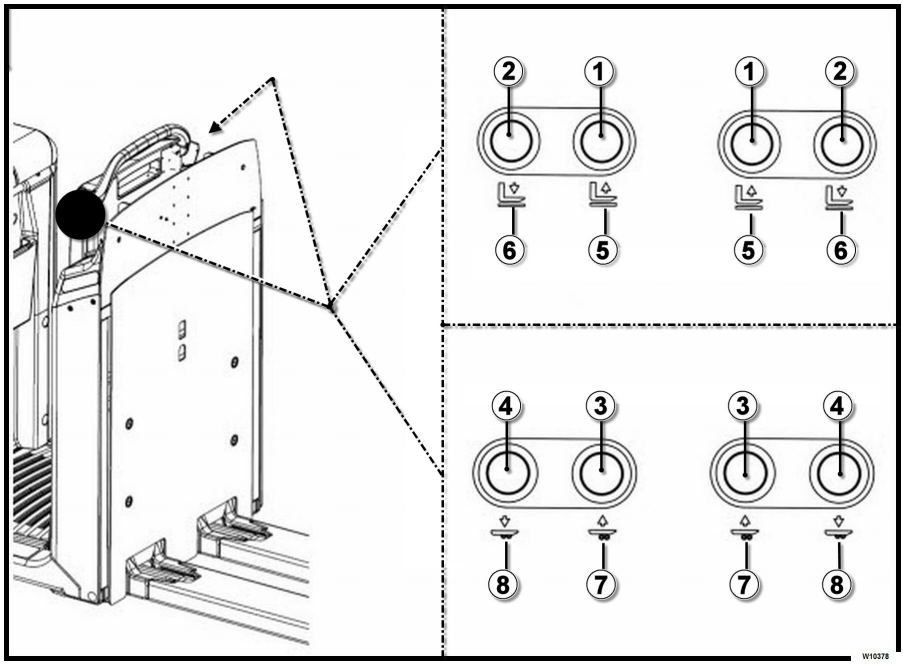
⚠ WARNING

Never exceed the capacity of the truck. This capacity is based on the centre of gravity and the lift height of the load.

Comply strictly with the capacity designation plates and labels! Never exceed the maximum loads shown! Otherwise, the stability of the truck can no longer be guaranteed.

Additional people in the truck (apart from the operator) or additional weight being added to the truck is forbidden. The capacity of the truck is not increased in this way.

Using the backrest fork controls (where present)



Types of fork controls installed on the backrest (where present on the truck)

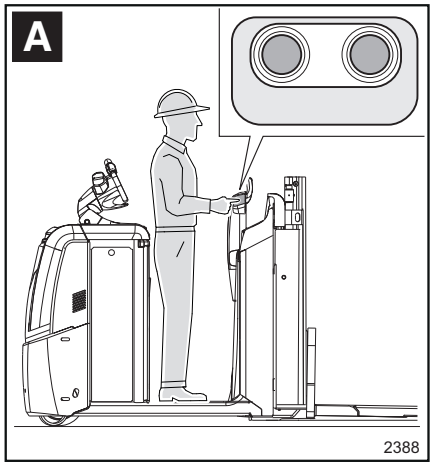
The fork controls installed on the backrest vary according to the model of truck:

- The controls and relevant symbols (1- 2 - 5 - 6) are specific to trucks WITH a lift mast
- The controls and relevant symbols (3 - 4 - 7 - 8) are specific to trucks WITH-OUT a lift mast

NOTE

- *The buttons (1- 2 - 5 - 6) or alternatively the buttons (3 - 4 - 7 - 8) are installed on both sides of the backrest.*

Using the fork controls with the operator on board on the platform



The image (A) shows the position of the operator on board the truck when using the backrest fork controls.

⚠ DANGER

Risk of accident

To avoid his feet being crushed by the forks, the operator must keep both feet on the truck platform in the operator presence detection area. Pressing the operator presence area with just one foot is forbidden.

To avoid cutting his hands when using the controls, the operator must keep his hands and other body parts away from the moving parts of the truck.

Lifting the forks

- With the truck switched on, position yourself standing correctly on the platform (A), then:

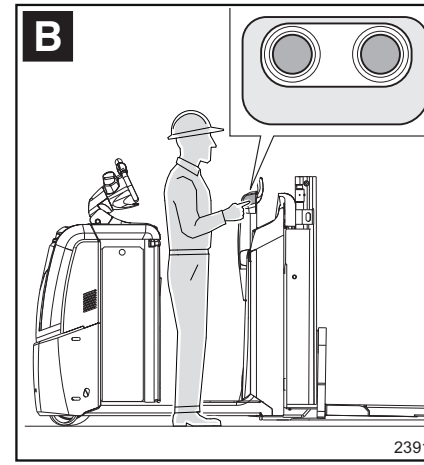
  - To raise the forks, press button (1) or (3) depending on the truck model. The forks will lift as shown by the symbol (5) or (7). Release the key to stop the forks.

Lowering the forks

- With the truck switched on, position yourself standing correctly on the platform (A), then:

  - To lower the forks, press button (2) or (4) depending on the truck model. The forks will lower as shown by the symbol (6) or (8). Release the key to stop the forks.

Using the backrest fork controls with the operator on the ground next to the truck



The image (B) shows the position of the operator when using the backrest fork controls from the ground.

⚠ DANGER

Risk of accident

To avoid his feet being crushed by the forks, when the operator fully lowers the forks from on board the truck, he must keep both feet on the truck platform in the operator presence detection area. Pressing the operator presence area with just one foot is forbidden.

To avoid cutting his hands when using the controls, the operator must keep his hands and other body parts away from the moving parts of the truck.

Lifting the forks

- With the truck switched on, position yourself correctly on the ground alongside the truck and then:

  - To raise the forks, press button (1) or (3) depending on the truck model. The forks will lift as shown by the symbol (5) or (7). Release the key to stop the forks.

Lowering the forks for trucks WITH lift mast

- With the truck switched on, position yourself correctly on the ground alongside the truck and then:

  - To lower the forks, press the key (2) .

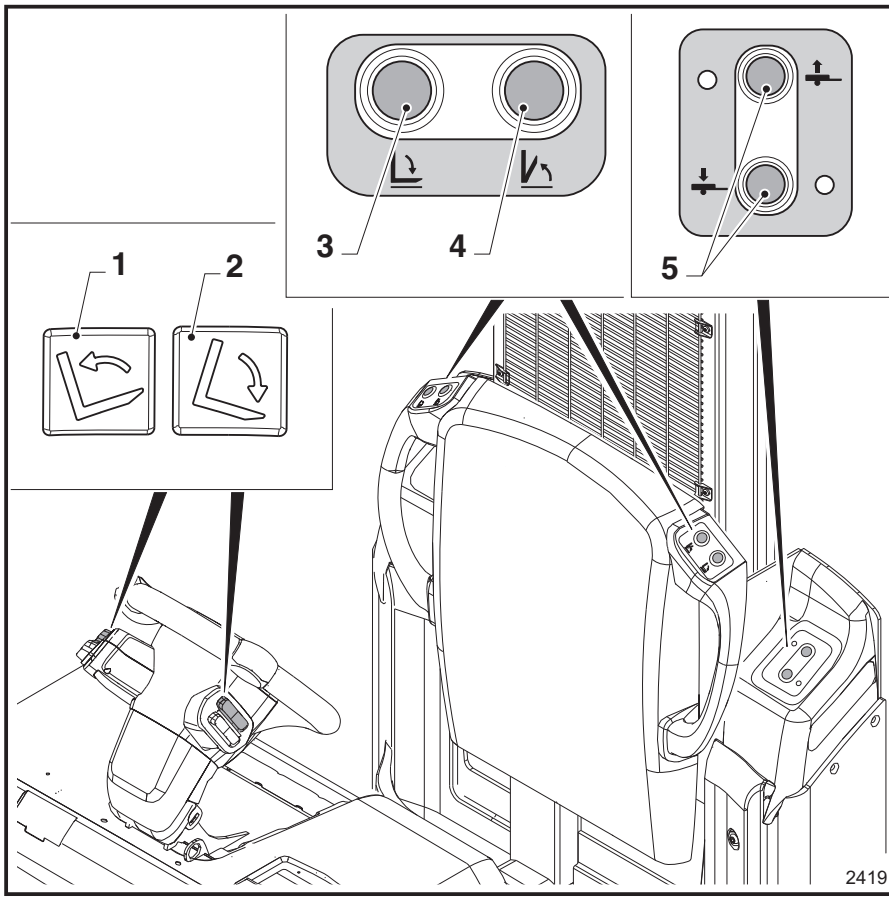
- The forks will lower as shown by the symbol (6). Release the key to stop the forks at the required height.

- The forks will not lower all the way to the ground, but during lowering the forks will stop automatically at a predefined height. This setting helps prevent the operator's feet or other body parts being crushed under the forks. To lower the forks further, the operator must stand correctly on the platform (A) and then press the push-button (2).

Lowering the forks for trucks WITHOUT lift mast

- The controls for lowering the forks (4) DO NOT work with the operator on the ground alongside the truck
- To lower the forks, the operator must stand correctly (A) on the platform and then press the push-button (4).

Using additional fork controls (only for model LTX FF)



1 Fork upward tilt button
2 Fork downward tilt button
3 Fork opening button
4 Fork closing button
5 "LiftRunner" trailer lifting/lowering control. The control is optional and described in section

NOTE

The following controls are active with the truck switched on and the operator standing on the platform in the correct "working position", and only if the control has not already reached the end position.

⚠ DANGER

Stepping onto the forks is forbidden!

Do not use the controls while standing on the forks.

⚠ CAUTION

Coupling a trailer is only permitted when the forks are fully closed (fully folded in the vertical position).

In all other cases, coupling a trailer is forbidden.

⚠ CAUTION

Never use the towing mode and the pallet stacker mode at the same time.

Towing a trailer and stacking another load at the same time is forbidden.

The following controls are explained below:

- Fork upward tilt
- Fork downward tilt
- Opening the forks
- Closing the forks

Fork tilt

Fork UPWARD tilt (1)

- To tilt the forks upwards:
  - Press one of the buttons (1) located on both the steering wheel turrets. Fork movement can be stopped at any time by releasing the button. The forks will stop in the position reached

Fork DOWNWARD tilt (2)

- To tilt the forks downwards:
  - Press one of the buttons (2) located on both the steering wheel turrets. Fork movement can be stopped at any time by releasing the button. The forks will stop in the position reached

Opening the forks (3)

⚠ DANGER

Before opening the forks, ensure that there is sufficient space and that the space is clear of objects, shelving, walls etc. Make sure there are no people in the danger area, as there is a risk of injury. If there are obstacles present in the opening/closing radius of the forks, opening the forks is forbidden.

To open the forks:

- Fully lower the forks. The open forks control is disabled when the forks are raised above the ground
- Press the two buttons (3) at the same time until the forks are fully open. The buttons (3) are located on the right-hand side and the left-hand side of the seat backrest

⚠ WARNING

Truck travel: Check that the forks are fully open before beginning travel. Truck travel is forbidden when the forks are not fully open.

Forks: Fork lifting and lowering is only enabled with the forks completely open.

Closing the forks (4)

⚠ DANGER

Before closing the forks, ensure that there is sufficient space and that the space is clear of objects, shelving, walls etc. Make sure there are no people in the danger area, as there is a risk of injury. If there are obstacles present in the opening/closing radius of the forks, closing the forks is forbidden.

To close the forks:

- Fully lower the forks. The Close Forks control is disabled with the forks raised above the ground
- Then press the two buttons (4) at the same time until the forks are fully closed The buttons (4) are located on the right-hand side and the left-hand side of the seat backrest

⚠ WARNING

Truck travel: Check that the forks are fully closed before beginning travel. Truck travel is forbidden when the forks are not fully closed.

Forks: Fork lifting and lowering is only enabled with the forks completely open.

⚠ DANGER

Risk of injury

Manually raising the forks is forbidden!

"LiftRunner" trailer lifting/lowering control (5)

The control is optional and described in section ⇒Chapter "Introduction to LiftRunner (where present)", Page 182 .

Taking up load

– Approach the load with caution and with as much precision as possible.

– Lower the forks so that they can easily be inserted into the pallet.

– Slowly insert the forks at the centre of the load to be lifted.

⚠ CAUTION

Insert the fork without bumping into either the shelving or the load.

– Insert the forks as far as possible below the load. If possible, the forks should be inserted far enough in that the load is resting against the fork carriage. The load centre of gravity must be centred between the forks.

⚠ DANGER

Pay attention to the part of the forks protruding from the load to be lifted.

Do not strike the wall, the shelving or other loads and/or objects behind the load to be picked up.

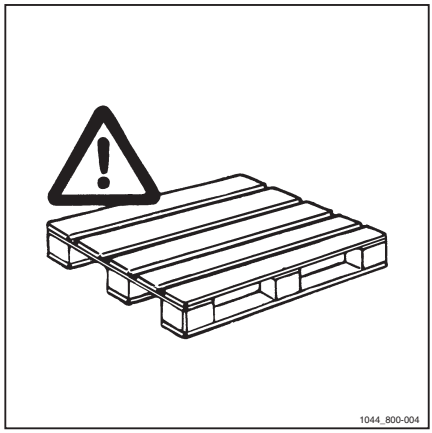
– Lift the load a few centimetres from the ground and read the "Transporting loads" section.

Palletising a load

Only pallets that do not exceed the established maximum dimension may be stored. Faulty load-carrying aids (pallets) and incorrectly assembled loading units must not be stored.

The load must be placed or fixed on the load-carrying aid so that it cannot move or fall.

The loading units must be stored so that the established width of the aisles is not reduced by any protruding parts.

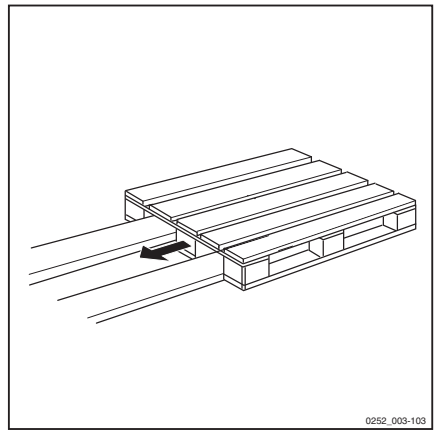


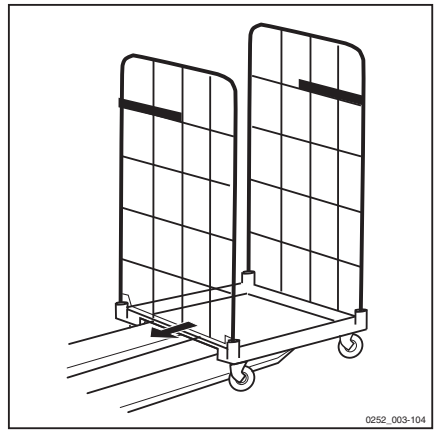
Transporting loads on the forks ▷

As a general rule, loading units must be transported one by one (e.g. pallets). Transporting several loads at once is only authorised:

- If the safety requirements are met
- On the orders of the supervisor in charge

The operator must ensure that the load is properly packaged. Only loads that have been properly packaged and are safe and secure may be moved.





⚠ WARNING

Always drive forwards for optimum visibility.

– Only travel in the direction of the forks when depositing a load, as visibility in this direction is restricted.

If the load height or dimensions are likely to obstruct the operator's view, a second person on foot must assist with manoeuvres in order to warn the driver of any obstacles. In this case, driving is only authorised at walking speed and with the greatest care. Stop the truck immediately if you lose contact with the person accompanying you.

⚠ DANGER

Lower or raise the load until there is sufficient ground clearance.

Never transport loads with forks raised to greater heights as the truck and the load being carried may become unstable.

Do not allow the load, the pallets or the container to trail along the floor.

⚠ DANGER

When travelling and transporting the load, be aware of the side clearance of the load, particularly when turning corners.

Avoid hitting shelving and objects in your path.

⚠ DANGER

Danger of load tipping over

Avoid sudden starts and stops.

Approach corners slowly and carefully.

⚠ WARNING

– Lower/lift the fork carriage enough to detach the fork from the ground.

The load must not be raised too high as it may block visibility to the rear. If the load blocks visibility to the rear, a second operator must walk closer to the truck and act as a guide when reversing. Only drive at walking speed and always take extra care. The truck must be stopped immediately if you lose visual contact with the operator guiding you.

Depositing a load on the ground

- Approach the load deposit area.
- Lower the fork arms until the load is deposited in the required area, then free the forks from any contact with the pallet or container.
- Look in the direction of movement before moving the truck.
- Check that the truck's path is free of any objects, people and obstacles of any type.
- Look in the direction of movement and simultaneously proceed very slowly to fully extract the forks from the load.

⚠ DANGER

Risk of injury and crushing for the operator! Risk of damage to the truck and the goods

During the entire load placement operation, be careful not to hit any obstacles. You must maintain an adequate safety distance from obstacles (e.g. other pallets, protruding objects, shelving etc.).

⚠ DANGER

Never leave the truck with the forks raised, whether loaded or not.

Driving on slopes

Instructions

Before approaching a slope with the truck, the operator must check and verify the following:

- When driving the truck up or down slopes, you must not exceed the values indicated for slopes in the "Technical data" paragraph. The reported values represent the maximum theoretical slope that the truck can handle with and without a load. The operator must keep in mind that the actual values could be lower depending on the wear on the truck or its parts, the shape of the slope's edges and the traction between the truck's wheels and the surface of the slope
- The surface of the uphill or downhill slope is clear of objects and sufficiently lit
- The surface of the uphill or downhill slope must not be slippery; it must provide adequate grip for the truck. Consider the ambient conditions
- The operator must ensure that the load or parts of the truck do not come into contact with the ground at the upper and lower ends of the slope

⚠ WARNING

Risk of tipping and accident

Reduce speed and drive slowly and carefully on uphill and downhill slopes.

⚠ DANGER

Risk of tipping

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

⚠ WARNING

When travelling on a slope with a load on the forks, the load on the forks must be facing uphill.

⚠ DANGER

Risk of accident and falling

Keep the truck at the required safety distance from the edges of uphill and downhill slopes.

⚠ CAUTION

In certain cases, driving with the forks pointing towards the top of the slope is permitted, even if the truck is not loaded.

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

⚠ DANGER

Risk of accident

Do not park on a slope. If, in an emergency, you have to do so, apply the parking brake and block the wheels with wheel chocks.

Using the truck on a lift

Using the truck on lifts is only allowed if the lift has sufficient 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 of the truck 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 they must exit the lift first after transit.

Using the truck on the loading bridge and inside a container

⚠ DANGER

Risk of accident

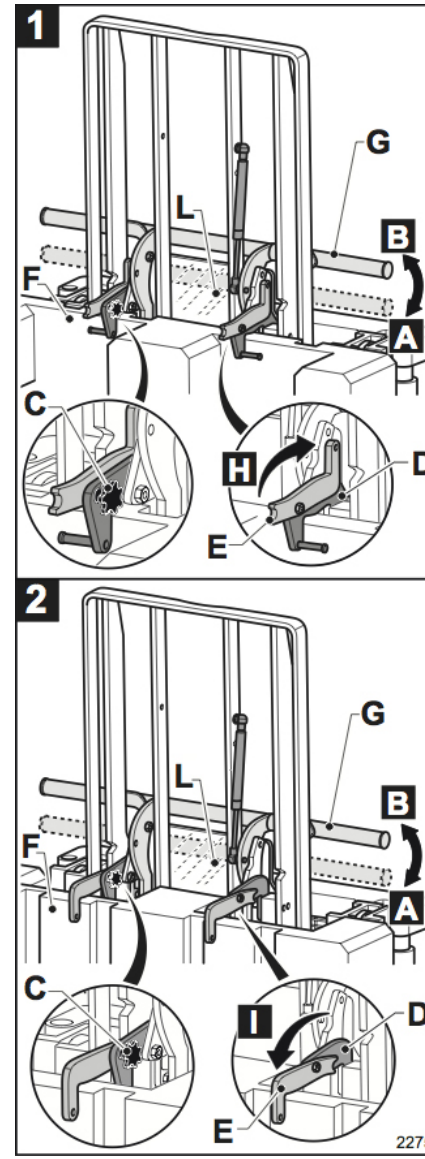
Before driving on to a loading bridge, the operator must check that the bridge has been properly assembled and secured, and that it has sufficient load capacity.

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 stress created by the truck.

The lorry driver and the forklift operator must be in agreement to prevent the truck from moving during loading and unloading.

Load back rest with vertical pallet hook (optional) ▷



Hand protective guard (L):

- Do not remove the guard
- Before using the truck, check that there is a protective guard and that this guard is intact

The system allows you to transport empty pallets in a vertical position in the following two ways:

- See image **(1)**— The pallet (F) is held by the clamp (D)
- See image **(2)**— The pallet (F) is held by the clamp (E)

If the pallet to be transported is positioned as shown in image **(1)**, the clamp (E) should be turned backwards (H). Procedure:

- Pull the bar (G) upwards (B) to lower the clamps (D) and (E)
- Unscrew the knob (C)
- Turn the clamp (E) backwards (H)
- Completely screw in the knob (C)
- Repeat the preceding steps for the other clamp (E)
- Push the bar (G) downwards (A) to raise clamps (D) and (E)
- Position the pallet in the position defined (1) and clamp it between the clamps (D), pulling the bar (G) towards (B)

⚠ CAUTION

Risk of crushing hands and feet

While moving the bar (G) towards (A) or (B), keep your hands away from the clamps (D - E) of the pallet lock.

When manually positioning the pallet, be careful that the pallet does not fall.

If the pallet to be transported is positioned as shown in image (2), the clamp (E) should be turned forwards (I). Procedure:

- Pull the bar (G) upwards (B) to lower the clamps (D) and (E)
- Unscrew the knob (C)
- Turn the clamp (E) forwards (I)
- Completely screw in the knob (C)
- Repeat the preceding steps for the other clamp (E)

- Push the bar (G) downwards (A) to raise clamps (D) and (E)
- Position the pallet in the position defined (2) and clamp it between the clamps (E), pulling the bar (G) towards (B)

⚠ CAUTION

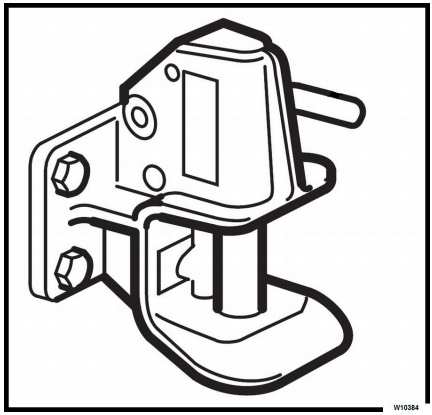
Risk of crushing hands and feet

While moving the bar (G) towards (A) or (B), keep your hands away from the clamps (D - E) of the pallet lock.

When manually positioning the pallet, be careful that the pallet does not fall.

Handling trailers

Towing trailers



This manual describes both order pickers and tow tractors

Trucks WITHOUT a towing hook: Towing is NOT permitted

Order picker trucks

- Order picker trucks **are not** equipped with a manufacturer-installed towing hook (the image shows an example of a towing hook)
- Order picker trucks **are not** suitable for towing trailers

⚠ DANGER

It is forbidden to tow trailers with order picker trucks.

Trucks WITH a towing hook: Towing is permitted

Tow tractors

- Tow tractors **are** equipped with a manufacturer-installed towing hook (the image shows an example of a towing hook)
- Tow tractors **are** suitable for towing trailers

NOTE

The following paragraphs describe how to use the towing hook.

The pulling force of the towing hook and the truck

The nominal pulling force is linked to the nominal capacity. This force is delivered by the tow tractor for 60 minutes continuously. The maximum pulling force is the maximum permitted force exerted on the hook for a limited period of time (see specific performance diagram).

⚠ CAUTION

You must consider that in difficult conditions of use, such as on slopes or slippery roads, NEITHER the pulling force of the towing truck NOR the trailer load capacity is decisive in determining the load that can be towed, but rather the ability to brake safely to prevent accidents.

⚠ CAUTION

The maximum permissible load capacity is for towing (unbraked) trailers on a flat surface. The maximum permissible load capacity must be reduced for towing trailers uphill or downhill slopes. The load and trailer type must be adapted correctly.

It is forbidden to load or unload the truck on uphill or downhill slopes. The trailer must be suitable for the load being transported. The load must be distributed evenly and attached in accordance with the law. Refer to the towing values contained in the technical data chapter.

⚠ CAUTION

It is forbidden to couple trailers to rails.

The hook is designed for towing only. Pushing trailers of any type is forbidden. The position of the towing hook hinge is important for safety and performance. Any changes to the components and their positioning in relation to the truck produced by the manufacturer must be authorised and validated to maintain their compliance.

Towing: Safety guidelines

⚠ DANGER

Risk to life

Hitching or unhitching a trailer on an incline is strictly prohibited. This work must be performed on level ground. Failure to comply with these guidelines may result in a risk of injury to oneself or to a third party. The trailer or tow tractor may move and gain momentum on an incline.

⚠ WARNING

Before coupling or uncoupling a trailer, ensure:

- Both the tractor and the trailer are on level ground
- The trailer tow bar and the tractor tow coupling are compatible
- If fitted, the trailer braking system is engaged, or the trailer wheels have been chocked to prevent movement

The driver must be trained to use and manoeuvre the tow tractor with or without a trailer.

⚠ DANGER

Risk of injury

Position yourself in a safe place or in a marked area for hitching or unhitching the trailer. During this hitching or unhitching work, the driver cannot be clearly seen by other forklift operators: There is a risk of impacts or collision.

⚠ WARNING

Risk of imbalance

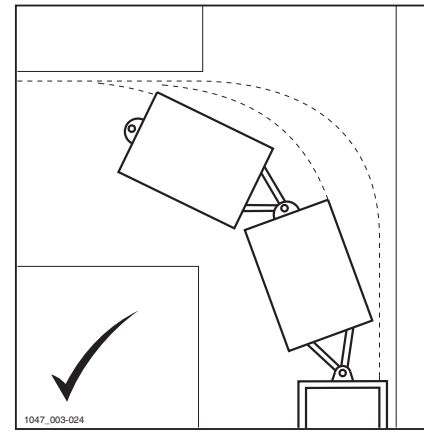
Hitch the trailer tow bar to the tractor so that the bar is as horizontal as possible.

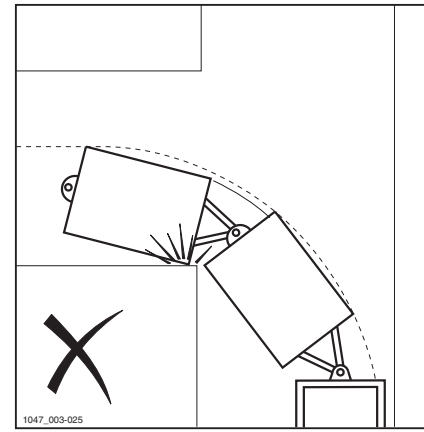
⚠ WARNING

Risk of trapping

During the hitching or unhitching work, always handle the trailer with care. Take care not to trap your fingers or to let them become trapped between the tractor and the trailer.

Towing the trailer ▷





⚠ CAUTION

Follow the requirements

Trailers are not required to be fitted with a brake for loads weighing less than 2.5 tonnes. For loads weighing more than 2.5 tonnes, all trailers must be fitted with brakes. On ramps, always use trailers fitted with brakes.

⚠ DANGER

Risk of accident and risk of tipping

Do not manoeuvre trailers on a slope.

When towing trailers, and particularly when cornering, the operator must limit the travel speed depending on the type of towed load and the number of trailers being towed.

NOTE

Ensure that you understand how to operate all of the braking mechanisms that could be installed on the trailers that will be towed. Ensure that the load to be towed is secured in a stable manner and evenly distributed on each trailer, and that the load is within the nominal capacity of the tow tractor. Assess the turning radius of the tow tractor. This is particularly important because of the cutting effect when turning.

⚠ CAUTION

NEVER drive on public roads if local traffic regulations are not complied with.

NOTE

If you are travelling on public roads, make sure that the designation plates conform to local traffic regulations.

– Release the braking system of the towing vehicle and remove any blocks from the wheels.
– Check the width of the trailer or of the widest load to ensure clear passage on roads.
– Check that there is a clear pathway in the direction of travel. Slowly move the tow

tractor forwards to eliminate the play in the trailer connections. Then accelerate gradually up to the desired speed.

– When approaching your destination, reduce your speed in advance to ensure that the tow tractor and the trailers stop. A sudden stop could cause the load to overturn and the trailers could close in on themselves.

⚠ DANGER

Never transport passengers in a trailer unless the trailer is specifically designed for that purpose.

Coupling the trailer

⚠ CAUTION

When coupling and uncoupling trailers, both the tow tractor and the trailer must always be on a flat surface. Check that all of the switch elements are in the neutral position and that the parking brake is engaged.

Before coupling a trailer, check that the eye of the trailer tow bar and the towing hook of the tow tractor are compatible. Check that the trailer brakes are engaged, or check that the wheels are locked securely to prevent accidental movement. Move the tow tractor towards the trailer in reverse very slowly. Make sure that the towing hook and the eye of the trailer tow bar are aligned when viewed from the driver's compartment.

Single-position or multi-position tow coupling

⚠ DANGER

Risk of accident. If the trailer coupling pin comes out or is damaged during towing, the load will be released and it will no longer be possible to control it.

Only use the original coupling pins for the trailer, after checking that they are in good condition.

Check that the trailer coupling pin is inserted and fitted securely.

Coupling the tow tractor and the trailer ▷

– Pull out the extension (1) or the towing pin (2) depending on the version of the hook present on the truck.

– Reverse the tow tractor slowly.

⚠ DANGER

Nobody should stand between the tow tractor and the trailer during the approach. Always move the tow tractor towards the trailer.

– Insert the tiller eye in the towing device (3) of the tow tractor.

NOTE

The multi-position towing device allows three coupling heights. It is recommended that you choose the height at which the tiller is horizontal:

– Lower the extension (1) or the towing pin (2) into the towing device (3) and then turn it by 90°. This locks the towing pin.

⚠ CAUTION

Always make sure that the towing pin has been locked after coupling.

– Remove the wheel chocks from the trailer wheels and release the trailer's brakes.

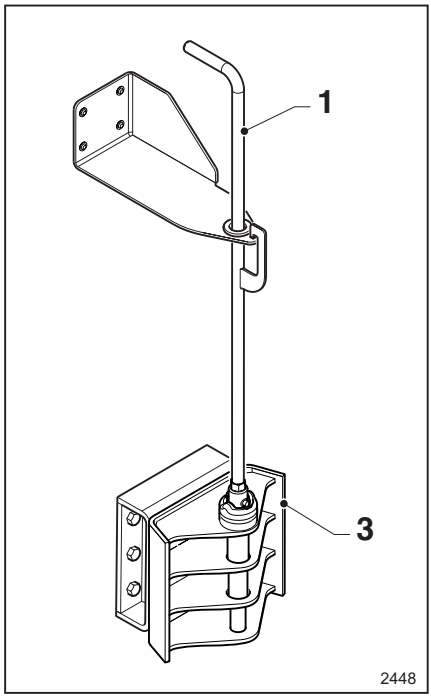
Uncoupling the tow tractor and the trailer

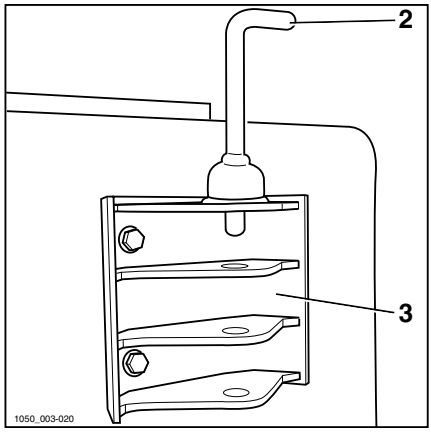
– Climb down from the truck and secure the trailer against accidental movements using wheel chocks or the trailer's brake.

– Turn the towing pin (2) or the extension (1) by 90° and pull it out of the towing device (3).

– Slowly move the tow tractor closer.

– Insert the towing pin (2) or the extension (1) into the towing device (3) again and lock it.





Automatic-closure towing hook

Types of automatic-closure towing hook

Two types of automatic-closure towing hook can be installed on the tow tractor:

- Standard automatic-closure towing hook
- Automatic-closure towing hook with remote operating lever

Both types are described below.

General safety precautions when using the automatic-closure towing hook

⚠ WARNING

Risk of injury, danger of crushing

Do not place your hands, feet or arms into the open hook.

⚠ DANGER

Nobody should be standing between the tow tractor and the trailer during coupling and uncoupling.

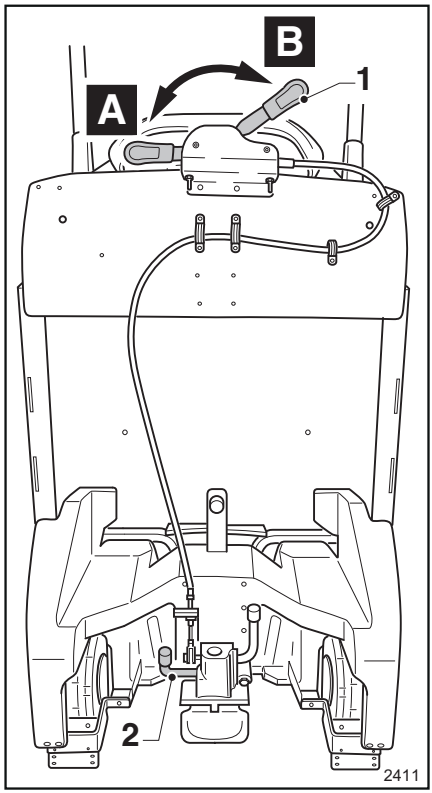
Only move the tow tractor towards the trailer, not vice versa.

⚠ CAUTION

Release the brake on the front axle of the trailer with an articulated tiller. Failure to do this can cause damage to the towing hitch, the trailer eye and the support device!

When coupling a trailer with a fixed tiller, the trailer eye must go into the centre of the towing hitch.

Coupling the tow tractor and trailer (automatic-closure towing hook with remote operating lever)



– Open the locking pin of the towing hook by manually moving the remote operating lever (1) from (A) to (B).
– Secure the trailer against moving with wheel chocks or the trailer brake.
– Reverse the tow tractor slowly towards the trailer. The pin of the towing hook locks automatically upon contact with the trailer eye. The pin of the towing hook also locks by pressing the lever (2) with your foot.

⚠ WARNING

It is not permitted to lock the pin of the towing hook using the remote operating lever (1) from (B) to (A).

Uncoupling the tow tractor and trailer (automatic-closure towing hook with remote operating lever)

– Climbing down from the truck will activate the truck's parking brake.
– Secure the trailer against moving with wheel chocks or the trailer brake.
– Manually rotate the remote operating lever (1) from (A) to (B).
– Move the tow tractor forwards slowly.

Coupling the tow tractor and trailer (standard automatic-closure towing hook)

– Turn the lever (3) upwards (C).

– As shown on the label (6), the red pin protrudes from the seating to indicate that the hook is not locked. Do not place hands, feet or any other parts of your body in the hook!

– Reverse the tow tractor slowly towards the trailer. The pin of the towing hook locks automatically upon contact with the trailer eye. The pin of the towing hook also locks by pressing the lever (4) with your foot.

– As shown on the label (6), the red pin retracts into the seating to indicate that the hook is locked properly.

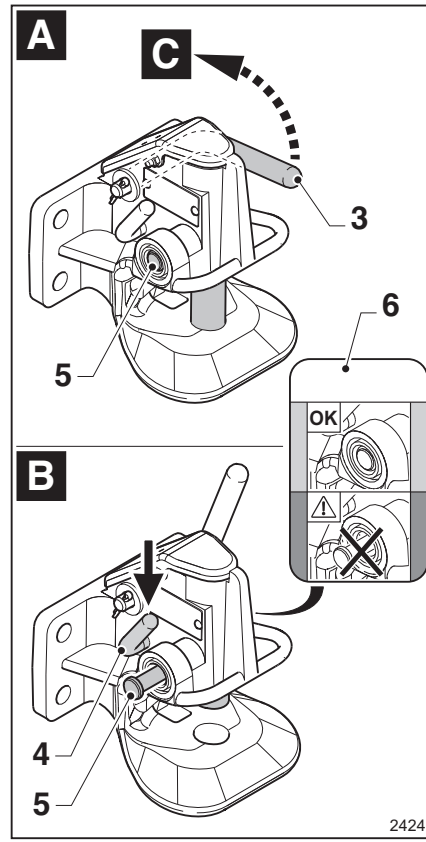
Uncoupling the trailer

– Climbing down from the truck will activate the truck's parking brake.

– Secure the trailer against moving with wheel chocks or the trailer brake.

– Turn the lever (3) upwards.

– Move the tow tractor forwards slowly.



A Hook locked
B Hook open

Loading trailers

NOTE

Below is a list of guidelines. This list is not exhaustive.

⚠ DANGER

Risk of accident

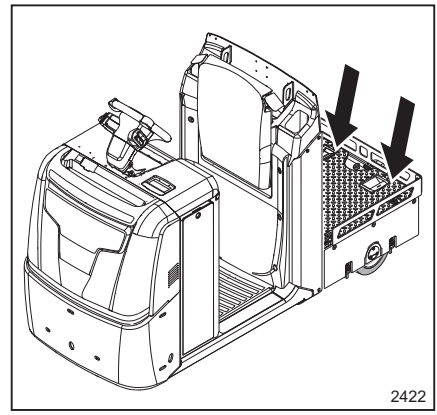
– Never exceed the maximum loads shown! These values apply to compact and homogeneous loads

– It is not permitted to incorrectly load or climb onto the trailer.

- Make sure that the loads are evenly distributed in the trailer, and check that they are properly secured. Do not exceed the permissible load.
- Put heavy loads at the bottom and lighter loads on top.
- The centre of gravity should be as low as possible.
- Never load a trailer on a slope.
- Do not exceed the trailer and truck load capacities.
- Never transport passengers on a trailer.

Using the version with rear load bed LTX-T

Transporting loads on the rear load bed ▷



⚠ CAUTION

Ensure that the loading weight does not exceed the capacity of the truck.

– The maximum load that can be transported on the rear load bed is 600 kg. Transporting heavier loads is prohibited.

– When there is a load on the rear load bed, the maximum weight that can be towed by the trailers is 2 t. When transporting trailers, trailers fitted with brakes are required for driving on ramps.

Always observe the nominal capacity indicated on the truck's load capacity label ⇒Chapter "Capacity plate LTX-T", Page 67 .

– For more information, see the section containing information about the capacity plate ⇒Chapter "Capacity plate LTX-T", Page 67 and trailer towing ⇒Chapter "Towing the trailer", Page 171 .

Warnings to observe:

- Park on a flat surface that is suitable for loading and unloading from the rear load bed and any trailers
- Turn off the truck. Climb down from the truck and ensure that there are no people or vehicles in transit
- Any other people that could hinder operations must not be present when loading or unloading
- Check that the load is not damaged
- Do not transport suspended loads
- Check that the load does not obscure the signal lights on the rear of the tow tractor

Make sure that the load being transported is:

- Secured correctly (use the mounting rings)
- Stable
- Centred
- Evenly distributed
- Suitable for the dimensions of the truck and the trailer
- Suitable for the nominal load capacity of the tow tractor

⚠ DANGER

Risk of injury

Safety shoes must be worn.

Transporting people is strictly prohibited.

⚠ DANGER

Risk of loss of stability.

When approaching a corner or driving on wet surfaces, it is essential to slow down.

Adapt your driving to the load being transported and its dimensions.

Accessing the storage compartment located under the rear load bed ▷

The version with the load bed is equipped with a storage compartment:

- Park on a flat surface that is suitable for loading and unloading from the rear load bed and any trailers
- Turn off the truck. Climb down from the truck and ensure that there are no people or vehicles in transit

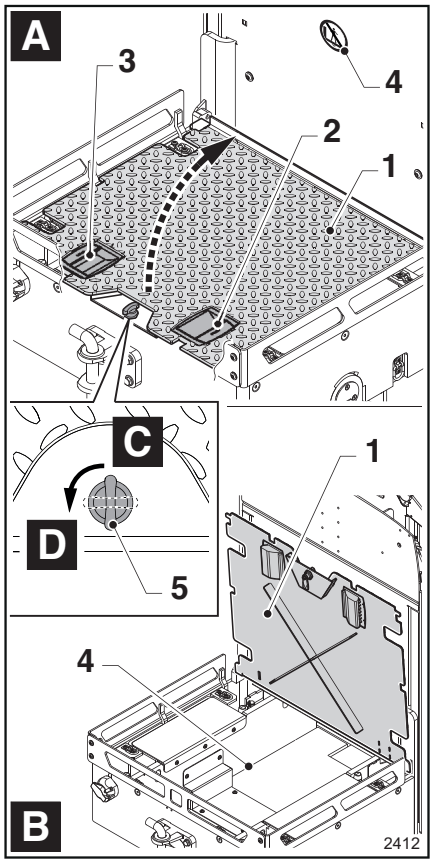
Opening the hood (1) allows you to access the storage compartment (4).

To open the closed (A) hood (1), follow these steps:

- Position yourself to the side of the truck
- Open the lock (5) by turning it towards (C)
- Place a hand in the handle (2) or (3) Choose the closest handle to the side of the truck the you are on
- Manually open the hood (1)
- The hood is held open by gas springs

⚠ CAUTION

While accessing the compartment (4), be careful not to hit your head on the hood or other protruding parts of the truck



To close the hood (1), follow these steps:

- Position yourself to the side of the truck
- Place a hand in the handle (2) or (3) Choose the closest handle to the side of the truck the you are on
- Close the lock (5) by turning it towards (D)

⚠ DANGER

Risk of crushing hands! When closing the hood, insert your fingers into the relative handle.

Do not keep your hands or fingers under the hood when closing the hood.

Do not use the truck when the door of the storage compartment is open or not closed correctly.

LiftRunner (optional)

Introduction to LiftRunner (where present)

TheLiftrunner system is optional. This system allows the operator to lift and lower the trailer after connecting the trailer to the tow tractor in an appropriate manner.

Two types of LiftRunner are available as an alternative, and both are optional. The following paragraphs explain its functionality:

- The first paragraph describes the functionality of the electrically controlled Liftrunner
- The second paragraph describes the functionality of the hydraulically controlled Liftrunner

NOTE

Information about trailers and the Liftrunner option not present in this manual can be viewed in the specific trailer instruction manual. The trailer instruction manuals are delivered to the customer with the purchase of a trailer.

Hydraulically controlled LiftRunner system (if present)

⚠ CAUTION

Only use suitable trailers that have been authorised by the truck manufacturer.

Strictly adhere to the instructions provided by the trailer manufacturer.

The Liftrunner system is optional. This system allows the operator to lift and lower the trailer after adequately connecting the trailer to the tow tractor.

The following points are explained below:

- Care and precautions to be followed
- Instructions on how to hydraulically connect the tow tractor to the trailer
- Explanation of operation and controls
- Instructions on how to hydraulically disconnect the tow tractor from the trailer

⚠ DANGER

Risk of oil splashing and injury.

Do not connect or disconnect the trailer pipe to the quick-release coupling (1) when the tow tractor is running. The truck should be turned off.

Do not connect or disconnect the trailer pipe to the quick-release coupling (1) if the trailer is not in the lowered position. Check that there are no people near the trailer. Then lower the trailer.

Climbing on the tow tractor if someone is working on the hydraulic connection between the tow tractor and the trailer is forbidden. Do not connect the pipe to the tow tractor if there are people on the tow tractor.

⚠ DANGER

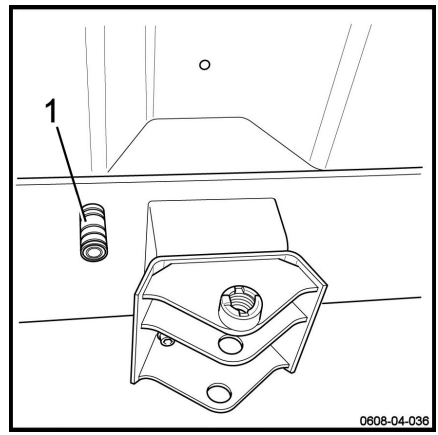
Risk of crushing the trailer and the operator falling.

Climbing and walking on the trailers is forbidden.

NOTE

It is possible to configure the operation of the trailer as follows: The tow tractor will not move until the trailer reaches its maximum height. For more information, please contact your authorised technical assistance centre.

Connecting the trailer to the LiftRunner system



– Park the tow tractor safely on a flat surface.

– Turn the switch to position (B) to turn off the LiftRunner system.

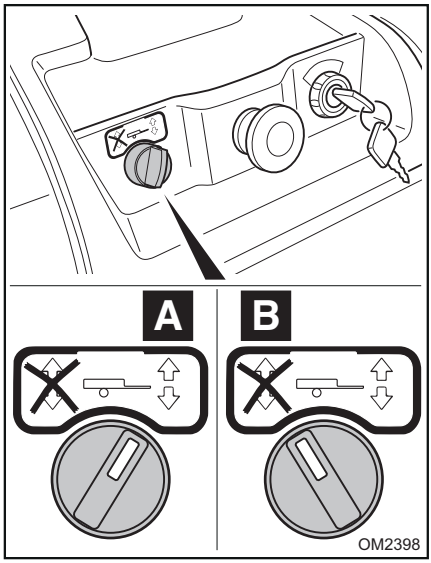
– Turn off the truck.

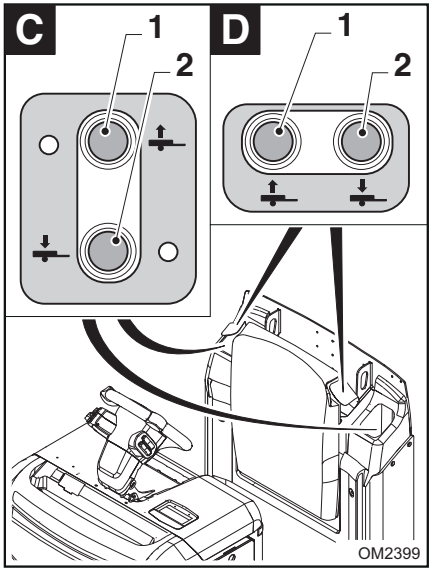
– Climb down from the tow tractor and connect the hydraulic fitting of the trailer to the quick-release coupling (1) at the rear of the tow tractor.

Information regarding the quick-release coupling (1):

- The theoretical maximum capacity that can be supplied to the quick-release coupling (1) varies between 5 l/min and 9 l/min according to the load present on the trailers.
- The theoretical maximum pressure that can be supplied by the pump to the quick-release coupling is approximately 180 bar.
- The quick-release coupling (1) is female and 3/8".

Operation





– Turn on the tow tractor again.

– Climb onto the truck platform.

– Turn the switch to (A) to turn on the system for lifting and lowering trailers.

– Turn the switch to (B) to turn off the system for lifting and lowering trailers.

There are two types of operation:

- Lifting and lowering the trailers AUTOMATICALLY
- Lifting and lowering the trailers by using a BUTTON

⚠ DANGER

Risk of crushing feet of others when the trailers are lowered.

In the version with AUTOMATIC lowering of trailers, the operator must make sure that there are no people near the trailer before leaving the truck.

In the version with MANUAL lowering of trailers, the operator must make sure that there are no people near the trailer before lowering the trailers by using the button.

Lifting and lowering the trailers AUTOMATICALLY

- When the operator climbs onto the operator platform, the system automatically lifts the trailers
- When the operator climbs down from the operator platform, the system automatically lowers the trailers

Lifting and lowering the trailers by using a BUTTON

- Push the button (1) to lift the trailers
- Push the button (2) to lower the trailers

NOTE

Depending on the truck model purchased, the buttons (1) and (2) may be located in zone (C) or in zone (D).

Disconnecting the LiftRunner system

– Park the tow tractor safely on a flat surface.

– Fully lower the trailers.

– Turn the switch to position (B) to turn off the LiftRunner system.

– Turn off the truck.

– Climb down from the tow tractor and disconnect the hydraulic fitting of the trailer

from the quick-release coupling (1) at the rear of the tow tractor.

Electrically controlled LiftRunner system (where present)

⚠ CAUTION

Only use suitable trailers that have been authorised by the truck manufacturer.

Strictly adhere to the instructions provided by the trailer manufacturer.

The Liftrunner system is optional. This system allows the operator to lift and lower the trailer after adequately connecting the trailer to the tow tractor.

⚠ DANGER

Risk of crushing the trailer and of the operator falling.

Climbing and walking on the trailers is forbidden.

Connecting the trailer to the LiftRunner system

– Park the tow tractor safely on a flat surface.

– Turn off the truck.

– Climb down from the tow tractor and connect the socket and plug for LiftRunner that are used to connect the truck to the trailers.

Information about the power socket for LiftRunner present on the truck:

- 85 A for power contacts and 14.5 A for control contacts.

Operation

Lifting and lowering the trailers AUTOMATICALLY

- When the operator climbs onto the operator platform, the system automatically lifts the trailers
- When the operator climbs down from the operator platform, the system automatically lowers the trailers

⚠ DANGER

Risk of crushing feet of others when the trailers are lowered

In the version with AUTOMATIC lowering of trailers, the operator must make sure that there are no people near the trailer before leaving the truck.

Charging the battery

Accessing the battery for trucks WITHOUT a mobile platform ▷

Park the truck in a suitable area

Turn off the truck

⚠ DANGER

Risk of crushing hands

Do not put your hands under the battery hood (1). Keep your hands away from the closing points between the hood and the chassis. The risk of crushing hands is highlighted by the label (3).

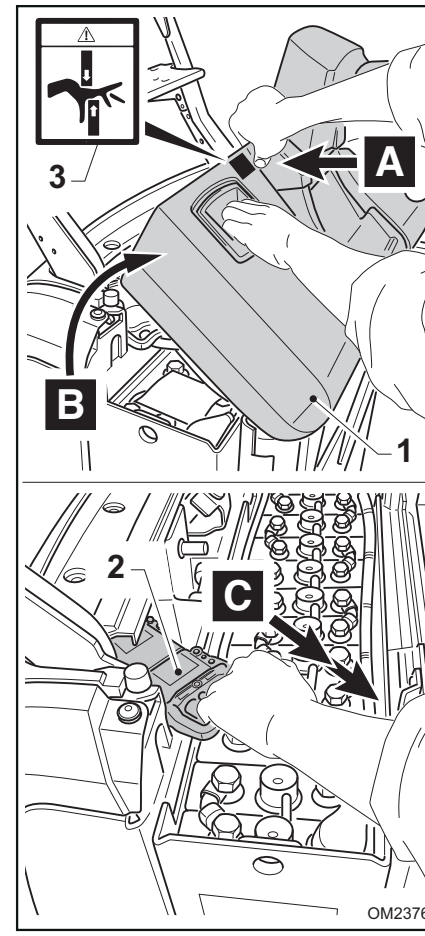
Open the battery hood (1) as described below (see adjacent illustration):

- Push the button (A) once to unlock the battery access hood (1)
- Then hold down the button (A), put your other hand in the handle on the battery access hood (1) and, at the same time, pull the hood towards (B) until the hood is fully open
- Pull the battery socket (2) towards (C) to disconnect it from the truck plug.
- To close the battery hood (1), proceed in the reverse order To avoid the risk of crushing hands, be careful not to put your hands under the battery hood

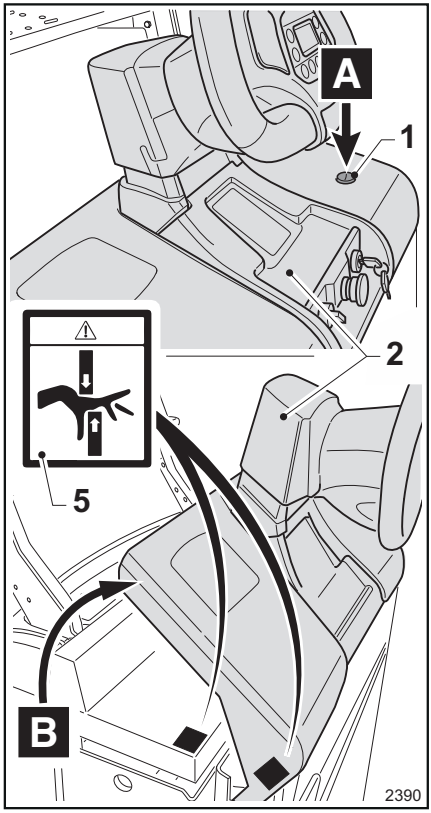
⚠ CAUTION

Risk of damaging battery male/female connector cables and subsequent risk of short circuits

Do not trap the cables when closing the battery hood



Accessing the battery for trucks with a mobile platform (optional)



Park the truck in a suitable area

Turn off the truck.

⚠ DANGER

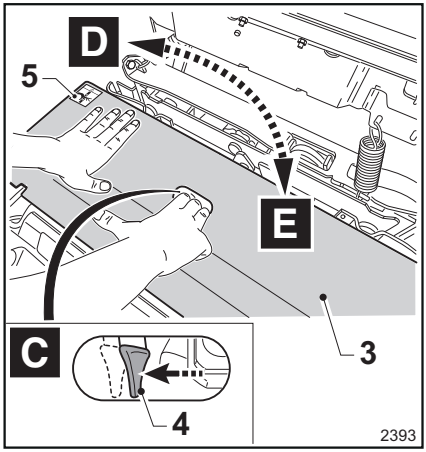
Risk of crushing hands

Do not put your hands under the battery hood (2). Keep your hands away from the closing points between the hood and the chassis. The risk of crushing hands is highlighted by the label (5).

– Open the battery hood (2) as described below:

- Push (A) the button (1) once to unlock the battery access hood (2)
- Then hold down (A) the button (1), put your other hand in the handle on the battery access hood (2) and, at the same time, pull the hood towards (B) until the hood is fully open

– Open the battery hood (3) as described below:



Push the toggle lever (4) inside the slot (C) to unlock the hood, then open the hood (3) as indicated (D).

– Charge the battery.

- Disconnect the socket from the battery male connector

– Close the battery hood (3)

- Push the hood (3) towards (E) until fully closed

⚠ DANGER

Risk of crushing hands

Do not put your hands under the hood (3). Keep your hands away from the closing points between the hood and the chassis. The risk of crushing hands is highlighted by the label (5).

⚠ CAUTION

Risk of damaging battery male/female connector cables and subsequent risk of short circuits

Do not trap the cables when closing the battery hood

Charging the lead battery

⚠ CAUTION

Charge the battery with the truck turned off and the battery hood open.

You can only remove the plug from the socket when the truck is switched off.

⚠ DANGER

The battery must be charged in rooms that comply with applicable regulations. Refer to the battery and battery charger manuals to see the charging procedures, level checks etc., checking the battery type (gel, lead etc.) and making sure of the voltage and current delivered. Excessive currents can damage the battery and cause dangerous situations. As regards safety precautions, follow the instructions given in the battery manual and those included in the "Safety guidelines" of this manual. Before recharging, the battery cables and the battery charger cables must be checked for damage and replaced if necessary. Do not place objects on the battery during charging.

- Access the upper part of the battery, open the battery hood and hold the hood open.
- Connect the battery outlet to the battery charger to begin charging
- Turn on the external battery charger
- After the battery charging operation is completed, switch off the battery charger
- Unplug the battery charger
- Plug the battery in again
- Close the battery hood

NOTE

Refer to the battery operating instructions for more information.

Recharging the battery using the on-board battery charger (optional)

⚠ DANGER

The on-board charger can be connected to a 2P+T 230 V 16 A socket. You must ensure that this socket is electrically protected by a Type A circuit breaker (RCD).

Make sure that the mains supply voltage complies with the battery charger's working voltage. The electrical system must comply with the current national regulations.

⚠ CAUTION

Charge the battery with the truck switched off.

The truck cannot be used during charging.

⚠ DANGER

Before recharging, it is necessary to ensure that the location chosen for recharging satisfies all of the safety requirements. The battery must be charged in rooms that comply with applicable regulations. Refer to the battery manual for information about charging procedures, level checks etc.

Check the battery type (gel, lead etc.), voltage and current delivered. Excessive currents can damage the battery and cause dangerous situations. As regards safety precautions, follow the instructions given in the battery manual and those included in the "Safety guidelines" of this manual. A lead battery produces explosive gases during charging. Make sure that the charging area is compliant with legal regulations and is thereby well ventilated.

⚠ DANGER

If the truck is fitted with an on-board battery charger, connecting the battery to an external battery charger is strictly prohibited.

It is strictly forbidden to use an on-board battery charger other than the original one installed by the truck manufacturer.

⚠ CAUTION

Risk of damage to the power cable resulting in electric shocks and/or burns! Park the truck near the socket. The power cable for the on-board battery charger must not be taut during connection and charging. Make sure that the cable does not come into contact with certain parts of the truck (forks, mast, wheels etc.) to prevent damage.

Do not pinch the charging cable when closing the hood that covers the plug for the on-board battery charger. The power cable must be checked regularly as part of periodic statutory checks and maintenance operations.

⚠ CAUTION

Disconnect the plug from the socket when the battery is fully charged. It is also possible to interrupt the charging procedure by removing the plug from the socket (lithium-ion batteries only).

Recharging the battery using the on-board battery charger (optional)

⚠ CAUTION

Charge the battery with the truck turned off, the start key removed and the battery hood open.

⚠ DANGER

The battery must be charged in rooms that comply with applicable regulations. Refer to the battery and battery charger manuals to see the charging procedures, level checks etc., checking the battery type (gel, lead etc.) and making sure of the voltage and current delivered. Excessive currents can damage the battery and cause dangerous situations. As regards safety precautions, follow the instructions given in the battery manual and those included in the "Safety guidelines" of this manual.

⚠ DANGER

If the truck is fitted with an on-board battery charger, connecting the battery to an external battery charger is strictly prohibited.

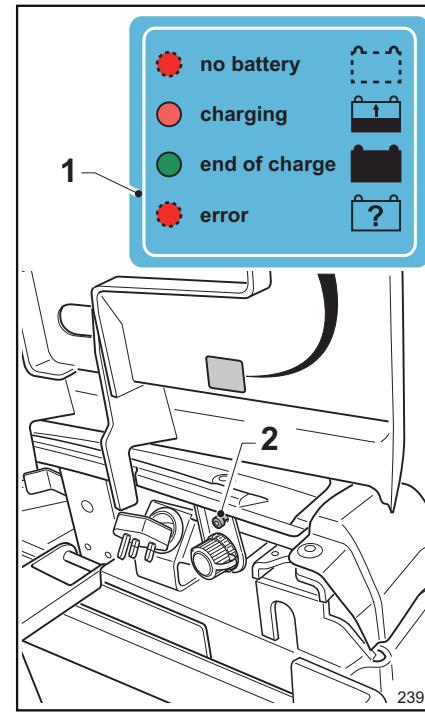
⚠ CAUTION

Make sure that the mains supply voltage complies with the battery charger's working voltage.

⚠ DANGER

The electrical system connected to the on-board battery charger plug must comply with the national regulations in force and European standard EN 60204-1.

Instructions:



The label (1) informs the operator about the charging status, indicated by LED (2):

- LED with steady red light
  The battery is charging
- LED with steady green light
  The battery has fully charged
- LED with flashing red light
  Alarm to the charging system; contact the service centre authorised by the manufacturer.

Charging procedure:

- Access the upper part of the battery, open the battery hood and hold the hood open.
- Connect the on-board battery charger plug to the mains socket
- After fully charging the battery (LED with light green), remove the plug from the battery charger from the mains socket. Cor-

rectly position the plug in its housing, being careful not to trap the cables

- Close the battery hood

5

Maintenance

General maintenance information

The following instructions contain all the information required for maintenance of the truck. Carry out the servicing work in compliance with the service plan. This will ensure that the truck is reliable and in good working order and that the warranty remains valid.

Only genuine spare parts and lubricants recommended by the manufacturer may be used for servicing work.

⚠ CAUTION

Do not mix different types of grease or lubricating oil.

Maintenance is divided into:

- **Regular maintenance** (can be carried out by the user)

  Regular maintenance operations are outlined over the following pages. Regular maintenance can be carried out by the user of the truck. Alternatively, regular maintenance may be carried out by the manufacturer's authorised service network as part of the service plan.
- **Service plans** (only to be carried out by the manufacturer's authorised service network)

⚠ DANGER

Planned maintenance and repairs must be performed by the service network authorised by the manufacturer in order to keep the machine in perfect condition and compliant with technical specifications.

NOTE

Contact the authorised service network to arrange a maintenance contract suited to your truck.

⚠ CAUTION

Maintenance intervals are defined for standard use. In the following cases, it is necessary to reduce the interval between the various scheduled maintenance operations: in the event of use in dusty or salty environments, extremely high or low ambient temperatures, high levels of air humidity, particularly intense and heavy-duty uses, and specific national regulations for trucks or individual components.

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 - 1000 hours

At operating hours										Carried out	
1.000		2.000		4.000		5.000		7.000			
8.000		11.000		13.000		14.000				✓	✖
Note											
▲ = Every 1000 hours or at least every 12 months (whichever comes first), unless local regulations require more frequent intervention.											
Drive											
Reduction gear: check that it is correctly mounted											
Reduction gear: check for any oil leakage											
Drive motor: check that it is correctly mounted											
Forks											
Check condition of forks											
Grease the rods and levers (if present)											
Grease the fork opening and closing system and check that it is working correctly (for LTX-FF only)											
Check bushes and levers											
Steering											
Steering: check the mounting of the steering wheel "cockpit"											
Steering: check that the steering system operates correctly											
Steering: grease the two steering wheel travel controls											
Steering: check that the "cockpit" steering wheel adjustment system is properly mounted and that it operates correctly (if present)											
Wheels											
Wheels and rollers: check for any damage, foreign matter or signs of wear											
Wheels: check that they are at the correct tightness											
Rollers: check that they are correctly mounted											
Hydraulic pivot wheels: check the oil level and check that the wheels operate correctly (where present)											
Pivot wheels: check and adjust the pivot wheels (for LTX only)											
Load rollers: Grease using the specific grease nipples (for LTX only)											
Brake											
Electromagnetic brake: check for signs of wear and any adjustment											
Check that the various braking operations of the truck are operating correctly											
Hood											

Maintenance - 1000 hours

At operating hours										Carried out	
1.000		2.000		4.000		5.000		7.000			
8.000		11.000		13.000		14.000				✓	✖
Battery hood: check that it is working correctly and check the resistance of the gas spring that supports the hood											
Rear load bed hood: check that it is working correctly and check the resistance of the gas spring that supports the hood (for LTX-T only)											
Electrical system											
Battery: check the battery condition and that it is correctly mounted											
Battery: check the condition of the cables and sockets											
Battery: check the acid density and check that the battery is not damaged											
Battery: service the battery according to the manufacturer's instructions											
On-board charger (if present): clean											
On-board charger (if present): check that it is operating correctly											
Truck cables and connectors: check the condition and position											
Electrical components: clean											
Indicator lights and alarms: check for and then resolve any issues											
Lighting: check that the lights, direction indicators and headlights operate correctly (if present)											
Test the insulation between the chassis and the electric motors											
Test the insulation between the chassis and the electronic control											
Check the insulation between the chassis and the battery poles											
On-board charger (if present): earthing and isolation circuit tests											
Hydraulic system											
Pump unit: check the general condition											
Pump unit: check the wear of the lifting motor brushes and inductor											
Hydraulic system: check the oil level											
Hydraulic system: check for any leakage from cylinders and hydraulic fittings											
Hydraulic system: check the condition of the pipe lines											
Hydraulic system: grease the lift mast profiles											
Operator elevating platform (if present)											
Platform chain: check the chain adjustment and maintenance (clean, adjust, grease) ▲											
Platform: check the mounting, condition and operation											
Gas spring: check the pressure calibration											

At operating hours										Carried out	
1.000		2.000		4.000		5.000		7.000			
8.000		11.000		13.000		14.000				✓	✖
Gas spring: check that it is operating correctly											
Towing hook (if present)											
Check that the towing hook is correctly mounted											
Check that the system to lock/unlock the towing hook operates correctly											
Check and lubricate the automatic towing hook											
Sprung platform (if present)											
Gas spring: check the pressure calibration											
Gas spring: check that it is operating correctly											
Cab (if present)											
Windscreen wiper tank liquid: check the windscreen wiper tank liquid and refill											
Windscreen wiper brushes: check the windscreen wiper brushes for wear											
Pivot wheels: check and adjust the pivot wheels											
Load lift system (if present)											
Mast: check that it is in good condition											
Mast: lubricate the sliding tracks of the mast profiles											
Mast: check that it is correctly mounted											
Lift cylinders, chains, rollers and end stops: check the condition, mounting and operation											
Lifting chain: check chain adjustment and maintenance ▲ (clean, adjust, grease)											
Fork holder: check that the fork holder is in good condition, is correctly mounted and is operating correctly											
Protective device: check the condition and mounting of the anti-shearing protective guard (if present)											
Mobile chassis: check that the fork holder is in good condition, is properly mounted and is operating correctly											

Maintenance — 3000 hours

At operating hours										Carried out	
3.000		6.000		9.000		12.000		15.000		✓	✖
Note											
Perform all maintenance work every 1000 hours											
Hydraulic system											
Replace hydraulic oil and hydraulic oil filter											
Maintenance of the lift mast (if present)											

Maintenance — 10,000 hours

At operating hours										Carried out	
10.000		20.000								✓	✖
Note											
Perform all maintenance work every 1000 hours											
Drivetrain											
Replace the reduction gear unit oil											

Regular Service

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.

Lubricating and cleaning the lifting chains

NOTE

Turn off the truck and perform the preliminary maintenance operations

Lubricating the lifting chains

To ensure that the chains operate correctly, make sure that they are always sufficiently lubricated.

⚠ WARNING

Lubricant reduces friction and protects the chain from oxidation caused by the environment.

If lubricant is not used or if it is insufficient, the chains will be noisier (squeaking etc.) and performance will be reduced.

– For chain lubricant specifications, see the section "Supply table" in chapter 6. Alternatively, contact the sales network authorised by the manufacturer.
– Using a clean brush, spread a thin layer of lubricant along the entire length of the chain. Lubricate the chain both inside and outside. This will help the lubricant to penetrate the links of the chain.
– If dirt has accumulated on the chain, thoroughly clean the lifting chains before lubricating them (see the following instructions).

Cleaning the lift chains

⚠ WARNING

There is a risk of accident!

Load chains are safety components.

The use of cold/chemical cleaning agents or fluids that are corrosive or contain acid or chlorine can damage the chains and is therefore prohibited.

– Follow the manufacturer's guidelines before using a cleaning agent.

– Place a collection vessel under the lift mast.
– Clean with paraffin derivatives, such as benzine.
– Dry the chain with a clean cloth and then lubricate the chain.

ENVIRONMENT NOTE

Dispose of fluid that has been spilled or collected in the collection vessel in an environmentally-friendly manner. Follow applicable current regulations

Maintenance as required

Preparation

⚠ DANGER

The descriptions relating to battery replacement in this manual refer to lead batteries only.

Replacing or performing maintenance of any kind on lithium batteries is strictly prohibited. Contact the manufacturer's authorised technical service centre for more information.

Maintenance personnel

The battery may only be changed by specially trained personnel, in accordance with the manufacturer's instructions for the battery, the battery charger and the truck. The maintenance instructions for the battery must be observed.

Fire prevention precautions



⚠ WARNING

Do not smoke or use a naked flame when handling batteries. In the area designated for parking the truck to recharge the battery or battery charger, there should be no flammable materials or substances that can cause sparks within a radius of at least 2 metres. The charging area must be well ventilated. Keep a fire extinguisher at hand.

Parking the truck securely

Park the truck securely before carrying out work on the battery. The truck can only be operated when the battery cover is closed and the battery outlet is inserted. If the truck is enabled for side removal of the battery, the truck can only be operated once the battery is fixed in place properly using the battery locking system.

Battery maintenance

The covers of the battery cells must be kept dry and clean. Any leakage of battery acid must be neutralised immediately. Terminals

and soldering lugs must be clean and lightly greased with pole grease.

First installation or replacement of the truck battery

Only connect the battery specified by the manufacturer for the truck model purchased.

This applies both to the first installation of the battery (sale of the truck without a battery) and to the replacement of the battery.

⚠ DANGER

The weight and size of the battery influence the stability of the truck. The new battery must comply with the weight shown on the truck identification plate. The truck identification plate shows the maximum weight and minimum weight (kg) permitted for the battery to be installed.

⚠ CAUTION

When replacing the battery, check the type of battery on the truck (gel, lead etc.), the voltage (V) and the current delivered (Ah) and install a battery with the same specifications using the spare parts service authorised by the manufacturer. For more detailed information on the battery (V, Ah, technology), refer to the technical data chapter in the operating manual. If in doubt, consult the service network authorised by the truck manufacturer.

⚠ DANGER

The battery must be installed in accordance with technical regulations by specially trained personnel. Take care not to damage the wiring when replacing the battery. After installation, make sure to lock the battery properly inside the battery compartment using the appropriate clasps. Some trucks are equipped with battery clasps which must be adjusted precisely after the battery is installed. If in doubt, we recommend that you contact the authorised service network. Incorrect installation can cause accidents and injuries. The truck manufacturer is not liable for accidents/injuries caused by installations carried out by untrained personnel or installations not carried out in accordance with the technical regulations.

Unlocking the battery (before replacing the battery)

Before replacing the battery:

- Open the hoods to access the battery, as explained in Chapter 4
- Unlock the battery as explained below. There are two versions of the battery lock:

  Standard battery lock

  Battery lock for the version with a mobile platform

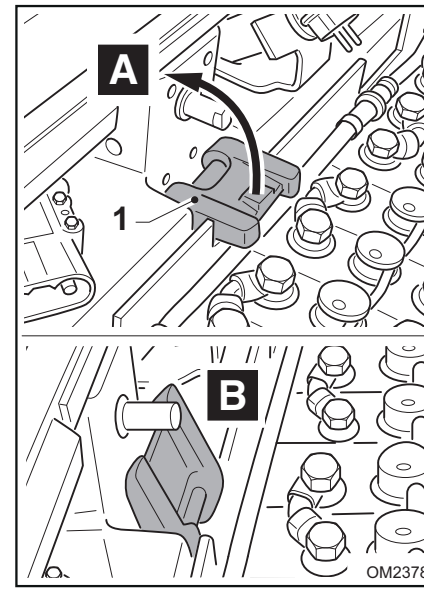
Unlocking the battery in the standard truck version

⚠ CAUTION

Risk of crushing fingers between the mechanical clasp and the battery.

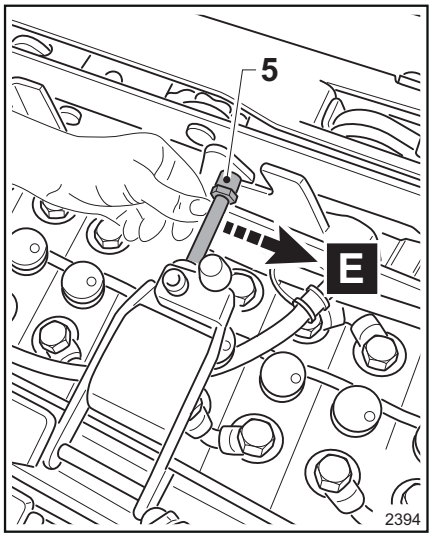
During all stages, be careful not to put your fingers under the mechanical clasp (1). When opening, only let go of the mechanical clasp when it is fully open and in a stable position.

Manually open the battery's mechanical clasp (1) by turning it towards (A) until it is fully open (B).



Unlocking the battery in the truck version with a mobile step plate

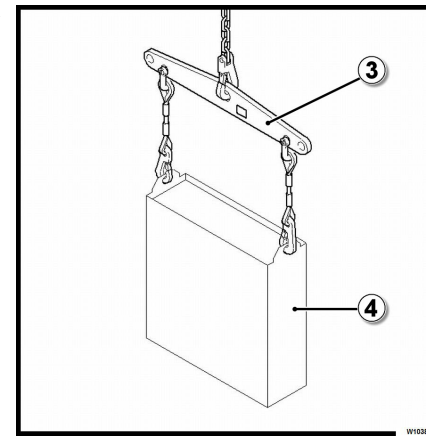
Push the pin (5) towards (E) to unlock the battery. If necessary, replace the battery as explained in the relevant section.



Battery replacement with removal from the top

– Insert the rope sling hooks into the appropriate battery slots. Hook the battery (4) onto the lifting crane (3) using the slots provided on the sides of the battery.

– Lift the battery and remove it.



⚠ DANGER

Use a crane with a suitable lifting capacity for the weight of the battery. Lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the truck. Do not stand in the danger area below suspended loads. Use NON-METALLIC rope slings. Make sure that the capacity of the slings is suitable for the battery weight. The rope slings must be pulled vertically. To prevent short circuits, it is recommended that batteries with polar terminals or unprotected connections be covered with a rubber mat.

– Replace the battery and refit it by following the steps in reverse order, taking **the same precautions and care mentioned previously**.

⚠ CAUTION

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

– When installing the new battery, be particularly careful during the battery insertion stage.

⚠ CAUTION

Proceed with caution during the battery lowering phase! To avoid damage, do not let the battery hit the parts of the truck. Carefully place the battery inside the special compartment and centre it correctly. The battery must not protrude from the side of the truck. After closing the battery mechanical clasp, check that there is little or no clearance in the battery compartment. When closing the battery hood, take care to correctly position the cables of the battery male connector so as not to damage them.

Replacing the battery with side removal

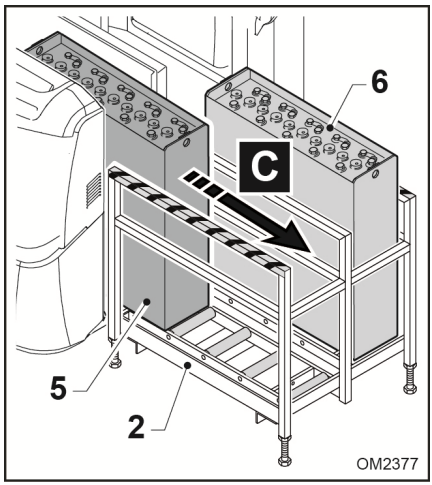
Extracting the truck battery and removing it from the side

– Place the manufacturer-approved battery side-removal roller unit next to the truck; position it so that it is still and stable; adjust the height of the roller unit so that it is level with the underside of the battery at the battery compartment

⚠ DANGER

"Risk of crushing hands!" The battery must be removed by a single operator only. The operator must follow the operating instructions given in this section, positioning himself on the same side as the battery side-removal roller unit.

– Pull the battery (5) outwards (C), sliding it along the rollers on the truck frame and positioning it on the previously prepared external roller unit (2).



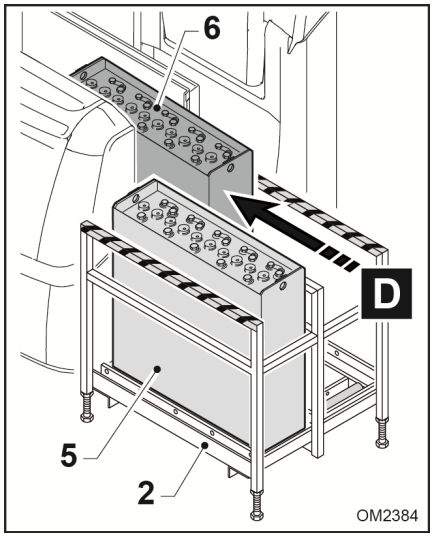
Installing the new truck battery by inserting it from the side

– Change the battery and refit it by following the above steps in reverse order.

⚠ CAUTION

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

– Move the roller unit (2) using a pallet truck to align the battery to be inserted with the empty battery compartment. Alternatively, move the truck using an adequate battery extension to align the battery to be inserted with the empty battery compartment. The roller unit must be positioned so that it is still and stable. The battery to be inserted must be level with the underside of the battery.



– When installing the new battery, be particularly careful during the battery insertion stage.

– Push the battery (6) towards (D) to position it in the appropriate battery compartment on the truck.

⚠ DANGER

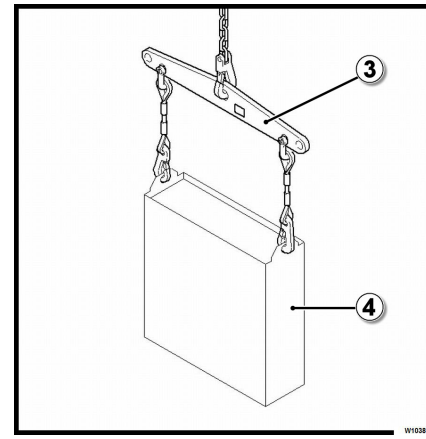
"Risk of crushing hands!" The battery must be inserted by a single operator only. The operator must follow the operating instructions given in this section, positioning himself on the same side as the battery side-removal roller unit.

⚠ CAUTION

Carefully place the battery inside the special compartment and centre it correctly. The battery must not protrude from the side of the truck. After closing the battery mechanical clasp (1), check that there is little or no clearance in the battery compartment. When closing the battery hood, take care to correctly position the cables of the battery male connector so as not to damage them.

Removing the battery from the outer roller unit using a crane

– After positioning the battery on the roller unit (2), if you wish to lift it and remove it using a crane, you must heed the warnings below. ▷



⚠ DANGER

The lifting tool (crane) must exert a vertical lift. When lifting, use a crane with a suitable lifting capacity for the battery weight. Lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the truck. Do not stand in the danger area below suspended loads. Use NON-METALLIC slings. Make sure that the lifting capacity of the slings is suitable for the weight of the battery. The rope slings must be pulled vertically. To prevent short circuits, it is recommended that batteries with polar terminals or unprotected connections be covered with a rubber mat. The battery hooks must be attached in such a way that they cannot fall onto the battery cells during the lowering phase of the crane.

Replacing the battery with side removal

⚠ DANGER

Before changing the battery, park the truck. Ensure that the truck is on an even surface and cannot move accidentally.

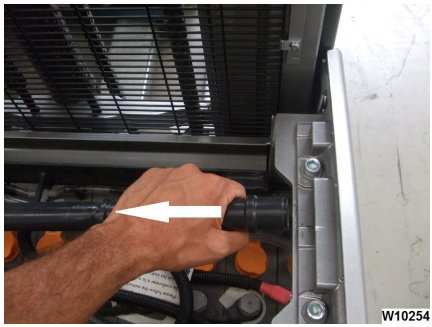
Ensure that the unlocked battery cannot slide off and fall onto the ground. Danger of crushing hands and feet and risk of battery acid spillage.

– Switch off the truck and perform the preliminary maintenance operations. ▷

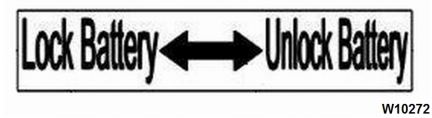
– Lift the battery hood (see the "Internal accessibility" section of the previous chapter)

– Detach the socket from the battery plug (see the "Internal Accessibility" section of the previous chapter)

– Push the lever to unlock the battery, as indicated by the white arrow in the adjacent picture.


W10254

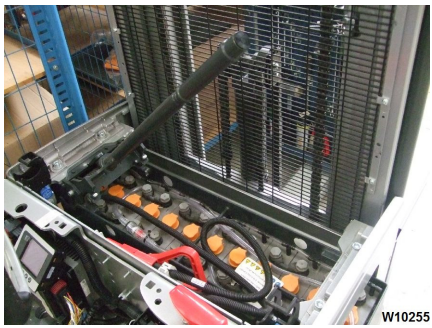
– The label written in English on the lever indicates "Lock Battery" in the direction to lock the battery and "Unlock Battery" in the direction to unlock the battery. ▷



W10272

– The spring of the battery lock lever will push the lever upwards. This will release the battery. ▷

– Place the fixed roller unit for side removal of the manufacturer-approved battery next to the truck; position it so that it is still and stable; adjust the height of the roller unit so that it is level with the underside of the battery at the battery compartment.


W10255

⚠ DANGER

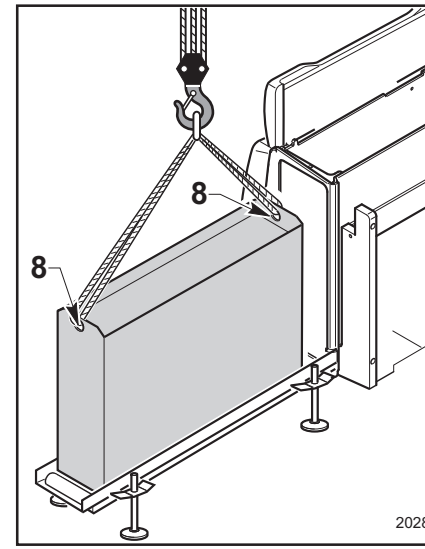
"Risk of crushing hands!" The battery must be removed by a single operator only. The operator must follow the operating instructions given in this section, positioning himself on the same side as the battery side-removal roller unit.

– Pull the battery outwards, sliding it along the rollers on the truck frame and position-

ing it on the previously prepared external roller unit.

– Hook the battery at the two points (8) with a sling or chain. ▷

– Lift the battery and remove it.

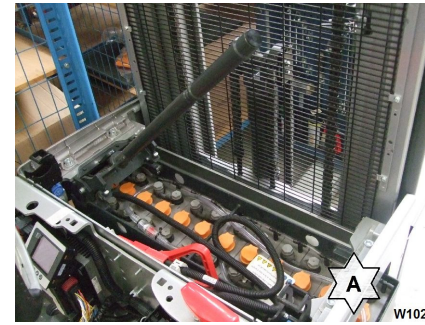


⚠ DANGER

Use a crane with a suitable lifting capacity for the weight of the battery. Lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the truck. Do not stand in the danger area below suspended loads. Use NON-METALLIC rope slings. Make sure that the capacity of the slings is suitable for the battery weight. The rope slings must be pulled vertically. To prevent short circuits, it is recommended that batteries with polar terminals or unprotected connections be covered with a rubber mat.

– Replace the battery and refit it by following the above steps in reverse order.

– When installing the new battery, be particularly careful during the battery insertion stage. Push the battery inwards, sliding it along the rollers on the truck frame and positioning it on the previously prepared external roller unit. ▷



⚠ DANGER

"Danger of crushing hands" between the battery frame and the battery lock lever. Do not put your hands in zone "A" and keep all other parts of the body, such as the head, out of the way when inserting the battery. The operation must be performed by a single operator. The operator must follow the operating instructions given in this section, positioning himself on the same side as the battery side-removal roller unit.

⚠ CAUTION

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

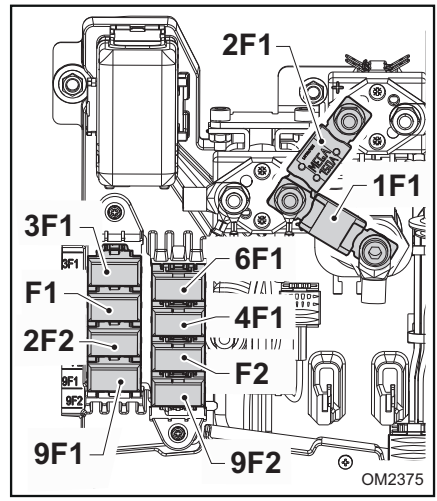
⚠ CAUTION

When closing the battery hood, take care to correctly position the cables of the battery plug so as not to damage them.

NOTE

After positioning the battery holddown, check that there is little or no clearance in the battery compartment.

Fuses



NOTE

This section is for information purposes only and does not authorise the operator to carry out maintenance on the electrical system.

DANGER

Using the wrong fuses can result in short circuits. Before carrying out any operations on the electrical system, turn off the truck power supply by disconnecting the connector

Before replacing the fuse, eliminate the cause that led to its blowing. When replacing fuses, contact the manufacturer's authorised technical service centre and use only original spare parts. The manufacturer is NOT responsible for accidents, injuries etc. caused by third parties.

– Description of fuses:

Name	Description	Value
2F1	Lift fuse	150 A
1F1	Traction fuse	225 A
3F1	Steering fuse	30 A
6F1	MMS fuse (optional data socket)	5 A
F1	Auxiliary general fuse	10 A
4F1	Lights fuse	5 A
2F2	Hydraulic fuse	5 A
F2	Fuse for various options	10 A
9F1	Fuse for various options	5 A
9F2	Fuse for various options	10 A

Decommissioning

General Information

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

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.

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 reassemble 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.

DANGER

Disassembly of the forklift for scrapping is extremely hazardous.

ENVIRONMENT NOTE

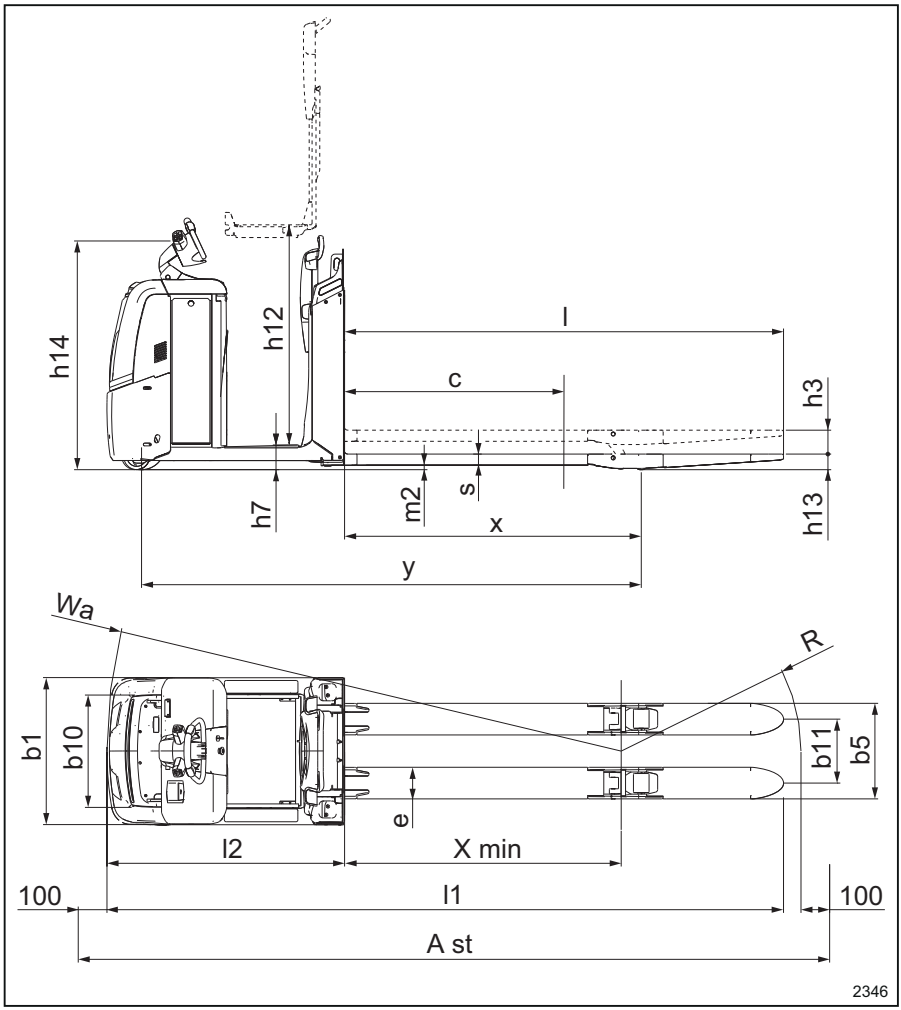
In particular, batteries, fluids (oils, fuels, lubricants, etc, electrical and electronic components and rubber components must be disposed of in compliance with specific local legislation for each type of material.

6

Technical data

Datasheet (VDI 2198): OPX

Datasheet OPX 20 and OPX 25



			OPX 20	OPX 25
1.3	Drive		Electric	Electric
1.4	Operator type		Standing	Standing

			OPX 20	OPX 25
1.5	Rated capacity / rated load	Q (t)	2.0	2.5
1.6	Load centre distance	c (mm)	1200	1200
1.8	Load distance	x (mm)	1615 (2)	1615 (2)
1.9	Wheelbase	y (mm)	2717 (2)	2717 (2)
2.1	Service weight (including battery)	kg	1178 (2)	1203 (2)
2.2	Axle loading, laden front/rear	kg	1120/2058	1188/2515
2.3	Axle loading, unladen front/rear	kg	897/281	906/297
3.1	Tyres		Polyurethane	Polyurethane
3.2	Tyre size, front	mm	254 x 102	254 x 102
3.3	Tyre size, rear	mm	85 x 100	85 x 80
3.4	Additional wheels (dimensions)	mm	150 x 50	150 x 50
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 1 / 2	1x - 1 / 4
3.6	Tread, front	b_{10} (mm)	474	474
3.7	Tread, rear	b_{11} (mm)	348 (368/388/498)	348 (368/388/498)
4.2	Height, mast lowered	h_1 (mm)	-	-
4.3	Free lift	h_2 (mm)	-	-
4.4	Lift	h_3 (mm)	130	130
4.5	Height, mast extended	h_4 (mm)	-	-
4.6	Initial lift	h_5 (mm)	-	-
4.8	Stand height // Seat height (min/max)	h_7 (mm)	130 (6)	130 (6)
4.9	Height drawbar in driving position min./max.	h_{14}(mm)	1250 (7)	1250 (7)
4.10	Height of wheel arms	h_8 (mm)	-	-
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1197	1197
4.15	Fork height, lowered	h_{13} (mm)	85	85
4.19	Overall length	l_1 (mm)	3680	3680
4.20	Length to face of fork	l_2 (mm)	1290	1290

			OPX 20	OPX 25
4.21	Overall width	b_1 (mm)	800	800
4.22	Fork dimensions	s/e/ l (mm)	61 (78 max.)/172/2390	61 (78 max.)/172/2390
4.24	Fork-carriage width	b_3 (mm)	-	-
4.25	Distance between fork-arms	b_5 (mm)	520 (540/560/670)	520 (540/560/670)
4.31	Ground clearance, laden, below mast	m_1 (mm)	-	-
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	24/154 (3)	24/154 (3)
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	see table	see table
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	see table	see table
4.34.2	Aisle width for pallets 800 x 1200 lengthways	Ast (mm)	see table	see table
4.35	Turning radius	W_a (mm)	2893 (2)/2786 (2) (3)	2893 (2)/2786 (2) (3)
5.1	Travel speed laden/unladen	km/h	9/12	9/12
5.1.1	Travel speed laden/unladen, backwards	km/h	8/11	8/11
5.2	Lift speed laden/unladen	m/s	0.070/0.111	0.064/0.089
5.3	Lowering speed laden/unladen	m/s	0.084/0.067	0.068/0.066
5.8	Max. gradeability laden/unladen	%	7%/12% (9)(10)	7%/12% (9)(10)
5.9	Acceleration time, laden/unladen	s	6.1/4.8	6.4/4.8
5.10	Service brake		Electromagnetic	Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	3	3
6.2	Lift motor, rating at S3	kW	2.2/5%	2.2/5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no	no

			OPX 20	OPX 25
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 465	24/345 - 465
6.5	Battery weight (± 5%)	kg	402	402
6.6	Energy consumption according to DIN EN 16796	kW/h	0.45	0.48
6.6.2	CO_2 equivalent emissions	kg/h	0.2	0.3
8.1	Type of drive unit		AC control	AC control
10.7	Sound level at driver's ear	dB (A)	< 70	< 70

(1) deliberately left blank

(2) with fork length 2390 mm / x = 1615 mm / tie rod version; for other fork dimensions, see the table below

(3) with load arms or forks raised

(4) deliberately left blank

(5) deliberately left blank

(6) with elevating platform with pneumatic damping option h_7 +30 mm; (h_{14} +87 mm); with elevating platform with vibration-damping supports option h_7 +20 mm (h_{14} +77 mm)

(7) with tiller setting option, setting range h_{14} = +89 mm, -19 mm; with elevating platform with pneumatic damping option (h_{14} +87 mm); with elevating platform with vibration-damping supports option (h_{14} +77 mm)

(8) deliberately left blank

(9) on a slope with rounded edges with forks/ arms raised, if possible

(10) with fork length 2390 mm; for other fork dimensions the geometric limit varies between 6.6% (fork length 3100 mm) and 10.7% (fork length 990 mm)

(11) deliberately left blank

Overview of OPX 20 / 25 / 20 Plus / 25 Plus forks							
l mm	c mm	x (a) mm	y (a) (b) (c) mm	l_1 (b)	W_a (b) (d) mm	Ast (b) (d) mm	aisle width load condition (Ast)
thrust rod							

990	500	805	1907	2280	2034	2885	(g)
1190	600	1005	2107	2480	2231	2904	(h)
1450	750	1265	2367	2740	2489	3184	(i)
1650	850	1465	2567	2940	2688	3383	(i)
1650	850	1105	2207	2940	2330	3295	(i)
1800	900	1615	2717	3090	2837	3505	(i)
2150	1100	1605	2707	3440	2827	3792	(i)
2150	1100	1375	2477	3440	2598	3766	(i)
2390 (e)	1200	1845	2947	3680	3065	4122	(j)
2390 (f)	1200	1615	2717	3680	2837	3969	(k)
tie rod							
2390	1200	1845	2947	3680	3015	3989	(k)
2390	1200	1615	2717	3680	2786	3964	(k)
2900	1500	2125	3227	4190	3293	4554	(i)
3100	1600	2125	3227	4390	3293	4819	(l)

(a) with forks lowered; with forks fully raised for thrust rod version -57 mm; for tie rod version -108 mm

(b) with 54 or 1054 container +114 mm

(c) for OPX 20 Plus and OPX 25 Plus versions +3 mm

(d) values with forks fully raised; with forks lowered Wa for thrust rod version +57 mm, Wa for tie rod version +108 mm

(e)long wheelbase adapted for picking up three crosswise Euro pallets

(f) short wheelbase adapted for picking up two lengthwise Euro pallets

(g) 1 pallet 1000 x 1200, crosswise

(h) 1 pallet 800 x 1200, lengthwise

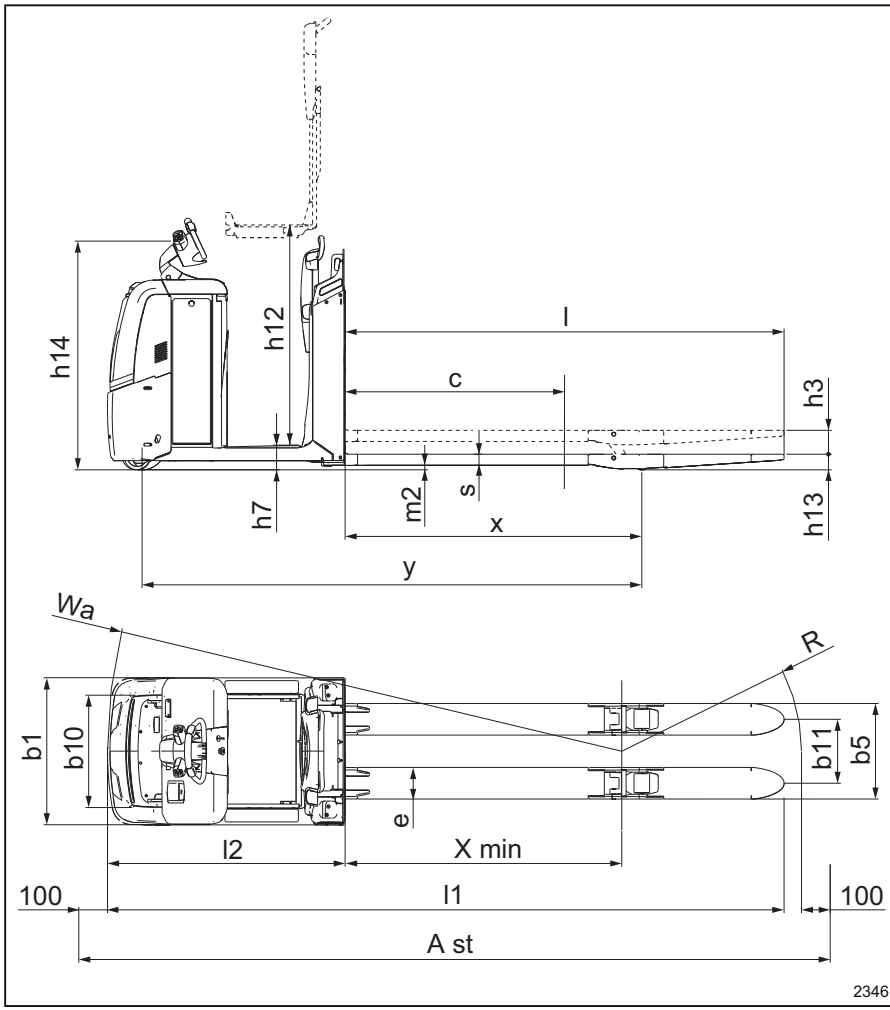
(l) pallet 800 x l_6, lengthwise (l_6 = 2 x c)

(j) 3 pallets 800 x 1200, crosswise

(k) 2 pallets 800 x 1200, lengthwise

(l) 2 pallets 800 x 1200, lengthwise + 1 pallet 800 x 1200, crosswise on the tip of the forks

Datasheet OPX 20 Plus and OPX 25 Plus



			OPX 20 Plus	OPX 25 Plus
1.3	Drive		Electric	Electric
1.4	Operator type		Standing	Standing
1.5	Rated capacity / rated load	Q (t)	2.0	2.5

			OPX 20 Plus	OPX 25 Plus
1.6	Load centre distance	c (mm)	1200	1200
1.8	Load distance	x (mm)	1615 (2)	1615 (2)
1.9	Wheelbase	y (mm)	2720 (2)	2720 (2)
2.1	Service weight (including battery)	kg	1218 (2)	1243 (2)
2.2	Axle loading, laden front/rear	kg	1236/1982	1322/2421
2.3	Axle loading, unladen front/rear	kg	933/285	942/301
3.1	Tyres		Polyurethane	Polyurethane
3.2	Tyre size, front	mm	254 x 102	254 x 102
3.3	Tyre size, rear	mm	85 x 80	85 x 80
3.4	Additional wheels (dimensions)	mm	110 x 60	110 x 60
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 2 / 4	1x - 2 / 4
3.6	Tread, front	b_{10} (mm)	547	547
3.7	Tread, rear	b_{11} (mm)	348 (368/388/498)	348 (368/388/498)
4.2	Height, mast lowered	h_1 (mm)	-	-
4.3	Free lift	h_2 (mm)	-	-
4.4	Lift	h_3 (mm)	130	130
4.5	Height, mast extended	h_4 (mm)	-	-
4.6	Initial lift	h_5 (mm)	-	-
4.8	Stand height // Seat height (min/max)	h_7 (mm)	130	130
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1250 (7)	1250 (7)
4.10	Height of wheel arms	h_8 (mm)	-	-
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	-	-

			OPX 20 Plus	OPX 25 Plus
4.15	Fork height, lowered	h_{13} (mm)	85	85
4.19	Overall length	l_1 (mm)	3680	3680
4.20	Length to face of fork	l_2 (mm)	1290	1290
4.21	Overall width	b_1 (mm)	800	800
4.22	Fork dimensions	s/e/ l (mm)	61 (78 max.)/172/2390	61 (78 max.)/172/2390
4.24	Fork-carriage width	b_3 (mm)	-	-
4.25	Distance between fork-arms	b_5 (mm)	520 (540/560/670)	520 (540/560/670)
4.31	Ground clearance, laden, below mast	m_1 (mm)	-	-
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	24/154 (3)	24/154 (3)
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	see table	see table
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	see table	see table
4.34.2	Aisle width for pallets 800 x 1200 lengthways	Ast (mm)	see table	see table
4.35	Turning radius	W_a (mm)	2893 (2)/2786 (2) (3)	2893 (2)/2786 (2) (3)
5.1	Travel speed laden/unladen	km/h	11/14	11/14
5.1.1	Travel speed laden/unladen, backwards	km/h	8/11	8/11
5.2	Lift speed laden/unladen	m/s	0.070/0.111	0.064/0.089
5.3	Lowering speed laden/unladen	m/s	0.084/0.067	0.068/0.066
5.8	Max. gradeability laden/unladen	%	7%/12% (9) (10)	7%/12% (9) (10)
5.9	Acceleration time, laden/unladen	s	6.1/4.8	6.2/4.8
5.10	Service brake		Electromagnetic	Electromagnetic

Datasheet (VDI 2198): OPX

			OPX 20 Plus	OPX 25 Plus
6.1	Drive motor, rating S2 = 60 min.	kW	3	3
6.2	Lift motor, rating at S3	kW	2.2/5%	2.2/5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no	no
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 465	24/345 - 465
6.5	Battery weight (± 5%)	kg	402	402
6.6	Energy consumption according to DIN EN 16796	kW/h	0.45	0.48
6.6.2	CO_2 equivalent emissions	kg/h	0.2	0.3
8.1	Type of drive unit		AC control	AC control
10.7	Sound level at driver's ear	dB (A)	< 70	< 70

(1) deliberately left blank

(2) with fork length 2390 mm / x = 1615 mm / tie rod version; for other fork dimensions, see the table below

(3) with load arms or forks raised

(4) deliberately left blank

(5) deliberately left blank

(6) deliberately left blank

(7) with tiller setting option, setting range h_{14} = +89 mm, -19 mm; with elevating platform with pneumatic damping option (h_{14} +87 mm); with elevating platform with vibration-damping supports option (h_{14} +77 mm)

(8) deliberately left blank

(9) on a slope with rounded edges with forks/ arms raised, if possible

(10) with fork length 2390 mm; for other fork dimensions the geometric limit varies between 6.6% (fork length 3100 mm) and 10.7% (fork length 990 mm)

(11) deliberately left blank

Overview of OPX 20 / 25 / 20 Plus / 25 Plus forks							
l mm	c mm	x (a) mm	y (a) (b) (c) mm	l_1 (b)	W_a (b) (d) mm	Ast (b) (d) mm	aisle width load condition (Ast)
thrust rod							
990	500	805	1907	2280	2034	2885	(g)
1190	600	1005	2107	2480	2231	2904	(h)
1450	750	1265	2367	2740	2489	3184	(i)
1650	850	1465	2567	2940	2688	3383	(i)
1650	850	1105	2207	2940	2330	3295	(i)
1800	900	1615	2717	3090	2837	3505	(i)
2150	1100	1605	2707	3440	2827	3792	(i)
2150	1100	1375	2477	3440	2598	3766	(i)
2390 (e)	1200	1845	2947	3680	3065	4122	(j)
2390 (f)	1200	1615	2717	3680	2837	3969	(k)
tie rod							
2390	1200	1845	2947	3680	3015	3989	(k)
2390	1200	1615	2717	3680	2786	3964	(k)
2900	1500	2125	3227	4190	3293	4554	(i)
3100	1600	2125	3227	4390	3293	4819	(l)

(a) with forks lowered; with forks fully raised for thrust rod version -57 mm; for tie rod version -108 mm

(b) with 54 or 1054 container +114 mm

(c) for OPX 20 Plus and OPX 25 Plus versions +3 mm

(d) values with forks fully raised; with forks lowered Wa for thrust rod version +57 mm, Wa for tie rod version +108 mm

(e)long wheelbase adapted for picking up three crosswise Euro pallets

(f) short wheelbase adapted for picking up two lengthwise Euro pallets

(g) 1 pallet 1000 x 1200, crosswise

(h) 1 pallet 800 x 1200, lengthwise

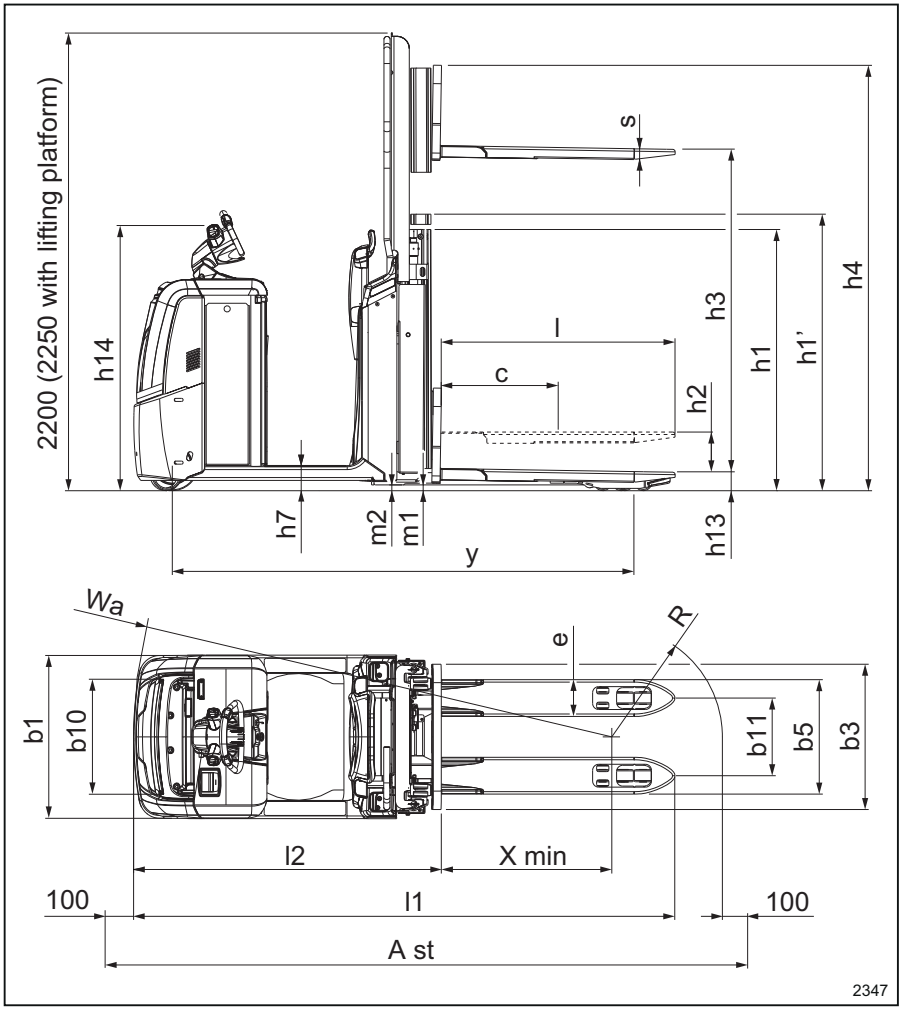
(l) pallet 800 x l_6, lengthwise (l_6 = 2 x c)

(j) 3 pallets 800 x 1200, crosswise

(k) 2 pallets 800 x 1200, lengthwise

(I) 2 pallets 800 x 1200, lengthwise + 1 pallet 800 x 1200, crosswise on the tip of the forks

Datasheet OPX-D 20



			OPX-D 20
1.3	Drive		Electric
1.4	Operator type		Standing

			OPX-D 20
1.5	Rated capacity / rated load	Q (t)	2.0 (1.0 on main lift)
1.6	Load centre distance	c (mm)	600
1.8	Load distance	x (mm)	944/816 (3)
1.9	Wheelbase	y (mm)	2260/2132 (3)(4)
2.1	Service weight (including battery)	kg	1476
2.2	Axle loading, laden front/rear	kg	1278/2198
2.3	Axle loading, unladen front/rear	kg	1024/452
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	254 x 102
3.3	Tyre size, rear	mm	85 x 60
3.4	Additional wheels (dimensions)	mm	150 x 50
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 1 / 4
3.6	Tread, front	b_{10} (mm)	474
3.7	Tread, rear	b_{11} (mm)	380
4.2	Height, mast lowered	h_1 (mm)	See table below
4.3	Free lift	h_2 (mm)	See table below
4.4	Lift	h_3 (mm)	1580
4.5	Height, mast extended	h_4 (mm)	See table below
4.6	Initial lift	h_5 (mm)	130
4.8	Stand height // Seat height (min/max)	h_7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1250 (7)
4.10	Height of wheel arms	h_8 (mm)	85

			OPX-D 20
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1197
4.15	Fork height, lowered	h_{13} (mm)	91
4.19	Overall length	l_1 (mm)	2653 (4)
4.20	Length to face of fork	l_2 (mm)	1503 (4)
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	55/180/1150
4.24	Fork-carriage width	b_3 (mm)	711
4.25	Distance between fork-arms	b_5 (mm)	560
4.31	Ground clearance, laden, below mast	m_1 (mm)	19/143 (3)
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	25/155 (3)
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	-
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x 1200 lengthways	Ast (mm)	3067 (3) (4)
4.35	Turning radius	W_a (mm)	2440/2313 (3) (4)
5.1	Travel speed laden/unladen	km/h	9/12
5.1.1	Travel speed laden/unladen, backwards	km/h	8/11
5.2	Lift speed laden/unladen	m/s	0.15/0.25
5.3	Lowering speed laden/unladen	m/s	0.19/0.25
5.8	Max. gradeability laden/unladen	%	8%/15% (9) (8.9%; 7.1%) (11)

			OPX-D 20
5.9	Acceleration time, laden/unladen	s	6.6/5.3
5.10	Service brake		Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	3
6.2	Lift motor, rating at S3	kW	2.2/5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 465
6.5	Battery weight (± 5%)	kg	402
6.6	Energy consumption according to DIN EN 16796	kW/h	0.39
6.6.2	CO_2 equivalent emissions	kg/h	0.2
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) deliberately left blank

(2) deliberately left blank

(3) with load arms or forks raised

(4) with 54 or 1054 container +114 mm

(5) deliberately left blank

(6) with elevating platform with pneumatic damping option h_7 +30 mm; (h_{14} +87 mm); with elevating platform with vibration-damping supports option h_7 +20 mm (h_{14} +77 mm)

(7) with tiller setting option, setting range h_{14} = +89 mm, -19 mm; with elevating platform with pneumatic damping option (h_{14} +87 mm); with elevating platform with vibration-damping supports option (h_{14} +77 mm)

(8) deliberately left blank

(9) deliberately left blank

(10) deliberately left blank

(11) in brackets: minimum geometric limit on slope with non-rounded edges without or with foot protection (if different). Due to manufacturing and assembly tolerances, we recom-

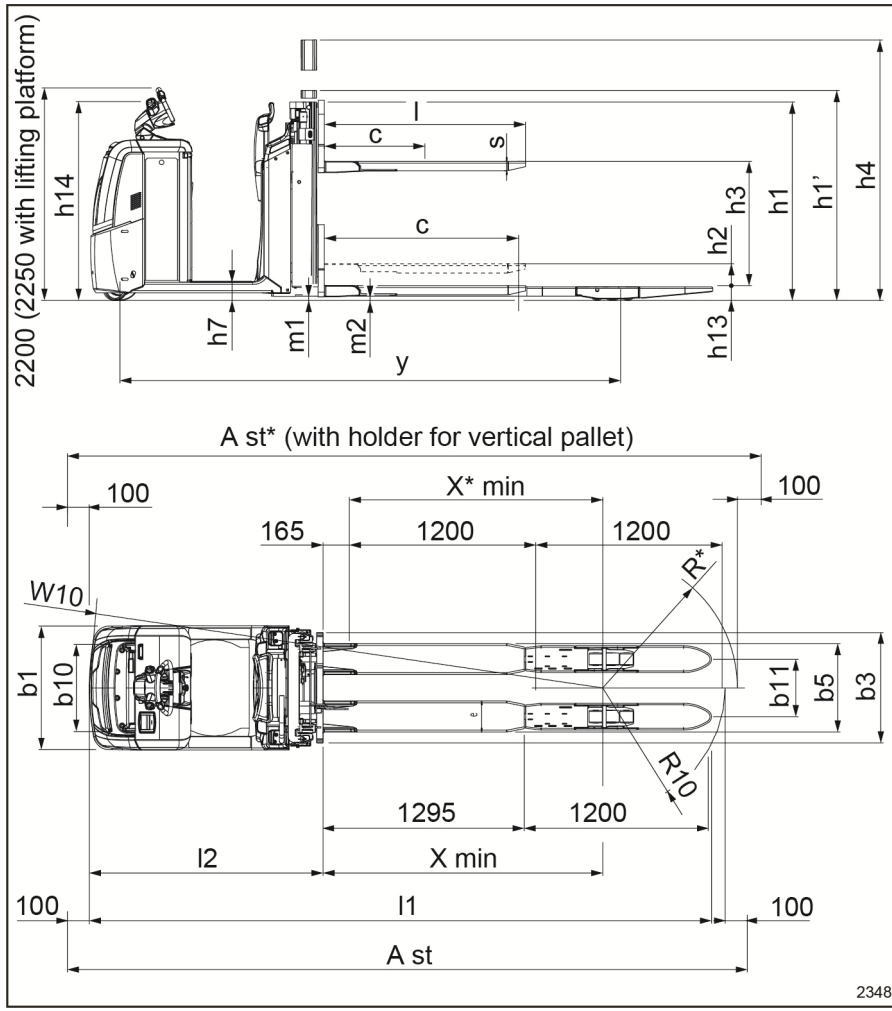
mend allowing for at least a 1% decrease in nominal values

OPX-D 20 additional mast table				OPX-D 20
Mast type				Telescopic
Mast height, lowered position		h_1	mm	1276
Mast height, free lift		$h_{1'}$	mm	1351
Free lift (a)		h_2	mm	150
Lift height		h_3	mm	1580 (b)
Mast height, mast raised		h_4	mm	2066
Truck height, mast lowered	standard		mm	2200
	with elevating platform lowered (b)		mm	2250
	with pallet support (b)		mm	-
Truck height, mast raised	standard		mm	2200
	with elevating platform lowered (b)		mm	2250
	with pallet support (b)		mm	-

(a) with mast with increased height $h_{1'}$

(b) with mandatory screen protection on the load-side attachments support

Datasheet OPX-L 20



			OPX-L 20
1.3	Drive		Electric
1.4	Operator type		Standing
1.5	Rated capacity / rated load	Q (t)	2.0 (1.0 on main lift)

			OPX-L 20
1.6	Load centre distance	c (mm)	1248/600 on main lift (1)
1.8	Load distance	x (mm)	1910/1782 (3)
1.9	Wheelbase	y (mm)	3225/3097 (3) (4)
2.1	Service weight (including battery)	kg	1567
2.2	Axle loading, laden front/rear	kg	1539/2028
2.3	Axle loading, unladen front/rear	kg	1170/397
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	254 x 102
3.3	Tyre size, rear	mm	85 x 80
3.4	Additional wheels (dimensions)	mm	150 x 50
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 1 / 4
3.6	Tread, front	b_{10} (mm)	474
3.7	Tread, rear	b_{11} (mm)	370
4.2	Height, mast lowered	h_1 (mm)	See the table below
4.3	Free lift	h_2 (mm)	See the table below
4.4	Lift	h_3 (mm)	800
4.5	Height, mast extended	h_4 (mm)	See the table below
4.6	Initial lift	h_5 (mm)	130
4.8	Stand height // Seat height (min/max)	h_7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1250 (7)
4.10	Height of wheel arms	h_8 (mm)	85
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1197

			OPX-L 20
4.15	Fork height, lowered	h_{13} (mm)	91
4.19	Overall length	l_1 (mm)	4005 (4)
4.20	Length to face of fork	l_2 (mm)	1503 (4)
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	60 (72 max.)/200/1295
4.24	Fork-carriage width	b_3 (mm)	711
4.25	Distance between fork-arms	b_5 (mm)	570
4.31	Ground clearance, laden, below mast	m_1 (mm)	13/100 (3)
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	25/155 (3)
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	See table
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x 1200 lengthways	Ast (mm)	-
4.35	Turning radius	W_a (mm)	3399/3271 (3) (4)
5.1	Travel speed laden/unladen	km/h	9/12
5.1.1	Travel speed laden/unladen, backwards	km/h	8/11
5.2	Lift speed laden/unladen	m/s	0.159/0.253
5.3	Lowering speed laden/unladen	m/s	0.218/0.240
5.8	Max. gradeability laden/unladen	%	7%/12%(9) (6.6%; 5.3%) (11)
5.9	Acceleration time, laden/unladen	s	6.5/5.3
5.10	Service brake		Electromagnetic

			OPX-L 20
6.1	Drive motor, rating S2 = 60 min.	kW	3
6.2	Lift motor, rating at S3	kW	2.2/5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 465
6.5	Battery weight (± 5%)	kg	402
6.6	Energy consumption according to DIN EN 16796	kW/h	0.39
6.6.2	CO_2 equivalent emissions	kg/h	0.2
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with support for vertical pallet 1365/765 mm

(2) deliberately left blank

(3) with load arms or forks raised

(4) with 54 or 1054 container +114 mm

(5) deliberately left blank

(6) with elevating platform with pneumatic damping option h_7 +30 mm; (h_{14} +87 mm); with elevating platform with vibration-damping supports option h_7 +20 mm (h_{14} +77 mm)

(7) with tiller setting option, setting range h_{14} = +89 mm, -19 mm; with elevating platform with pneumatic damping option (h_{14} +87 mm); with elevating platform with vibration-damping supports option (h_{14} +77 mm)

(8) deliberately left blank

(9) on a slope with rounded edges with forks/ arms raised, if possible

(10) deliberately left blank

(11) in brackets: minimum geometric limit on slope with non-rounded edges without or with foot protection (if different). Due to manufacturing and assembly tolerances, we recommend allowing for at least a 1% decrease in nominal values

OPX-L 20 additional mast table				OPX-L 20	
Mast type				Telescopic	Telescopic
Mast height, lowered position		h_1	mm	1276	1276
Mast height, free lift		$h_{1'}$	mm	1351	1351
Free lift [a]		h_2	mm	150	150
Lift height		h_3	mm	800 [b]	1580 [b]
Mast height, mast raised		h_4	mm	1676	2066
Truck height, mast lowered	standard		mm	2200	2200
	with elevating platform lowered [b]		mm	2250	2250
	with pallet support [b]		mm	2200	2200
Truck height, mast raised	standard		mm	2200	2200
	with elevating platform lowered [b]		mm	2250	2250
	with pallet support [b]		mm	2334	3114

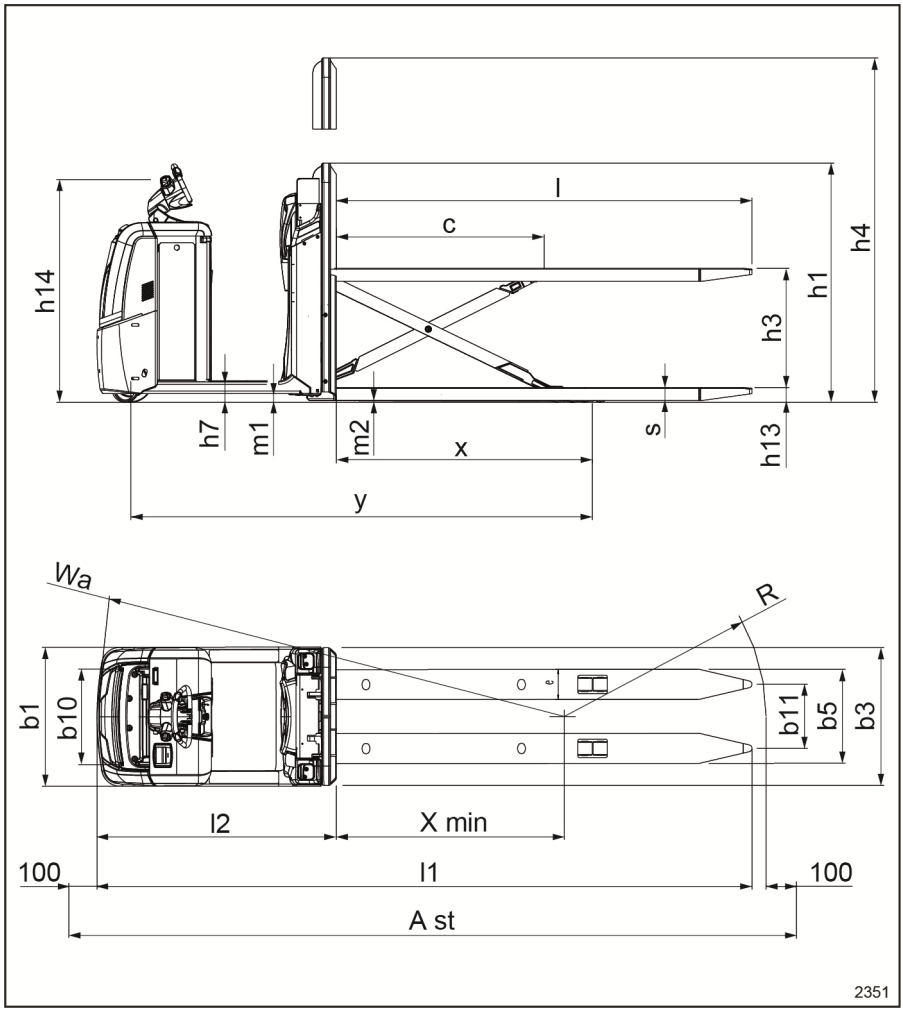
(a) with mast with increased height $h_{1'}$

(b) with mandatory screen protection on the load-side attachments support

OPX-L 20 AISLE WIDTH (WITH LOAD ARMS RAISED)						
fork length mm	dimens. pallet up-right mm	length load arms mm	x	W_a [c]	Ast [c]	aisle width load condition (Ast)
1295	-	1207	1782	3271	4289	2 pallets 800 x 1200, lengthwise
1295	165	1137	1617	3271	4350	2 pallets 800 x 1200, lengthwise

(c) with 54 or 1054 container +114 mm

Datasheet OPX-L 20 S



			OPX-L 20 S
1.3	Drive		Electric
1.4	Operator type		Standing
1.5	Rated capacity / rated load	Q (t)	2.0

			OPX-L 20 S
1.6	Load centre distance	c (mm)	1200
1.8	Load distance	x (mm)	1474/1310 (3)
1.9	Wheelbase	y (mm)	2661/2497 (3) (4)
2.1	Service weight (including battery)	kg	1456
2.2	Axle loading, laden front/rear	kg	1140/2316
2.3	Axle loading, unladen front/rear	kg	1020/436
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	254 x 102
3.3	Tyre size, rear	mm	85 x 80
3.4	Additional wheels (dimensions)	mm	150 x 50
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 1 / 4
3.6	Tread, front	b_{10} (mm)	474
3.7	Tread, rear	b_{11} (mm)	368
4.2	Height, mast lowered	h_1 (mm)	1375 (5)
4.3	Free lift	h_2 (mm)	-
4.4	Lift	h_3 (mm)	700
4.5	Height, mast extended	h_4 (mm)	2075 (5)
4.6	Initial lift	h_5 (mm)	-
4.8	Stand height // Seat height (min/max)	h_7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1250 (7)
4.10	Height of wheel arms	h_8 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1197

			OPX-L 20 S
4.15	Fork height, lowered	h_{13} (mm)	85
4.19	Overall length	l_1 (mm)	3764 (4)
4.20	Length to face of fork	l_2 (mm)	1374 (4)
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/ l (mm)	75/172/2390
4.24	Fork-carriage width	b_3 (mm)	792 (5)
4.25	Distance between fork-arms	b_5 (mm)	540
4.31	Ground clearance, laden, below mast	m_1 (mm)	18 (8)
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	10/710 (3)
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	4036 (3) (4)
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x 1200 lengthways	Ast (mm)	-
4.35	Turning radius	W_a (mm)	2838/2675 (3) (4)
5.1	Travel speed laden/unladen	km/h	9/12
5.1.1	Travel speed laden/unladen, backwards	km/h	8/11
5.2	Lift speed laden/unladen	m/s	0.095/0.176
5.3	Lowering speed laden/unladen	m/s	0.13/0.13
5.8	Max. gradeability laden/unladen	%	7%/12% (2.7%) (11)
5.9	Acceleration time, laden/unladen	s	6.8/5.4
5.10	Service brake		Electromagnetic

			OPX-L 20 S
6.1	Drive motor, rating S2 = 60 min.	kW	3
6.2	Lift motor, rating at S3	kW	2.2/5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 465
6.5	Battery weight (± 5%)	kg	402
6.6	Energy consumption according to DIN EN 16796	kW/h	0.39
6.6.2	CO_2 equivalent emissions	kg/h	0.2
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

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(2) deliberately left blank

(3) with load arms or forks raised

(4) with 54 or 1054 container +114 mm

(5) with mandatory load backrest (1290 mm from the forks to the upper end for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with elevating platform with pneumatic damping option h_7 +30 mm; (h_{14} +87 mm); with elevating platform with vibration-damping supports option h_7 +20 mm (h_{14} +77 mm)

(7) with tiller setting option, setting range h_{14} = +89 mm, -19 mm; with elevating platform with pneumatic damping option (h_{14} +87 mm); with elevating platform with vibration-damping supports option (h_{14} +77 mm)

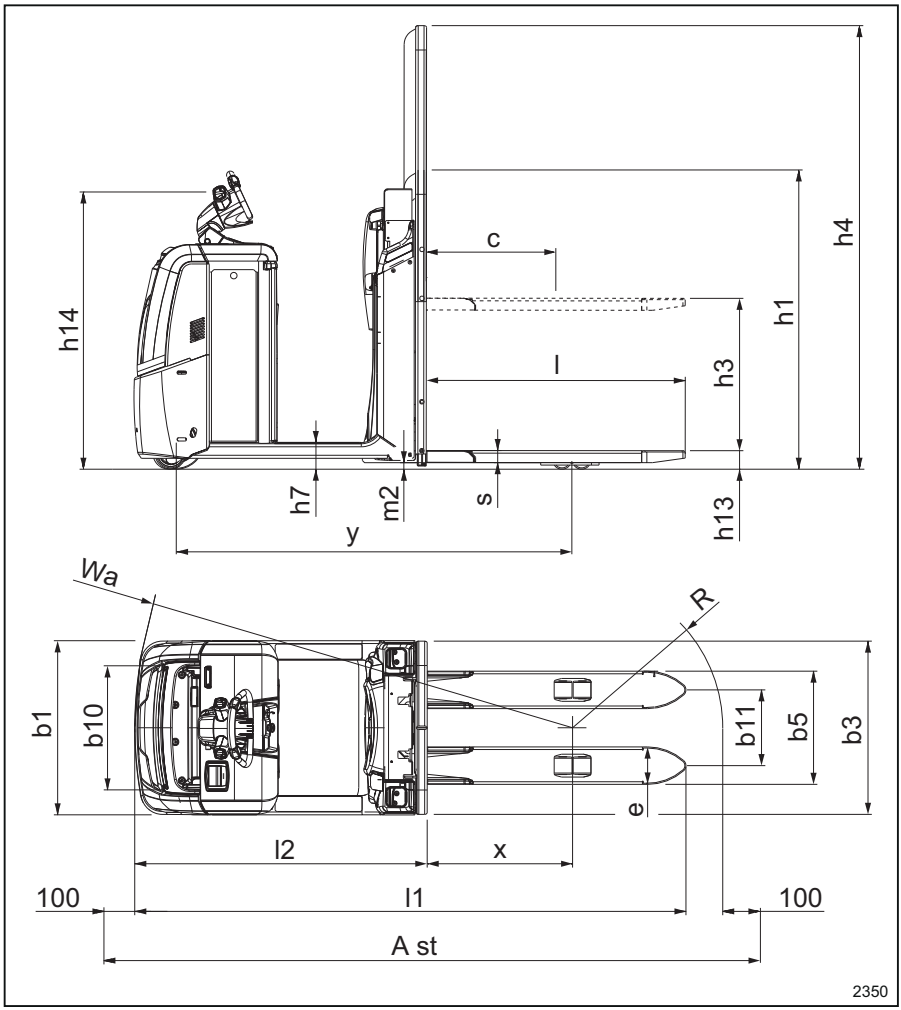
(8) minimum ground clearance under the chassis with mandatory foot protection

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(10)deliberately left blank

(11) in brackets: minimum geometric limit on slope with non-rounded edges without or with foot protection (if different). Due to manufacturing and assembly tolerances, we recommend allowing for at least a 1% decrease in nominal values

Datasheet OPX-L 12



			OPX-L 12
1.3	Drive		Electric
1.4	Operator type		Standing
1.5	Rated capacity / rated load	Q (t)	1.2

			OPX-L 12
1.6	Load centre distance	c (mm)	600
1.8	Load distance	x (mm)	670
1.9	Wheelbase	y (mm)	1823 (4)
2.1	Service weight (including battery)	kg	1308
2.2	Axle loading, laden front/rear	kg	920/1588
2.3	Axle loading, unladen front/rear	kg	875/433
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	254 x 102
3.3	Tyre size, rear	mm	85 x 60
3.4	Additional wheels (dimensions)	mm	150 x 50
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 1 / 4
3.6	Tread, front	b_{10} (mm)	474
3.7	Tread, rear	b_{11} (mm)	(348) 388
4.2	Height, mast lowered	h_1 (mm)	1375 (5)
4.3	Free lift	h_2 (mm)	-
4.4	Lift	h_3 (mm)	700
4.5	Height, mast extended	h_4 (mm)	2075 (5)
4.6	Initial lift	h_5 (mm)	-
4.8	Stand height // Seat height (min/max)	h_7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h_{14}(mm)	1250 (7)
4.10	Height of wheel arms	h_8 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1197

			OPX-L 12
4.15	Fork height, lowered	h_{13} (mm)	86
4.19	Overall length	l_1 (mm)	2532 (4)
4.20	Length to face of fork	l_2 (mm)	1342 (4)
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/ l (mm)	55/172/1190
4.24	Fork-carriage width	b_3 (mm)	796 (5)
4.25	Distance between fork-arms	b_5 (mm)	(520) 560
4.31	Ground clearance, laden, below mast	m_1 (mm)	-
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	-
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x 1200 lengthways	Ast (mm)	2871 (4)
4.35	Turning radius	W_a (mm)	2007 (4)
5.1	Travel speed laden/unladen	km/h	9/12
5.1.1	Travel speed laden/unladen, backwards	km/h	8/11
5.2	Lift speed laden/unladen	m/s	0.135/0.218
5.3	Lowering speed laden/unladen	m/s	0.130/0.122
5.8	Max. gradeability laden/unladen	%	7.8%/15% (6.2%) (11)
5.9	Acceleration time, laden/unladen	s	5.8/4.9
5.10	Service brake		Electromagnetic

			OPX-L 12
6.1	Drive motor, rating S2 = 60 min.	kW	3
6.2	Lift motor, rating at S3	kW	2.2/5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 465
6.5	Battery weight (± 5%)	kg	402
6.6	Energy consumption according to DIN EN 16796	kW/h	0.30
6.6.2	CO_2 equivalent emissions	kg/h	0.2
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

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(2) deliberately left blank

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(4) with 54 or 1054 container +114 mm

(5) with mandatory load backrest (1290 mm from the forks to the upper end for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with elevating platform with pneumatic damping option h_7 +30 mm; (h_{14} +87 mm); with elevating platform with vibration-damping supports option h_7 +20 mm (h_{14} +77 mm)

(7) with tiller setting option, setting range h_{14} = +89 mm, -19 mm; with elevating platform with pneumatic damping option (h_{14} +87 mm); with elevating platform with vibration-damping supports option (h_{14} +77 mm)

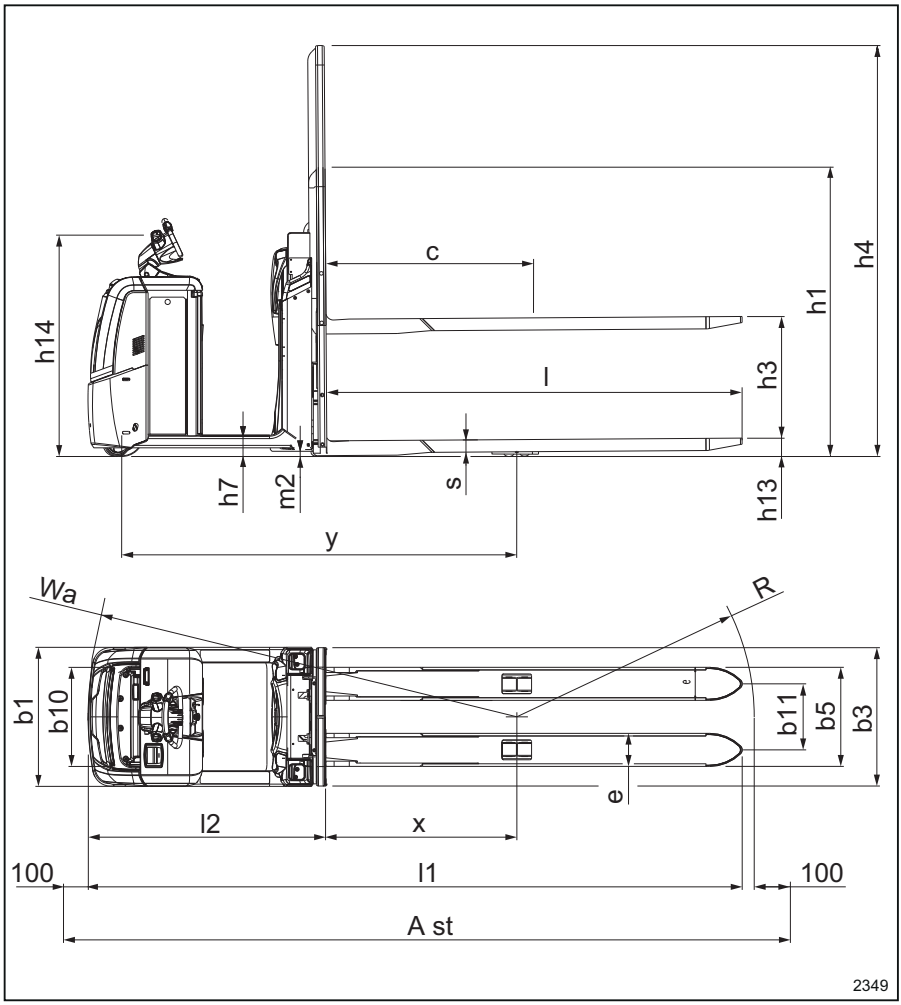
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(11) in brackets: minimum geometric limit on slope with non-rounded edges without or with foot protection (if different). Due to manufacturing and assembly tolerances, we recommend allowing for at least a 1% decrease in nominal values

Datasheet OPX-L 16



			OPX-L 16
1.3	Drive		Electric
1.4	Operator type		Standing
1.5	Rated capacity / rated load	Q (t)	1.6

			OPX-L 16
1.6	Load centre distance	c (mm)	1200
1.8	Load distance	x (mm)	1093
1.9	Wheelbase	y (mm)	2279 (4)
2.1	Service weight (including battery)	kg	1585
2.2	Axle loading, laden front/rear	kg	944/2241
2.3	Axle loading, unladen front/rear	kg	1041/544
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	254 x 102
3.3	Tyre size, rear	mm	85 x 80
3.4	Additional wheels (dimensions)	mm	150 x 50
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 1 / 4
3.6	Tread, front	b_{10} (mm)	474
3.7	Tread, rear	b_{11} (mm)	375
4.2	Height, mast lowered	h_1 (mm)	1665 (5)
4.3	Free lift	h_2 (mm)	-
4.4	Lift	h_3 (mm)	700
4.5	Height, mast extended	h_4 (mm)	2365 (5)
4.6	Initial lift	h_5 (mm)	-
4.8	Stand height // Seat height (min/max)	h_7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1250 (7)
4.10	Height of wheel arms	h_8 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1197

			OPX-L 16
4.15	Fork height, lowered	h_{13} (mm)	90
4.19	Overall length	l_1 (mm)	3763 (4)
4.20	Length to face of fork	l_2 (mm)	1373 (4)
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/ l (mm)	70 (85 max.)/190/2390
4.24	Fork-carriage width	b_3 (mm)	796 (5)
4.25	Distance between fork-arms	b_5 (mm)	570
4.31	Ground clearance, laden, below mast	m_1 (mm)	-
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	4026 (4)
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x 1200 lengthways	Ast (mm)	-
4.35	Turning radius	W_a (mm)	2459 (4)
5.1	Travel speed laden/unladen	km/h	9/12
5.1.1	Travel speed laden/unladen, backwards	km/h	8/11
5.2	Lift speed laden/unladen	m/s	0.102/0.178
5.3	Lowering speed laden/unladen	m/s	0.123/0.123
5.8	Max. gradeability laden/unladen	%	6.0%/15% (5.0%) (11)
5.9	Acceleration time, laden/unladen	s	6.4/5.3
5.10	Service brake		Electromagnetic

			OPX-L 16
6.1	Drive motor, rating S2 = 60 min.	kW	3
6.2	Lift motor, rating at S3	kW	2.2/5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 465
6.5	Battery weight (± 5%)	kg	402
6.6	Energy consumption according to DIN EN 16796	kW/h	0.52
6.6.2	CO_2 equivalent emissions	kg/h	0.3
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

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(4) with 54 or 1054 container +114 mm

(5) with mandatory load backrest (1290 mm from the forks to the upper end for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with elevating platform with pneumatic damping option h_7 +30 mm; (h_{14} +87 mm); with elevating platform with vibration-damping supports option h_7 +20 mm (h_{14} +77 mm)

(7) with tiller setting option, setting range h_{14} = +89 mm, -19 mm; with elevating platform with pneumatic damping option (h_{14} +87 mm); with elevating platform with vibration-damping supports option (h_{14} +77 mm)

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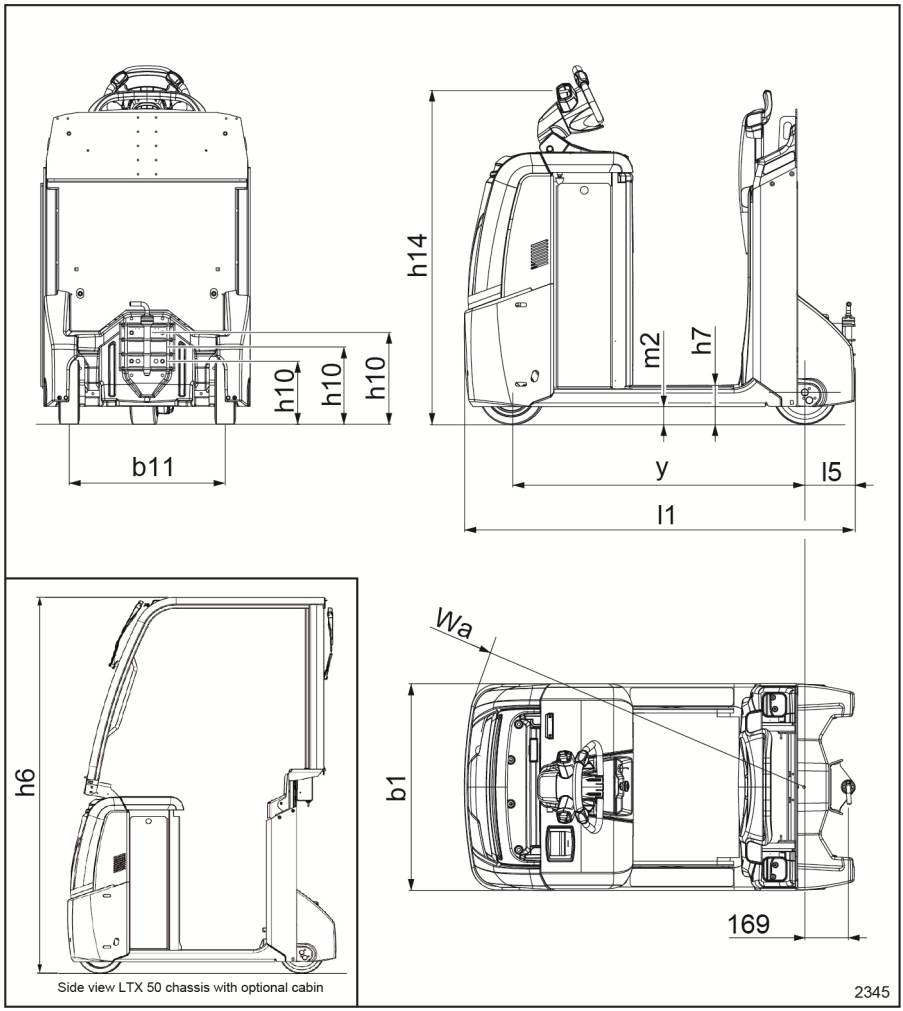
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(11) in brackets: minimum geometric limit on slope with non-rounded edges without or with foot protection (if different). Due to manufacturing and assembly tolerances, we recommend allowing for at least a 1% decrease in nominal values

Datasheet (VDI 2198): LTX

Datasheet LTX 50



Side view LTX 50 chassis with optional cabin

1.2	**Manufacturer's type designation**		**LTX 50**
1.3	Drive		Electric
1.4	Operator type		Standing

1.2	Manufacturer's type designation		LTX 50
1.5	Rated capacity / rated load	Q (t)	5.0
1.7	Rated draw bar pull	F (N)	1000
1.9	Wheelbase	y (mm)	1133 (2)(3)
2.1	Service weight (including battery)	kg	1223
2.2	Axle loading, laden front/rear	kg	-
2.3	Axle loading, unladen front/rear	kg	607/616
3.1	Tyres		Rubber
3.2	Tyre size, front	mm	254 x 102
3.3	Tyre size, rear	mm	250 x 85
3.4	Additional wheels (dimensions)	mm	- (3)
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x / 2 (3)
3.6	Tread, front	b_{10} (mm)	- (3)
3.7	Tread, rear	b_{11} (mm)	604
4.7	Height of overhead guard (cabin)	h_6 (mm)	2245 (3) (5)
4.8	Stand height // Seat height (min/max)	h_7 (mm)	150 (3) // 905/1094
4.9	Height drawbar in driving position (min./max.)	h_{14} (mm)	1270 (3) (6)
4.12	Coupling height	h_{10} (mm)	190/245/300 - 300/355/410(7)
4.13	Loading height, unladen	h_{11} (mm)	-
4.16	Length of loading surface	l_3 (mm)	-
4.17	Overhang	l_5 (mm)	195
4.18	Width of loading surface	b_9 (mm)	-
4.19	Overall length	l_1 (mm)	1512 (2)

1.2	Manufacturer's type designation		LTX 50
4.21	Overall width	b_1 (mm)	800
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	70 (3)
4.35	Turning radius	W_a (mm)	1480 (2)(3)
5.1	Travel speed laden/unladen	km/h	8/14
5.1.1	Travel speed laden/unladen, backwards	km/h	6/6
5.5	Drawbar pull, laden/unladen S2 = 60 min.	N	1000
5.6	Max. drawbar pull, laden/unladen S2 = 5 min.	N	3400 (9)
5.8	Max. gradeability laden/unladen	%	see diagram
5.9	Acceleration time, laden/unladen	s	7.1/5.1
5.10	Service brake		Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	3
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage/ nominal capacity K_5	V/Ah	24/345 - 465
6.5	Battery weight ± 5%	kg	402
6.6	Energy consumption according to DIN EN 16796	kWh/h	1.40
6.6.2	CO_2 equivalent emissions	kg/h	0.8
6.7	Turnover output	t/h	475
6.8	Turnover efficiency according to VDI 2198	t/kWh	123
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) Deliberately left blank

(2) with 54 or 1054 container +114 mm

(3) with ground clearance m_2 =100 mm: two additional wheels 100 x 40, b_{10} = 580 mm, y =1150 mm (with 54 or 1054 container + 114 mm), h_6 = 2275 mm, h_7 =180 mm, H_{14} = 1300 mm, W_a = 1497 mm (with 54 or 1054 container + 114 mm)

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(5) optional equipment

(6) with steering wheel adjustment option, adjustment range h_{14} = +89 mm ... -19 mm

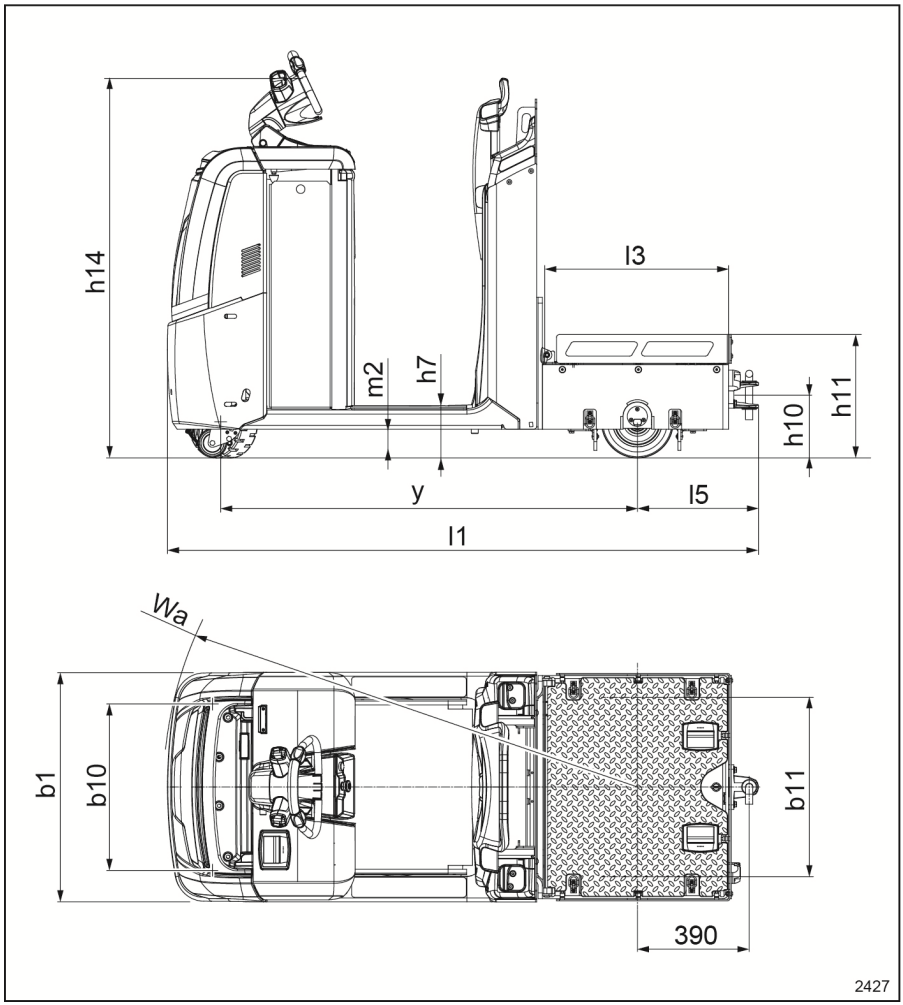
(7) with tow coupling in three positions. Note: The position of the tow coupling hinge is important for safety reasons. Any changes made to the truck's components and their position in relation to the manufacturer's certified configurations must be validated for compliance

(8) Deliberately left blank

(9) with lead battery; with Li-ion battery = 1750 N

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Datasheet LTX -T06



1.2	Manufacturer's type designation		LTX-T 06
1.3	Drive		Electric
1.4	Operator type		Standing
1.5	Rated capacity / rated load	Q (t)	5.0 (towing)/0.6 (maximum on board) (1)
1.7	Rated draw bar pull	F (N)	1000

1.2	Manufacturer's type designation		LTX-T 06
1.9	Wheelbase	y (mm)	1453 (2)
2.1	Service weight (including battery)	kg	1207
2.2	Axle loading, laden front/rear	kg	707/1100
2.3	Axle loading, unladen front/rear	kg	715/492
3.1	Tyres		Rubber
3.2	Tyre size, front	mm	254 x 102
3.3	Tyre size, rear	mm	250 x 85
3.4	Additional wheels (dimensions)	mm	100 x 40
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x -2 / 2
3.6	Tread, front	b_{10} (mm)	580
3.7	Tread, rear	b_{11} (mm)	620
4.7	Height of overhead guard (cabin)	h_6 (mm)	2275 (5)
4.8	Stand height // Seat height (min/max)	h_7 (mm)	180 // 935/1124
4.9	Height drawbar in driving position (min./max.)	h_{14} (mm)	1300 (6)
4.12	Coupling height	h_{10} (mm)	220(8)
4.13	Loading height, unladen	h_{11} (mm)	430
4.16	Length of loading surface	l_3 (mm)	638
4.17	Overhang	l_5 (mm)	422
4.18	Width of loading surface	b_9 (mm)	765
4.19	Overall length	l_1 (mm)	2059 (2)
4.21	Overall width	b_1 (mm)	800

1.2	Manufacturer's type designation		LTX-T 06
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	100
4.35	Turning radius	W_a (mm)	1640 (2)
5.1	Travel speed laden/unladen	km/h	10/10
5.1.1	Travel speed laden/unladen, backwards	km/h	6/6
5.5	Drawbar pull, laden/unladen S2 = 60 min.	N	1000
5.6	Max. drawbar pull, laden/unladen S2 = 5 min.	N	3400 (9)
5.8	Max. gradeability laden/unladen	%	see diagram
5.9	Acceleration time, laden/unladen	s	5.2 - 5.9 - 6.6 (10)/4.8
5.10	Service brake		Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	3
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage/ nominal capacity K_5	V/Ah	24/345 - 465
6.5	Battery weight ± 5%	kg	402
6.6	Energy consumption according to DIN EN 16796	kWh/h	-
6.6.2	CO_2 equivalent emissions	kg/h	-
6.7	Turnover output	t/h	410
6.8	Turnover efficiency according to VDI 2198	t/kWh	174
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) For combined applications; see the capacity table for the transporter

(2) with 54 or 1054 container +114 mm

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(4) Deliberately left blank

(5) optional equipment

(6) with steering wheel adjustment option, adjustment range h_{14} = +89 mm ... -19 mm

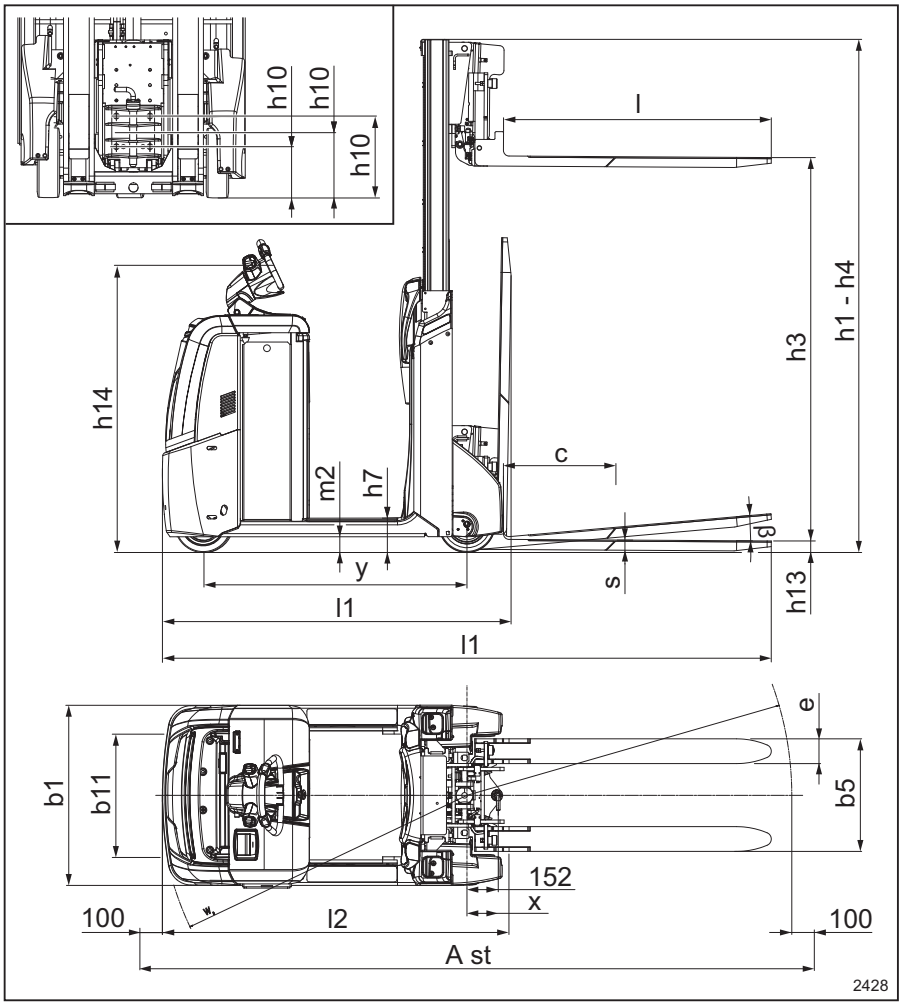
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(8) with a single-level tow coupling. N.B. The position of the tow coupling hinge is important for safety reasons. Any changes made to the truck's components and their position in relation to the manufacturer's certified configurations must be validated for compliance

(9) with lead battery; with Li-ion battery = 1750 N

(10) with a 0.6 t onboard load - 0.6 t onboard load + 2 t towing load - 5 t towing load

Datasheet LTX-FF



1.2	Manufacturer's type designation		LTX-FF 05	LTX-FF 10
1.3	Drive		Electric	Electric
1.4	Operator type		Standing	Standing
1.5	Rated capacity / rated load	Q (t)	0.5	1.0

1.2	Manufacturer's type designation		LTX-FF 05	LTX-FF 10
1.5.1	Trailer load	Q (t)	5.0	5.0
1.6	Distance from the centre of gravity of the load	c (mm)	(400) 500 (600)	(400) 500 (600)
1.7	Rated draw bar pull	F (N)	1000	1000
1.8	Load distance, centre of the drive axle to the forks	x (mm)	165 (1)	165 (1)
1.9	Wheelbase	y (mm)	1168(2)	1282(4)
2.1	Service weight (including battery)	kg	1565	1677
2.2	Axle loading, laden front/rear	kg	527/1538	417/2260
2.3	Axle loading, unladen front/rear	kg	833/732	907/770
3.1	Tyres		Polyurethane	Polyurethane
3.2	Tyre size, front	mm	254 x 102	254 x 102
3.3	Tyre size, rear	mm	250 x 80	250 x 80
3.4	Additional wheels (dimensions)	mm	-	-
3.5	Wheels, number front / rear (x = driven wheels)		1x / 2	1x / 2
3.6	Tread, front	b_{10} (mm)	-	-
3.7	Tread, rear	b_{11} (mm)	604	604
4.1	Tilting of the fork carriage forward/backward	a/b	0/5	0/5
4.2	Height, mast lowered	h_1 (mm)	1776	1776
4.3	Free lift	h_2 (mm)	-	-
4.4	Lift height	h_3 (mm)	1204	1204

1.2	Manufacturer's type designation		LTX-FF 05	LTX-FF 10
4.5	Height, mast deployed	h_4 (mm)	1776	1776
4.8	Stand height // Seat height (min/max)		150 // 905/1094	150 // 905/1094
4.9	Height drawbar in driving position (min./max.)	h_{14} (mm)	1270(4)	1270(4)
4.12	Coupling height	h_{10} (mm)	245/300/355 (520 max.) (5)	245/300/355 (520 max.) (5)
4.15	Fork height, lowered	h_{13} (mm)	55	55
4.17	Overhang	l_5 (mm)	192	192
4.19	Overall length	l_1 (mm)	1544 (2) (6)/2504 (2) (7)	1695 (6) (8)/2655 (7) (8)
4.20	Length to the fork surface	l_2 (mm)	1514 (1) (2)	1665 (1) (8)
4.21	Overall width	b_1 (mm)	800	800
4.22	Fork dimensions	s/e/l (mm)	45/110/(790) / 990 / (1190)	45/110/(790) // 990 // (1190)
4.24	Fork carriage width	b_3 (mm)	500	500
4.25	Distance between the fork arms	b_5 (mm)	500	500
4.31	Ground clearance, with load, below the mast	m_1 (mm)	70	70
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	70	70
4.34	Aisle width for pallet 800 x 1200, crosswise	A_{st} (mm)	3124(9)	3291
4.34 .1	Aisle width for pallet 1000 x 1200, crosswise	A_{st} (mm)	3268(10)	3433
4.34 .2	Aisle width for pallet 800 x 1200, crosswise	A_{st} (mm)	3311(11)	3470

1.2	Manufacturer's type designation		LTX-FF 05	LTX-FF 10
4.35	Turning radius	W_a (mm)	1516	1653
5.1	Travel speed laden/unladen	km/h	7.5/13	7.5/13
5.1.1	Travel speed laden/unladen, backwards	km/h	4/4	4/4
5.2	Coupling force, with/without load	m/s	0.17/0.23	0.12/0.23
5.3	Lowering speed with/without load	m/s	0.28/0.26	0.23/0.26
5.5	Drawbar pull, laden/unladen S2 = 60 min.	N	1000	1000
5.6	Max. drawbar pull, laden/unladen S2 = 5 min.	N	3400 (12)	3400 (12)
5.8	Max. gradeability laden/unladen	%	11%/15% (13)	6.5%/15% (13)
5.9	Acceleration time, laden/unladen	s	5.9/5.0	6.0/5.0
5.10	Service brake		Electromagnetic	Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	3	3
6.2	Lift motor, nominal power at S3		2.2 / 5%	2.2 / 5%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no	no
6.4	Battery voltage/ nominal capacity K_5	V/Ah	24/345 - 465	24/560 - 620
6.5	Battery weight ± 5%	kg	402	515
6.6	Energy consumption according to DIN EN 16796	kWh/h		
6.6.2	CO_2 equivalent emissions	kg/h		
6.7	Turnover output	t/h	-	43 (14)
6.8	Turnover efficiency according to VDI 2198	t/kWh	-	38 (14)

1.2	Manufacturer's type designation		LTX-FF 05	LTX-FF 10
8.1	Drive control		AC control	AC control
10.7	Sound level at driver's ear	dB (A)	< 70	< 70

(1) with all the couplings, except the Rockinger coupling and the single-level automatic-locking coupling that protrude 26 mm/58 mm from the profile of the open forks

(2) with 53 container; with 54 or 1054 containers + 114 mm

(3) only with 54 container

(4) with height-adjustable steering wheel, adjustment range = +89 mm … -19 mm

(5) with tow coupling in three positions. Note: The position of the tow coupling hinge is important for safety reasons. Any changes made to the truck's components and their position in relation to the manufacturer's certified configurations must be validated for compliance

(6) -4 mm with fork length l=790 mm; +4 mm with fork length l=1190 mm

(7) -200 mm with fork length l=790 mm; +200 mm with fork length l=1190 mm

(8) the LTX-FF is equipped with steel collision protection as standard, set up for tow coupling on the drive side (+38 mm for l_1 and l_2)

(9) with 53 container; with 54 or 1054 containers + 150 mm

(10) with 53 container; with 54 or 1054 containers + 142 mm

(11) with 53 container; with 54 or 1054 containers + 120 mm

(12) with lead-acid battery; with lithium-ion battery = 1750 N

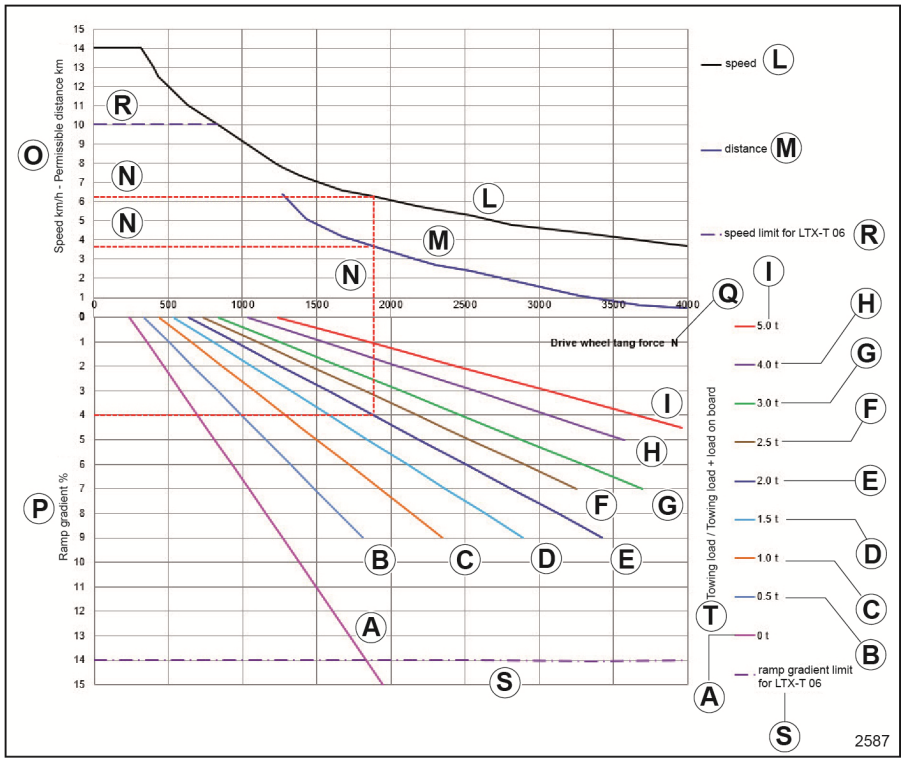
(13) for use as a pallet stacker; for use as a tow tractor, see diagram

(14) pallet stacker mode

LTX-FF 05 / LTX-FF 10 MAST						
Mast type					Single	Single
Mast height, lowered position			h_1	mm	1776	2326
Free lift			h_2	mm	1204	1754
Lift height			h_3	mm	1204	1754
Mast height, mast raised			h_4	mm	1776	2326
Residual capacity at nominal height	LTX-FF 05	c=400 mm	Qres	kg	500	500
		c=500 mm	Q_{res}	kg	500	500
		c=600 mm (a)	Q_{res}	kg	450	450
	LTX-FF 10	c=400 mm	Q_{res}	kg	1000	1000
		c=500 mm	Q_{res}	kg	1000	1000
		c=600 mm (a)	Q_{res}	kg	830	830

(a) Load centre of gravity distance not permitted with L=790 mm fork length

LTX50 / LTX-T06 performance diagram



- **A** = 0 t
- **B** = 0.5 t
- **C** = 1 t
- **D** = 1.5 t
- **E** = 2 t
- **F** = 2.5 t
- **G** = 3 t
- **H** = 4 t
- **I** = 5 t
- **L** = speed (km/h)
- **M** = distance (km)
- **N** = see example below
- **O** = speed in km/h - permissible distance (km)
- **P** = ramp gradient (%)
- **Q** = drive wheel force (N)

- **R** = speed limiter for LTX-T 06 models
- **S** = ramp gradient limit (%) for LTX-T 06 models
- **T** = towing load/towing load + onboard load

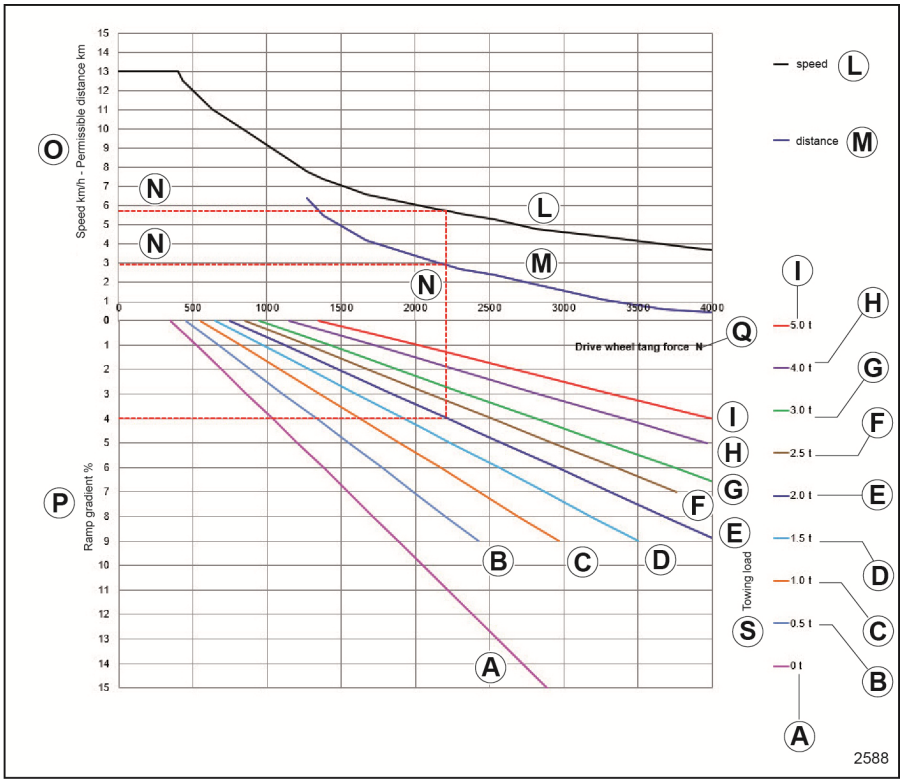
The example in the illustration shows **N**:

- A tow tractor towing --> 2 t
- Use on a ramp --> 4%
- Maximum possible travel speed 4% --> 6.3 km/h
- Length of ramp --> 3.7 km

NOTE

It is recommended that self-braking trailers are used when the trailer weight is greater than 2.5 t and for all trailer loads when driving on sloping roads (upwards or downwards)

LTX-FF performance diagram



- **A** = 0 t
- **B** = 0.5 t
- **C** = 1 t
- **D** = 1.5 t
- **E** = 2 t
- **F** = 2.5 t
- **G** = 3 t
- **H** = 4 t
- **I** = 5 t
- **L** = speed (km/h)
- **M** = distance (km)
- **N** = see example below
- **O** = speed in km/h - permissible distance (km)
- **P** = ramp gradient (%)

- **Q** = drive wheel force (N)
- **R** = speed limit for LTX-T model
- **S** = towing load/towing load + onboard load

The example in the illustration shows **N**:

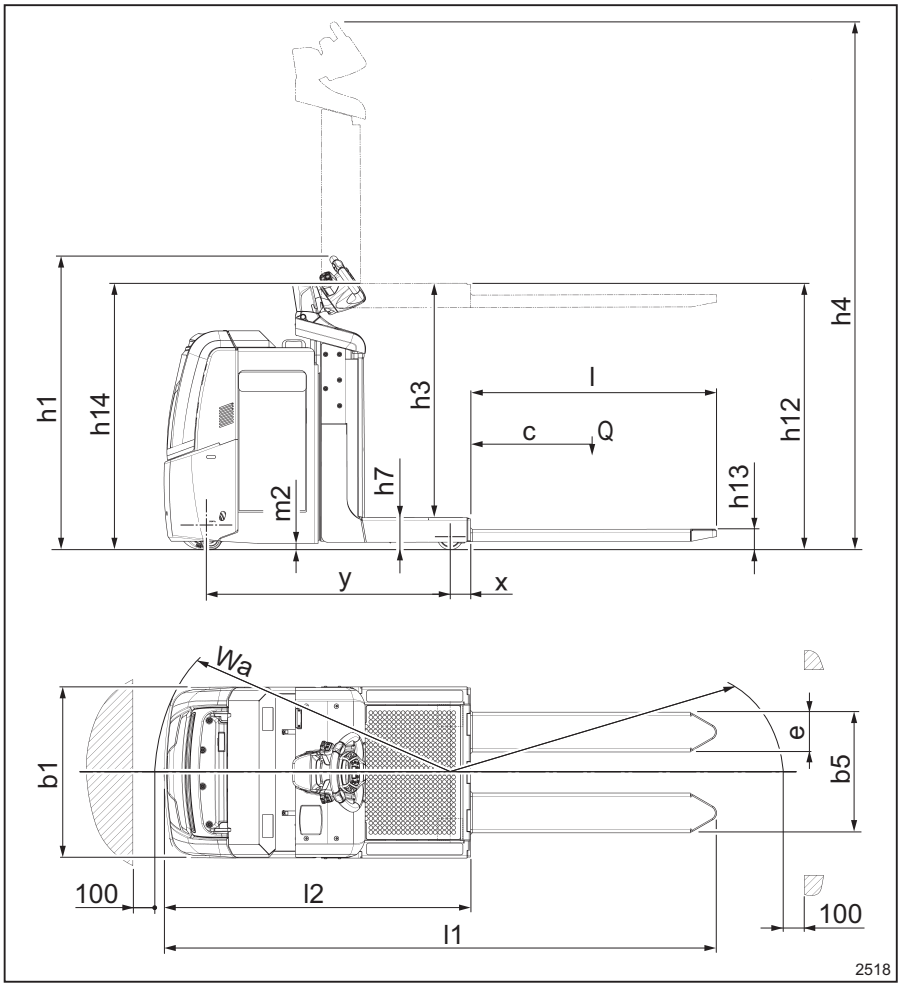
- A tow tractor towing --> 2 t
- Use on a ramp --> 4%
- Maximum possible travel speed 4% --> 5.7 km/h
- Length of ramp --> 2.9 km

NOTE

It is recommended that self-braking trailers are used when the trailer weight is greater than 2.5 t and for all trailer loads when driving on sloping roads (upwards or downwards)

Datasheet (VDI 2198): OXV

Datasheet OXV 07



			OXV 07
1.3	Drive		Electric
1.4	Operator type		Standing

			OXV 07
1.5	Rated capacity / rated load	Q (t)	0.7
1.6	Load centre distance	c (mm)	500
1.8	Load distance	x (mm)	97
1.9	Wheelbase	y (mm)	1152
2.1	Service weight (including battery)	kg	1264
2.2	Axle loading, laden front/rear	kg	390/1574
2.3	Axle loading, unladen front/rear	kg	766/498
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	230 x 90
3.3	Tyre size, rear	mm	120 x 50
3.4	Additional wheels (dimensions)	mm	100 x 40
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 2/4
3.6	Tread, front	b_{10} (mm)	552
3.7	Tread, rear	b_{11} (mm)	534
4.2	Height, mast lowered	h_1 (mm)	1373
4.4	Lift	h_3 (mm)	1050
4.5	Height, mast extended	h_4 (mm)	2423
4.8	Stand height // Seat height (min/max)	h_7 (mm)	145
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1258
4.10	Height of wheel arms	h_8 (mm)	80
4.11	Additional lift	h_9 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1195

			OXV 07
4.15	Fork height, lowered	h_{13} (mm)	95
4.19	Overall length	l_1 (mm)	2582
4.20	Length to face of fork	l_2 (mm)	1432
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	57/186/1150
4.24	Fork-carriage width	b_3 (mm)	-
4.25	Distance between fork-arms	b_5 (mm)	564
4.26	Distance between the wheel arms	b_4 (mm)	-
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	2902
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	2806
4.35	Turning radius	W_a (mm)	1345
5.1	Travel speed laden/unladen	km/h	9/10 (2)
5.1.1	Travel speed laden/unladen, backwards	km/h	8/8 (2)
5.2	Lift speed laden/unladen	m/s	0.16/0.23
5.3	Lowering speed laden/unladen	m/s	0.34/0.26
5.8	Max. gradeability laden/unladen	%	5%/10% (4)
5.9	Acceleration time, laden/unladen	s	5.7/5.2
5.10	Service brake		Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	2.3
6.2	Lift motor, rating at S3	kW	2.2/6%

			OXV 07
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 375
6.5	Battery weight (± 5%)	kg	295
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.44
6.6.2	CO_2 equivalent emissions	kg/h	0.2
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) deliberately left blank

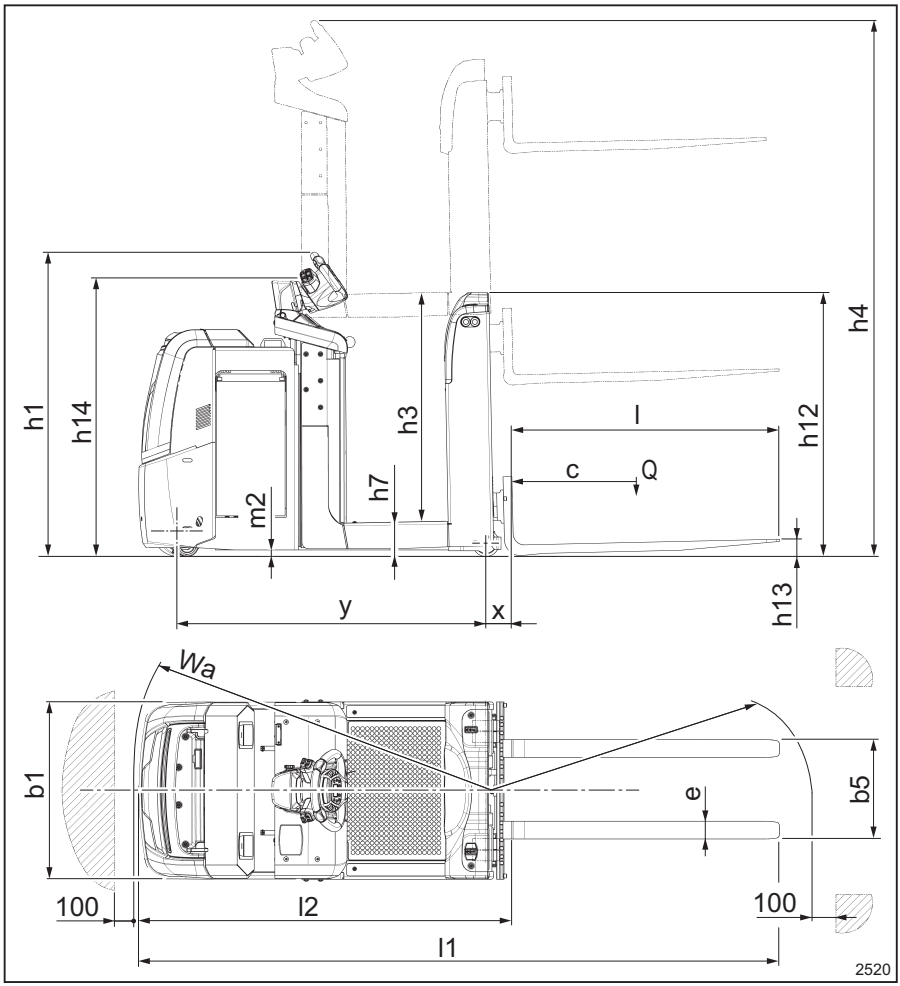
(2) up to a platform height of 300 mm from the ground

(3) deliberately left blank

(4) on slopes with rounded edges; the geometric limit for slopes with non-rounded edges is 7%

Residual capacity at maximum height			distance from the centre of gravity of the load c		$h_{13}+h_3+h_9$
			mm	mm	mm
			500	600	-
OXV 07	Q_{res}	kg	700	600	1145

Datasheet OXV 08



			OXV 08
1.3	Drive		Electric
1.4	Operator type		Standing
1.5	Rated capacity / rated load	Q (t)	0.8

			OXV 08
1.6	Load centre distance	c (mm)	500
1.8	Load distance	x (mm)	121
1.9	Wheelbase	y (mm)	1380
2.1	Service weight (including battery)	kg	1576
2.2	Axle loading, laden front/rear	kg	512/1864
2.3	Axle loading, unladen front/rear	kg	892/684
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	230 x 90
3.3	Tyre size, rear	mm	120 x 50
3.4	Additional wheels (dimensions)	mm	100 x 40
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 2/4
3.6	Tread, front	b_{10} (mm)	552
3.7	Tread, rear	b_{11} (mm)	534
4.2	Height, mast lowered	h_1 (mm)	1373
4.4	Lift	h_3 (mm)	1050
4.5	Height, mast extended	h_4 (mm)	2423
4.8	Stand height // Seat height (min/max)	h_7 (mm)	145
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1258
4.10	Height of wheel arms	h_8 (mm)	80
4.11	Additional lift	h_9 (mm)	762
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1195
4.15	Fork height, lowered	h_{13} (mm)	55 (1)

			OXV 08
4.19	Overall length	l_1 (mm)	2887
4.20	Length to face of fork	l_2 (mm)	1687
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	40/80/1200 (1)
4.24	Fork-carriage width	b_3 (mm)	800 (1)
4.25	Distance between fork-arms	b_5 (mm)	205/733 (1)
4.26	Distance between the wheel arms	b_4 (mm)	-
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	3149
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	3139
4.35	Turning radius	W_a (mm)	1569
5.1	Travel speed laden/unladen	km/h	9/10 (2)
5.1.1	Travel speed laden/unladen, backwards	km/h	8/8 (2)
5.2	Lift speed laden/unladen	m/s	0.15/0.21 (0.15/0.22) (3)
5.3	Lowering speed laden/unladen	m/s	0.34/0.33 (0.30/0.13) (3)
5.8	Max. gradeability laden/unladen	%	7%/10% (4)
5.9	Acceleration time, laden/unladen	s	6.2/5.6
5.10	Service brake		Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	2.3
6.2	Lift motor, rating at S3	kW	2.2/6%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no

			OXV 08
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/400 - 500
6.5	Battery weight (± 5%)	kg	377
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.44
6.6.2	CO_2 equivalent emissions	kg/h	0.2
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with standard adjustable forks; for platform with fixed forks h_{13} = 65 mm; s/e/l = 60/180/1150 mm; b_3 = 700 mm; b_5 = 560 mm

(2) up to a platform height of 300 mm from the ground

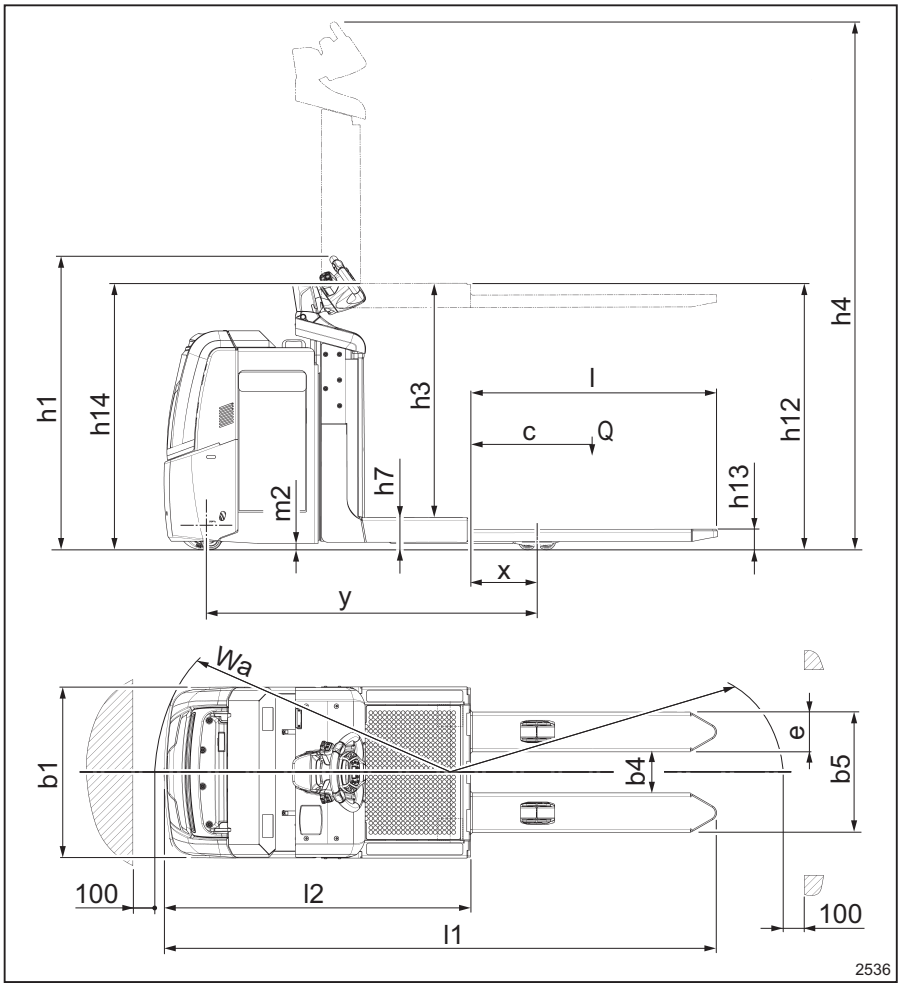
(3) In brackets: (fork speed)

(4) on slopes with rounded edges; the geometric limit for slopes with non-rounded edges is 7%

Residual capacity at maximum height			distance from the centre of gravity of the load c		$h_{13}+h_3+h_9$
			mm	mm	mm
			500	600	-
OXV 08	Q_{res}	kg	800	700	1867/1877 (a)

(a) for optional platform with fixed forks

Datasheet OXV 10



			OXV 10
1.3	Drive		Electric
1.4	Operator type		Standing
1.5	Rated capacity / rated load	Q (t)	1.0

			OXV 10
1.6	Load centre distance	c (mm)	600
1.8	Load distance	x (mm)	309
1.9	Wheelbase	y (mm)	1554
2.1	Service weight (including battery)	kg	1266
2.2	Axle loading, laden front/rear	kg	694/1572
2.3	Axle loading, unladen front/rear	kg	890/376
3.1	Tyres		Polyurethane
3.2	Tyre size, front	mm	230 x 90
3.3	Tyre size, rear	mm	85 x 90
3.4	Additional wheels (dimensions)	mm	150 x 50
3.5	Wheels, number front /rear (x = driven wheels)	mm	1x - 1/2
3.6	Tread, front	b_{10} (mm)	478
3.7	Tread, rear	b_{11} (mm)	378
4.2	Height, mast lowered	h_1 (mm)	1373
4.4	Lift	h_3 (mm)	1050
4.5	Height, mast extended	h_4 (mm)	2423
4.8	Stand height // Seat height (min/max)	h_7 (mm)	145
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1258
4.10	Height of wheel arms	h_8 (mm)	80
4.11	Additional lift	h_9 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h_{12} (mm)	1195
4.15	Fork height, lowered	h_{13} (mm)	95

			OXV 10
4.19	Overall length	l_1 (mm)	2582
4.20	Length to face of fork	l_2 (mm)	1432
4.21	Overall width	b_1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	57/186/1150
4.24	Fork-carriage width	b_3 (mm)	-
4.25	Distance between fork-arms	b_5 (mm)	564
4.26	Distance between the wheel arms	b_4 (mm)	253
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30
4.34	Aisle width for pallets 800 x l_6 lengthways	Ast (mm)	2919
4.34.1	Aisle width for pallets 1000 x 1200 crossways	Ast (mm)	-
4.35	Turning radius	W_a (mm)	1742
5.1	Travel speed laden/unladen	km/h	10/10 (2)
5.1.1	Travel speed laden/unladen, backwards	km/h	8/8 (2)
5.2	Lift speed laden/unladen	m/s	0.15/0.23
5.3	Lowering speed laden/unladen	m/s	0.34/0.26
5.8	Max. gradeability laden/unladen	%	8%/10% (4)
5.9	Acceleration time, laden/unladen	s	6.2/5.4
5.10	Service brake		Electromagnetic
6.1	Drive motor, rating S2 = 60 min.	kW	2.3
6.2	Lift motor, rating at S3	kW	2.2/6%
6.3	Battery according to DIN 43531/35/36; A, B, C, no		no

			OXV 10
6.4	Battery voltage / nominal capacity K_5	V/Ah	24/345 - 375
6.5	Battery weight (± 5%)	kg	295
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.44
6.6.2	CO_2 equivalent emissions	kg/h	0.2
8.1	Type of drive unit		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) deliberately left blank

(2) up to a platform height of 300 mm from the ground

(3) deliberately left blank

(4) on slopes with rounded edges; the geometric limit for slopes with non-rounded edges is 7%

Residual capacity at maximum height			distance from the centre of gravity of the load c		$h_{13}+h_3+h_9$
			mm	mm	mm
			500	600	-
OXV 10	Q_{res}	kg	1000	1000	1145

Eco-design requirements for electric motors and variable speed drives

All motors in this industrial truck are exempt from Regulation (EU) 2019/1781 because these motors do not meet the description given in Article 2 "Scope", Item (1) (a) and because of the provisions in Article 2 (2) (h) "Motors in cordless or battery-operated equipment" and Article 2 (2) (o) "Motors designed specifically for the traction of electric vehicles".

All variable speed drives in this industrial truck are exempt from Regulation (EU) 2019/1781 because these variable speed drives do not meet the description given in Article 2 "Scope", Item (1) (b).

Oil and lubricant tables

⚠ DANGER

Toxic products!

Oils and other consumables are toxic products. Refer to the **safety guidelines for operating materials** in chapter **2**.

⚠ CAUTION

Only the lubricants listed are approved by the manufacturer. Using oil mixtures or hydraulic fluids that are not recommended can cause damage to the truck and malfunctions.

Do not use lubricants other than those approved by the manufacturer. Contact your technical service centre for more information.

OPX 20 / OPX 25 / OPX 20 PLUS / OPX 25 PLUS

	Volume [l]	Type	
		Standard	Cold store
Hydraulic system	1.8	HLF 32	EQUIVIS XV32
Reduction gear unit	0.8	FUCHS RENOLIN UNISYN XT150 DIN 51517-3	
Pivot wheels (PLUS only)	0.35	IDRAULICAR AP31	
Grease for traction control knobs (cockpit)	/	KLÜBERSYNTH LI 44-22	
Generic lubricant	/	TUTELA MP02	STATERMELF EP2
Chain lubricant	/	STRUCTOVIS EHD	STRUCTOVIS FHD

OPX-L 16 / OPX-L 20 S

	Volume [l]	Type	
		Standard	Cold store
Hydraulic system	2.5	HLF 32	EQUIVIS XV32
Reduction gear unit	0.8	FUCHS RENOLIN UNISYN XT150 DIN 51517-3	
Grease for traction control knobs (cockpit)	/	KLÜBERSYNTH LI 44-22	
Generic lubricant	/	TUTELA MP02	STATERMELF EP2
Chain lubricant	/	STRUCTOVIS EHD	STRUCTOVIS FHD

LTX 50 / LTX-T 06 / LTX-FF 05 / LTX-FF 10 / OPX-L 12 / OPX-L 20 / OPX-D 20

	Volume [l]	Type	
		Standard	Cold store
Hydraulic system	3	HLF 32	EQUIVIS XV32
Reduction gear unit	0.8	FUCHS RENOLIN UNISYN XT150 DIN 51517-3	
Grease for traction control knobs (cockpit)	/	KLÜBERSYNTH LI 44-22	
Generic lubricant	/	TUTELA MP02	STATERMELF EP2
Chain lubricant	/	STRUCTOVIS EHD	STRUCTOVIS FHD

OXV 07 / OXV 08

	Volume [l]	Type	
		Standard	Cold store
Hydraulic system	3	HLF 32	EQUIVIS XV32
Reduction gear unit	0.8	FUCHS RENOLIN UNISYN XT150 DIN 51517-3	
Grease for traction control knobs (cockpit)	/	KLÜBERSYNTH LI 44-22	
Generic lubricant	/	TUTELA MP02	STATERMELF EP2
Chain lubricant	/	STRUCTOVIS EHD	STRUCTOVIS FHD

A

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