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Original instructions

Order picker trucks





OPX 20
OPX 25
OPX 20 PLUS
OPX 25 PLUS
OPX-L 12
OPX-L 16
OPX-L 20
OPX-L 20 S
OPX-D 20
LTX 50

CE

0615 1075 1076 1077 1078
1079 1080 1081 1082 1084

first in intralogistics

45878043402 EN - 10/2017

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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

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Forklift data

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

Type	
Serial number	
Date of delivery	

General information

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

How to Consult the Manual

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

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

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

⚠ DANGER

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

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⚠ 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.

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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, and therefore reserves the right to implement changes and to accept no claims concerning the information provided in this manual.

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

Copyright and trademark rights

These instructions must not be reproduced, translated or made accessible to third parties—including as excerpts—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
- Rules for the compliant use industrial vehicles;
- EC Declaration of Compliance;
- Warranty book.

If the forklift has been delivered with a traction battery and/or battery charger, ensure that such products conform to the order and that the relative user and maintenance manual are included, as well as the EC declaration for the battery charger.

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

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

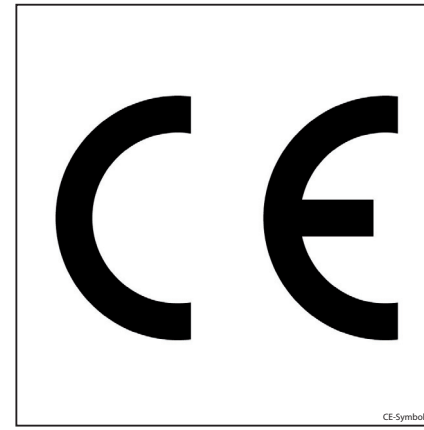
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CE labelling

The manufacturer uses CE labelling to indicate that the truck complies with the standards and regulations valid at the time of marketing. This is confirmed by the issued EC declaration of conformity. The CE labelling is attached to the nameplate.

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

The EC declaration of conformity must be carefully stored and made available to the responsible authorities.



CE-Symbol

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EC declaration of conformity in accordance with Machinery Directive

Declaration

STILL GmbH
Berzeliusstraße 10
D-22113 Hamburg Germany

We declare that the

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

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

Personnel authorised to compile the technical documents:

See EC compliance declaration

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

⚠ DANGER

The forklift must not be used for other purposes.

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

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

- Transport on uneven (irregular or non-compact) surfaces
- loads that exceed the weight and/or load centre limits;
- transporting non-stable loads;
- transporting loads not equally distributed on the forks;
- transporting swinging loads;
- transporting loads whose load centre is considerably displaced with respect to the forklift's longitudinal median plane;
- transporting loads of dimensions such as to block the view of the operator when driving;
- transporting loads piled so high that they could fall onto the operator;
- travelling with a load over 300 mm off the ground;
- transporting and/or lifting people;
- pushing or pulling loads;
- moving upwards or downwards on a slope with the load facing downwards;
- turning at high speed;
- turning and/or moving sideways on slopes (upwards or downwards);
- colliding with stationary and/or mobile structures;

⚠ DANGER

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

Working conditions

The forklift has been designed and built for internal transport.

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

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

⚠ CAUTION

Do not use the forklift in dusty areas.

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

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

⚠ DANGER

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

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

Contact the authorised sales network for more information.

Modifications to Forklift

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

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

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

⚠ DANGER

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

Applied equipment

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

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

User obligations

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

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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.

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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.

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Safety

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Safety guidelines

General Precautions

NOTE

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

General Safety Rules

- Only allow qualified, trained and authorized personnel to use the forklift.
- Do not install equipment on the forklift unless supplied or indicated by the manufacturer.
- Maintain the forklift in full working efficiency in order to limit any type of risk to the minimum.
- Do not use the truck with bonnets or doors open or with guards removed.
- The data plates found on the forklift must be kept in good condition and replaced if damaged.
- Carefully read and follow all of the safety indications found on the forklift.
- Make sure that the forklift has sufficient overhead clearance.
- Do not park the forklift in front of fire-fighting devices or fire escapes or anywhere that it blocks traffic.
- If the forklift shows signs of failure or breakage and there is reason to consider it unsafe, stop, park it, and notify the maintenance manager.
- Maintain appropriate distances from high voltage overhead cables. Comply with the safety distances established by the competent authorities.
- Never raise the load using just one fork.
- Place the load on the fork carriage or in such a way that the centre of gravity of the load is as close as possible to the fork carriage.
- The load must be placed on the fork arms so that the centre of gravity falls lengthwise on the mid point between the fork arms.
- Do not drive with loads off-centre laterally with respect to the forklift's median axis. Lack of compliance with this regulation can compromise forklift stability.
- Make sure that the surface on which the load rests is able to support its weight.
- Always use safety clothing compliant with current regulations and any personal protective equipment that may be applicable.
- Do not travel on loose or hilly ground or on steps.
- Do not drive with loads raised more than 300 mm from ground level.
- Do not turn or stack on slopes.
- Reduce speed on slopes.
- Do not overload the forklift beyond the capacity limits indicated on the capacity plates.
- Individuals under the influence of drugs and alcohol are not permitted to use the truck.
- The operator may not use an MP3 player or any electrical device that may distract their attention from the surrounding work environment.

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.

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⚠ 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.

Battery connection cables

⚠ CAUTION

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

Requirements for the traction-battery charging area

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

Safety Regulations Relative to Forklift Use

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

ENVIRONMENT NOTE

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

⚠ CAUTION

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

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Safety Regulations Relative to Operating Materials

Rules for handling and disposing of operating materials

ENVIRONMENT NOTE

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

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

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

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

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

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

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

Always comply with anti-pollution regulations!

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

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

ENVIRONMENT NOTE

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

Oils

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

ENVIRONMENT NOTE

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

DANGER

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

DANGER

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

Battery Acid

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

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NOTE

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

ENVIRONMENT NOTE

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

Residual 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 in wet or icy conditions or when consumables are leaking.
- Fire and explosion risks due to batteries and electrical voltages.

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

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

Stability

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

Risks can include:

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

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Electromagnetic radiation

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

Non-ionised radiation

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

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 Transport, Lifting and Idling 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.

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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.

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

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

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

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.

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Safety tests

Regular safety inspection of the truck ▷

Safety inspection based on time and extraordinary incidents

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

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

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

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

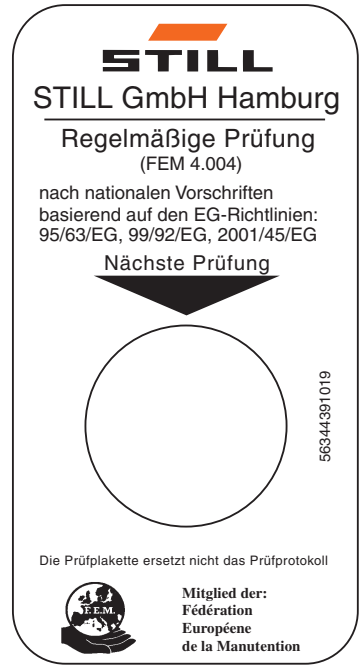
– Observe guidelines for checks carried out on the truck in accordance with FEM 4.004.

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

– Contact your service centre.

NOTE

Observe the national regulations for your country!



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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.

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3

Overview

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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 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, it 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 pneumatic sprung step plate (option)
- Elevating operator step plate (option)
- Folding step
- Ergonomic folding seat that is height-adjustable and pneumatically sprung for long journeys (option)
- Narrower seat backrest for a more spacious operator compartment (option)
- Lithium-ion batteries
- Wide range of lights for improved operator safety and visibility

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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.



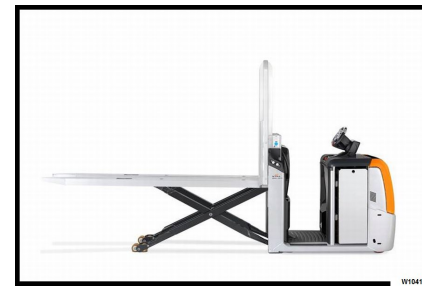
OPX-L 20 S

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 to put them at 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 1200 kg and lifted to a working height of 786 mm. The vehicle's compact size makes it particularly suitable for narrower working aisles.



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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 vehicle's short wheelbase gives it a small turning radius, which makes it easier to 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

Stand-out features of the OPX-L 20 are its centre of gravity, which is optimised for faster cornering; pedestrian mode permits shorter distances on foot from the pallet when order picking; and the ergonomic working height. Advantages resulting from the ability to vary height for ergonomic working.



OPX-L 20 D

Capacity: 2000 kg

Speed: 12 km/h

Double the efficiency with the OPX-L 20 D. 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, such as pallets of yogurt. 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 be up to 2000 kg.



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LTX50

Towing capacity: 5000 kg

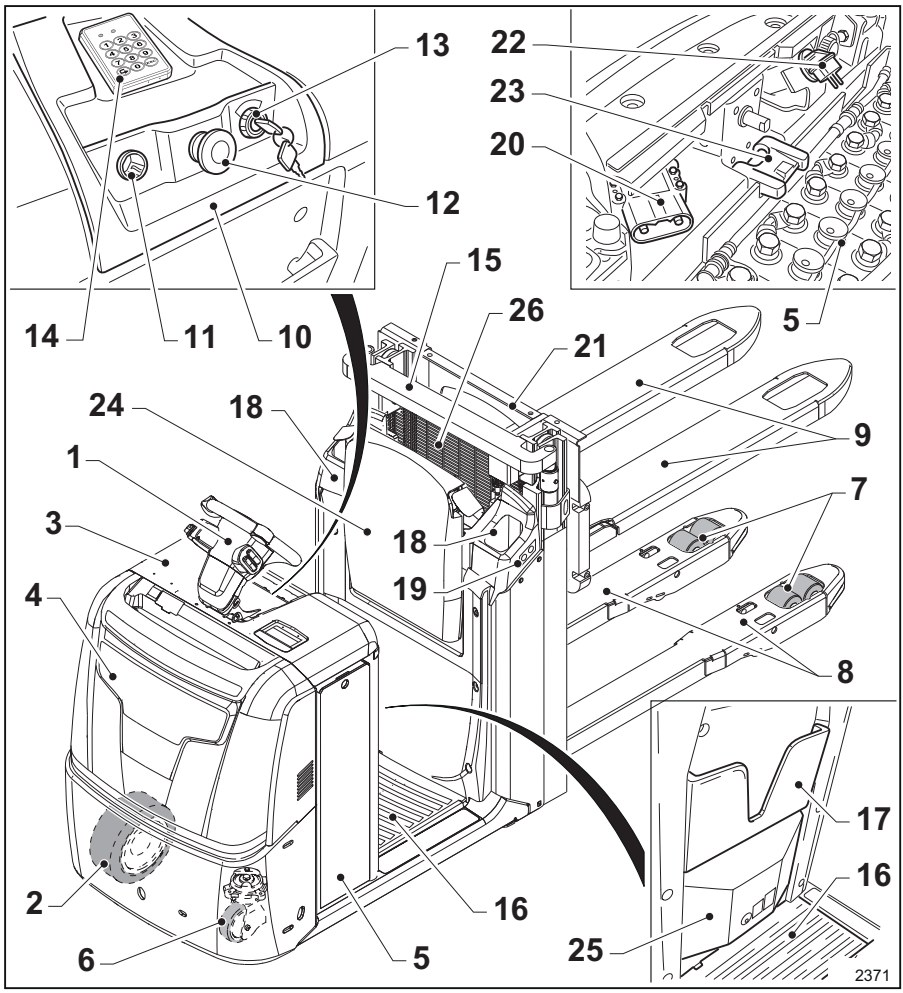
Speed: 12 km/h

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



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OPX range general overview



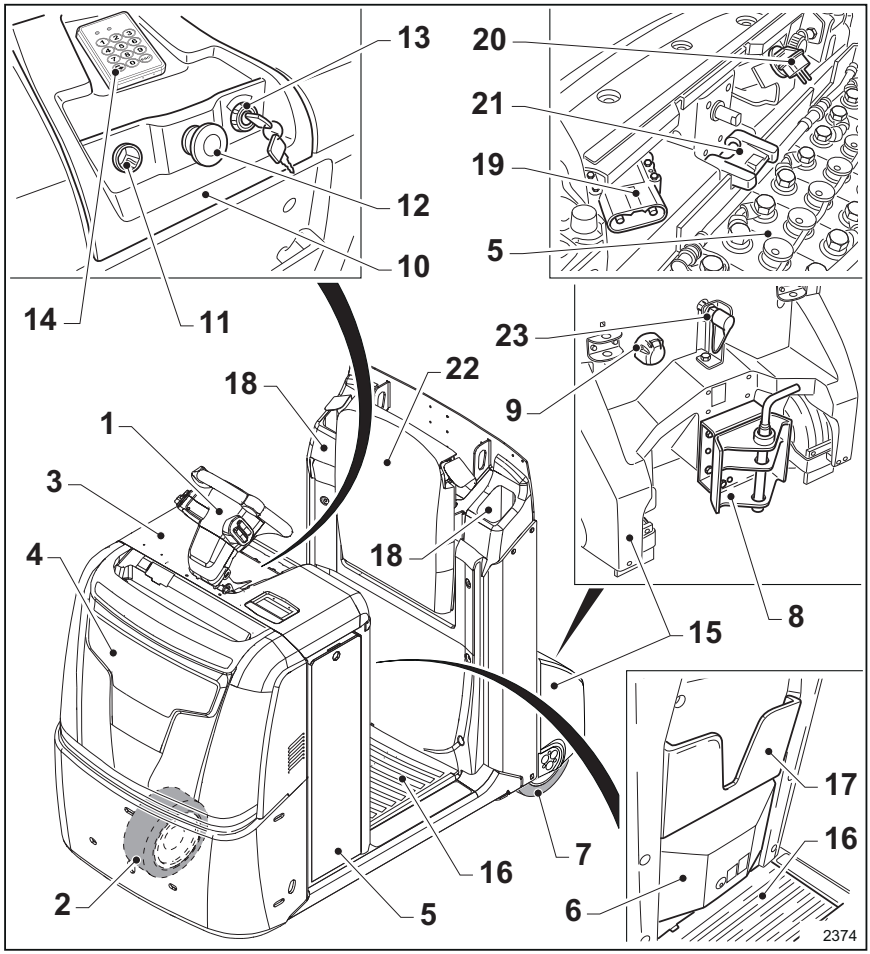
1	Steering wheel with integrated controls	10	Dashboard
2	Drive wheel	11	12/24 V cigarette lighter socket
3	Hood for accessing the battery compartment	12	Emergency stop button
4	Motor compartment cover	13	On/off key
5	Battery	14	Digicode - Numerical Keypad
6	Pivoting wheel	15	Lift mast
7	Load castor	16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

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19	Seat backrest push buttons
20	Battery plug/socket
21	Fork carriage
22	On-board battery charger socket
23	Mechanical battery lock clasp
24	Seat backrest
25	Platform damping system
26	Load rack

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LTX50 general overview



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

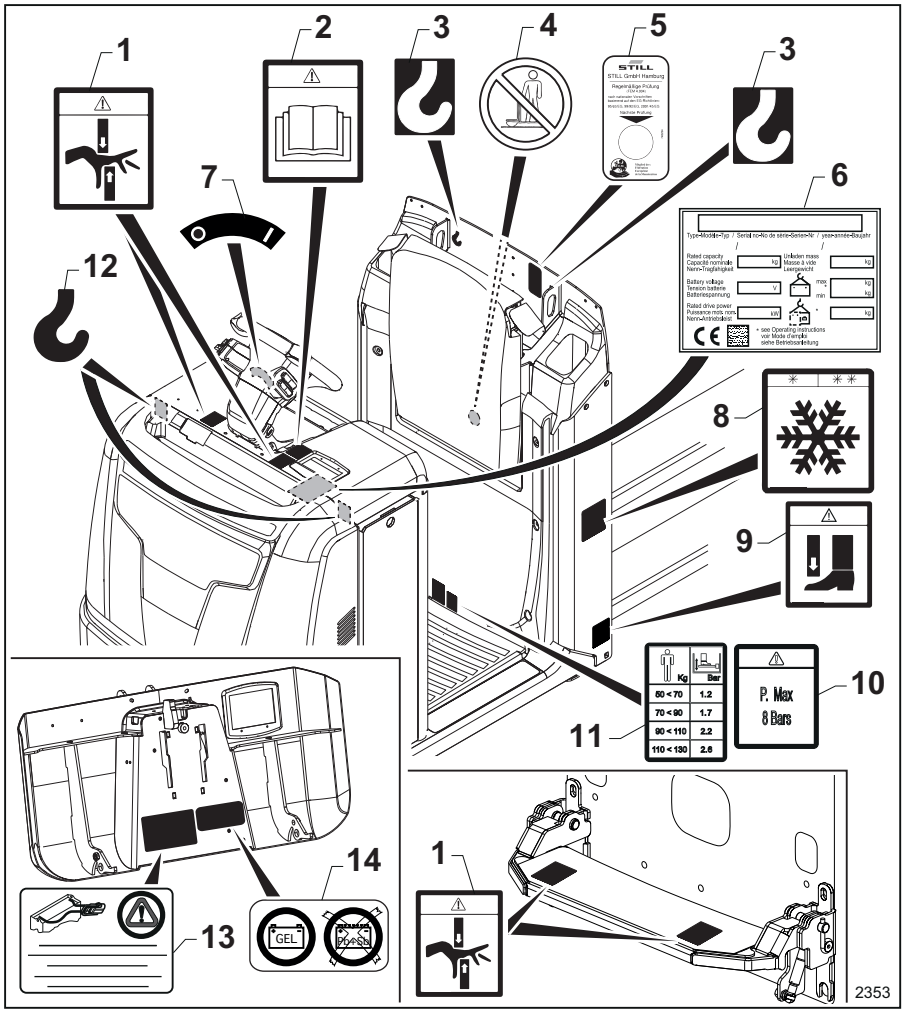
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21 Mechanical battery lock clasp
22 Seat backrest
23 LiftRunner system hydraulic coupling

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Markings

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



1	"Danger of crushing hands" label	8	"Cold store" label (for cold store equipment only)
2	"Operating and maintenance manual" label	9	"Danger of crushing feet" label
3	"Hook" symbol	10	"Maximum permissible pressure" label
4	"Do not climb on the forks" label	11	"Operator platform capacity diagram" label
5	"Annual safety inspection" label (Germany only)	12	"Hook" symbol
6	"Nominal value" plate	13	"Battery warning" label
7	Label "ON/OFF"	14	Version set up for gel batteries

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Description of labels

(1) This symbol indicates the 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 sold in Germany. The label indicates the date of the truck's periodic safety inspection.

(6) Plate showing the truck nominal values.

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

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

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

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

(11) This label indicates the adjustment pressure of the operator platform 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. (only present on versions with platform damping).

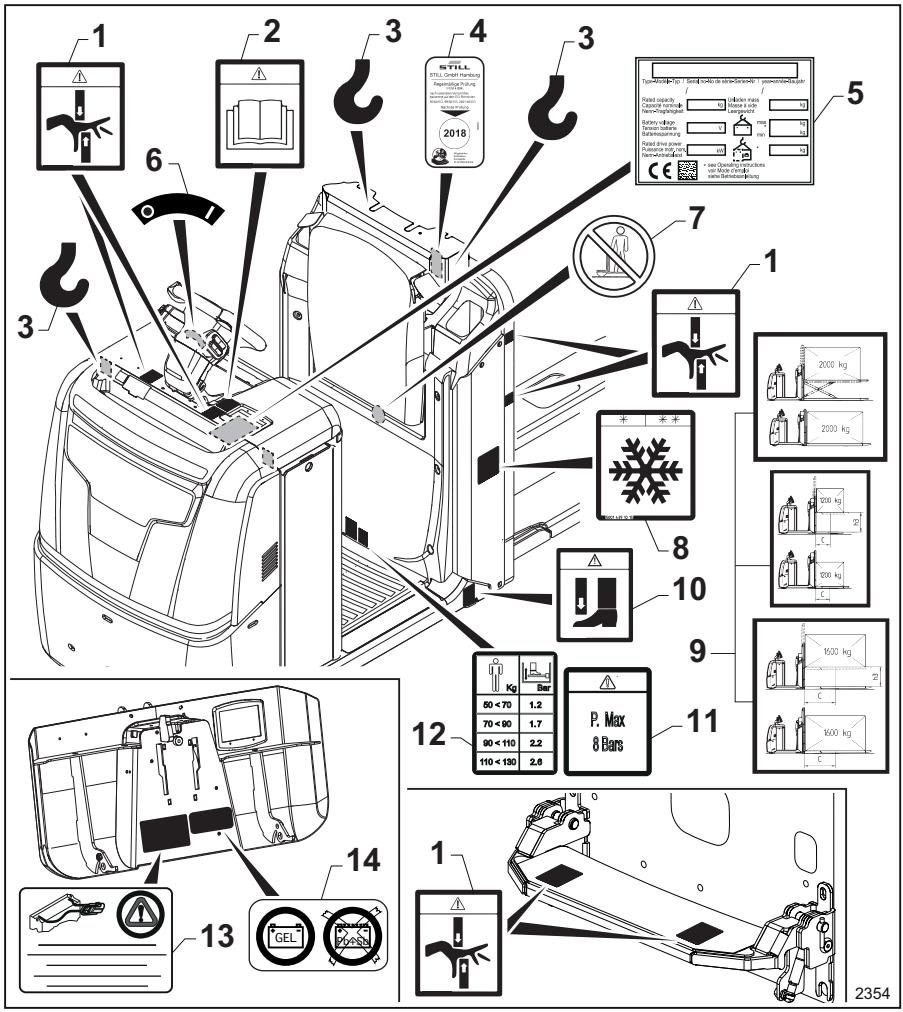
(12) This label indicates where to attach the truck's lifting hook.

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

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

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



1	"Danger of crushing hands" label	8	"Cold store" label (for cold store equipment only)
2	"Operating and maintenance manual" label	9	Truck capacity label
3	"Hook" symbol	10	"Danger of crushing feet" label
4	"Annual safety inspection" label (Germany only)	11	"Maximum permissible pressure" label
5	"Nominal value" plate	12	"Operator platform capacity diagram" label
6	Label "ON/OFF"	13	"Battery warning" label
7	"Do not climb on the forks" label	14	Version set up for gel batteries

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Description of labels

(1) This symbol indicates the 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.

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

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

(5) Plate showing the truck nominal values.

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

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

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

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

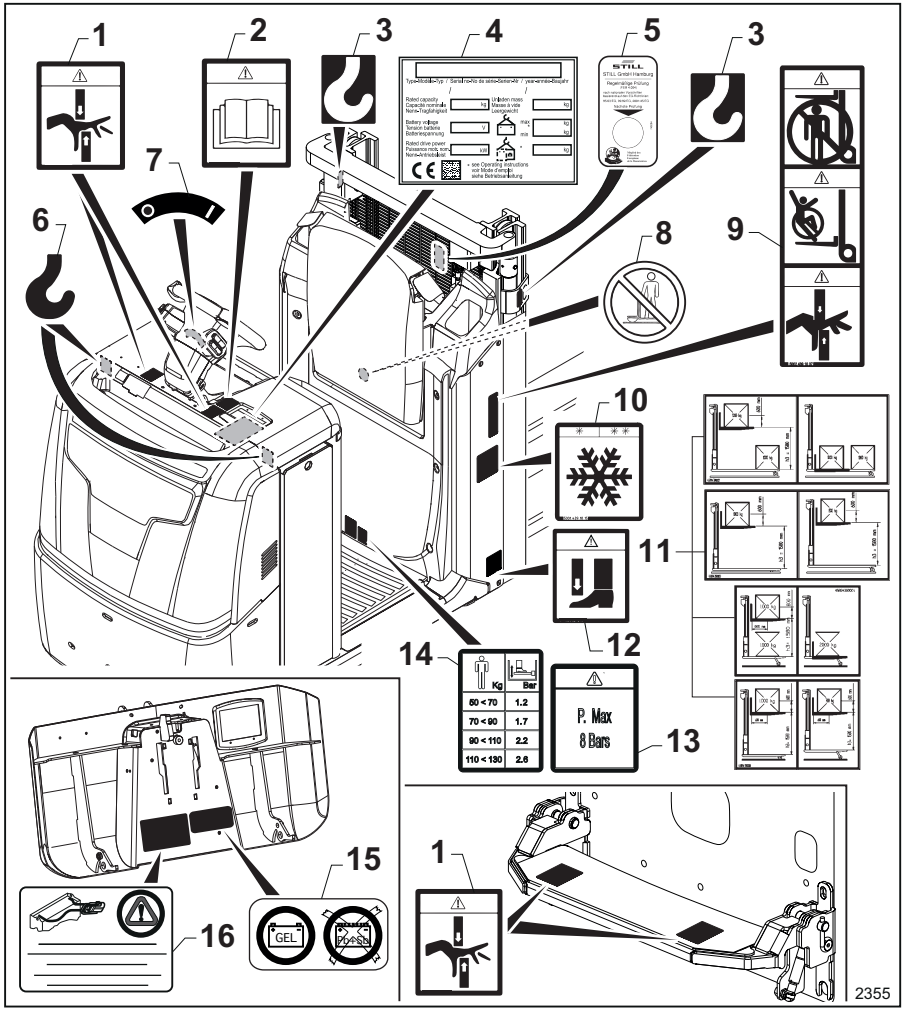
(12) This label indicates the adjustment pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 and 90 kg; 2.2 bar: between 90 and 110 kg; 2.6 bar: between 110 and 130 kg. (only present on versions with platform damping).

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

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

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Location of OPX-L20 and OPX-D20 labels



1	"Danger of crushing hands" label	9	Warning label
2	"Operating and maintenance manual" label	10	"Cold store" label (for cold store equipment only)
3	"Hook" symbol		
4	"Nominal value" plate	11	
5	"Annual safety inspection" label (Germany only)	12	"Danger of crushing feet" label
		13	"Maximum permissible pressure" label
6	"Hook" symbol	14	"Operator platform capacity diagram" label
7	Label "ON/OFF"	15	Version set up for gel batteries
8	"Do not climb on the forks" label	16	"Battery warning" label

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Description of labels

(1) This symbol indicates the 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) Plate showing the truck nominal values.

(5) This label is only present on trucks sold in Germany. The 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 by 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 carrying people on the truck is prohibited and that standing or passing under the raised forks is prohibited.

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

(11)

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

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

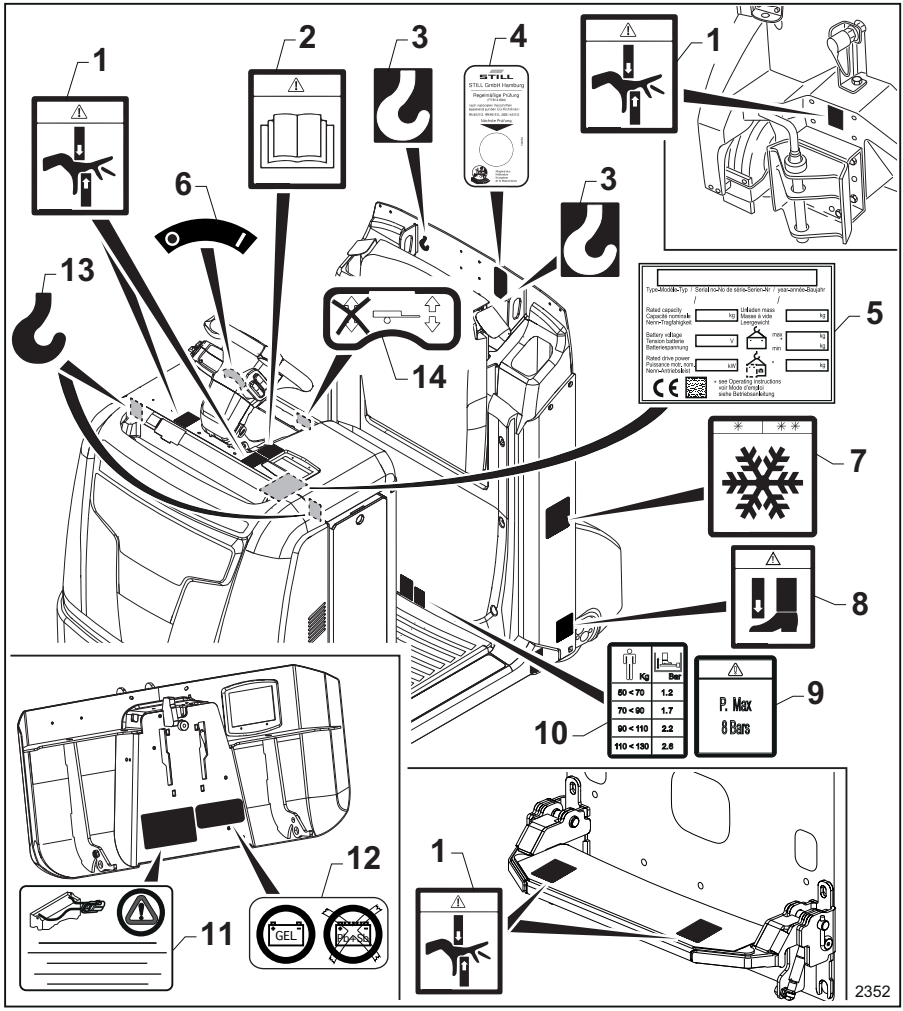
(14) This label indicates the adjustment pressure of the operator platform depending on the weight of the operator. 1.2 bar: below 70 kg; 1.7 bar: between 70 and 90 kg; 2.2 bar: between 90 and 110 kg; 2.6 bar: between 110 and 130 kg. (only present on versions with platform damping).

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

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Location of LTX50 labels



1	"Danger of crushing hands" label
2	"Operating and maintenance manual" label
3	"Hook" symbol
4	"Annual safety inspection" label (Germany only)
5	"Nominal value" 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 diagram" label
11	"Battery warning" label
12	Version set up for gel batteries
13	"Hook" symbol
14	"Handling trailers" label

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Description of labels

(1) This symbol indicates the 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 sold in Germany. The label indicates the date of the truck's periodic safety inspection.

(5) Plate showing the truck nominal values.

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

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

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

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

(10) This label indicates the adjustment pressure of the operator platform 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. (only present on versions with platform damping).

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

(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.

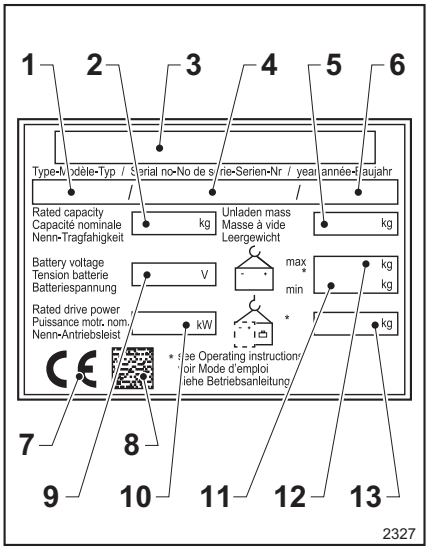
(14) This "ON/OFF" label relates to handling trailers. Switching the " Lift Runner" system on and off (optional).

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Data plate

NOTE

Please indicate the serial number for all technical enquiries.



1	Model
2	Rated capacity in kg
3	Manufacturer
4	Serial no.
5	Unladen weight (without battery) in kg
6	Year of manufacture
7	EC conformity symbol
8	QR code
9	Battery voltage V
10	Nominal power rating in kW
11	Minimum battery weight
12	Maximum battery weight
13	Additional weight (ballast) in kg

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Serial number

NOTE

Please quote the serial number with all technical questions.

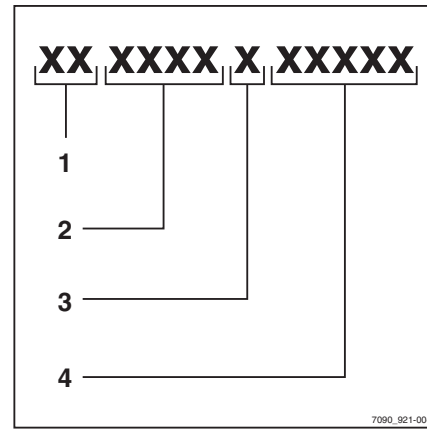
The serial number contains the following information:

1 Production location

2 Type

3 Year of production

4 Sequential number



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

⚠ DANGER

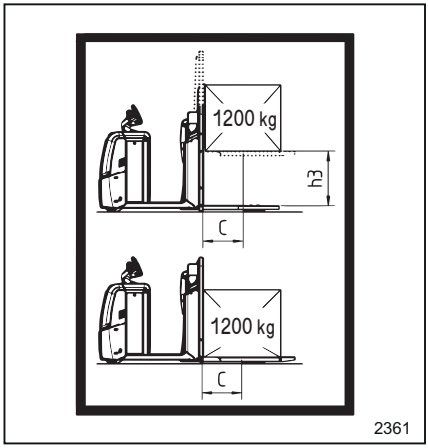
The values indicated on the capacity plate refer to compact and homogeneous loads and must not be exceeded — otherwise the stability of the truck and the load-bearing capacity of the structures may be compromised.

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.

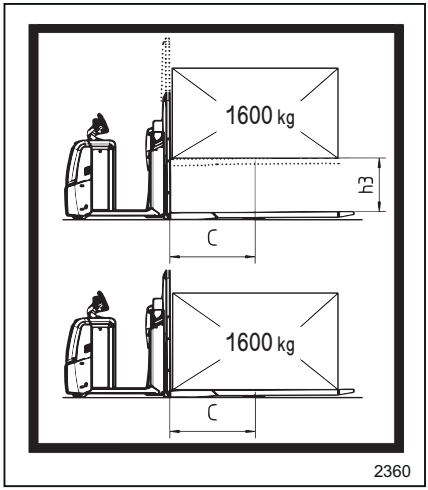


OPX-L 16

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.



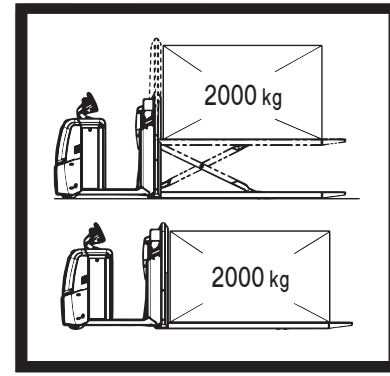
https://truckmanualshub.com/

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.



2362

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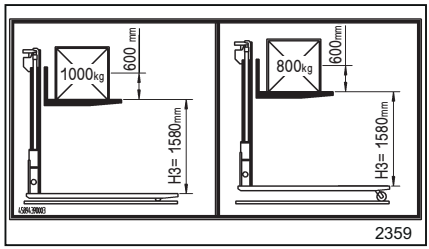
OPX-L 20 capacity plate

⚠ 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.

– Capacity plate for **transporting a single load**. ▷

- The left-hand image shows the truck maximum capacity (1000 kg) with the straddles fully lowered
- The right-hand image shows the truck maximum capacity (800 kg) with the straddles fully raised

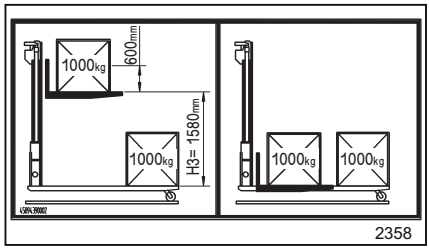


2359

– Capacity plate for **transporting two loads**. ▷

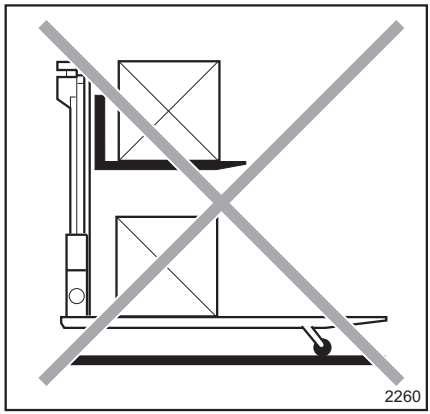
When transporting two loads, with one on the forks and the other on the straddles, the maximum capacity of the truck is 2000 kg distributed as follows:

- 1000 kg on the forks regardless of the fork lift height
- 1000 kg on the straddles regardless of the straddle lift height



2358

– **Forbidden!** There must be no loads under the forks. Transporting loads as shown in the illustration to the side is expressly forbidden (this is not a label on the truck, but rather an example image). ▷


2260

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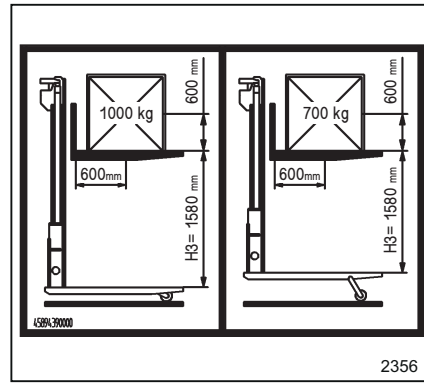
OPX-D 20 capacity plate

⚠ 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.

– Capacity plate for **lifting a load on the forks**. ▷

- The left-hand image shows the maximum capacity of the truck (1000 kg) with the forks at the maximum height and with the straddles fully lowered
- The right-hand image shows the maximum capacity of the truck (700 kg) with the forks at the maximum height and with the straddles fully raised.



2356

– Capacity plate for use as a **double pallet stacker** and use as a **pallet truck**. ▷

The left-hand image shows use as a **double pallet stacker**. When transporting two loads, with one on the forks and the other on the straddles, the maximum capacity of the truck is 2000 kg distributed as follows:

- 1000 kg on the forks regardless of the fork lift height
- 1000 kg on the straddles regardless of the straddle lift height

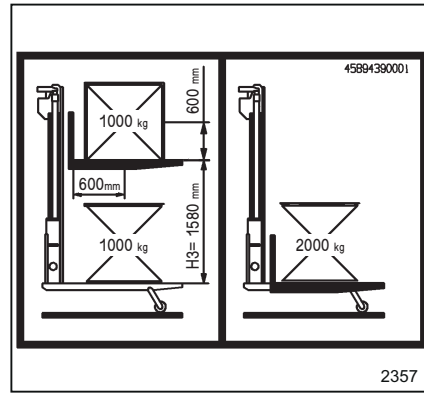
⚠ CAUTION

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.

The right-hand image shows use as a **pallet truck**. When transporting a load on the forks (forks fully lowered regardless of the straddle



2357

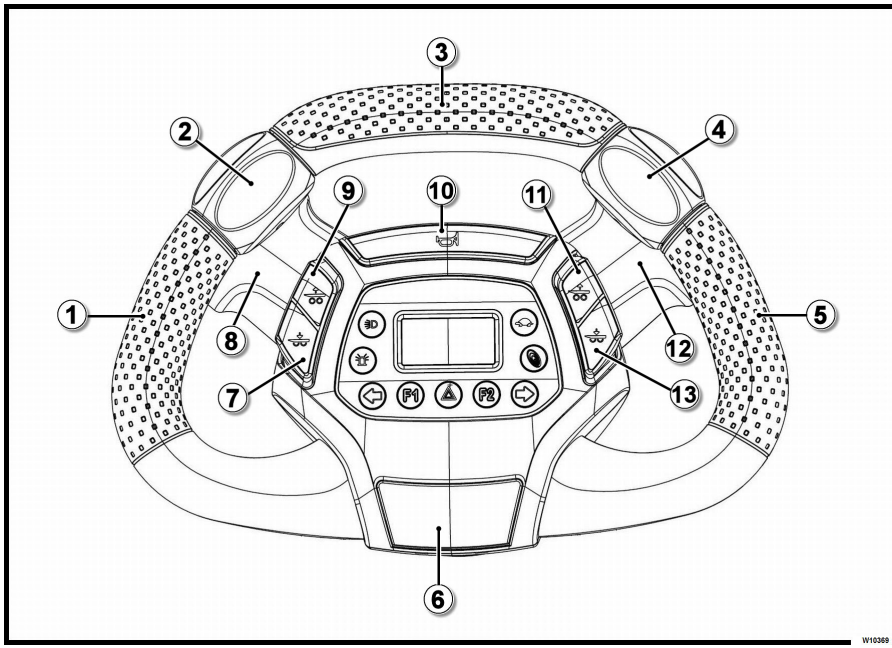
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lift height), the maximum capacity of the truck is 2000 kg.

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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 the travel control (2) or (4) is turned, the truck starts in forward or reverse travel.

(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

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(6) Service braking button

- When the button is pushed, service braking is actuated

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

The functionality of the push 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 models
- Specific functionality for OPX-L 12/16/20S models only

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

- Version WITHOUT adjustable straddles

  In this case, the command moves the forks

  Fork movement can be stopped at any time by releasing the push button (7). The forks will stop in the position reached
- Version WITH adjustable straddles

  In this case, the command moves the straddles

  On the version with the adjustable straddle, when the button (7) is pressed, the straddles lower fully to the ground

(7) Specific functionality for OPX-L 12/16/20S 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 push 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 models
- Specific functionality for OPX-L 12/16/20S models only

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

- Version WITHOUT adjustable straddles

  In this case, the command moves the forks

  The command only works if the forks are at a height equal to or lower than the initial lift height

  The initial lift height can vary according to the version of the truck.

  When the push button (9) is pressed, the forks are raised until the initial lift height is reached.

  Fork movement can be stopped at any time by releasing the push button (9). The forks will stop in the position reached
- On the version with a lift mast, use the key on the optional turrets (8) and (12) to raise the forks further.
- Version WITH adjustable straddles

  In this case, the command moves the straddles

  On the version with adjustable straddles, when the push button is pressed, the forks are raised fully to the maximum height of the initial lift.

(9) Specific functionality for OPX-L 12/16/20S models only

- Version WITHOUT control turrets (8) and (12)

  In this case, the command moves the forks

  When the push 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 push button (9). The forks will stop in the position reached

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- Version WITH control turrets (8) and (12)

  In this case, the command moves the forks

  The command only works if the forks are at a height equal to or lower than the initial lift height

  The initial lift height can vary according to the version of the truck.

  When the push button (9) is pressed, the forks are raised until the initial lift height is reached.

  Fork movement can be stopped at any time by releasing the push button (9). The forks will stop in the position reached
- On the version with a lift mast, use the key on the optional turrets (8) and (12) to raise the forks further.

(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)

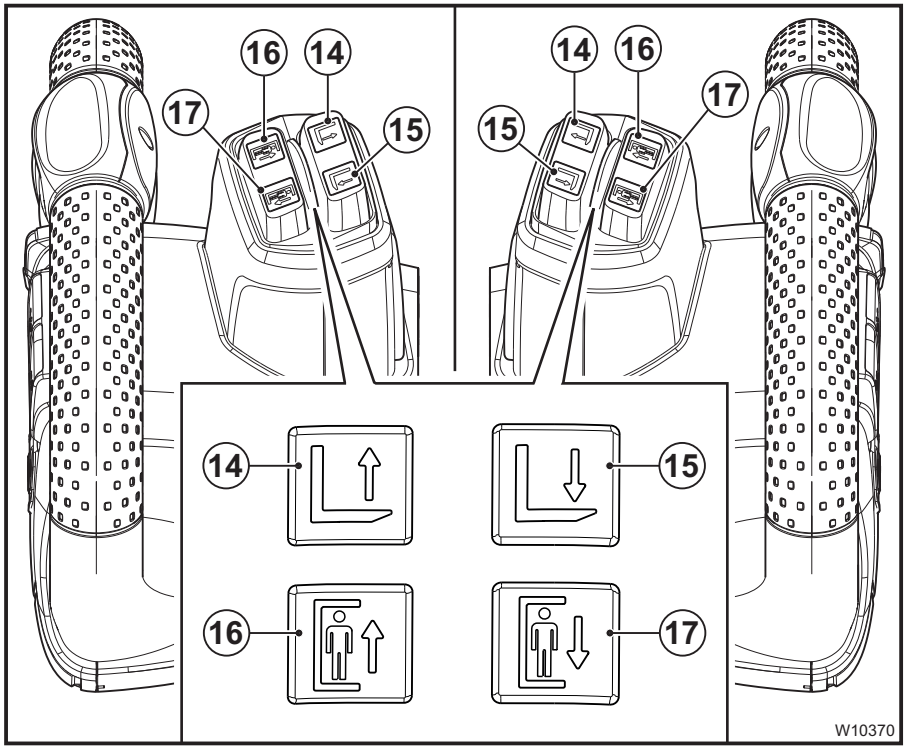
- For operation, see point (8)

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

- For operation, see point (7)

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Comandi volante - Parte 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)

⚠ 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".

(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.

NOTE

The speed of the forks is proportional to how hard the button is pressed.

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(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.

NOTE

- *The speed of the forks (14 and 15) is proportional to how hard the push button is pressed.*

(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

NOTE

The speed of the platform is proportional to how hard the button is pressed.

(17) Mobile platform lowering button (where present)

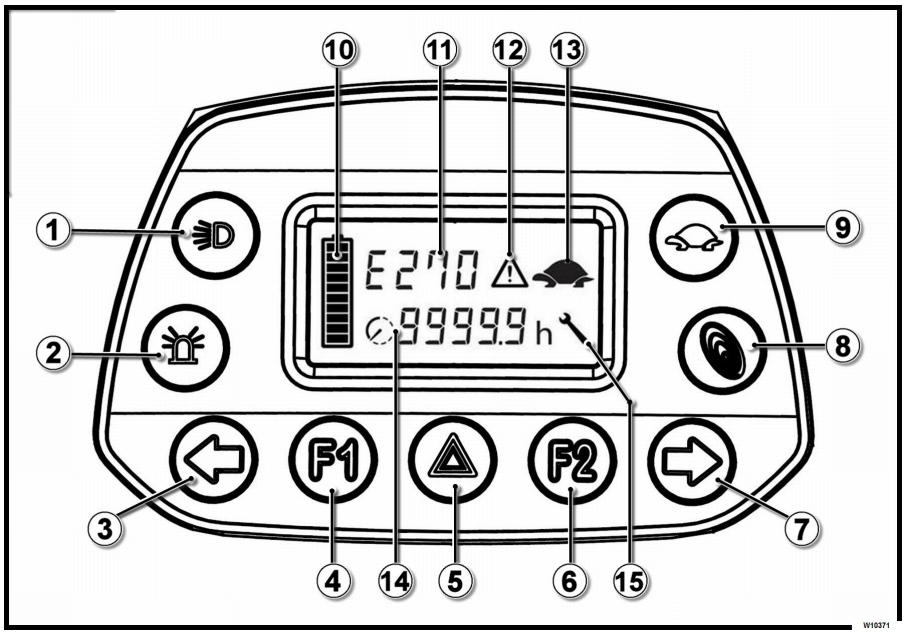
- When the button is pressed, the movable step plate lowers
- Movement of the movable step plate can be stopped at any time by releasing the button The movable step plate stops at the position reached

NOTE

- *The speed of the platform is proportional to how hard the button is pressed.*

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Steering wheel controls - Part 3



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

Description of the keys

- **(1) Dipped beam headlights**

  Dipped beam headlights are optional. The button (1) is always present but only works in the presence of the optional dipped beam headlights.

  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.

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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 arrow (where present).**

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

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

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

- **(4) F1 - Optional controls**

  The button (4) is optional. It is always present but can only be activated in the presence of the option that allows you to use some functions of the truck from the ground. For this reason, the control is not activated when the key (4) is pressed with the operator on board the truck.

  When the key (4) is pressed with the operator on the ground, the push button lights up and the optional functionality is activated (necessary for steering wheel travel controls, not necessary for seat backrest controls with ground-based driving)

  When the key (4) is pressed again with the operator on the ground, the button lights up and the optional feature switches off.

- **(5)Hazard warning signal (where present)**

  The button (5) is only present on some 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 - Optional controls**

  The button (6) is optional. It is always present but can only be activated in the presence of the option that allows you to use some functions of the truck from the ground. For this reason, the control is not activated when the key (6) is pressed with the operator on board the truck.

  When the key (6) is pressed with the operator on the ground, the push button lights up and the optional functionality is activated (necessary for steering wheel travel controls, not necessary for seat backrest controls with ground-based driving).

  When the key (6) is pressed again with the operator on the ground, the button lights up and the optional feature switches off.

- **(7) Right arrow (where present)**

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

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

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

- **(8)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.

  When the illuminated key (8) is pressed again, the button turns off and the Blue-Q system is deactivated.

- **(9)Tortoise**

  The tortoise function activates the truck's creep speed.

  When the key (9) is pressed, creep speed is activated. The button lights up and simultaneously the tortoise symbol (13) appears. 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 switches off. 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, 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

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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**

  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**

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

- **(14)Hour meter**

  - 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**

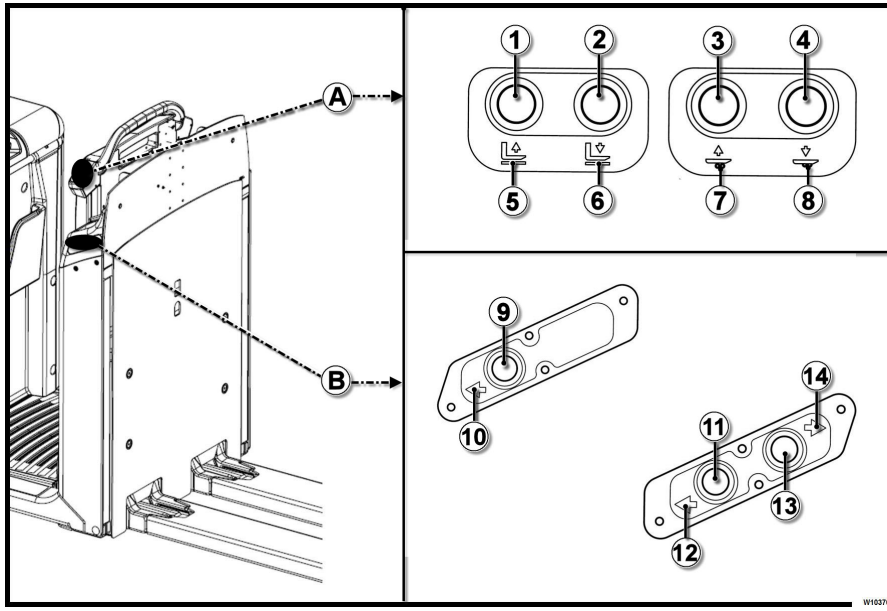
  The adjustable spanner reminds the operator that a service is due:

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

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Backrest controls



Description

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

Backrest controls, if any, 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 (A) zone:

- 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.

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.

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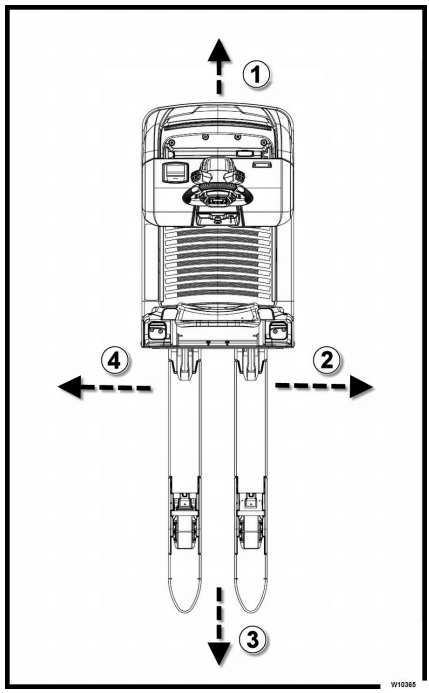
Definition of directions

Direction of movement defined by the regulations:

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

NOTE

The information is valid for the entire OPX and LTX range; the image to the side shows only the OPX truck by way of example.



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Lift mast

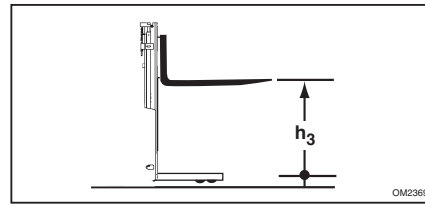
Types of lift masts (where present)

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

- Simplex (OPX-L20S)
- Telescopic (OPX-L20 and OPX-L20D)

Simplex (OPX-L20S)

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

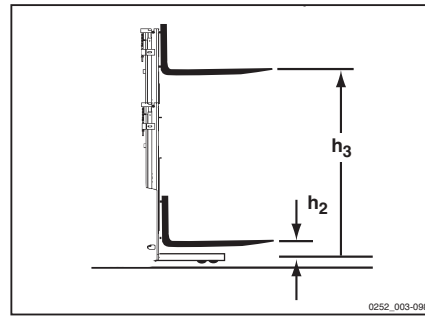


Telescopic (OPX-L20 and OPX-L20D)

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.



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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
- 12 V socket
- 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
- On-board charger
- Autolift
- Various types of traction chassis protective guard
- Adjustable 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
- Locking fork or straddle movement during travel (OPX range only)
- Various types of tow coupling (LTX50 only)

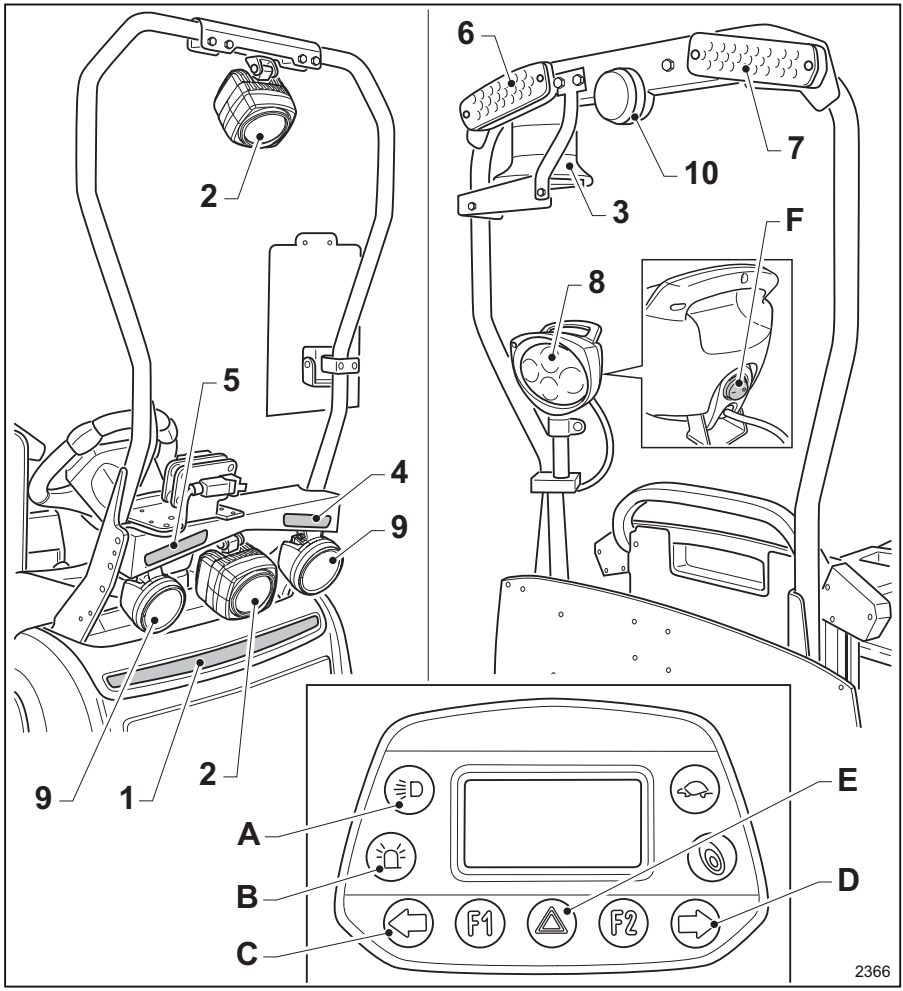
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FleetManager (Option)

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

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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		

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NOTE

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

(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 for truck at standstill

  Warning signal for alarm linked to the truck (contact the manufacturer's authorised technical service centre)

(2) Blue safety spotlights

(Blue spot light) safety spotlights improve safety in the workplace; they turn on automatically during forward travel of the truck. Two types of lights are available:

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

(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.

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

The arrows (direction indicators) serve to 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 on the left-hand side (4 e 6)

  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 on the right-hand side (5 e 7)

  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 using on-ground driving, when the steering wheel is turned at an angle greater than the permitted angle (about 10°). 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 fault 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.

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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).

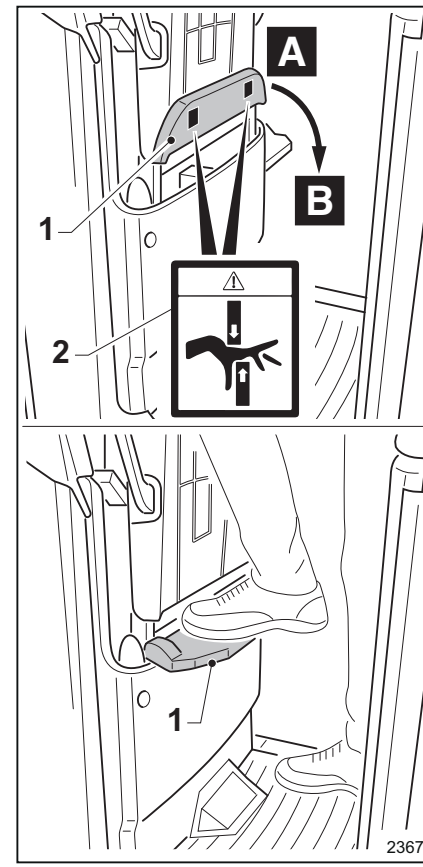
To close the step:

- 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.

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Attachment mounting bar with data socket (MMS)

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)

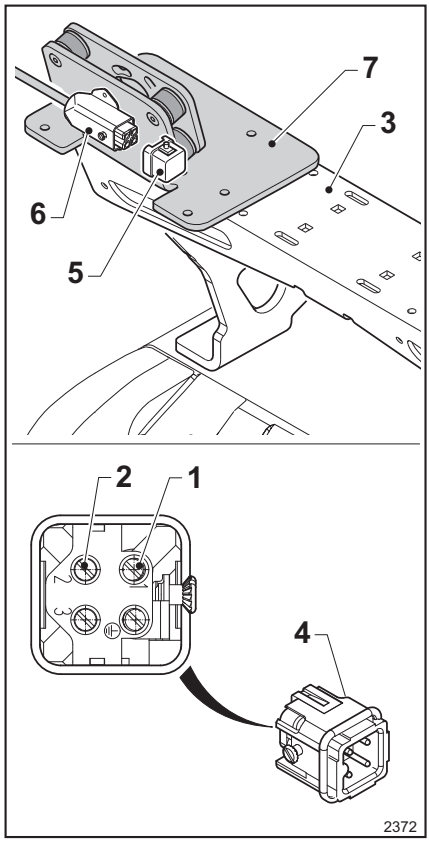
⚠ DANGER

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

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⚠ 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).

Battery electrolyte level indicator LED (optional)

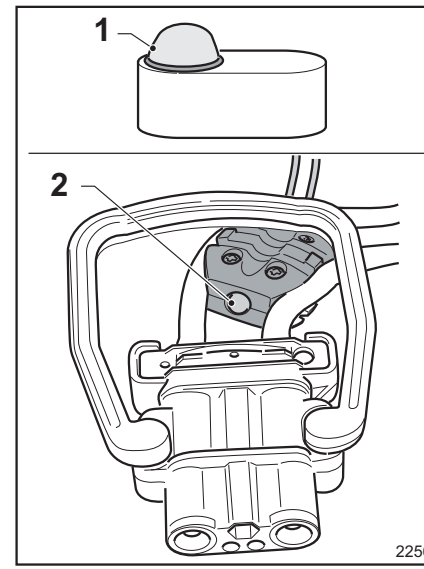
There are two versions of the LED:

- 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.



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4

Use

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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 into and removing pallets from stock.

The dimensions and capacity of the pallets or containers must be adapted to the load being transported to ensure stability.

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 him 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 braking distance from vehicles and persons in front of him and must always have the truck under control. The operator must avoid sudden stops, making fast U-turns and overtaking other vehicles in potentially dangerous areas or areas with poor 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

Risk due to protruding objects like shelves.

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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).

NOTE

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

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

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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.

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Forklift Use in Cold-Storage Rooms.

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

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

⚠ CAUTION

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

⚠ CAUTION

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

Avoid the formation of ice on the forklift.

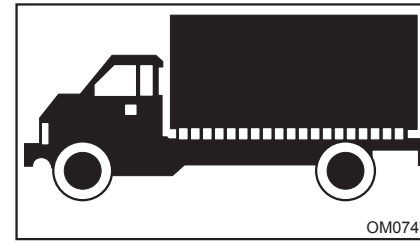
⚠ CAUTION

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

Truck transport and lifting

Transporting the truck

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



Climatic Conditions for Transport and Storage

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

Breaking-In

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

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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 damped 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)
- Turn on the truck (see the detailed instructions for turning 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.

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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 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

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- Test that the electromagnetic brake works effectively
- Check that the battery harness is in good condition
- Check and test the battery electrolyte level and density as indicated in the battery instructions
- 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
- Visually check that the operator platform is in good condition and test that it is operating correctly
- Check that the battery holddown is in good condition and correctly positioned and secured
- Check that the lift chain holding bracket (where present) is in good condition and properly fastened
- The roller tracks of the mast must be coated in a visible film of grease (where present)
- 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 Check that the seat and the safety catches are working properly 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 (where present)
- Check that the buzzer signalling when the truck is travelling in the direction of the fork arms works correctly (where present)

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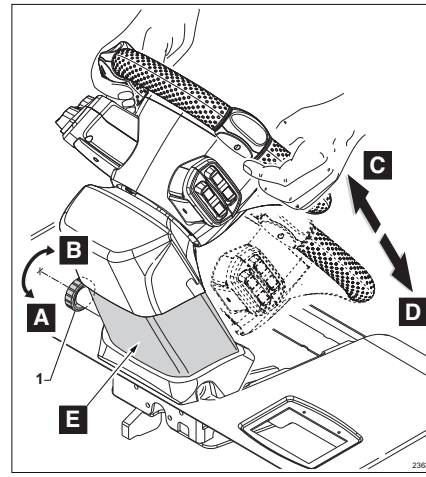
Optional driver's seat adjustments

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)



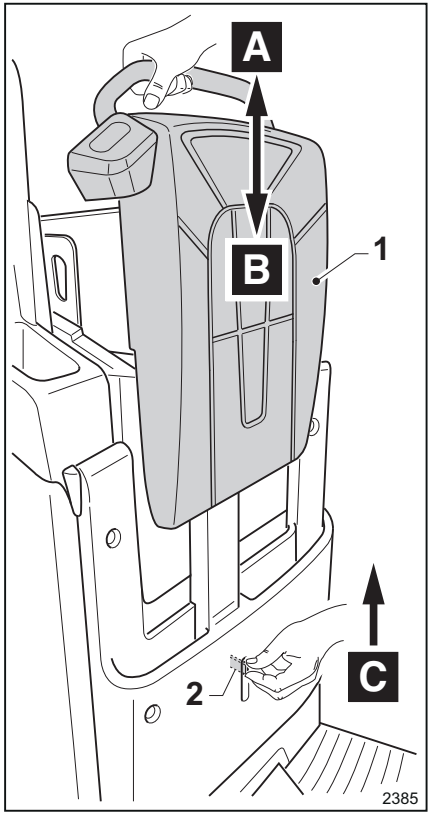
⚠ WARNING

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.

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Height-adjustable 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 confines of the truck. Putting your hands, arms, legs etc. outside the truck is forbidden as they could hit shelves etc.

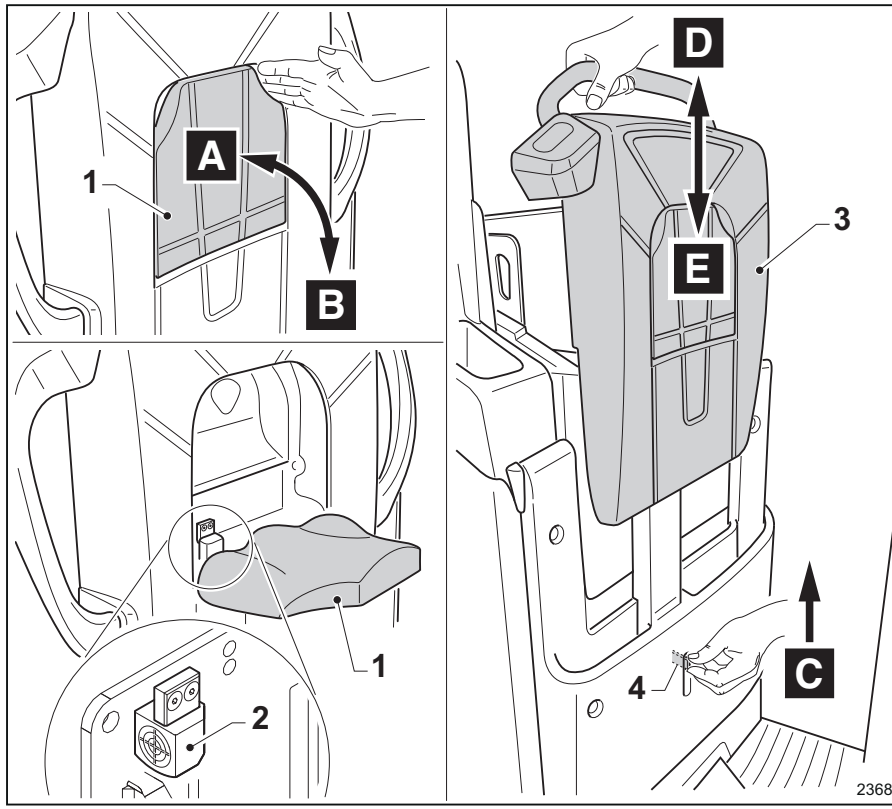
Positioning yourself correctly in the driving seat is mandatory. Positioning objects (e.g. screwdrivers, adjustable spanners etc.) between the seat backrest and the operator's back is forbidden.

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) down (B) with the other hand. Release the toggle lever (2) once the desired height has been reached.

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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.

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Optional driver's seat adjustments

⚠ 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.

With the seat at intermediate positions between (A) and (B), the truck stops travelling.

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.

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Adjusting the platform (optional)

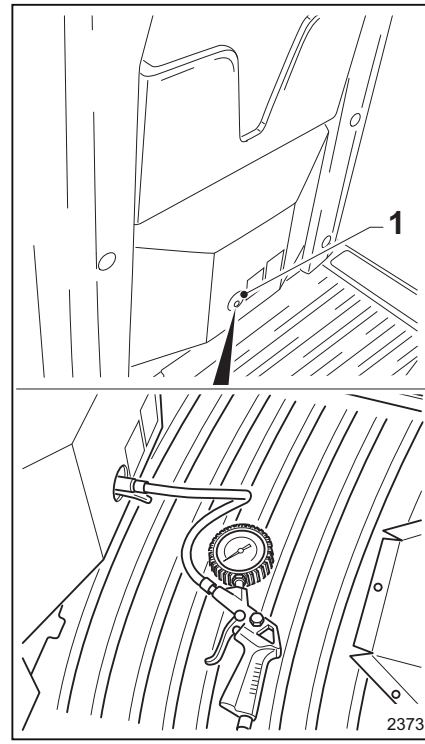
To improve driving comfort and to reduce the vibrations felt by the operator, adjust the pressure in the damping system in accordance with the weight of the operator.

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.

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



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

– Do not wear jewellery in the workplace.
– Do not wear loose-fitting 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(s) on the seat backrest 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.

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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)

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Driving position with the operator on board the truck

General information for driving with the operator on board the truck

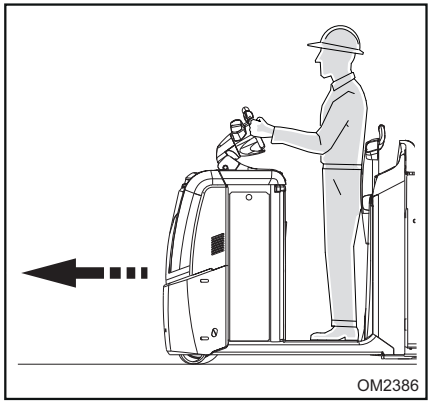
The operator should drive the truck using the controls located on the steering wheel and on the dashboard.

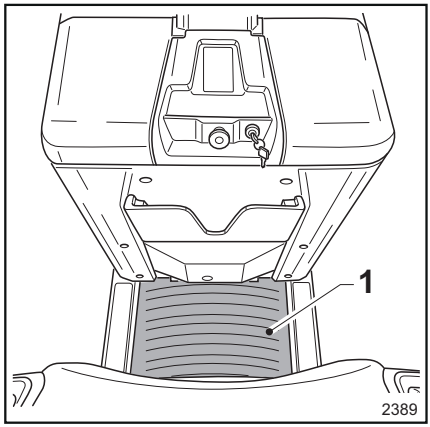
⚠ DANGER

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 correct driving position is:

- Operator standing on board the machine

  If present, 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

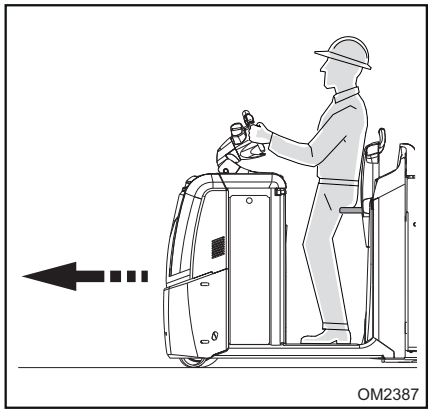
  Operator facing the truck front

  Both of the operator's feet must be on the mat (1) that detects the presence of the operator 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)



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⚠ 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

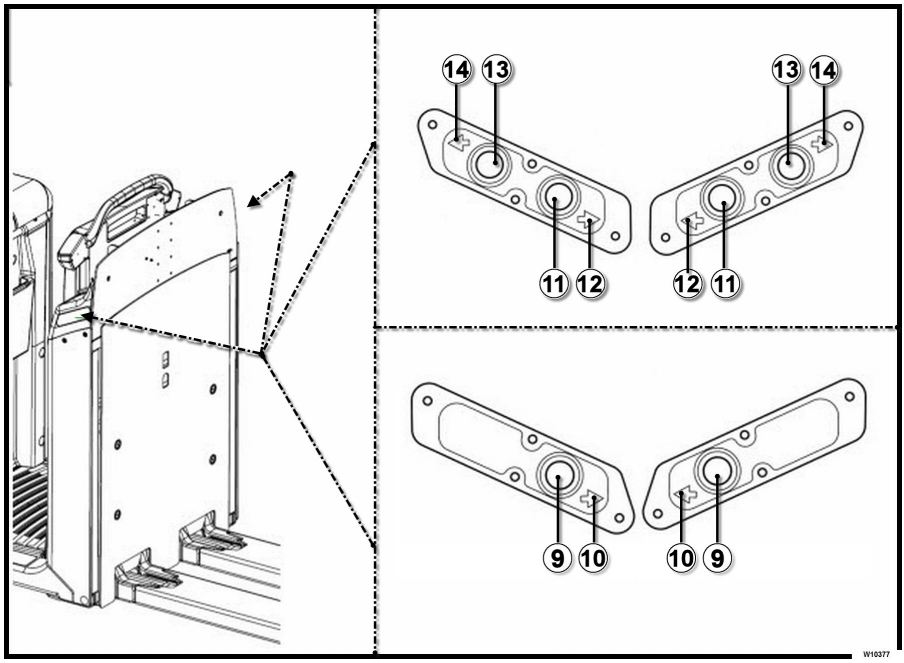
  Hands firmly on the steering wheel knob (if one hand is required to hold packages, items etc. then the other hand must be firmly on the steering wheel).

NOTE

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

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



NOTE

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 - 10) or alternatively the buttons (11 - 12 - 13 - 14) are installed on both sides of the 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*

DANGER

Risk of crushing feet.

When using, do not turn the steering wheel. Make sure that the truck maintains a straight course.

Use the travel controls with both feet on the ground, keeping them a safe distance from the truck edge.

When using the controls, the operator must walk alongside the truck.

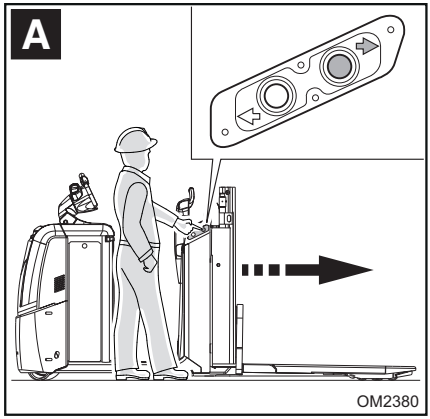
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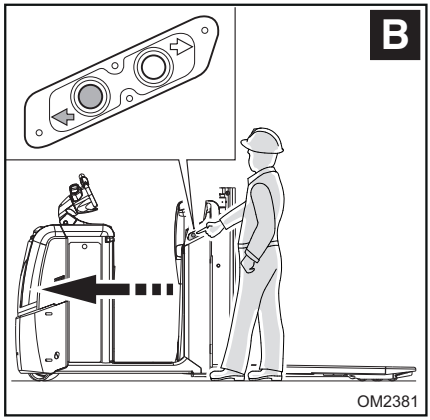
Using the travel controls with the operator on board

NOTE

The travel controls installed on the backrest (9 - 10 - 11 - 12 - 13 - 14) 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.

NOTE

- *If the travel control buttons are pressed for an extended period of time (about 10 seconds), a safety circuit immobilises the truck If this occurs, simply release the button and then press the travel control again*
- *When using the travel controls, if you turn the steering wheel to a steering angle greater than approximately 10°, the truck is immobilised To restart travel, release the button and then press the button again*
- *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*
- Position yourself correctly on the ground alongside the truck, then:

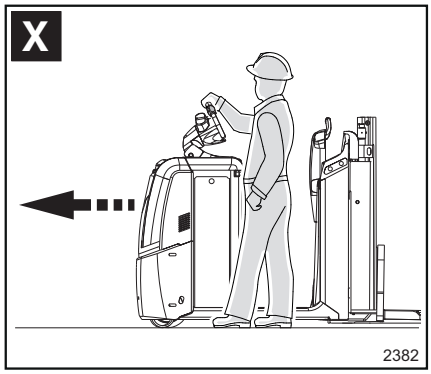
  - To move the truck in the direction indicated by the arrow (10), press the key (9). Release the key to stop the truck.

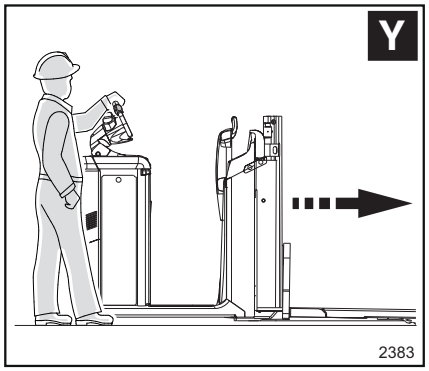
  - To move the truck in the direction indicated by the arrow (12), press the key (11). Release the key to stop the truck.

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

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





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

NOTE

- *Take care when using, especially if you are not familiar with using this function*
- *If the above function is used for an extended period of time (about 10 seconds), a safety circuit immobilises the truck If this occurs, simply release the travel control and then reactivate the travel control*
- *When using this function, if you turn the steering wheel to a steering angle greater than approximately 10°, the truck is immobilised To restore travel, release the control and then turn it again in the required direction*
- *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*

DANGER

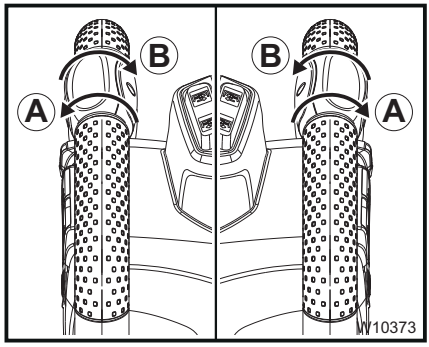
Risk of crushing feet and impacts.

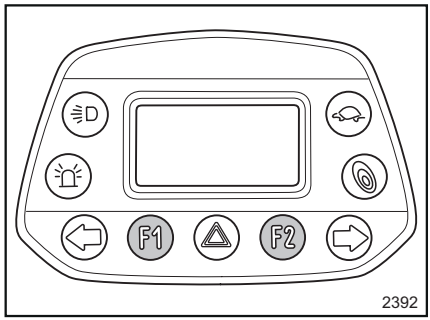
When using, do not turn the steering wheel. Make sure that the truck maintains a straight course.

Use the travel controls with both feet on the ground, keeping them a safe distance from the truck edge.

When using the controls, the operator must walk alongside the truck.

Use





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Activating the travel controls from the ground

- With the truck switched on, press the key (F1) or (F2) on the steering wheel to enable operation of the travel controls. The push-button pressed will light up.

  - Either (F1) or (F2) activate both the steering wheel travel controls.

Deactivating the travel controls from the ground

- With the truck switched on, press the key (F1) or (F2) activated previously to deactivate the travel controls (the push-button will turn off).

Forward/reverse travel with the operator on the ground alongside the truck:

- Position yourself correctly on the ground alongside the truck (X) and (Y), grip the steering wheel sideways with one hand, then:

  - When the travel control is turned in direction (A), the truck starts in reverse travel. Release the travel control to stop the truck.

  - When the travel control is turned in direction (B), the truck starts in forward travel. Release the travel control to stop the truck.

NOTE

The truck will move in the 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.

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Stopping the truck in EMERGENCIES

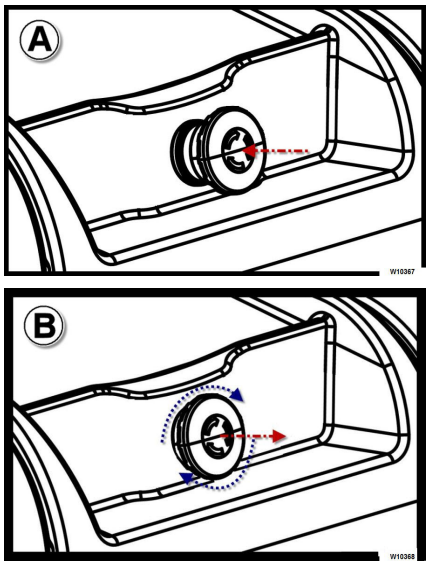
In an emergency, the power supply to all functions on the truck can be shut down through the emergency stop button.

⚠ CAUTION

The EMERGENCY stop button (1) 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 (1):

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



Activating the EMERGENCY stop button

To activate the button (1) 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 (1) 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)

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On/off systems

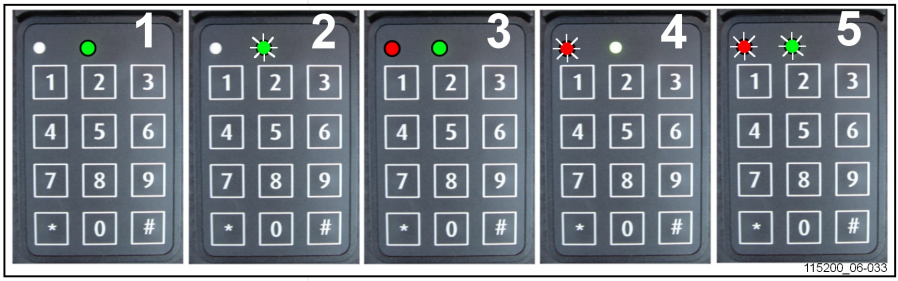
On/off key

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)

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Numeric keypad — Start-up using a PIN (Digicode 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)(PIN correct) ● 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 DIGI-CODE 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)	

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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.

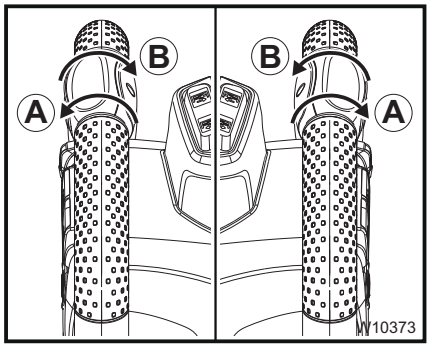
This time period can be configured between 0 and 10 minutes. This function is disabled by default.

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

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Driving

Truck operation



You can use the steering wheel controls to make the truck move forwards and backwards:

- Before carrying out the following steps, follow the correct sequence for using the truck ⇒ Chapter "Sequence to follow for using the truck", P. 4-70
- Hold the tiller head firmly and correctly
- Operate one of the two travel controls to select the desired direction of travel as described below:

  - The truck's speed increases or slows down according to the angular position of the travel control.

  - When the travel control (2) or (4) is turned in direction (A), the truck starts in reverse travel.

  - When the travel control (2) or (4) is turned in direction (B), the truck starts in forward travel.

  - When the travel control (2) or (4) is fully released, the truck brakes to a stop electrically.

  - When the travel control (2) or (4) is partially released, the truck slows, adjusting its speed to the new position of the travel control.
- When both travel controls (2) and (4) are turned:

  - The maximum possible speed does not vary with respect to the actuation of a single travel control.

  - The instantaneous speed will be that of the travel control between (2) and (4) with the greatest angular range.

  - When one of the travel controls (2) or (4) is fully released, the truck adjusts its speed to the position of the travel control that remains turned.

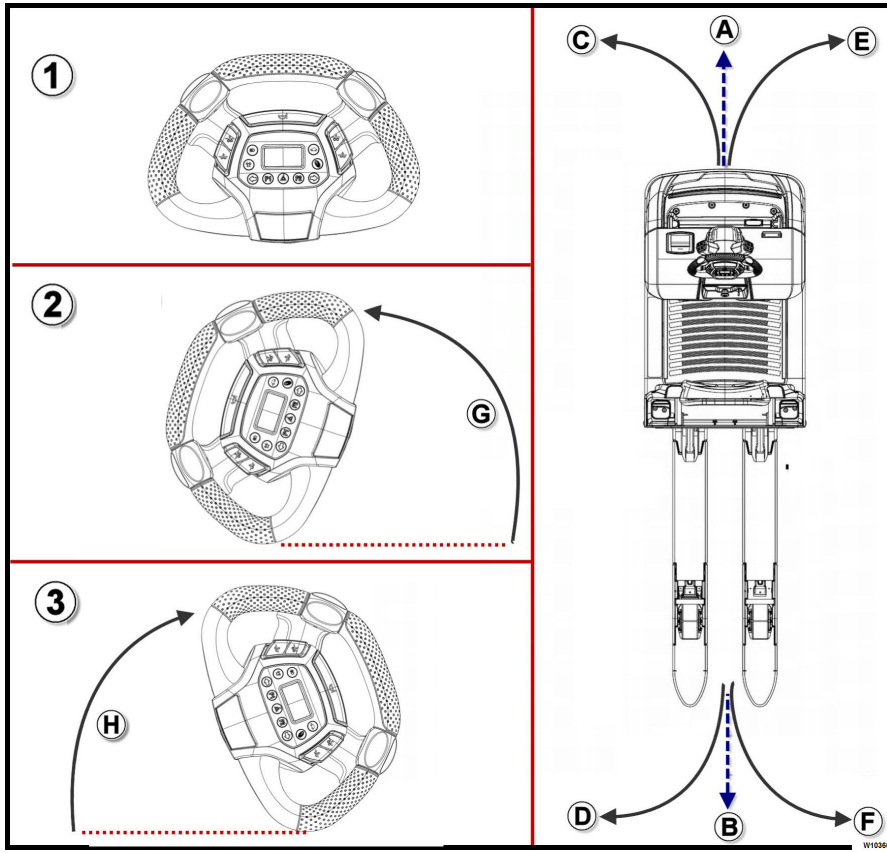
  - When the travel controls (2) and (4) are turned in opposite directions to each other, the truck's alarm will be triggered and the truck will lock.

⚠ CAUTION

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

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Steering



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)

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⚠ WARNING

Adjust your speed when turning, limiting it in line with the load being transported and the steering angle.

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Truck brake systems

⚠ WARNING

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

The operator must consider this factor while driving.

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

- By releasing the travel control
- By reversing the travel controls (see also the ⇒ Chapter "Reverse drive", P. 4-94 section)
- Using service braking

Braking by releasing the travel control

- During travel, fully release the control The truck will decelerate gently to a stop

NOTE

During travel, partially release the control. The truck will decelerate gently.

Braking by reversing the travel control

- During travel, turn the control in the opposite direction to the direction of movement The truck will decelerate more forcefully but will come to a gradual stop When the truck has stopped, release the travel control throttle.

⚠ CAUTION

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

⚠ CAUTION

Regulate the travel control by adapting truck braking to the type of load you are carrying in order to avoid losing the load.

Service braking

⚠ CAUTION

In dangerous situations, always brake using service braking.

- During travel, press the service braking push-button (the service braking push-button is shown in Chapter 3 of the manual). 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 release the travel controls and only then can you activate them again.*

Parking brake

– The electromagnetic parking brake operates when the truck is stationary, after having fully released the travel controls

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Reverse drive

Reverse of direction without load on forks

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

Reverse of direction with load on forks

- To reverse direction with a load on the fork arms, release the traction control throttle and wait for the truck to come to a stop.
- Reverse direction using the traction control throttle.

⚠ DANGER

Brake by releasing the traction control throttle, adapting deceleration to the type of load you are carrying to avoid losing the load itself.

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Parking and stopping the truck

- Park in pre-arranged and designated areas
- Lower the forks to the ground.
- Switch off the truck: by turning the key to position “0” and remove the key from the panel or alternatively, if there is one, switch off the truck using the numeric keypad

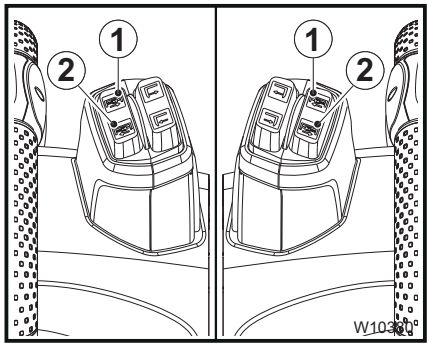
⚠ DANGER

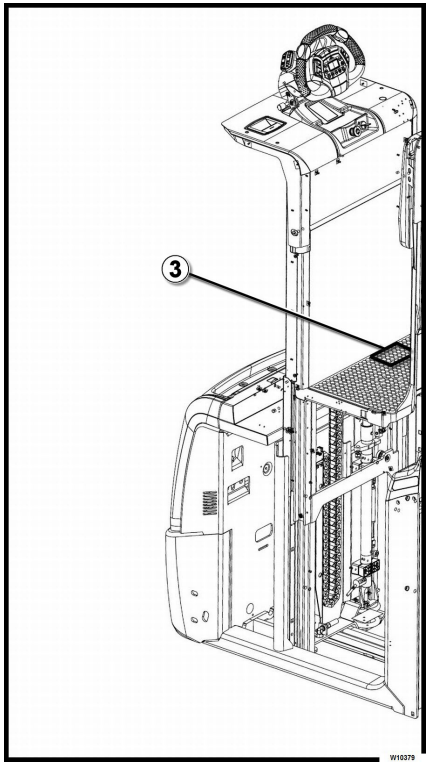
Park the truck in such a way that it does not obstruct passageways and/or render unusable emergency equipment (e.g. fire extinguishers and fire hydrants). Do not park the truck on slopes.

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Mobile platform

Using the mobile platform (where present)





DANGER

Risk of impact and crushing

When using the mobile platform, make sure 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 the ceiling or any objects that may be protruding from the shelving or 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 steering wheel 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.

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*

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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 feet twice consecutively and hold. Release the coloured area (3) to stop the platform at the position reached.

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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.

When using the lift, keep hands and feet away from moving parts.

⚠ DANGER

It is not permitted to go under 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 approximately 300 mm from the ground is prohibited.

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.

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⚠ 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.

⚠ 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.

NOTE

Further information on the general rules of truck use and picking up and depositing loads is provided in the "Safety Regulations for Industrial Forklift Use" manual attached to this manual.

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 load diagram! It is not permitted to increase the capacity by adding extra weight to the truck. Never exceed the maximum loads shown! Otherwise, the stability of the truck can no longer be guaranteed.

Transporting people in order to increase the capacity of the truck is prohibited.

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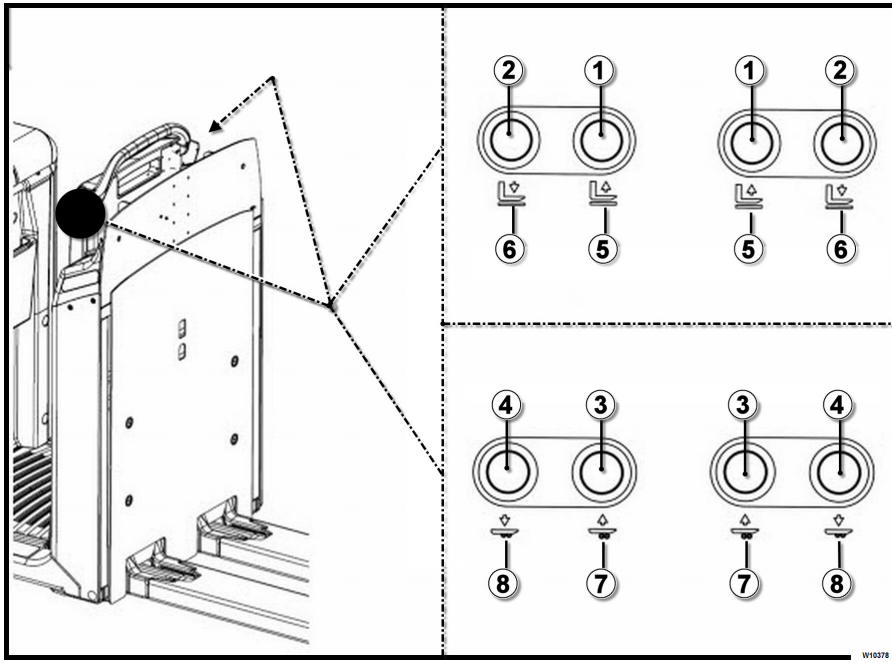
Moving the load

⚠ WARNING

If small items are being transported or if the load exceeds the height of the fork carriage, a load protective guard must be installed to prevent the items from falling on the operator.

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Using the backrest fork controls (where present)



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

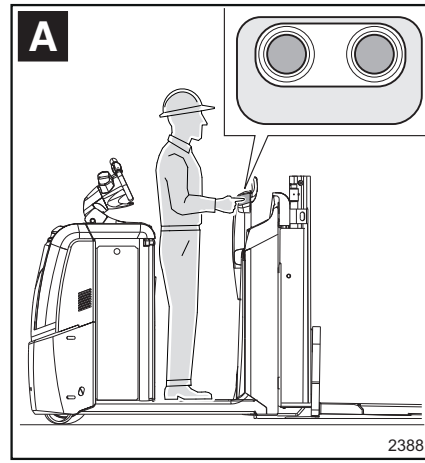
The fork controls installed on the backrest vary according to the model of truck:

- 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 WITHOUT 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



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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:

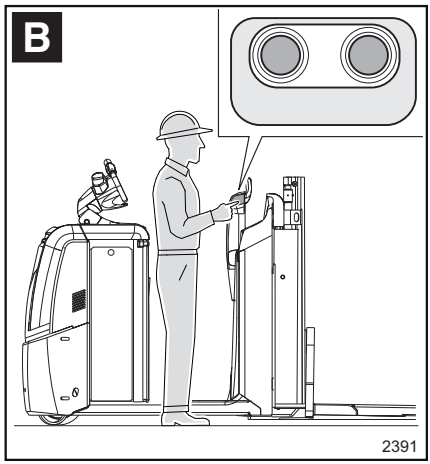
  - To raise the forks, press button (1) or (3) depending on the truck model. The forks will lift as shown by the symbol (5) or (7). Release the key to stop the forks.

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) .

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- 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

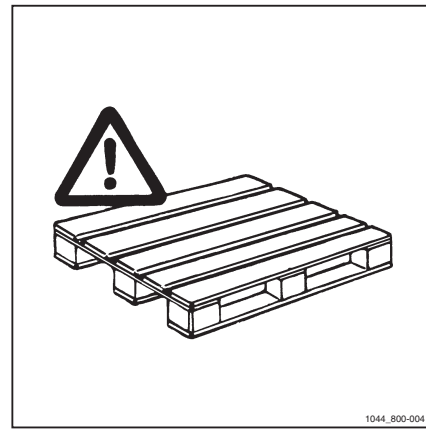
- The controls for lowering the forks(4) will NOT work with the operator on the ground alongside the truck.
- To lower the forks, the operator must stand correctly (A) on the platform and then press the push-button (4).

Palletising a load

Only stack pallets not exceeding the specified maximum dimensions. Do not stack damaged transport aids and improperly formed load units.

Place and secure the load on the lifting device in such a way that it cannot move or fall off.

Stack the load units so that the specified aisle width is not reduced by protruding parts.



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Transporting loads

As a general rule, loads 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. The operator can only move loads that have been properly packaged and are safe and secure.

⚠ 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 (approximately 300 mm).

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 cornering.

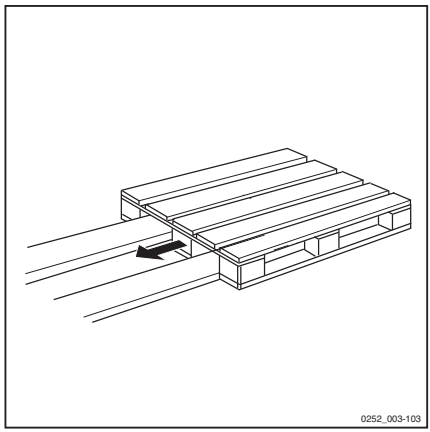
Avoid hitting shelving and objects in your path.

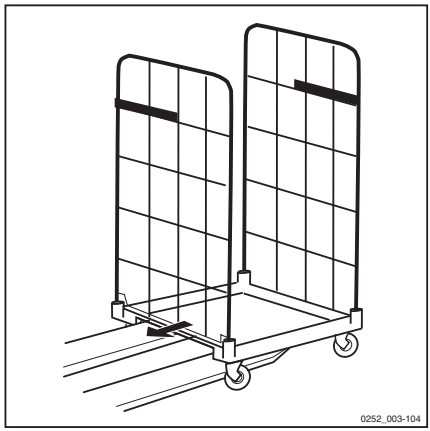
⚠ DANGER

Danger of load tipping over

Avoid sudden starts and stops.

Approach corners slowly and carefully.





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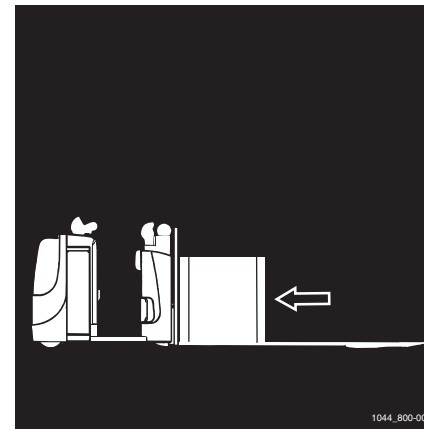
Carrying the load

▷

⚠ WARNING

– Raise or lower the load until ground clearance is obtained.

The load should not be so high as to block the view to the rear. If the load does block the view to the rear, a second person must walk next to the truck and act as a guide while it is reversing. Only drive at walking pace and always take extra care. The truck must be stopped immediately if visual contact with the guide is lost.



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 behind you before backing the truck away
- Check that the truck's path is free of any objects, people and obstacles of any type
- Look behind you and back away 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 forklift with the forks raised whether loaded or not.

NOTE

Further information on the general rules of forklift use is provided in the Rules for the Use of Industrial Vehicles Manual enclosed with this manual.

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Using the truck on inclines, loading bridges and lifts.

Driving on inclines

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

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

⚠ WARNING

When driving up or down inclines, the speed of travel must be reduced.

⚠ DANGER

Risk of tipping!

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

⚠ WARNING

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

⚠ DANGER

Risk of accident

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

⚠ CAUTION

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

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

⚠ DANGER

Risk of accident

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

Using the truck on a lift

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

Slowly drive the truck onto the lift load-first.

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

⚠ WARNING

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

⚠ CAUTION

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

Using the truck on loading bridges

⚠ DANGER

Risk of accident

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

You must drive onto the loading bridge slowly and carefully.

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

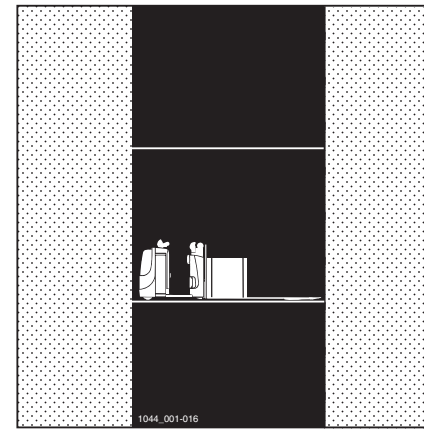
The lorry driver and the forklift truck operator must agree on the time of departure of the lorry.

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Entering lifts

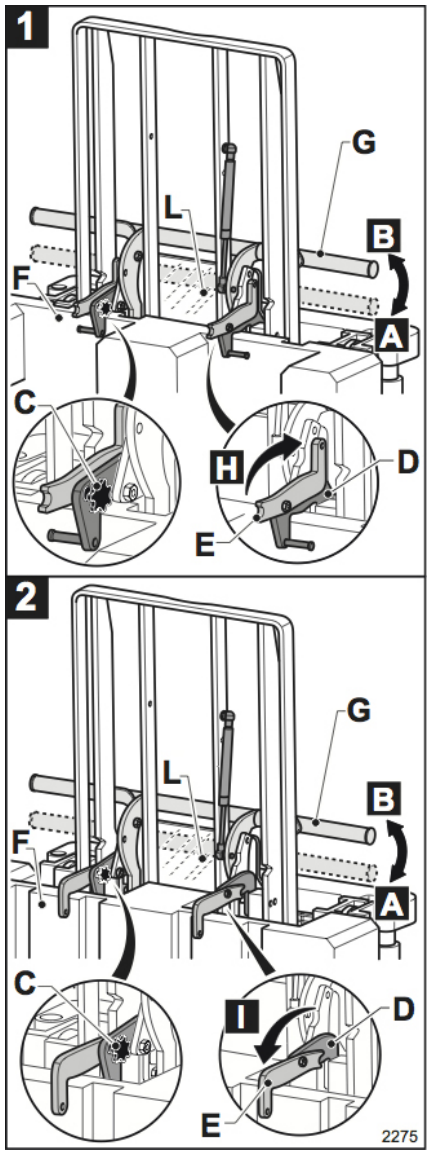
The operator can only use lifts with the truck where the lift capacity is sufficient, where the lifts are suitable and where user permission has been given. The truck must be secured on the lifts so that no part of the truck comes into contact with the walls of the compartment.

For more information, see the "Technical features" chapter.



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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)

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- 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

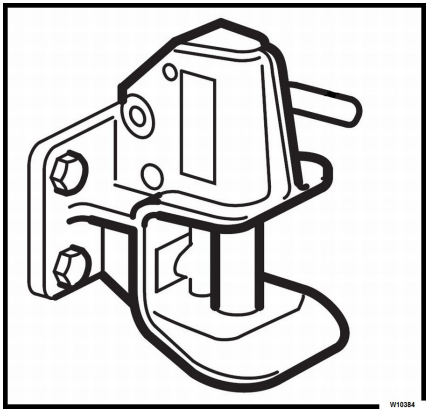
While moving the bar (G) towards (A) or (B), keep your hands away from the clamps (D - E) of the pallet lock.

When manually positioning the pallet, be careful that the pallet does not fall.

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Handling trailers

Towing trailers



This manual describes both order pickers and tow tractors

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.

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.

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Correct towing

NOTE

This tow tractor is suitable for towing trailers and is equipped with a towing device for this purpose.

Maximum towed weight

The nominal pulling force when towing is the nominal pulling force indicated on the identification plate of the tow tractor. The maximum pulling force is the maximum force that can be delivered by the tractor to overcome the start-up resistance of the load being towed (combined weight of the tow tractor, trailers and load).

⚠ CAUTION

When loads are being towed behind the tow tractor, you must consider that in difficult conditions of use, such as on slopes or slippery roads, NEITHER the pulling force of the towing vehicle 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 load capacity is only valid for (un-braked) towing on a level surface. For towing on downhill or uphill slopes, the maximum load should be reduced.

It is forbidden to load or unload the vehicle 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.

Please indicate the conditions of use to the manufacturer. The manufacturer will then provide you with the corresponding data.

- Do not hook the tractor to rail mounted vehicles.
- Do not push trailers (any type).

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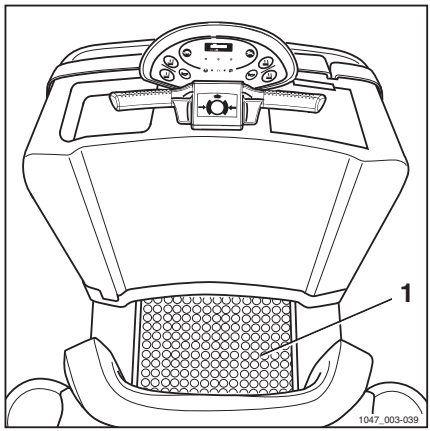
Coupling trailers

⚠ CAUTION

When coupling and uncoupling trailers, the tractor and trailer must always be on level ground. Make sure that all controls are in the neutral position and the parking brake is applied.

Before coupling a trailer, check if the draw bar of the trailer and the tow coupling of the tractor match. Make sure that the brakes of the trailer - if present - are applied or the wheels securely blocked to prevent any unintentional movement. Reverse the tractor to the trailer so that the tow pin and the trailer draw bar are aligned as seen from the driver's position.

– Step off the presence area (1). The tractor will be braked. ▷



Depending on the type of trailer coupling, proceed as follows:

- Single-position or multi-position trailer coupling, see ⇒ Chapter "Single-position or multi-position trailer coupling", P. 4-113
- Automatically closing trailer coupling, see ⇒ Chapter "Automatically closing trailer coupling", P. 4-115
- ROCKINGER trailer coupling, see ⇒ Chapter "ROCKINGER trailer coupling", P. 4-117

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Single-position or multi-position trailer coupling

Trailer coupling

– Pull the tow pin (2) out. ▷

– Reverse the tractor slowly.

⚠ DANGER

Do not allow anyone to stand between the tractor and trailer during the approach. Always drive the trailer to the tractor.

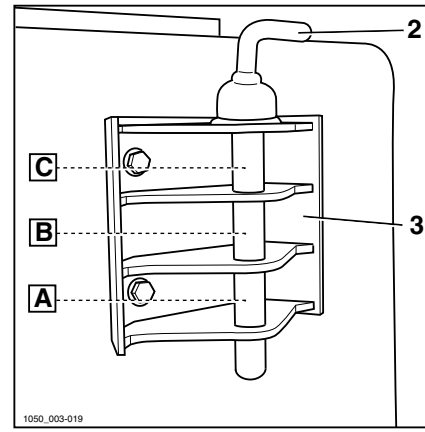
– Introduce the hitch of the drawbar into the coupling jaw (3) on the tractor.

NOTE

The multi-position coupling provides 3 hitch heights. It is recommended to choose the height at which the drawbar is horizontal:

Coupling height (distance from the ground)

Position	Height (mm)
A	300
B	355
C	410

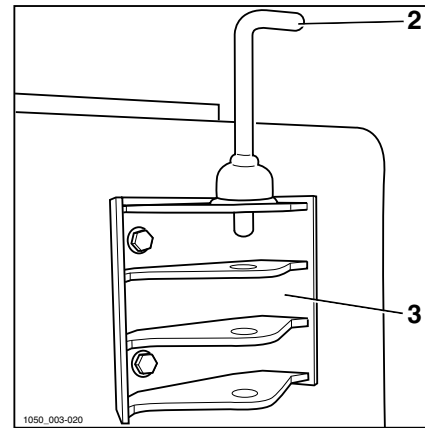


– Lower the tow pin (2) into the trailer coupling (3) and rotate it 90°. The tow pin is now secured. ▷

⚠ CAUTION

Always make sure that the tow pin is secured after the coupling procedure.

– Remove the chocks from the wheels of the trailer and release the trailer brakes.

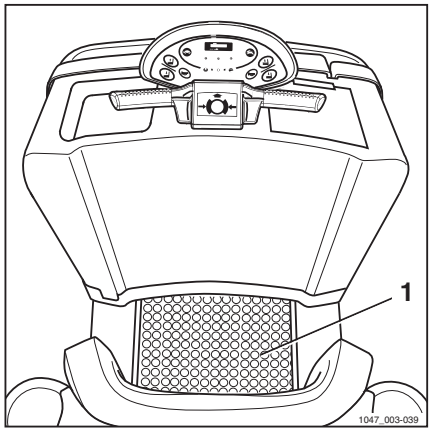


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Uncoupling

– Step off the presence area (1). The tractor will be braked. ▷

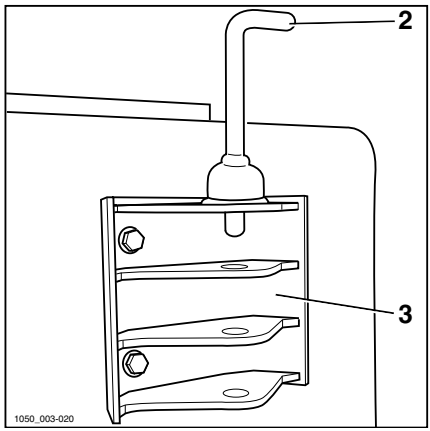
– Secure the trailer with chocks or engage the trailer brake.



– Turn the tow pin (2) 90° and pull it out of the trailer coupling (3). ▷

– Reverse the tractor slowly.

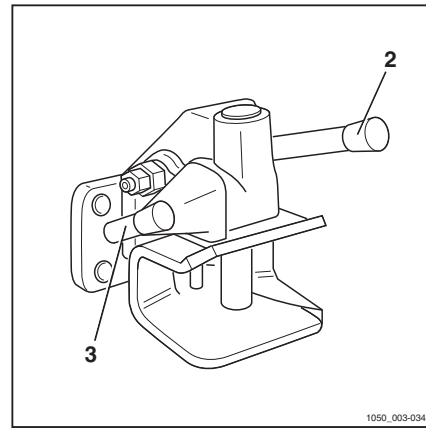
– Insert the tow pin (2) again into the trailer coupling (3) and secure it.



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Automatically closing trailer coupling

Hitching up



– Pull the safety lever (3).

– Swivel the lever (2) up.

– Release the brake on the front axle of the articulated drawbar trailer.

⚠ CAUTION

If this is not done, the coupling jaw, drawbar eye and support can be damaged!

The drawbar eye must hit the centre of the coupling jaw when hitching up a rigid drawbar trailer.

– Reverse the tractor slowly.

⚠ DANGER

Do not allow anyone to stand between the tractor and trailer during the coupling procedure.

Only drive the tractor to the trailer.

⚠ DANGER

Risk of accident!

– Make sure that after each coupling procedure the safety (3) fully contacts the securing sleeve.

A projecting safety (3) indicates improper hitching.

The trailer may not be driven in this state.

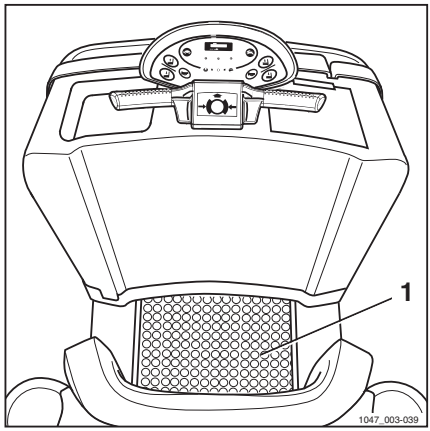
If the locking system is blocked, do not intervene. Risk of crushing your fingers! Please contact your after-sales service.

– Remove the chocks at the trailer.

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Uncoupling

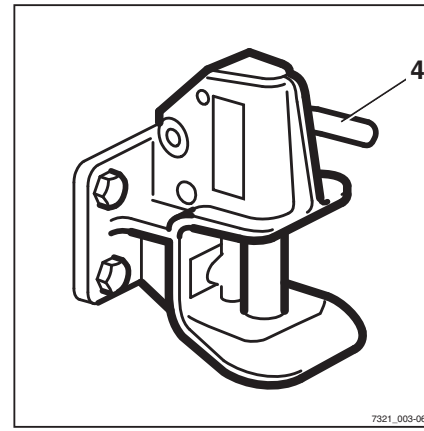
- Step off the presence area (1). The tractors will be braked. ▷
- Secure the trailer with chocks or engage the trailer brake.
- Pull the safety lever (3).
- Swivel the lever (2) up.
- Drive the tractor slowly forward.



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ROCKINGER trailer coupling

Hitching up



– Swivel the lever (2) up.

– Release the brake on the front axle of the articulated drawbar trailer.

⚠ CAUTION

If this is not done, the coupling jaw, drawbar eye and support can be damaged!

The drawbar eye must hit the centre of the coupling jaw when hitching up a rigid drawbar trailer.

– Reverse the tractor slowly.

⚠ DANGER

Do not allow anyone to stand between the tractor and trailer during the coupling procedure.

Only drive the tractor to the trailer.

⚠ DANGER

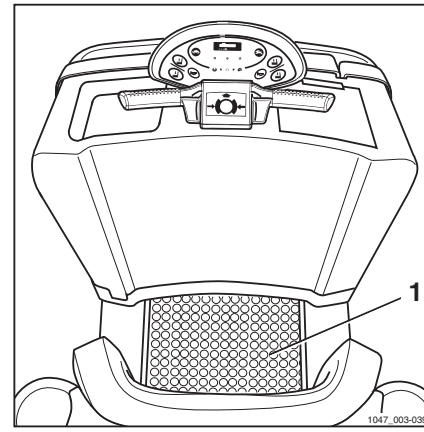
Risk of accident!

– Make sure that the tow pin is in the specified position.

If the locking system is blocked, do not intervene. Risk of crushing your fingers! Please contact your service centre.

– Remove the chocks at the trailer.

Unhitching



– Step off the presence area (1). The tractor will be braked.

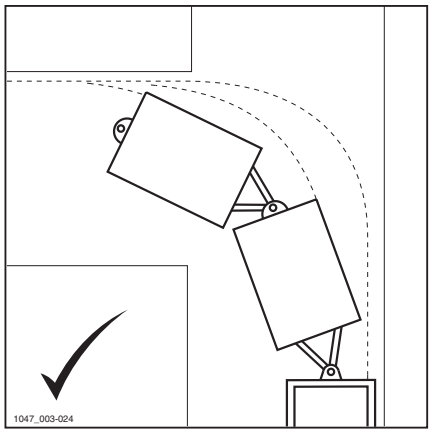
– Secure the trailer with chocks or engage the trailer brake.

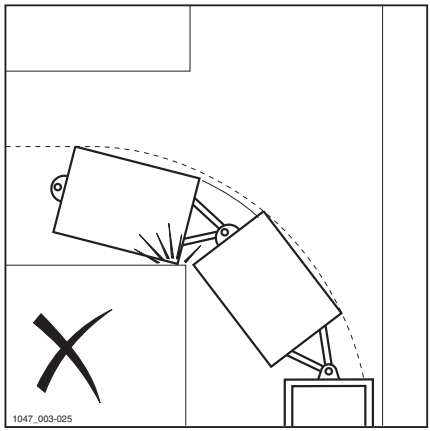
– Swivel the lever (2) up.

– Drive the tractor slowly forward.

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Towing a trailer





NOTE

Ensure that you understand how to operate any braking systems that may be fitted to trailers being towed. Ensure trailer load is secure, stable, evenly distributed on the trailer, and within the rated drawbar pull of the tractor. Inspect trailer steering to determine the type fitted. This is particularly important on long trains because of the cutting in effect when cornering.

CAUTION

NEVER travel on public highways unless you comply with local highway regulations.

NOTE

If travelling on public highways ensure that regulation plates conform to local highway regulations.

- Release trailer braking system and remove any chocks from the trailer wheels.
- Check width of the widest trailer or load to ensure free passage en-route.
- Check that the direction of travel is clear, slowly move the tractor forward taking up the slack in the trailer couplings before gently accelerating to the required speed.
- When approaching you destination reduce speed in advance to ensure bringing the tractor and trailers to rest. A sudden halt could cause load displacement and trailers could "jackknife".

NOTE

A trailer train cannot be backed up into position, so learn to position trailers first time.

DANGER

Never carry passengers on a trailer unless it has been specifically designed for such purpose.

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Charging the battery

Battery access

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.

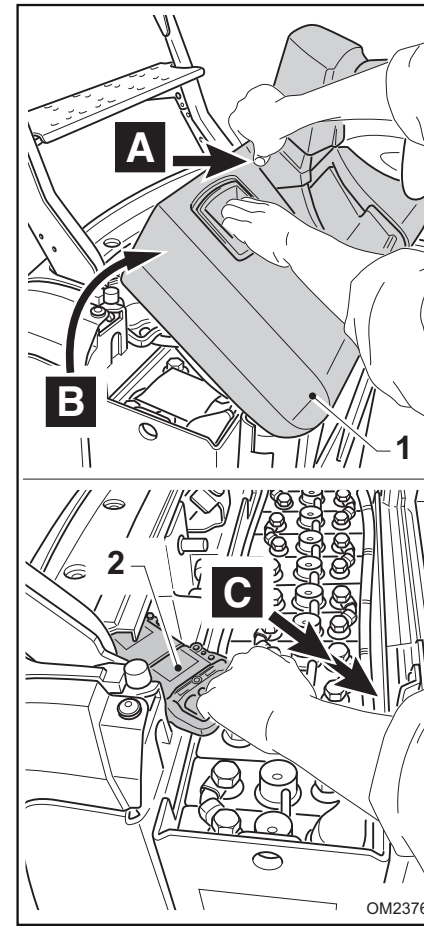
Open the battery hood (1) as described below (see adjacent illustration):

- Press the push-button (A) once to unlock the battery access hood (1).
- Then hold down the push-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 it is fully open.
- Pull the battery socket (2) towards (C) to disconnect it from the truck plug.
- Then place the battery socket (2) on the battery.
- To close the battery hood (1), proceed in the reverse order.

⚠ 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



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Battery Recharging

⚠ CAUTION

The battery is recharged with the forklift off.

⚠ DANGER

The battery must be charged in rooms that comply with the specific regulations on the subject. Refer to the battery and battery charger manual for the charging procedures, level checks etc., checking the type of battery (gel, lead etc.) and the voltage and current delivered. Excessive currents can damage batteries and cause dangerous situations. As far as the safety precautions are concerned, follow the instructions given in the battery manual and those included in "Safety regulations "of this manual.

- Access the upper part of the battery, open the battery hood and hold the hood open.
- Remove the battery caps (if indicated in the battery maintenance booklet).
- Turn on the external battery charger.
- Connect plug the battery charger in to begin charging.
- After the battery charging operation is completed, turn off the battery charger.
- Unplug the battery charger.
- Replace the battery caps (if removed previously).
- Plug the battery in again.
- Close the battery hood.

NOTE

Refer to the battery charger manual for more information.

Recharging the battery using the on-board battery charger (optional)

⚠ CAUTION

Charge the battery with the engine switched off and the start key removed.

⚠ DANGER

The battery must be charged in rooms that comply with applicable regulations. Refer to the battery and battery charger manual for the charging procedures, level checks etc., checking the type of battery (gel, lead etc.) and the voltage and current delivered. Excessive currents can damage batteries 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, it is strictly prohibited to connect the battery to an external battery charger.

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⚠ CAUTION

Make sure that the mains supply voltage complies with the battery charger's operating voltage.

⚠ DANGER

The electrical system must comply with the current national regulations.

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5

Maintenance

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General Information

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

Maintenance is divided into:

- Regular Service (scheduled by the user)
- Planned maintenance (to be performed by the service network authorised by the manufacturer)

⚠ 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 for a maintenance contract appropriate to your forklift.

⚠ 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.

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Maintenance plans

Key to symbols in table:

- ▲ = Every 1000 hours or at least every 12 months (whichever comes first), unless local regulations require more frequent intervention.

ENVIRONMENT NOTE

During maintenance operations, follow the instructions provided in the "Safety guidelines relative to operating materials" section in "Chapter 2".

Maintenance every 1000 hours
Transmission
Reduction gear unit: check that it is correctly mounted
Reduction gear unit: check for any oil leakage
Reduction gear unit: check the oil level in the reduction gear unit
Traction motor: check that it is correctly mounted
Forks
Check condition of forks
Grease the rods and levers (if present)
Check bushes and levers
Steering
Steering: check the mounting of the "cockpit" steering wheel
Steering: check that the steering system operates correctly
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 (if present)
Brake
Electromagnetic brake: check for signs of wear and adjust if necessary
Check that the various braking operations of the truck are operating correctly

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Maintenance every 1000 hours
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
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
Operator elevating platform (if present)
Platform chain: check the chain adjustment and maintenance ▲ (clean, adjust, grease)
Platform: check that the platform is correctly mounted, in good condition and operates correctly
Gas spring: check the pressure calibration
Gas spring: check that it operates 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
Sprung platform (if present)
Gas spring: check the pressure calibration
Gas spring: check that it operates correctly

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Maintenance every 1000 hours
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

Additional maintenance every 3000 hours
Hydraulic system
Replace hydraulic oil and hydraulic oil filter
Load lift system
Maintenance of the lift mast (if present)

Additional maintenance every 6000 hours
Transmission
Service the reduction gear unit

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Maintenance as required

Cleaning the Forklift

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

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

⚠ CAUTION

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

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.
– If using a steam jet, do not use any additional cleaning agents. Remove any water in the chain links with compressed air immediately after cleaning.
– 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

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Preparation

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 measures



⚠ 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.

Safe parking

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.

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Battery access

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.

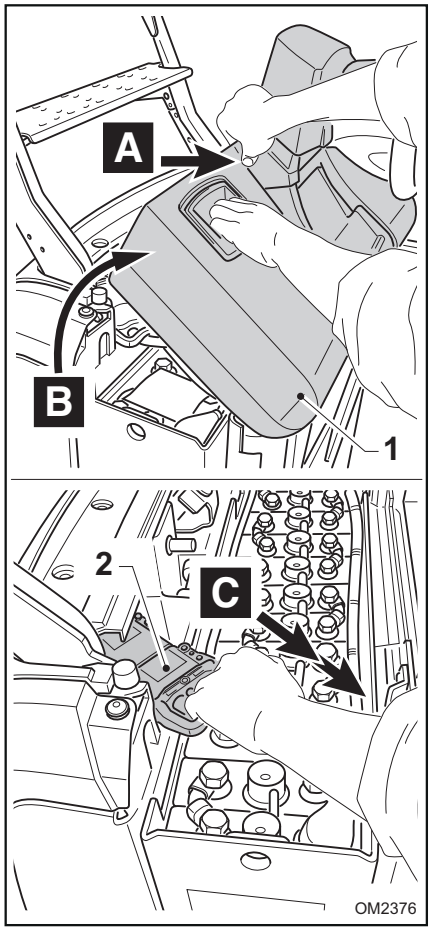
Open the battery hood (1) as described below (see adjacent illustration):

- Press the push-button (A) once to unlock the battery access hood (1).
- Then hold down the push-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 it is fully open.
- Pull the battery socket (2) towards (C) to disconnect it from the truck plug.
- Then place the battery socket (2) on the battery.
- To close the battery hood (1), proceed in the reverse order.

⚠ 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



Battery type

Trucks can be fitted with different types of battery. Observe the instructions on your battery type plate, as well as the specifications defined in the chapter "Technical data".

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⚠ WARNING

The weight and size of the battery influence the stability of the truck.

The new battery must weigh the same as the old one. Do not change its position from the original one.

⚠ CAUTION

Be careful not to damage any wiring when replacing the battery.

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Battery replacement with removal from the top

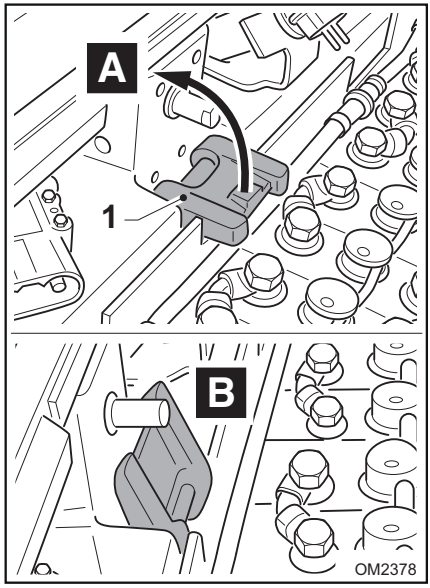
– Before replacing the battery, access the battery ⇒ Chapter "Battery access", P. 5-130.

Manually open the mechanical battery clasp (1) by turning it towards (A) until it is fully open (B).

⚠ CAUTION

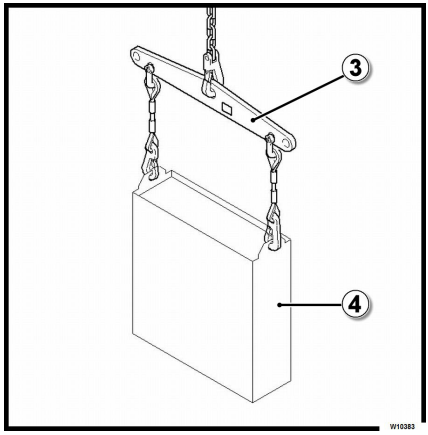
Risk of crushing fingers between the mechanical clasp and the battery.

Do not put your fingers under the mechanical clasp. Only let go of the mechanical clasp when it is fully open and in a stable position.



– Insert the 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 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.

– Replace the battery and refit it by following the steps in reverse order, taking **the same precautions and care mentioned previously**.

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⚠ 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 (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.

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Replacing the battery with side removal

Preliminary operations

⚠ 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.

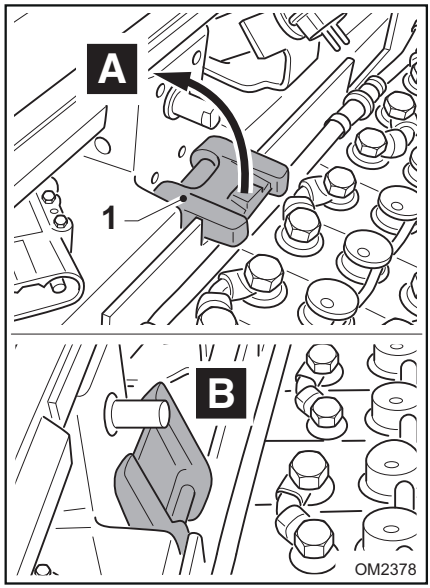
– Access the battery as explained in the relevant section ⇒ Chapter "Battery access", P. 5-130.

Manually open the mechanical battery clasp (1) by turning it towards (A) until it is fully open (B).

⚠ CAUTION

Risk of crushing fingers between the mechanical clasp and the battery.

Do not put your fingers under the mechanical clasp. Only let go of the mechanical clasp when it is fully open and in a stable position.



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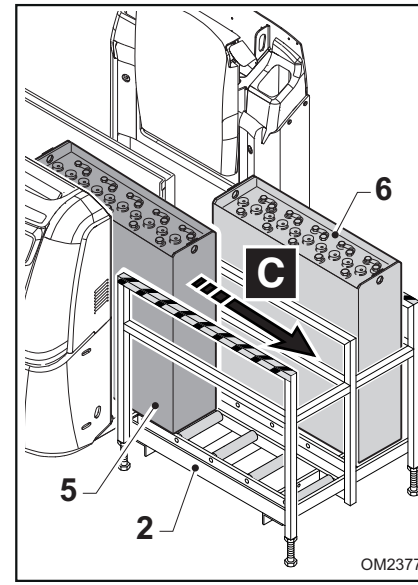
Extracting the truck battery and removing it from the side

– 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.

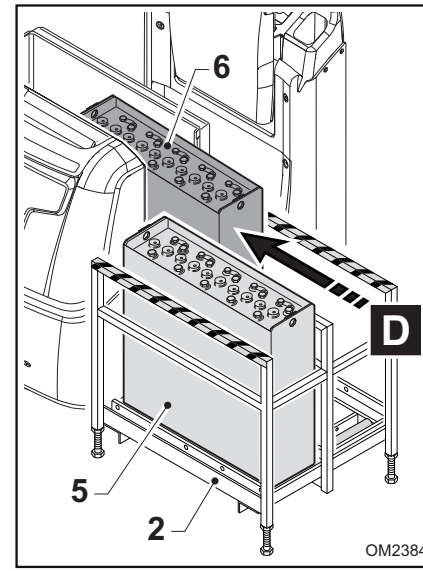
⚠ CAUTION

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. 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.



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⚠ DANGER

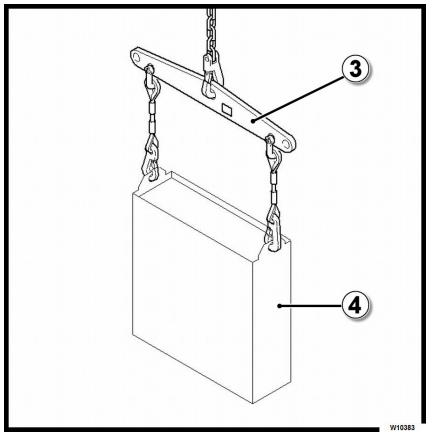
"Risk of crushing hands!" The battery must be inserted by a single operator only. The operator must follow the operating instructions given in this section, positioning himself on the same side as the battery side-removal roller unit.

⚠ 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.

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Fuses

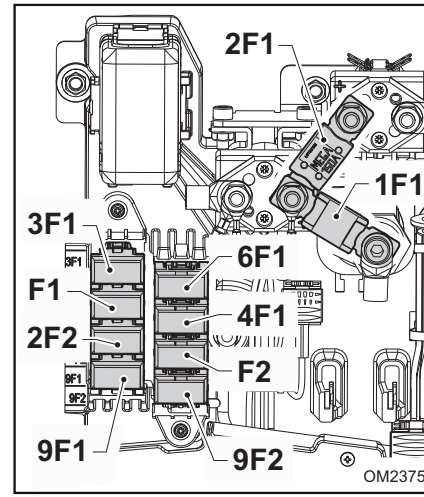
NOTE

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

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Decommissioning

General Information

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

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

⚠ DANGER

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

Permanent Putting Out of Commission (Demolition)

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

ENVIRONMENT NOTE

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

⚠ DANGER

Disassembly of the forklift for scrapping is extremely hazardous.

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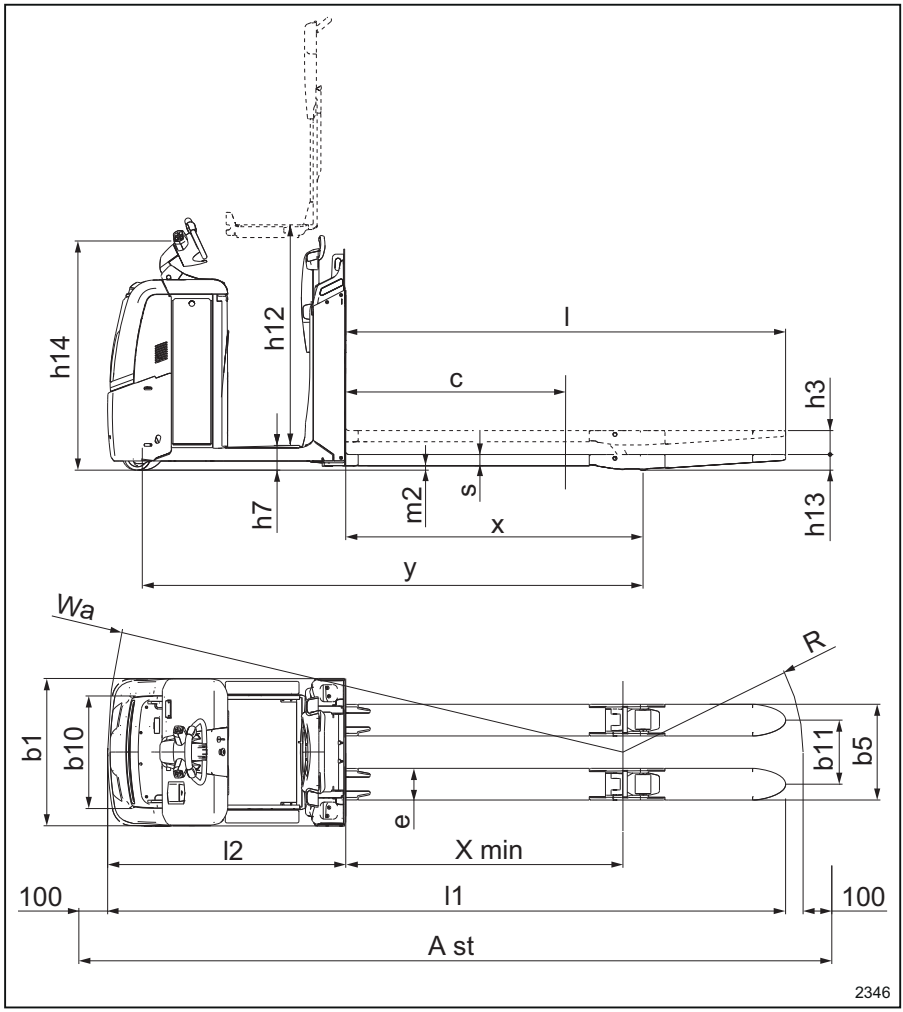
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Technical data

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Datasheet (VDI)

Datasheet (VDI) OPX 20 and OPX 25



			OPX 20	OPX 25
1.3	Drive		Electric	Electric
1.4	Operator type		Stand-on	Stand-on
1.5	Rated capacity/rated load	Q (t)	2,0	2,5

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			OPX 20	OPX 25
1.6	Load centre distance	c (mm)	1200	1200
1.7	Rated draw bar pull	F (N)	-	-
1.8	Load distance, centre of drive axle to fork	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)		1x - 1 / 2	1x - 1 / 4
3.6	Tread, front	b10 (mm)	483	483
3.7	Tread, rear	b11 (mm)	348 (368 / 388 / 498)	348 (368 / 388 / 498)
4.2	Height, mast lowered	h1 (mm)	-	-
4.3	Free lift	h2 (mm)	-	-
4.4	Lift	h3 (mm)	130	130
4.5	Height, mast extended	h4 (mm)	-	-
4.6	Initial lift	h5 (mm)	-	-
4.8	Stand height	h7 (mm)	130 (6)	130 (6)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1250 (7)	1250 (7)
4.10	Height of wheel arms	h8 (mm)	-	-
4.12	Coupling height	h10 (mm)	-	-
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	1197	1197
4.15	Forks height, lowered	h13 (mm)	85	85
4.17	Overhang	l5 (mm)	-	-

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Datasheet (VDI)

			OPX 20	OPX 25
4.19	Overall length	l1 (mm)	3680	3680
4.20	Length to face of forks	l2 (mm)	1290	1290
4.21	Overall width	b1 (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	b3 (mm)	-	-
4.25	Distance between fork-arms	b5 (mm)	520 (540 / 560 / 670)	520 (540 / 560 / 670)
4.31	Ground clearance, laden, below mast	m1 (mm)	-	-
4.32	Ground clearance, centre of wheelbase	m2 (mm)	24 / 154 (3)	24 / 154 (3)
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	see table	see table
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	see table	see table
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	see table	see table
4.35	Turning radius	Wa (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/un-laden,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
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	-	-
5.6	Max. drawbar pull, laden/un-laden S2 = 5 min	N	-	-
5.8	Max. gradeability laden/un-laden	%		
5.9	Acceleration time, laden/un-laden	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
6.4	Battery voltage / nominal capacity K5	V / Ah	24 / 345 - 465	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402	402

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			OPX 20	OPX 25
6.6	Energy consumption according to VDI cycle	kWh/h	-	-
8.1	Drive control		AC control	AC control
10.7	Sound level at driver's ear	dB (A)	< 70	< 70

(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

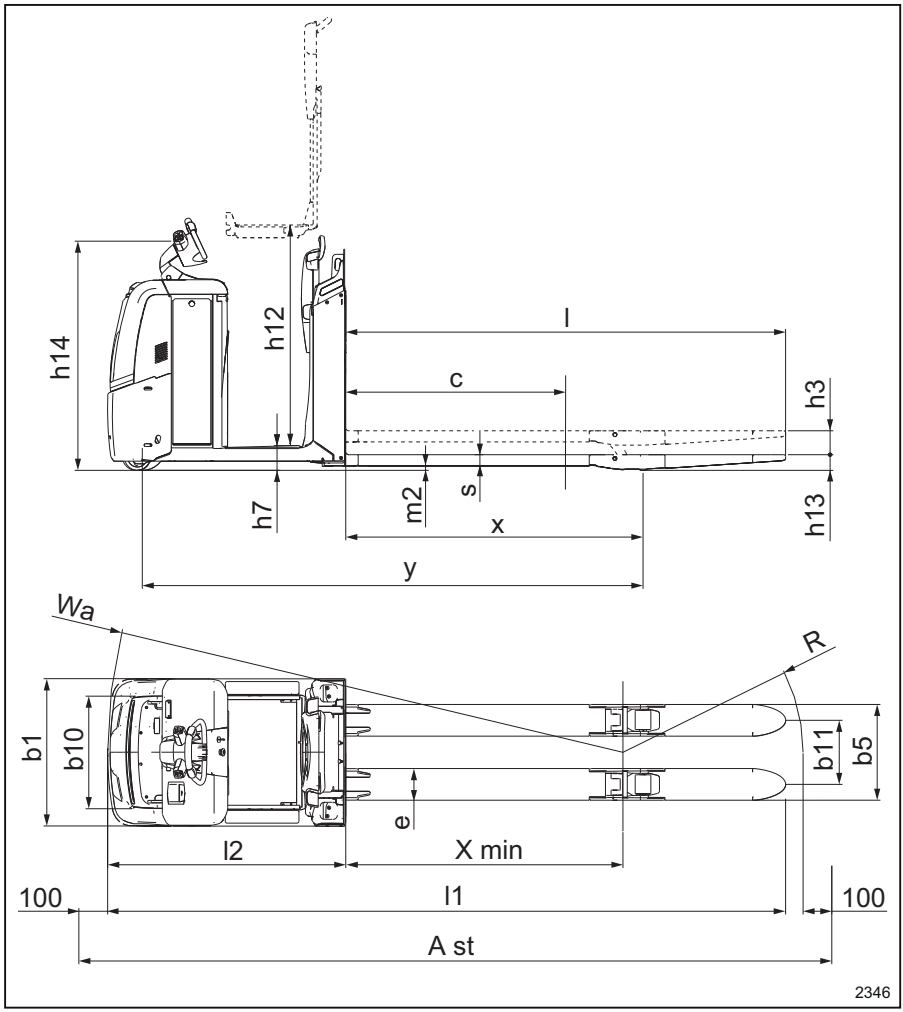
(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

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Datasheet (VDI) OPX 20 Plus and OPX 25 Plus



			OPX 20 Plus	OPX 25 Plus
1.3	Drive		Electric	Electric
1.4	Operator type		Stand-on	Stand-on
1.5	Rated capacity/rated load	Q (t)	2,0	2,5
1.6	Load centre distance	c (mm)	1200	1200

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			OPX 20 Plus	OPX 25 Plus
1.7	Rated draw bar pull	F (N)	-	-
1.8	Load distance, centre of drive axle to fork	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)		1x - 2 / 4	1x - 2 / 4
3.6	Tread, front	b10 (mm)	547	547
3.7	Tread, rear	b11 (mm)	348 (368 / 388 / 498)	348 (368 / 388 / 498)
4.2	Height, mast lowered	h1 (mm)	-	-
4.3	Free lift	h2 (mm)	-	-
4.4	Lift	h3 (mm)	130	130
4.5	Height, mast extended	h4 (mm)	-	-
4.6	Initial lift	h5 (mm)	-	-
4.8	Stand height	h7 (mm)	130 (6)	130 (6)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1250 (7)	1250 (7)
4.10	Height of wheel arms	h8 (mm)	-	-
4.12	Coupling height	h10 (mm)	-	-
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	-	-
4.15	Forks height, lowered	h13 (mm)	85	85
4.17	Overhang	l5 (mm)	-	-
4.19	Overall length	l1 (mm)	3680	3680
4.20	Length to face of forks	l2 (mm)	1290	1290

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			OPX 20 Plus	OPX 25 Plus
4.21	Overall width	b1 (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	b3 (mm)	-	-
4.25	Distance between fork-arms	b5 (mm)	520 (540 / 560 / 670)	520 (540 / 560 / 670)
4.31	Ground clearance, laden, below mast	m1 (mm)	-	-
4.32	Ground clearance, centre of wheelbase	m2 (mm)	24 / 154 (3)	24 / 154 (3)
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	see table	see table
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	see table	see table
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	see table	see table
4.35	Turning radius	Wa (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
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	-	-
5.6	Max. drawbar pull, laden/unladen S2 = 5 min	N	-	-
5.8	Max. gradeability laden/unladen	%		
5.9	Acceleration time, laden/unladen	s	6.1 / 4.8	6.2 / 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
6.4	Battery voltage / nominal capacity K5	V / Ah	24 / 345 - 465	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402	402
6.6	Energy consumption according to VDI cycle	kWh/h	-	
8.1	Drive control		AC control	AC control
10.7	Sound level at driver's ear	dB (A)	< 70	< 70

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(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

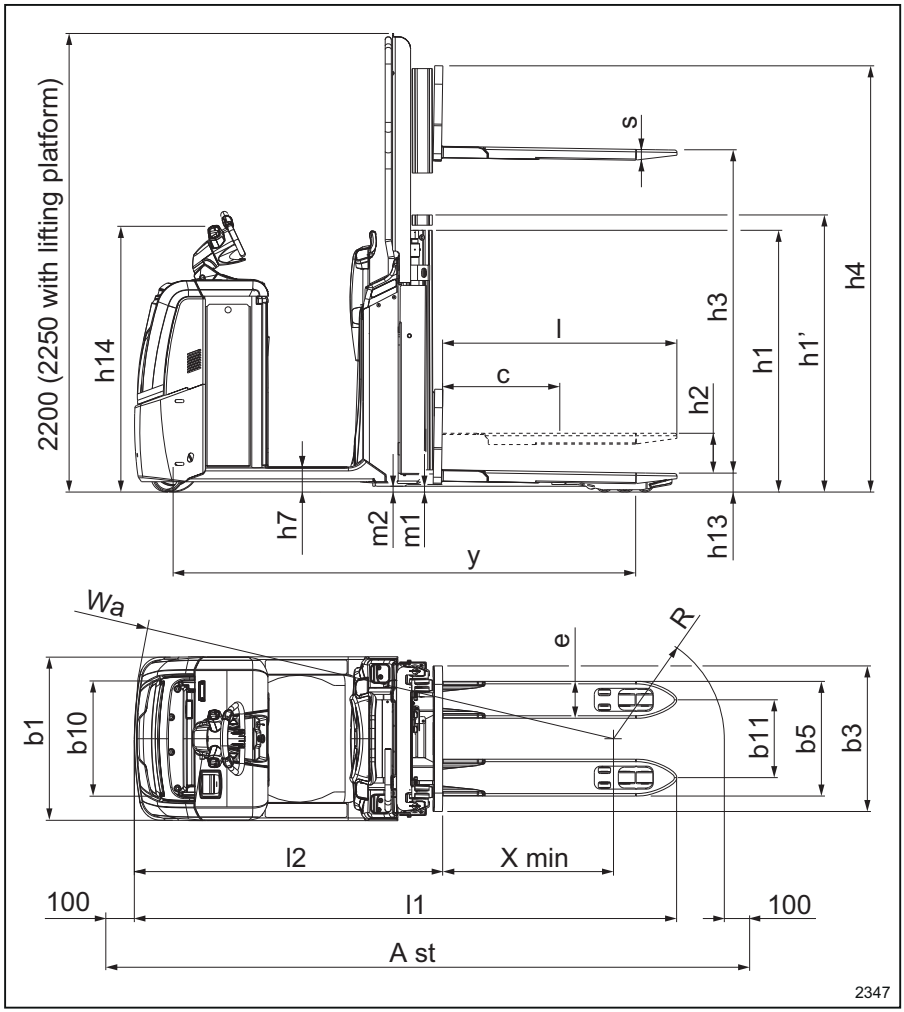
(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

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Datasheet (VDI) OPX-D 20



			OPX-D 20
1.3	Drive		Electric
1.4	Operator type		Stand-on
1.5	Rated capacity/rated load	Q (t)	2.0 (1.0 on main lift)
1.6	Load centre distance	c (mm)	600

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			OPX-D 20
1.7	Rated draw bar pull	F (N)	-
1.8	Load distance, centre of drive axle to fork	x (mm)	944 / 816 (3)
1.9	Wheelbase	y (mm)	2260 / 2132 (3)
2.1	Service weight (including battery)	kg	1527
2.2	Axle loading, laden front/rear	kg	1247 / 2280
2.3	Axle loading, unladen front/rear	kg	1063 / 464
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)		1x - 1 / 4
3.6	Tread, front	b10 (mm)	483
3.7	Tread, rear	b11 (mm)	380
4.2	Height, mast lowered	h1 (mm)	see table below
4.3	Free lift	h2 (mm)	see table below
4.4	Lift	h3 (mm)	1580
4.5	Height, mast extended	h4 (mm)	see table below
4.6	Initial lift	h5 (mm)	130
4.8	Stand height	h7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1250 (7)
4.10	Height of wheel arms	h8 (mm)	85
4.12	Coupling height	h10 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	1197
4.15	Forks height, lowered	h13 (mm)	91
4.17	Overhang	l5 (mm)	-
4.19	Overall length	l1 (mm)	2653
4.20	Length to face of forks	l2 (mm)	1503
4.21	Overall width	b1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	55 / 180 / 1150
4.24	Fork-carriage width	b3 (mm)	711
4.25	Distance between fork-arms	b5 (mm)	560

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			OPX-D 20
4.31	Ground clearance, laden, below mast	m1 (mm)	
4.32	Ground clearance, centre of wheelbase	m2 (mm)	25 / 155 (3)
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	-
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	3067 (3)
4.35	Turning radius	Wa (mm)	2440 / 2313 (3)
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
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	-
5.6	Max. drawbar pull, laden/unladen S2 = 5 min	N	-
5.8	Max. gradeability laden/unladen	%	
5.9	Acceleration time, laden/unladen	s	
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 K5	V / Ah	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402
6.6	Energy consumption according to VDI cycle	kWh/h	-
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

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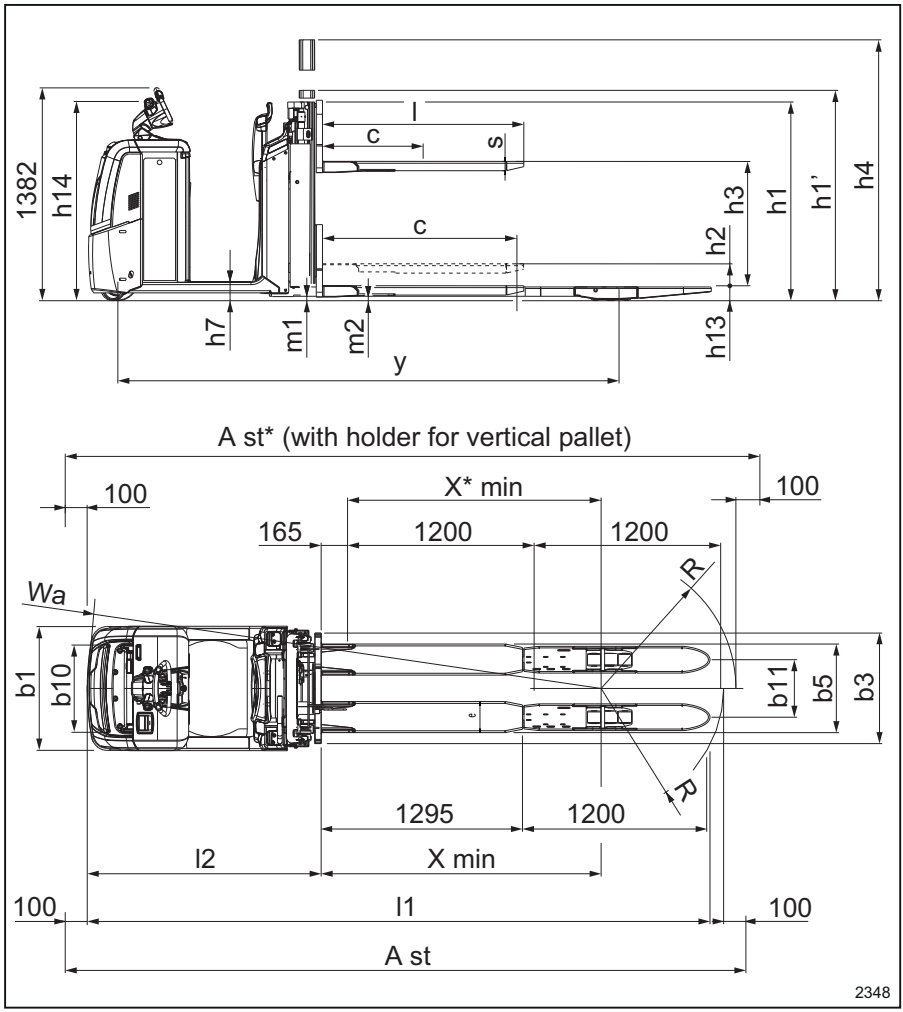
(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

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Datasheet (VDI) OPX-L 20



			OPX-L 20
1.3	Drive		Electric
1.4	Operator type		Stand-on
1.5	Rated capacity/rated load	Q (t)	2.0 / 1.0 on main lift
1.6	Load centre distance	c (mm)	1248 / 600 on main lift (1)

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			OPX-L 20
1.7	Rated draw bar pull	F (N)	-
1.8	Load distance, centre of drive axle to fork	x (mm)	1910 /1782 (3)
1.9	Wheelbase	y (mm)	3225 / 3097 (3)
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)		1x - 1 / 4
3.6	Tread, front	b10 (mm)	483
3.7	Tread, rear	b11 (mm)	370
4.2	Height, mast lowered	h1 (mm)	see table below
4.3	Free lift	h2 (mm)	see table below
4.4	Lift	h3 (mm)	800
4.5	Height, mast extended	h4 (mm)	see table below
4.6	Initial lift	h5 (mm)	130
4.8	Stand height	h7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1250 (7)
4.10	Height of wheel arms	h8 (mm)	85
4.12	Coupling height	h10 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	1197
4.15	Forks height, lowered	h13 (mm)	91
4.17	Overhang	l5 (mm)	-
4.19	Overall length	l1 (mm)	4005
4.20	Length to face of forks	l2 (mm)	1503
4.21	Overall width	b1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	60 (72 max) / 200 / 1295
4.24	Fork-carriage width	b3 (mm)	711
4.25	Distance between fork-arms	b5 (mm)	570

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			OPX-L 20
4.31	Ground clearance, laden, below mast	m1 (mm)	13 / 100 (3)
4.32	Ground clearance, centre of wheelbase	m2 (mm)	25 / 155 (3)
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	-
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	see table
4.35	Turning radius	Wa (mm)	3399 / 3271 (3)
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
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	-
5.6	Max. drawbar pull, laden/unladen S2 = 5 min	N	-
5.8	Max. gradeability laden/unladen	%	
5.9	Acceleration time, laden/unladen	s	6.5 / 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 K5	V / Ah	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402
6.6	Energy consumption according to VDI cycle	kWh/h	-
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

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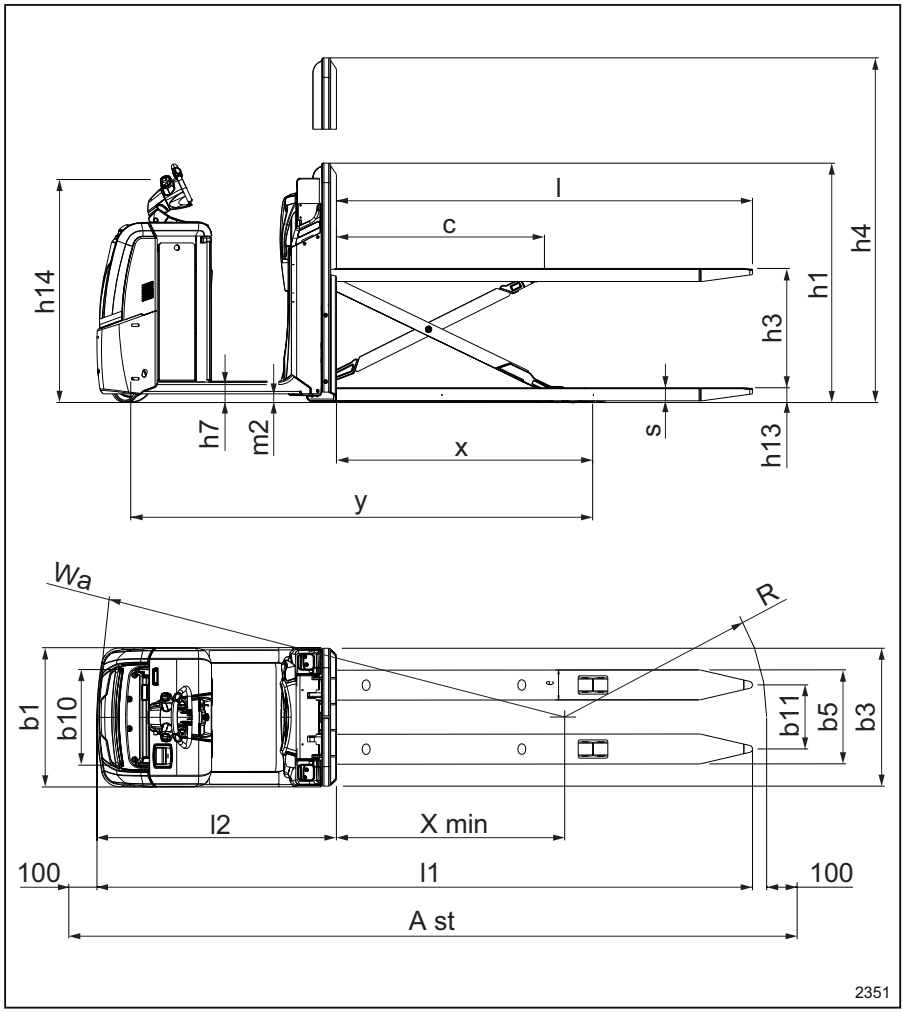
(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

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Datasheet (VDI) OPX-L 20 S



			OPX-L 20 S
1.3	Drive		Electric
1.4	Operator type		Stand-on
1.5	Rated capacity/rated load	Q (t)	2,0
1.6	Load centre distance	c (mm)	1200

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			OPX-L 20 S
1.7	Rated draw bar pull	F (N)	-
1.8	Load distance, centre of drive axle to fork	x (mm)	1474 /1308 (3)
1.9	Wheelbase	y (mm)	2661 / 2497 (3)
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)		1x - 1 / 4
3.6	Tread, front	b10 (mm)	483
3.7	Tread, rear	b11 (mm)	368
4.2	Height, mast lowered	h1 (mm)	1375 (5)
4.3	Free lift	h2 (mm)	-
4.4	Lift	h3 (mm)	700
4.5	Height, mast extended	h4 (mm)	2075 (5)
4.6	Initial lift	h5 (mm)	-
4.8	Stand height	h7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1250 (7)
4.10	Height of wheel arms	h8 (mm)	-
4.12	Coupling height	h10 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	1197
4.15	Forks height, lowered	h13 (mm)	85
4.17	Overhang	l5 (mm)	-
4.19	Overall length	l1 (mm)	3764
4.20	Length to face of forks	l2 (mm)	1374
4.21	Overall width	b1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	75 / 172 / 2390
4.24	Fork-carriage width	b3 (mm)	792 (5)
4.25	Distance between fork-arms	b5 (mm)	540

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			OPX-L 20 S
4.31	Ground clearance, laden, below mast	m1 (mm)	-
4.32	Ground clearance, centre of wheelbase	m2 (mm)	50
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	-
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	4036
4.35	Turning radius	Wa (mm)	2838 / 2675 (3)
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
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	-
5.6	Max. drawbar pull, laden/unladen S2 = 5 min	N	-
5.8	Max. gradeability laden/unladen	%	
5.9	Acceleration time, laden/unladen	s	6.8 / 5.4
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 K5	V / Ah	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402
6.6	Energy consumption according to VDI cycle	kWh/h	-
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

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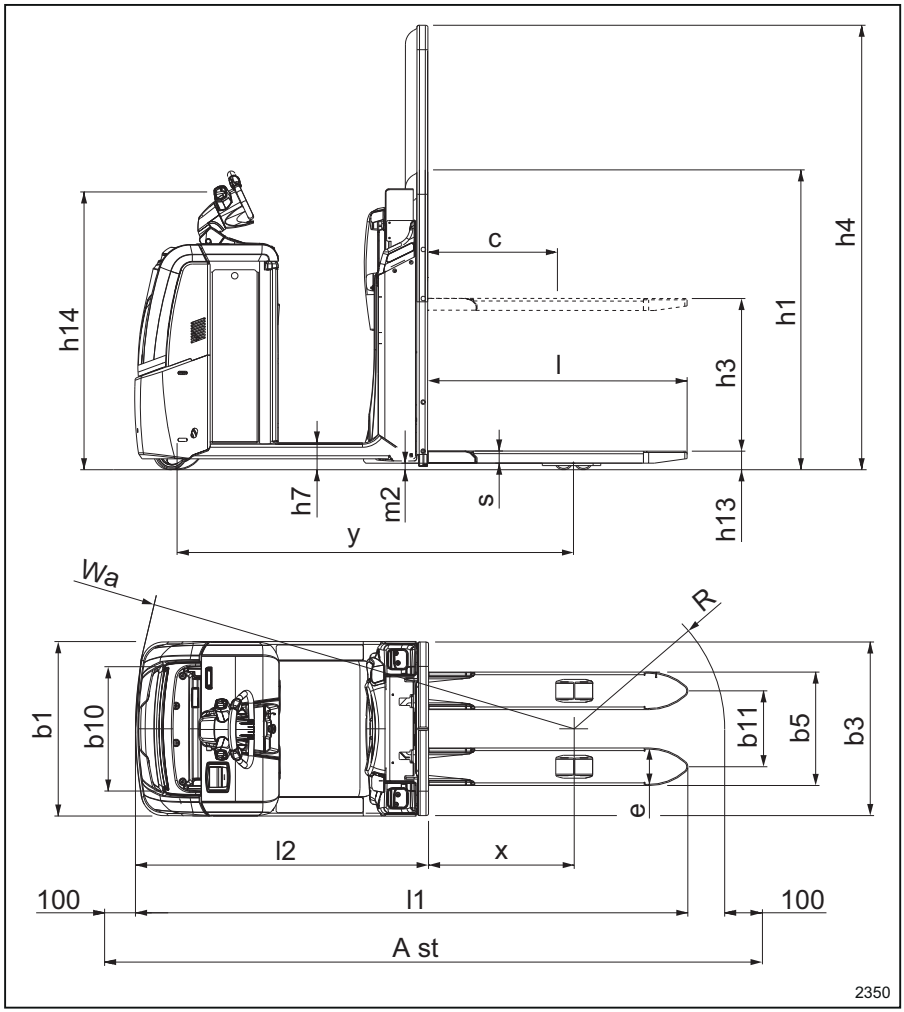
(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

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Datasheet (VDI) OPX-L 12



			OPX-L 12
1.3	Drive		Electric
1.4	Operator type		Stand-on
1.5	Rated capacity/rated load	Q (t)	1,2
1.6	Load centre distance	c (mm)	600

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			OPX-L 12
1.7	Rated draw bar pull	F (N)	-
1.8	Load distance, centre of drive axle to fork	x (mm)	670
1.9	Wheelbase	y (mm)	1823
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 80
3.4	Additional wheels (dimensions)	mm	150 x 50
3.5	Wheels, number front/rear (x=driven wheels)		1x - 1 / 4
3.6	Tread, front	b10 (mm)	483
3.7	Tread, rear	b11 (mm)	(348) 388
4.2	Height, mast lowered	h1 (mm)	1375 (5)
4.3	Free lift	h2 (mm)	-
4.4	Lift	h3 (mm)	700
4.5	Height, mast extended	h4 (mm)	2075 (5)
4.6	Initial lift	h5 (mm)	-
4.8	Stand height	h7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1250 (7)
4.10	Height of wheel arms	h8 (mm)	-
4.12	Coupling height	h10 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	1197
4.15	Forks height, lowered	h13 (mm)	86
4.17	Overhang	l5 (mm)	-
4.19	Overall length	l1 (mm)	2532
4.20	Length to face of forks	l2 (mm)	1342
4.21	Overall width	b1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	55 / 172 / 1190
4.24	Fork-carriage width	b3 (mm)	796 (5)
4.25	Distance between fork-arms	b5 (mm)	(520) 560

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Datasheet (VDI)

			OPX-L 12
4.31	Ground clearance, laden, below mast	m1 (mm)	-
4.32	Ground clearance, centre of wheelbase	m2 (mm)	30
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	-
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	2871
4.35	Turning radius	Wa (mm)	2007
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
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	-
5.6	Max. drawbar pull, laden/unladen S2 = 5 min	N	-
5.8	Max. gradeability laden/unladen	%	
5.9	Acceleration time, laden/unladen	s	5.8 / 4.9
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 K5	V / Ah	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402
6.6	Energy consumption according to VDI cycle	kWh/h	-
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

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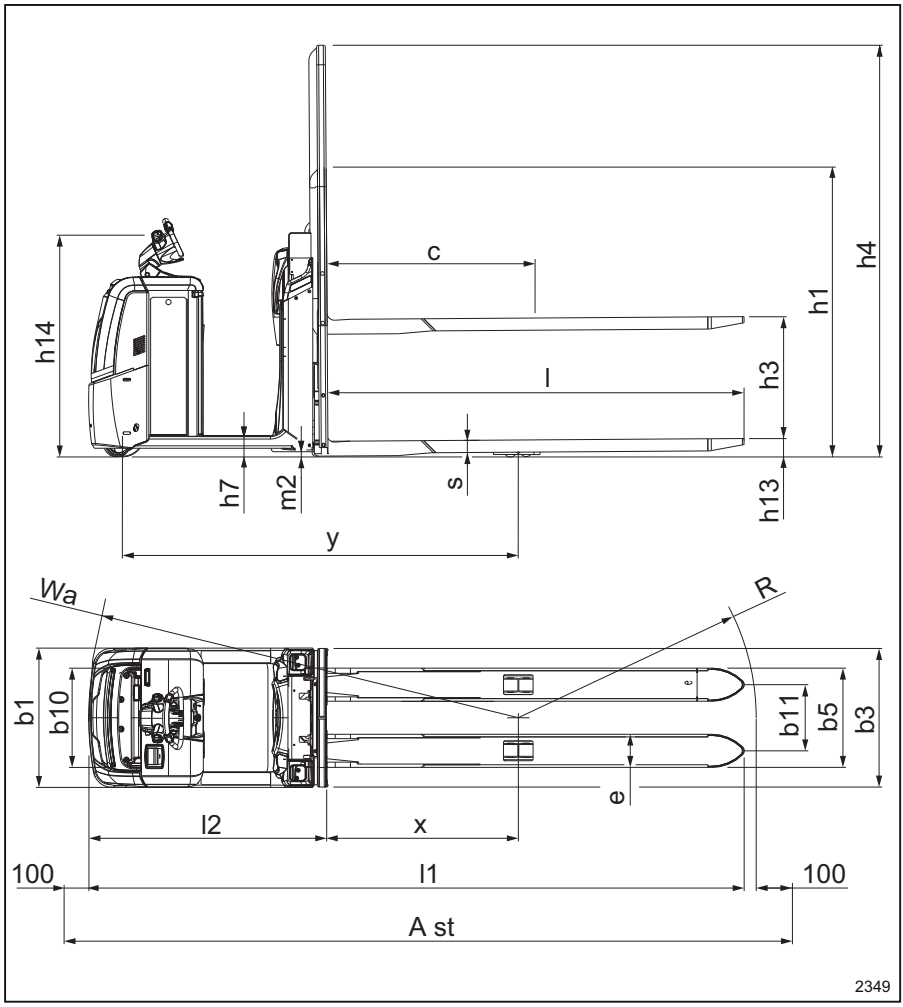
(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

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Datasheet (VDI) OPX-L 16



			OPX-L 16
1.3	Drive		Electric
1.4	Operator type		Stand-on
1.5	Rated capacity/rated load	Q (t)	1,6
1.6	Load centre distance	c (mm)	1200
1.7	Rated draw bar pull	F (N)	-

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			OPX-L 16
1.8	Load distance, centre of drive axle to fork	x (mm)	1093
1.9	Wheelbase	y (mm)	2279
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)		1x - 1 / 4
3.6	Tread, front	b10 (mm)	483
3.7	Tread, rear	b11 (mm)	375
4.2	Height, mast lowered	h1 (mm)	1665 (5)
4.3	Free lift	h2 (mm)	-
4.4	Lift	h3 (mm)	700
4.5	Height, mast extended	h4 (mm)	2365 (5)
4.6	Initial lift	h5 (mm)	-
4.8	Stand height	h7 (mm)	130 (6)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1250 (7)
4.10	Height of wheel arms	h8 (mm)	-
4.12	Coupling height	h10 (mm)	-
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	1197
4.15	Forks height, lowered	h13 (mm)	90
4.17	Overhang	l5 (mm)	-
4.19	Overall length	l1 (mm)	3763
4.20	Length to face of forks	l2 (mm)	1373
4.21	Overall width	b1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	70 (85 max) / 190 / 2390
4.24	Fork-carriage width	b3 (mm)	796 (5)
4.25	Distance between fork-arms	b5 (mm)	570
4.31	Ground clearance, laden, below mast	m1 (mm)	-

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			OPX-L 16
4.32	Ground clearance, centre of wheelbase	m2 (mm)	30
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	-
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	4026
4.35	Turning radius	Wa (mm)	2459
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
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	-
5.6	Max. drawbar pull, laden/unladen S2 = 5 min	N	-
5.8	Max. gradeability laden/unladen	%	
5.9	Acceleration time, laden/unladen	s	6.4 / 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 K5	V / Ah	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402
6.6	Energy consumption according to VDI cycle	kWh/h	-
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

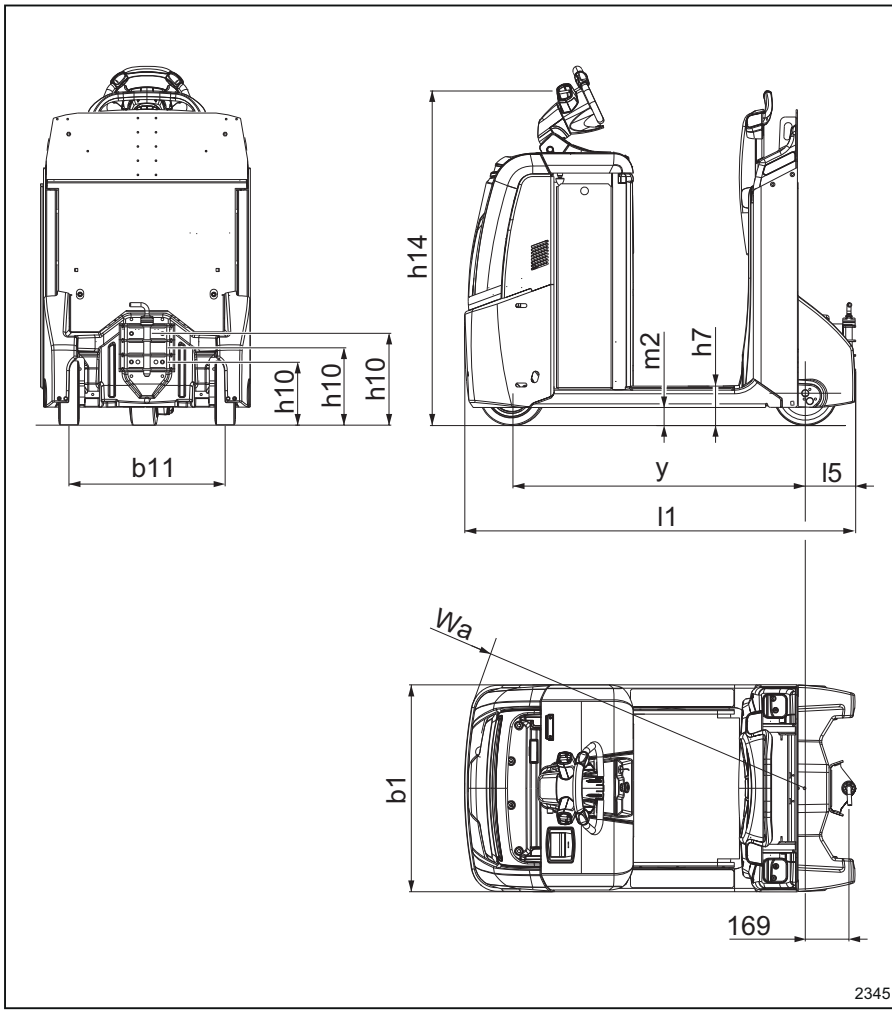
(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

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(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

Datasheet (VDI) LTX 50



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			LTX 50
1.3	Drive		Electric
1.4	Operator type		Stand-on
1.5	Rated capacity/rated load	Q (t)	5,0
1.6	Load centre distance	c (mm)	-
1.7	Rated draw bar pull	F (N)	
1.8	Load distance, centre of drive axle to fork	x (mm)	-
1.9	Wheelbase	y (mm)	1133 (4)
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	-
3.5	Wheels, number front/rear (x=driven wheels)		1x / 2
3.6	Tread, front	b10 (mm)	-
3.7	Tread, rear	b11 (mm)	604
4.2	Height, mast lowered	h1 (mm)	-
4.3	Free lift	h2 (mm)	-
4.4	Lift	h3 (mm)	-
4.5	Height, mast extended	h4 (mm)	-
4.6	Initial lift	h5 (mm)	-
4.8	Stand height	h7 (mm)	150 (4)
4.9	Height drawbar in driving position min./max.	h14 (mm)	1270 (4)
4.10	Height of wheel arms	h8 (mm)	-
4.12	Coupling height	h10 (mm)	190/245/300/355/410
4.14	Stand height, elevated (with lifting platform)	h12 (mm)	-
4.15	Forks height, lowered	h13 (mm)	-
4.17	Overhang	l5 (mm)	193
4.19	Overall length	l1 (mm)	1512
4.20	Length to face of forks	l2 (mm)	-

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			LTX 50
4.21	Overall width	b1 (mm)	800
4.22	Fork dimensions	s/e/l (mm)	-
4.24	Fork-carriage width	b3 (mm)	-
4.25	Distance between fork-arms	b5 (mm)	-
4.31	Ground clearance, laden, below mast	m1 (mm)	-
4.32	Ground clearance, centre of wheelbase	m2 (mm)	70 (4)
4.34.1	Aisle width for pallets 1000 x1200 crossways (forks raised)	Ast (mm)	-
4.34.2	Aisle width for pallets 800 x1200 crossways (forks raised)	Ast (mm)	-
4.34.3	Aisle width for for pallets 800 x l6 lengthways (forks raised)	Ast (mm)	-
4.35	Turning radius	Wa (mm)	1327 (4)
5.1	Travel speed laden/unladen	km/h	9 / 14
5.1.1	Travel speed laden/unladen,backwards	km/h	6 / 6
5.2	Lift speed laden/unladen	m/s	-
5.3	Lowering speed laden/unladen	m/s	-
5.5	Drawbar pull, laden/unladen S2 = 60 min	N	
5.6	Max. drawbar pull, laden/unladen S2 = 5 min	N	
5.8	Max. gradeability laden/unladen	%	see diagram
5.9	Acceleration time, laden/unladen	s	5.0 / 7.3
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 K5	V / Ah	24 / 345 - 465
6.5	Battery weight ± 5 %	kg	402
6.6	Energy consumption according to VDI cycle	kWh/h	
8.1	Drive control		AC control
10.7	Sound level at driver's ear	dB (A)	< 70

(1) with holder for vertical pallet 1365 / 765 mm

(2) with forks lenght 2390 mm / x=1615 mm / pull bar version; for other forks dimension see table below

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(3)3 with load arms or forks raised

(4) there is also the truck option with chassis clearance m2=100 mm, y=1150 mm, h7=180 mm, h14=1300 mm, Wa=1344 mm

(5) with mandatory load backrest (1290 mm from the forks to the top for OPX-L 20 S and OPX-L 12; 1575 mm for OPX-L16)

(6) with lifting platform option h7 +30 mm; h14 +87 mm

(7) with lifting platform option +87 mm; with tiller adjustment option, h14 setting range = +89 mm ¸ -19 mm

Supply table

Supply table for standard trucks

Element to be supplied	Lubricants
Hydraulic system	HLF 32
Reduction gear unit	TUTELA TRANSMISSION W90/LA
General and mast lubrication	TUTELA MP02
Pivot wheels lubrication (if fitted)	IDRAULICAR AP31
Chain lubrication	STRUCTOVIS EHD

Supply table for cold-storage trucks

Element to be supplied	Lubricants
Hydraulic system	EQUIVIS XV32
Reduction gear unit	TUTELA MATRIX
General and mast lubrication	STATERMELF EP2
Chain lubrication	STRUCTOVIS FHD

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A

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45878043402 EN – 10/2017