Original instructions

Pallet stacker

EXV 10C
EXV 12C
EXV 14C
EXV 16C



2080 2081 2082 2083 2559

first in intralogistics

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Rules for the operating company of industrial trucks

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

This guide provides information for handling industrial trucks:

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

Internet address and QR code

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

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1

Introduction

Forklift data

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

Type	
Serial number	
Date of delivery	

General information

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

Using the manual

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

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

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

⚠ DANGER

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

⚠ CAUTION

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

ENVIRONMENT NOTE

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

NOTE

This symbol is used to provide additional information.

Date of edition and latest update of this manual

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

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

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

Copyright and trademark rights

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

Delivery of the forklift and documentation

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

- Original instructions
- Declaration of conformity

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

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

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

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

Digital operating instructions

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

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

Procedure:

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

NOTE

XXXXXXXXXXXX is a placeholder for the serial number.

NOTE

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

Spare parts list

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

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

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


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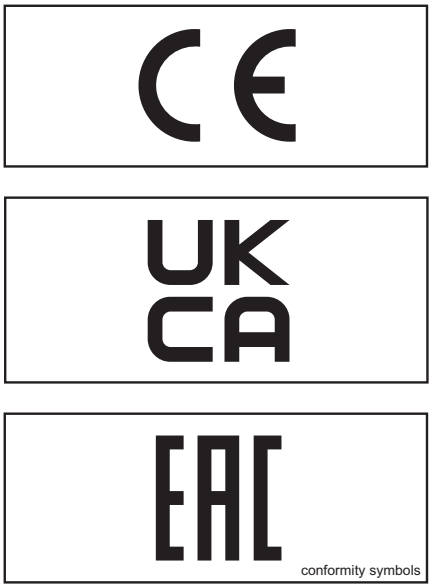
Conformity marking

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

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

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

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



conformity symbols

Declaration that reflects the content of the declaration of conformity

Declaration

STILL GmbH
Berzeliusstraße 10
22113 Hamburg Germany

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

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

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

Personnel authorised to compile the technical documents:

See declaration of conformity

STILL GmbH

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

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

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

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

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

Technical service and spare parts

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

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

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

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

Type of use

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

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

⚠ DANGER

The truck must not be used for other purposes.

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

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

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

⚠ DANGER

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

Working conditions

The truck has been designed and built for internal transport.

The truck must not be used outside the climatic conditions indicated below:

- Maximum ambient temperature: +45°C
- Minimum ambient temperature: -10°C
- Altitude up to 2000 m
- Relative humidity between 30% and 95% (without condensation)

⚠ CAUTION

Do not use the truck in dusty environments.

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

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

⚠ DANGER

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

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

Contact the authorised sales network for further information.

Modifications to Forklift

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

- Assembly of the options, only if provided by the manufacturer
- Assembly of applied equipment, only if provided by the manufacturer

⚠ WARNING

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

⚠ DANGER

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

Modifications and retrofitting

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

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

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

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

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

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

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

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

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

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



⚠ DANGER

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

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

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

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

The operating company must also fulfil the following prerequisites:

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

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

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

Applied equipment

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

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

⚠ CAUTION

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

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

User obligations

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

Environmental considerations

Disposal of components and batteries

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

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

NOTE

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

ENVIRONMENT NOTE

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

Packaging

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

ENVIRONMENT NOTE

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

2

Safety

Safety guidelines

General warning

NOTE

Some safety guidelines to be followed when using the truck are listed below. These regulations supplement those found in the VDI handbook "**Safety manual for users of industrial trucks**". For more information, please read the foreword at the beginning of this manual.

General safety guidelines

- Only allow qualified, trained and authorised personnel to use the truck.
- Do not install equipment on the forklift unless supplied or indicated by the manufacturer.
- Maintain the truck in full working condition in order to keep any type of risk to the minimum.
- Do not use the truck with hoods or doors open or with protective guards removed.
- The data plates found on the forklift must be kept in good condition and replaced if damaged.
- Carefully read and follow all of the safety indications found on the forklift.
- Ensure that there is sufficient free space above the truck, both during travel (beams, gates) and when lifting (low ceiling, bridge crane etc.).
- Do not park in front of fire-fighting devices or fire escapes or anywhere that obstructs traffic.
- If the truck shows signs of fault or breakage and there is reason to consider it unsafe, park the truck and notify your employer/manager. Only use the truck if it functions correctly and allows safe operation after repair.
- Maintain appropriate distances from high-voltage overhead cables. Comply with the safety distances established by the competent authorities.
- Never raise the load using just one fork.
- Place the load on the fork carriage rail or in such a way that the load centre of gravity is as close as possible to the fork carriage rail.
- The load must be placed on the forks so that the load centre of gravity is on the median plane between the forks.
- Do not drive with loads off-centre laterally with respect to the truck's median axis. Lack of compliance with this regulation can compromise forklift stability.
- Make sure that the surface on which the load rests is able to support its weight.
- Always use safety clothing compliant with current regulations and any personal protective equipment that may be applicable.
- Do not travel on rough or uneven ground or on steps.
- Do not travel with loads raised more than 300 mm from the ground.
- Stacking or de-stacking on ramps or slopes is prohibited.
- Reduce speed on slopes.
- Do not overload the truck beyond the capacity limits indicated on the designation plates.
- Individuals under the influence of drugs and alcohol are not permitted to use the truck.
- Use of a telephone or radio in the truck is permitted. However, do not use these devices when driving as they could be a distraction.

Flooring requirements

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

⚠ CAUTION

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

Battery connection cables

⚠ CAUTION

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

External electrical connections

⚠ CAUTION

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

Requirements for the lead-battery charging area

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

Safety guidelines for using the truck

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

ENVIRONMENT NOTE

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

⚠ CAUTION

If you notice a burning smell, stop the truck and press the emergency stop button.

Safety guidelines relating to consumables

Rules for handling and disposing of operating materials

ENVIRONMENT NOTE

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

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

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

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

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

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

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

Always comply with anti-pollution regulations!

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

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

Oils

- Avoid contact with skin.
- Do not inhale oil vapours.
- Wear appropriate personal protective equipment during truck maintenance operations (gloves, goggles etc.) to prevent the oil from coming into contact with your skin.

ENVIRONMENT NOTE

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

⚠ DANGER

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

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

Battery acid

- Do not inhale the steam: it is very harmful to health.
- Wear appropriate personal protective equipment to prevent contact with the skin.
- Battery acid is corrosive: if it should come into contact with your skin, rinse abundantly with water.
- Explosive gas mixtures can form when charging the battery; therefore, the rooms in which the battery is charged must be in compliance with the specific regulations on the subject (e.g. EN 62485-3 etc.).
- DO NOT smoke or use open flames and lights within a 2-m radius of the charged battery or in the battery charging area.

NOTE

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

ENVIRONMENT NOTE

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

Residual risk

Residual dangers, residual risks

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

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

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

⚠ WARNING

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

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

Risks can include:

- Escape of consumables due to leakages, rupture of lines and containers etc.
- Risk of accidents when driving on ramps or in conditions of poor visibility, etc.
- Falling, tripping etc. when moving the truck, especially if floors are wet or icy or when consumables are leaking.
- Danger of fire and explosion due to batteries and electrical voltages.
- Human error resulting from failure to observe the safety guidelines.
- Unrepaired damage or defective and worn components.
- Insufficient maintenance and testing
- Use of incorrect consumables
- Service intervals not observed.

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

Stability

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

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

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

⚠ WARNING

These risks are caused by improper use.

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

Electromagnetic radiation

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

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

Non-ionised radiation

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

Electrostatic charge

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

Noise

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

The value is determined in a test cycle in accordance with Harmonised European Standard EN 12053 and declared according to EN ISO 4871 with weighted time percentages of the operating modes.

⚠ CAUTION

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

Vibrations

Vibrations to which the hands and arms are exposed

The following value is valid for all truck models:

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

NOTE

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

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.

Modifications and retrofitting

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

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

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

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

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

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

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

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

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



⚠ DANGER

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

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

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

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

The operating company must also fulfil the following prerequisites:

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

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

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

Declaration of conformity in accordance with the Radio Equipment Directive 2014/53/EU

The manufacturers of the radio equipment installed declare that the radio equipment corresponds to the Directive RED 2014/53/EU.

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.

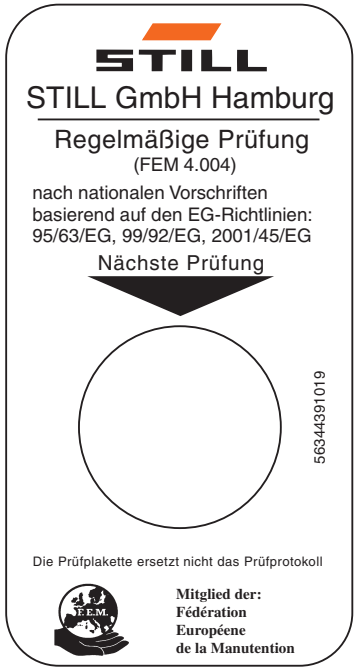
– Observe guidelines for checks carried out on the truck in accordance with FEM 4.004.

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

– Contact your service centre.

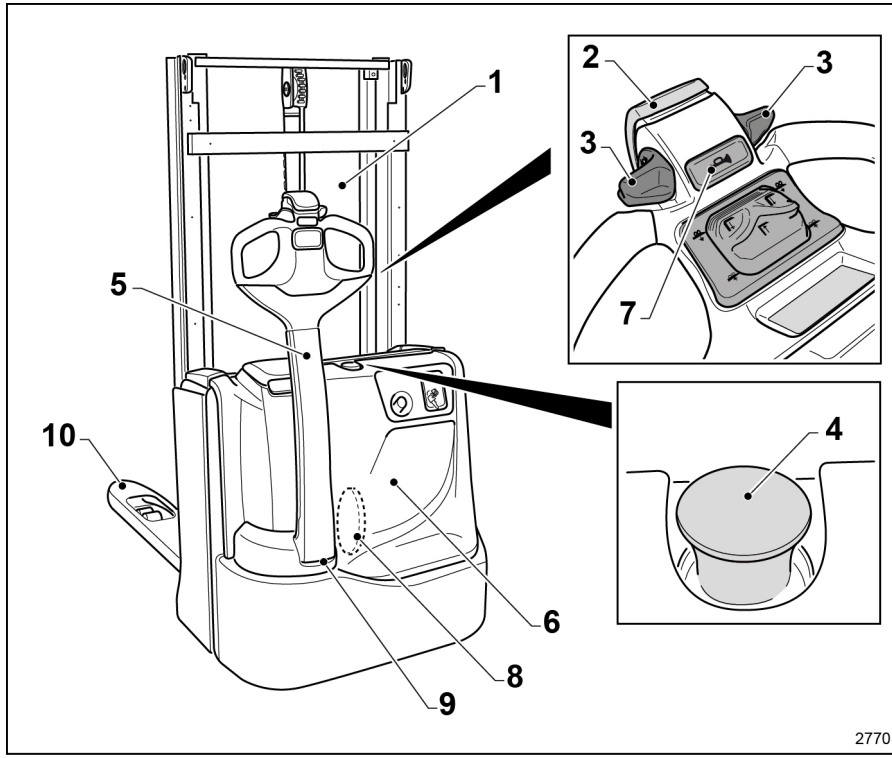
NOTE

Observe the national regulations for your country!



Safety devices

Main safety devices for the truck



The operator must be aware of the following safety devices:

1 Transparent protective screen or alternatively guard grille
2 Belly switch
3 Drive/brake control throttle
4 Emergency shutdown button
5 Tiller with OptiSpeed function
6 Protective casing
7 Horn button
8 Electromagnetic brake
9 Truck braking when the tiller reaches the upper end position and the lower end position
10 Automatic deceleration of the truck's speed of travel at predefined fork heights (only with initial lift option)

NOTE

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

Damage, defects and misuse of safety devices

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

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

Do not remove or deactivate safety devices and switches.

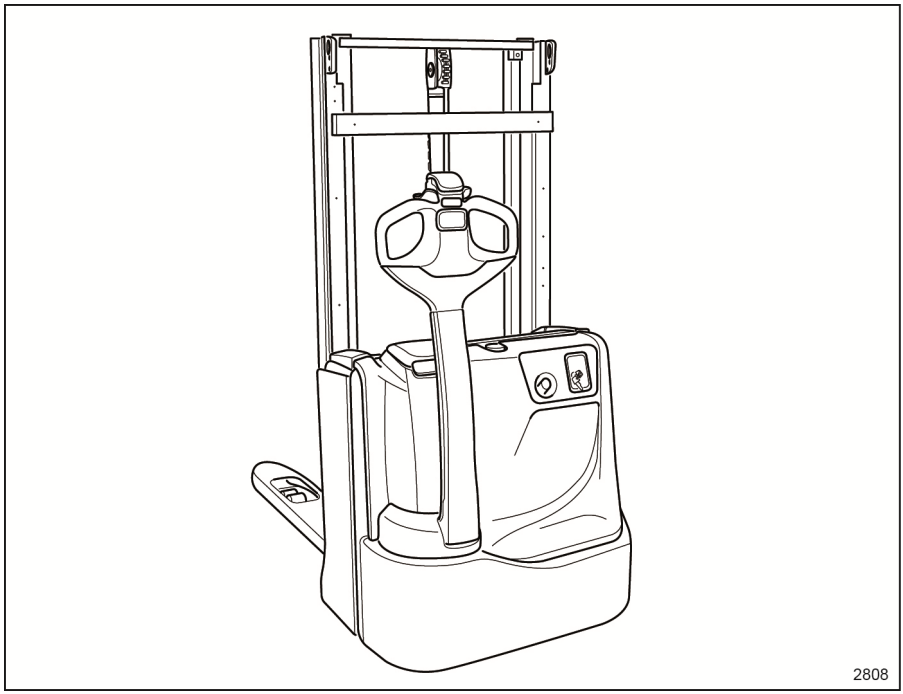
Fixed set values may only be changed with the approval of the manufacturer.

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

3

Overview

Technical description



EXV 10C, EXV 12C, EXV 14C and EXV 16C are pallet stackers for tall heights. They can handle and stack pallets with a maximum weight of 1000 kg (EXV 10C), 1200 kg (EXV 12C), 1400 kg (EXV 14C) and 1600 kg (EXV 16C) inside shops, storage areas and factories. The trucks are designed to be used indoors.

General features

- The traction motor operates the drive wheel using a reduction gear unit
- Asynchronous transmission: power 1.1 kW and 1.3 kW
- Smooth starting and acceleration
- Regenerative braking
- Speed of 6 km/h even when fully loaded

Lifting

Nominal load:

- EXV 10C: 1000 kg
- EXV 12C: 1200 kg
- EXV 14C: 1400 kg
- EXV 16C: 1600 kg

Pump unit:

- EXV 10C - EXV 12C: power 2.2 kW or 3 kW
- EXV 14C - EXV 16C: power 3 kW

Types of lift mast:

- Simplex mast (E): non-telescopic with central cylinder
- Telescopic mast (T): two-stage telescopic mast without free lift and with two lateral cylinders
- Compact telescopic mast (C): two-stage telescopic mast without free lift and a central cylinder
- NiHo mast (N): two-stage telescopic mast with free lift, lateral chains and two lateral cylinders plus a central cylinder
- Triplex mast (D): three-stage telescopic mast with free lift, lateral chains and two lateral cylinders plus a central cylinder

Driving

A long, robust and ergonomic tiller allows the operator to drive the truck easily.

The tiller is used to activate the following controls:

- Steering
- Drive control throttles
- Horn
- Fork lifting and lowering buttons
- Anti-crush safety push button
- Truck braking when the tiller reaches the upper end position and the lower end position

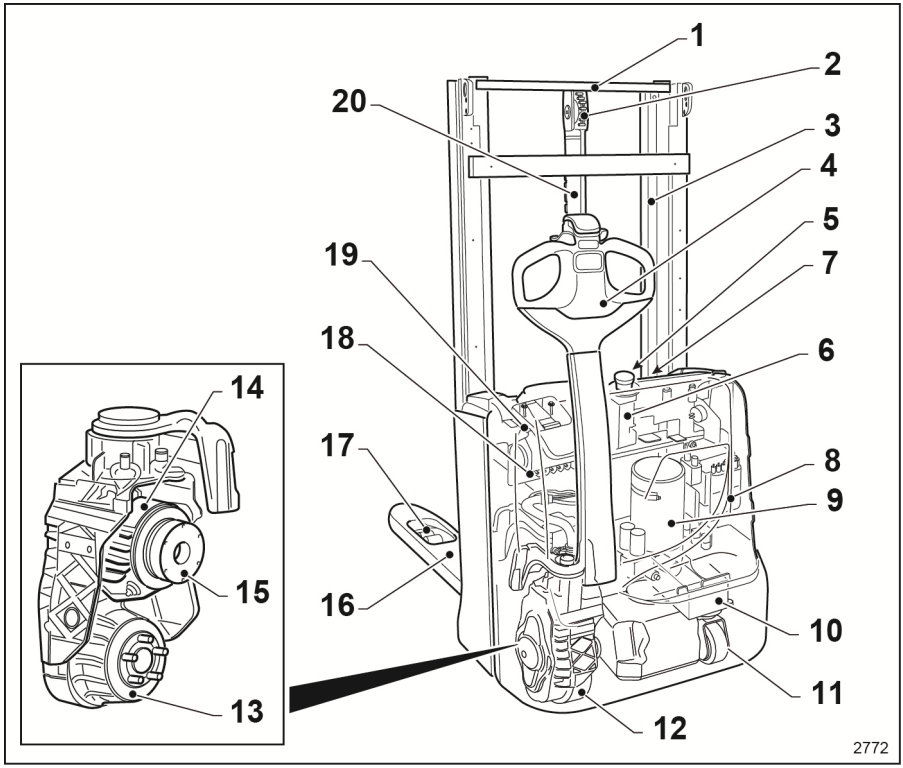
For safety reasons, when the tiller is released a gas spring automatically returns it to the initial position.

Braking system

Braking:

- counter-current, when the drive control throttles are released
- counter-current, by rotating the drive control throttles in the opposite direction
- counter-current, controlled by the belly safety switch
- electromagnetic safety device, controlled by the emergency shutdown button
- electromagnetic safety device, activated by the release of the tiller
- electromagnetic safety device, activated when the tiller reaches the lower end position
- electromagnetic parking, applied when the power supply is cut

General view



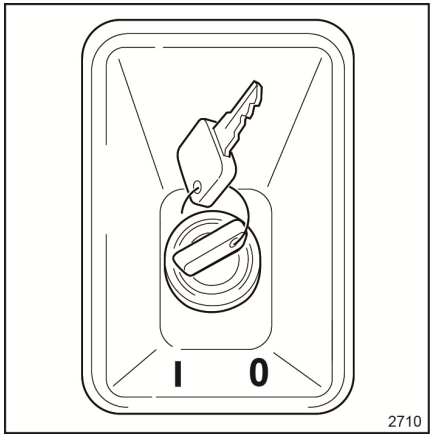
1	Mast	4	Tiller
2	Chains	5	Emergency shutdown button
3	Transparent plastic protection or guard grille	6	Fuse holder

7	Battery socket	14	Traction motor
8	Built-in battery charger (if present)	15	Brake
9	Pump motor	16	Fork
10	Hydraulic oil tank	17	Load rollers
11	Pivoting wheel	18	Electronic panel
12	Drive wheel	19	Battery
13	Reduction gear unit	20	Lift cylinder

Instruments and controls

Start/stop variants

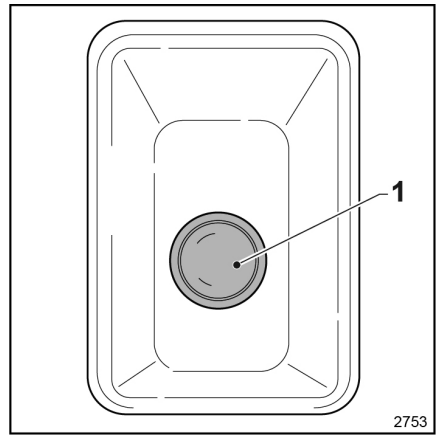
Start/stop key ▷



The key has two positions:

0 = Stopping the truck. Key removal position.
I = Starting the truck.

Start/stop push-button (optional) ▷



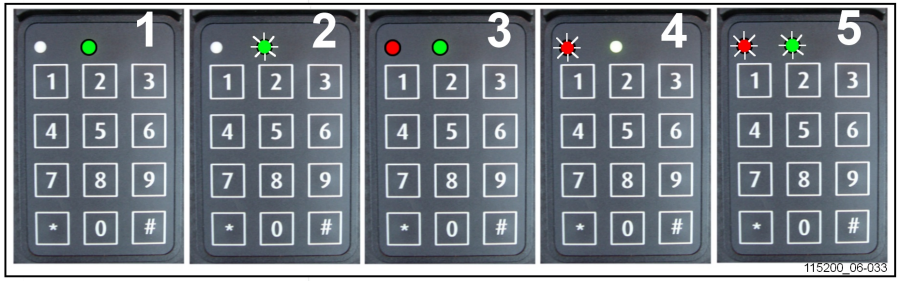
The truck can be equipped with a push-button (instead of the standard key) for switching the truck on and off.

- **Switching on** = To switch on the truck, press the button (1). The button lights up to indicate that the truck is ready for use.
- **Switching off** = To switch off the truck, press the button (1) again. The light from the button (1) goes out and the truck switches off.

NOTE

- *Switch off the truck after each use and whenever you move away from it.*
- *After switching on the truck using the button (1), the operator will need to enter their numeric code (Pin Code) to use the truck. The numeric code must be entered via the touch display or via the numeric keypad depending on the model of truck used.*

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



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

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

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

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

Stand-by

NOTE

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

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

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

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

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

Fleetmanager (Optional)

The Fleetmanager option is described in a specific user guide. See the Fleetmanager user guide for a detailed explanation. The Fleetmanger user guide is attached to the truck, but only if the truck was ordered with the Fleetmanager option.

Below is an overview of the instruments for activating the truck with FleetManager.

Illustration of the **transponder chip** ▷

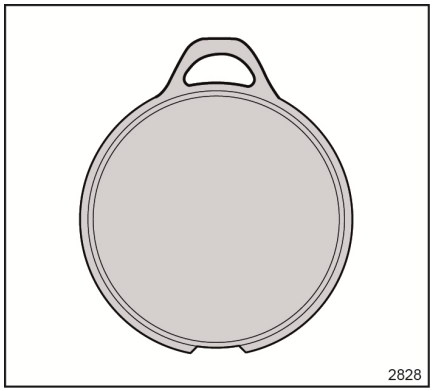


Illustration of the **reading device** variant ▷

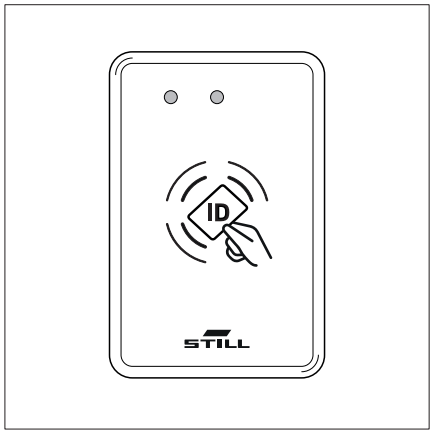
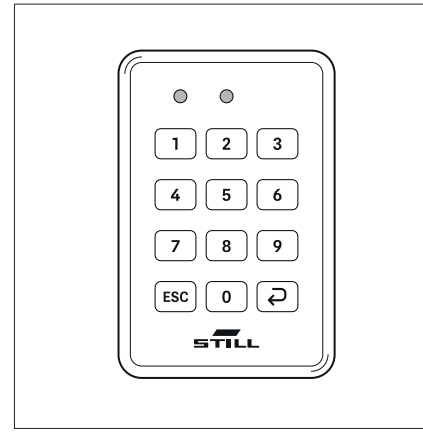
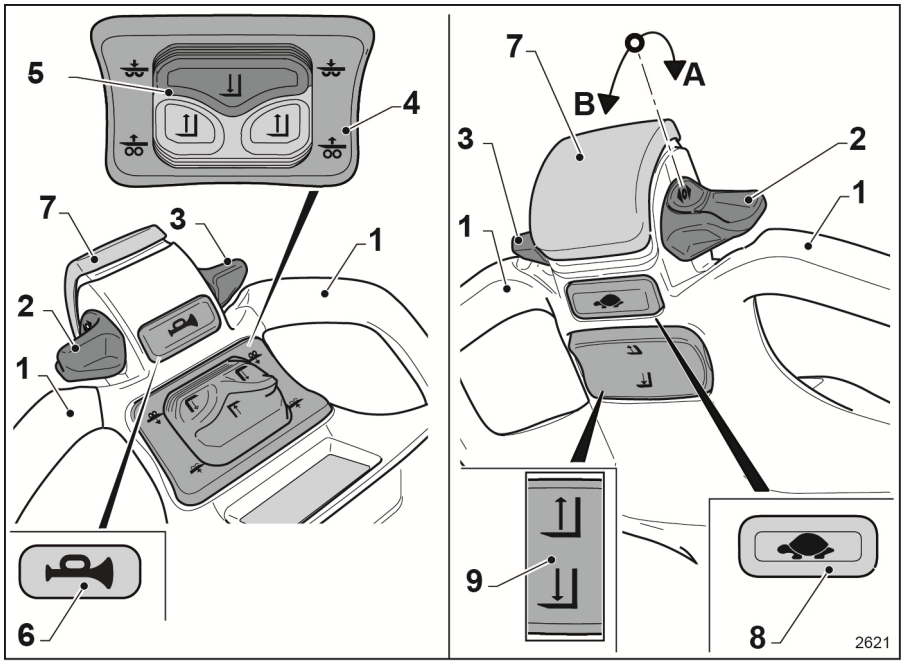


Illustration of the **keypad** variant ▷



Tiller controls



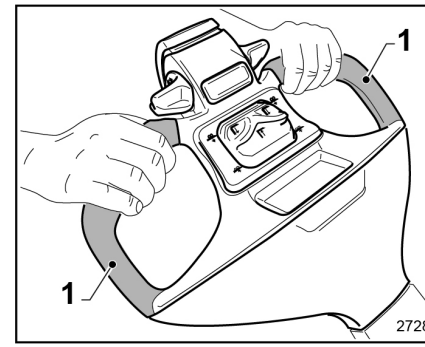
1 Tiller head handles
2 and 3 Drive control throttles
4 Straddle control button (optional)
5 Fork lifting/lowering proportional control button
6 Horn button
7 Belly switch
8 Multifunction button
9 Fork lifting/lowering button (not proportional), active when the multifunction button (8) is pressed

NOTE

The following controls are active with the truck switched on and the operator in the correct working position. This does not include the use of the multifunction button (8), which allows operation of the controls even when the tiller is in the vertical position.

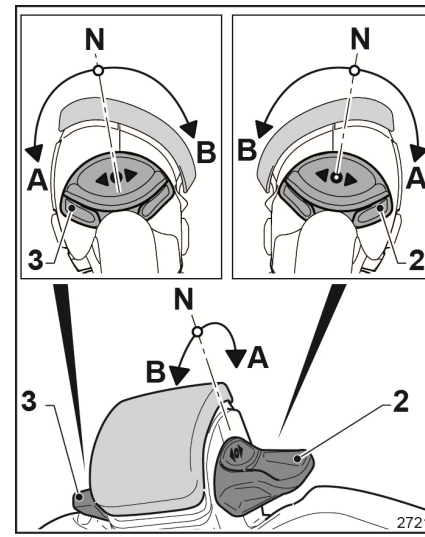
– **(1) Tiller head handle**

- Areas designed for holding the tiller head during use.



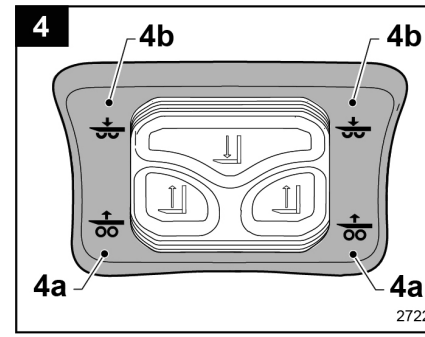
– **(2 - 3) Drive control throttles**

- The drive control consists of two throttles (2 - 3) that are mechanically connected and therefore move simultaneously.
- When the throttle (2 o 3) is turned in direction (A), the truck starts moving in the direction of the forks.
- When the throttle (2 o 3) is turned in direction (B), the truck starts moving in the direction of the operator.
- Once travel is activated in one of two ways, the speed is directly proportional to the angle of rotation of the throttles (2-3) in relation to the neutral zone (N). Increasing or decreasing this rotation increases or decreases the corresponding speed.
- To stop the truck from moving, turn the drive control throttles (2 - 3) until they reach the neutral position (N).

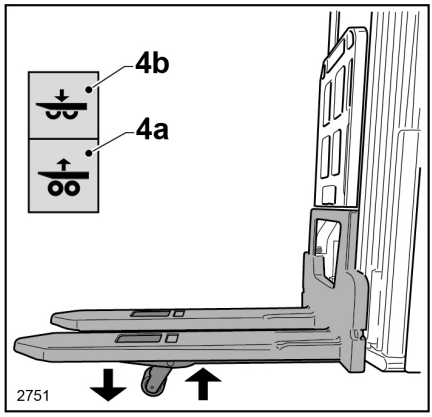


– **(4) Straddle (optional) control button**

- If the truck is the standard version, the button (4) is disabled.
- If the truck is equipped with the straddle initial lift (Initial lift), the button (4) is enabled to operate as described below.



– **(4a) Straddle lifting** ▷



- Press the button (4) on the symbol (4a) to raise the straddles.

– **(4b) Straddle lowering**

- Press the button (4) on the symbol (4b) to lower the straddles.

⚠ DANGER

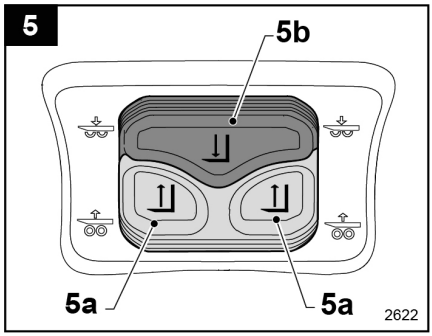
Risk of crushing feet!

Be careful not to put your feet under the straddles, particularly while using the straddle lowering function.

NOTE

- The straddle lifting function increases the ground clearance, meaning that the truck can be used on slopes.
- The button (4) is active only when the tiller is tilted to the working position.
- The button (4) can be activated when the tiller is in the vertical position only if you hold down the multifunction button (8) and then press on the symbol (4a).
- For safety reasons, straddle lowering (4b) is disabled when the tiller is in the vertical position even when the multifunction button (8) is held down.
- Please refer to the instructions on the multifunction button (8) for more information.
- Straddle movement can be stopped at any time simply by releasing the button (4). The straddles will stop in the position reached.

– **(5) Fork lifting/lowering proportional control button** ▷



The operator can adjust the speed of the forks by turning the button (5):

- The more the button is turned, the faster the forks are raised/lowered.
- The less the button is turned, the slower the forks are raised/lowered.

NOTE

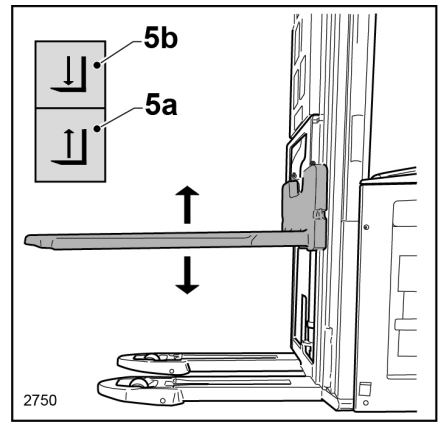
- *The button (5) is active when the tiller is tilted to the working position.*
- *The button (5) can be activated when the tiller is in the vertical position only if you hold down the multifunction button (8) and then press on the symbol (5a) or (5b).*
- *Please refer to the instructions on the multi-function button (8) for more information.*
- *Fork movement can be stopped at any time by releasing the button (5). The forks will stop in the position reached*

– **(5a) Fork lifting**

- Press the button (5) on the symbol (5a) to lift the forks and reach the maximum height.

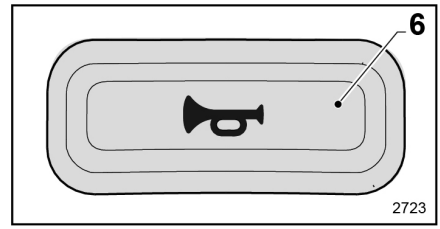
– **(5b) Fork lowering**

- Press the button (5) on the symbol (5b) to lower the forks.
- When the forks are fully lowered, a reduction in the fork lowering speed is automatically triggered just before the end of the stroke(soft landing).

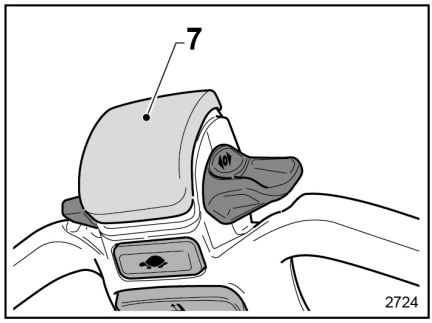


– **(6) Horn button**

- Press the button (6) to operate the horn. This device allows the driver to signal their presence when necessary.



– **(7) Belly switch** ▷



⚠ CAUTION

Risk of the load falling off the forks.

Recommendation: When manoeuvring with a load on the forks, do not deliberately press the button (7) if the operator is NOT in a dangerous situation.

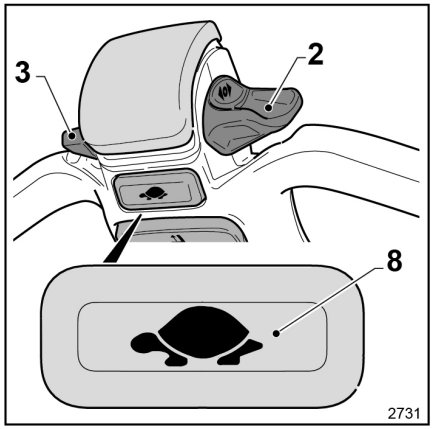
Description:

- The button (7) is a particularly useful safety feature in narrow areas. When the truck is moving toward the operator, the button (7) prevents the operator from being crushed between a wall/obstacle and the tiller head.

Operation:

- If the button (7) is pressed due to contact with the operator's body, the truck automatically reverses (from moving toward the operator to moving toward the forks).
- When reversing, the truck travels at creep speed for a maximum time that is preset by the manufacturer. If the button is released, the truck stops.

– **(8) Multifunction button** ▷



The button (8) has two different functions:

- To enable operation of the drive and fork lifting controls when the tiller is in the vertical position (normally when the tiller is in the vertical position, these controls are deactivated and the truck's parking brake is applied). The function is designed for manoeuvring in tight spaces and therefore the maximum travel speed is reduced accordingly.
- To select the three operating modes of the truck: standard; reduced travel speed; energy saving (Blue-Q).

Forward/reverse travel of the truck with the tiller in the vertical position (creep speed function).

- Keep the button (8) pressed and then (within a few seconds) turn the throttle (2 -3) in the required direction. The truck will move in the required direction in creep speed.

⚠ DANGER

Danger of crushing for the operator and/or truck collision. The creep speed function is automatically cancelled when the tiller is tilted to the standard working position. When the tiller is tilted from the vertical position (creep speed) to the working position, the operator must pay attention to the resulting change in truck speed. In this phase, the operator must reduce the rotation of the drive controls (2 and 3) to limit the truck's speed of travel and avoid any dangerous situations.

For fork lifting/lowering with the tiller in the vertical position

- Hold down the multifunction button (8) and then press the fork lifting/lowering buttons. See the explanation of the button (4, 5, 9).

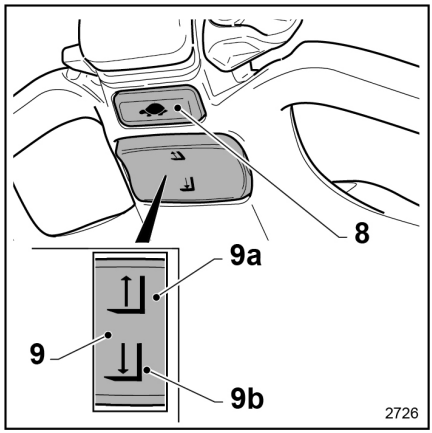
For straddle lifting/lowering (if option is present) with the tiller in the vertical position

- Hold down the multifunction button (8) and then press the straddle lifting/lowering button. See the explanation of the button (4).

Choice of truck driving performance

- To choose the performance, the tiller must be in the working position (not in the vertical position or in the horizontal position).
- Pressing the button (8) twice in quick succession switches between performance modes. Each time you press the button (8) twice in succession, a different level of driving performance is selected. You can choose whether to use maximum performance (hare icon illuminated), reduced performance (tortoise icon illuminated) or Blue-Q mode in which the truck performance is optimised to save as much battery energy as possible. The icon corresponding to the level of performance selected will be illuminated on the display. For more information, please refer to the display section.

– **(9) Additional fork lifting/lowering button** ▷



NOTE

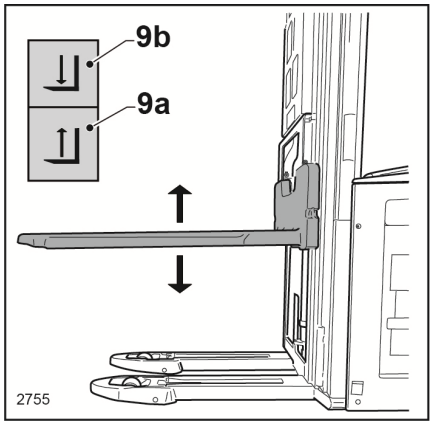
- *The button (9) is used to lift/lower the forks only when using the tiller in the vertical position. The button (9) is only activated with the tiller in the vertical position and the multifunction button (8) pressed.*
- *The button (9) is NOT active when the tiller is tilted to the working position.*
- *Fork movement can be stopped at any time by releasing the button (9) or the button (8). The forks will stop in the position reached.*

– **(9a) Fork lifting** ▷

- Hold down the button (8) and then press the button (9) on the symbol (9a) to lift the forks and reach the maximum height.

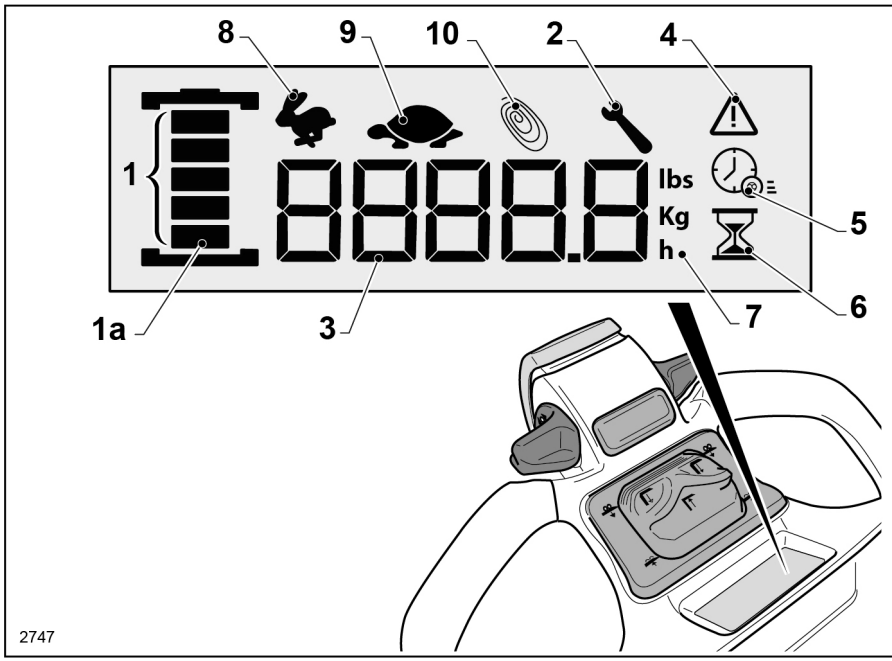
– **(9b) Fork lowering**

- Hold down the button (8) and then press the button (9) on the symbol (9b) to lower the forks.
- When the forks are fully lowered, a reduction in the fork lowering speed is automatically triggered just before the end of the stroke(soft landing).



Display variants

Display



- **(1)** Battery charge level indicator
- Battery fully charged: all five bars are lit on the display. As the battery discharges, the number of bars on the display gradually decreases.
- Battery with charge reduced to approximately 20%:

  - If you are using a lithium battery, the last bar stays on with a steady light.

  - If you are using another battery type (e.g. a lead battery), the last bar stays on with a flashing light.

  - Charging the truck battery is recommended.
- Battery with charge reduced to approximately 10%:

  - If you are using a lithium battery, only the last bar (1a) stays on with a white flashing light.

- If you are using another battery type (e.g. a lead battery), only the last bar stays on with a red steady light.
- With less than 10% residual charge, truck performance may become restricted. For example, reduction of the maximum speed or blocking of fork lifting.
- Charge the truck battery immediately.

- Battery completely empty:
  - Only the last bar stays on with a red flashing light.
  - Charge the truck battery immediately.

- **(2)** Service interval
- Flashing indicator light: Warns that the scheduled service interval is approaching. Contact the technical service centre for more information.
- Solid indicator light: Warns that scheduled servicing work is required. Contact the technical service centre for more information.
- **(3)** Hour meter/Weight/Alarm code
  - When the icon (4) is illuminated on the display, field (3) displays the alarm code. Please refer to the next section for more information on alarms.
  - When the icon (5) is illuminated on the display, field (3) displays the remaining operating hours of the truck before the battery is empty.
  - When the icon (6) is illuminated on the display, field (3) displays the total operating hours of the truck.
  - When the unit of measure icon (kg) or (lbs) is illuminated in field (7) on the display, field (3) shows the weight of the load lifted on the forks. Optional version.
- **(4)** Alarm indicator light
  - The truck may have various problems. The alarm code appears in the field (3) on the display.
  - Please refer to the next section for more information on alarms.
- **(5)** The icon (5) indicates that the value displayed in the field (3) relates to the truck's remaining operating hours before the battery is empty.
- **(6)** The icon (6) indicates that the value displayed in the field (3) relates to the truck's total operating hours. This is normally displayed when the truck is switched on.
- **(7)** Units of measurement:

- When the "h" icon is on, this indicates that the value shown on the display is expressed in working hours.
- When the "kg" icon is on, this indicates that the weight shown on the display is expressed in kg (optional).
- When the "lbs" icon is on, this indicates that the weight shown on the display is expressed in pounds (optional).

- **(8)** Hare icon
  - When the icon (8) is on, the performance of the truck is at its maximum.
- **(9)** Tortoise icon
  - When the icon (9) is on, the performance of the truck is automatically reduced and restricted.
- **(10)** Blue-Q icon
  - When the icon (10) is on, the performance of the truck will be optimised for maximum battery saving.

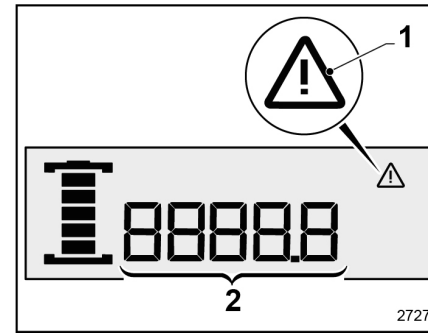
NOTE

- *For each performance level, the corresponding icon (8, 9, 10) is switched on when this level is activated and switched off when it is deactivated.*
- *Only one of the performance modes (8, 9, 10) can be activated at a time.*

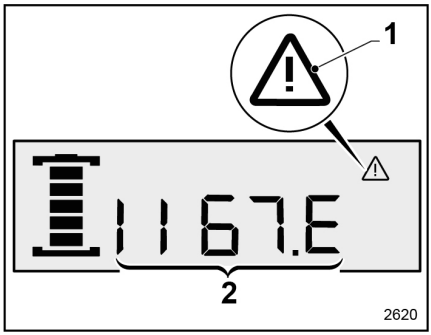
Alarms

– **Incorrect switch-on sequence**. The alarm indicator light (1) lights up on the display and standard information (e.g. the number of operating hours) remains displayed in field (2). The alarm indicates that the operator has performed an incorrect switch-on sequence. The operator must release all of the controls (tiller, throttles etc.) and then wait a moment before using the truck again. If the alarm reoccurs, switch the truck off and on again.

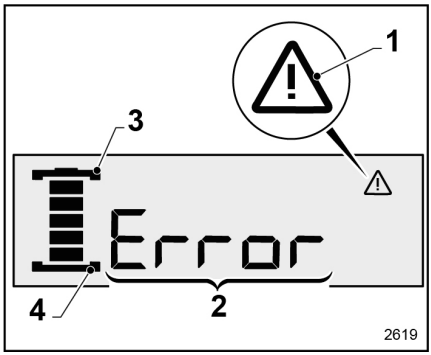
▷



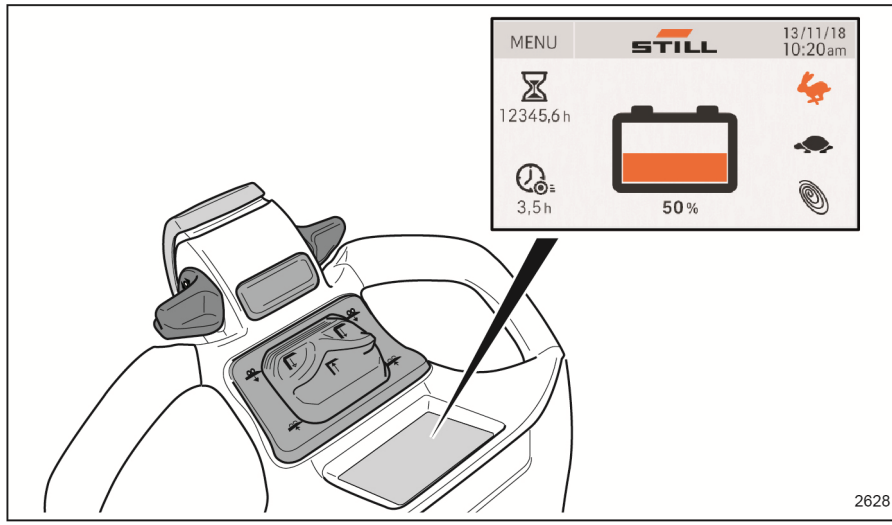
– **Generic alarm**. The alarm indicator light (1) lights up on the display and an error code appears in field (2). The alarm indicates that the truck may have various problems. Switch the truck off and on again. If the alarm appears again at start up, contact the technical service centre. In the meantime, park the truck in a safe and suitable place. ▷



– **Specific alarm relating to charging via the on-board battery charger (if present)**. The alarm indicator light (1) lights up on the display. Field (2) displays `Error` and the segments (3 and 4) flash. The alarm indicates that the truck has problems with charging via the on-board charger. Switch the truck off and on again. If the alarm appears again at start up, contact the technical service centre. ▷



Display touch

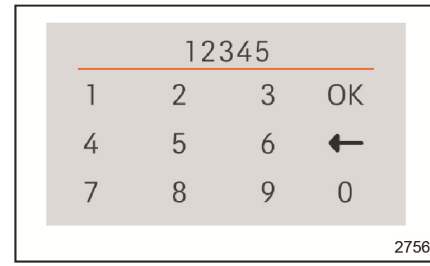


– **(1)** When the truck is started, the display lights up displaying the STILL logo

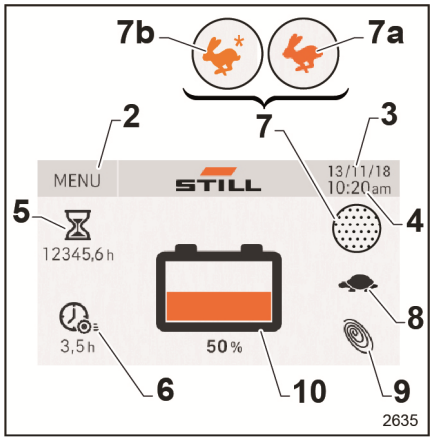
– **(1a)** for a few seconds the display shows the number of days until the next service, only if the notification option is active (contact the Technical Service Department for more information).



– If the "pin code" option is present, the operator must enter his personal code (5 digits) to start the truck.



– The main screen is then displayed:



– **MENU (2)**: pressing Menu enters the operator menu page to set or choose the display settings and some functions of the truck.

– **Date (3)**: indicates the date (see the following sections for more information).

– **Time (4)**: indicates the time (see the following sections for more information).

– **Operating hours (5)**: indicates the truck's total operating hours.

– **Hours remaining (6)**: indicates the remaining operating hours (estimated value) before the battery is completely discharged.

– **(7)** In this position the display shows the hare icon (7a) or alternatively the hare icon* (7b). Each time the position (7) is pressed, the display alternates the icon shown between hare 7a and hare* (7b):

- • Press on the lit hare icon (7a) to deactivate it, the display will automatically activate the hare icon* (7b) and show it as a lit icon on the display.
- • Press on the lit hare icon* (7b) to deactivate it, the display will automatically activate the hare icon (7a) and show it as a lit icon on the display.

– **Hare icon (7a)** lit to give the truck drive mode with maximum performance.

– **Hare icon* (7b)** lit to give the truck drive mode with performance customised by the operator.

– **Tortoise (8)**: press the tortoise icon (8) which lights up, the truck's performance is automatically reduced and limited.

– **Blue-Q (9)**: press the icon (9) which lights up, the function is enabled, the truck's performance will be optimised for maximum battery saving.

– **Battery charge level (10)**

NOTE

- *For each performance level, the corresponding icon ((7, 7a, 8, 9)) is lit when the level is activated and goes off when the level is deactivated.*
- *Only one of the performance modes ((7, 7a, 8, 9)) can be activated at a time.*

⚠ CAUTION

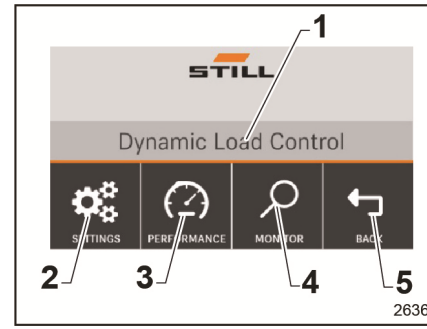
If the display is not working, do not continue to operate the truck. Switch the truck off and on again, and if the display is still not working, contact the technical service centre to replace the display.

⚠ WARNING

The images of the display on the following pages are for English. By setting a language other than English on the display, the operator will find the texts translated into the selected language.

MENU

▷



Pressing "MENU" on the main page displays the following:

– **(1)** The presence or absence of the "Dynamic Load Control" option is indicated in this zone:
- If it is present, text is displayed "Dynamic Load Control"
- If it is absent, no text is displayed.

– **(2)**"Settings" – general display settings

– **(3)**"Performance" – settings of some functions of the truck

– **(4)**"Monitor" – analysis of the truck status

– **(5)**"Back" key returns to the main page.

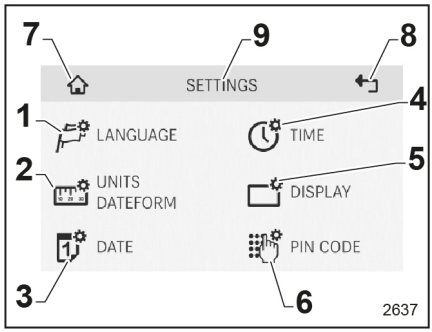
Pressing the icons (2, 3, 4) will take you to the related sub-menus, which will be explained on the next pages.

Settings (9)

The following settings can be configured on this page:

- (1) language of the operator interface
- (2) units of measurement and the form of the date
- (3) date
- (4) time
- (5) brightness and sound level of the display.
- (6) access codes (if the option is present)

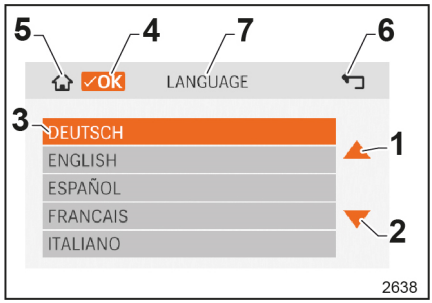
Press the key (7) to return the main page or the key (8) to go back to the previous page ("MENU")



Language (7)

You can choose your preferred language from the list.

- Scroll through the list using the (1) and (2) buttons, press on the desired language, the line of the selected language changes colour (3), then press the key (4) "OK" or (5) to confirm your choice and return to the main page.
- Press the key (6) to return to the previous page without saving any changes.

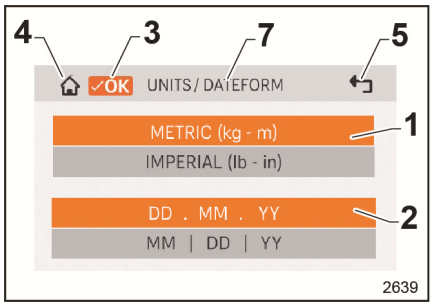


Units/Dateform (7)

- Set the unit of measurement of weight, METRIC (kg - m) or IMPERIAL (lb - in). The selected line changes colour (1)

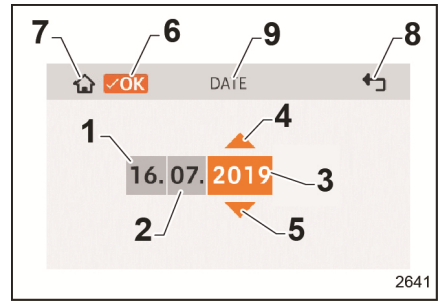
Set the display format of the date:

- DD . MM.YY (European: day.month.year);
- MM / DD / YY (American: month/day/year). The selected line changes colour (2).
- Press the key (3) "OK" or (4) to confirm your choices and return to the main page.
- Press the key (6) to return to the previous page without saving any changes.



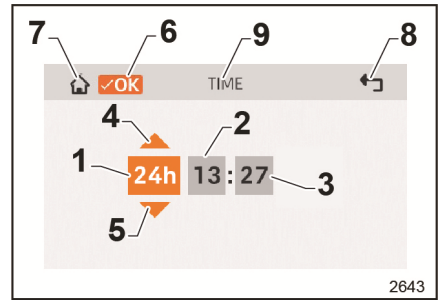
Date (9)

- Press the day (1), month (2) or year field (3). To change the activated field (coloured orange), use the arrows (4) and (5) to change the value.
- Press the key (6) "OK" or (7) to confirm your choices and return to the main page.
- Press the key (8) to return to the previous page without saving any changes.

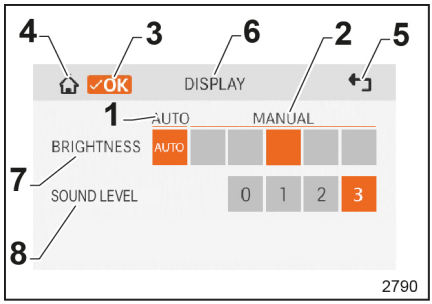


Time (9)

- Choose the time display (1) 12h or 24h and set the hours (2) and minutes (3)
- Select the field to be modified (displayed in orange), and use the arrows (4) and (5) to change the value.
- Press the key (6) "OK" or (7) to confirm your choices and return to the main page.
- Press the key (8) to return to the previous page without saving any changes.



Display (6)



Brightness (7)

- (1) Auto: the brightness of the display varies automatically according to the external light. To activate Auto, press on the "AUTO" square (which lights up orange) and set the desired average brightness value of the display using the other squares.
- (2) Manual: make sure that the "AUTO" square is not active (it is grey), then press one of the squares to set the fixed brightness of the display. The selected square lights up orange. While setting the brightness, the result is shown on the display.

Sound Level (8)

- Set the sound level of the display from the available sound levels (0,1,2,3).

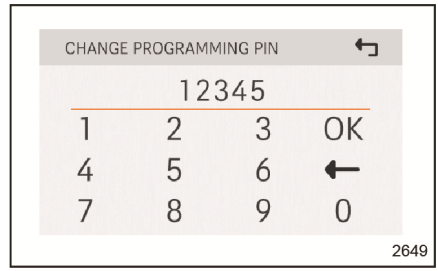
  - Pressing the field (0) will mean that the sound level will be at the minimum but will still be there. If the optional DLC is fitted, the specific sounds emitted by the DLC system will turn off completely. The selected sound level field lights up orange.

  - Pressing the field (1) sets the sound level to minimum.

  - Pressing the field (2) sets the sound level to medium.

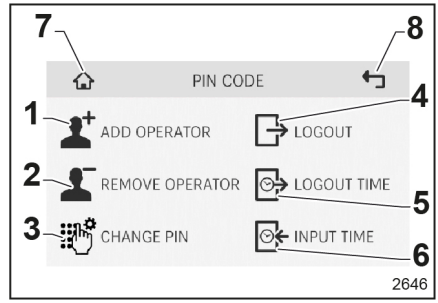
  - Pressing the field (3) sets the sound level to maximum.
- Press the key (3) "OK" or (4) to confirm your choices and return to the main page. Press the key (5) to go back to the previous page without saving any changes

PIN code (optional)



⚠ WARNING

The manager responsible for managing the operators using the truck must type in the programming code (eight zeros) "00000000" on first login, and then it is recommended to change the programming code as explained in the following paragraphs.



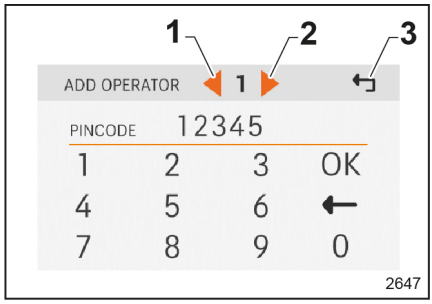
- From the main "PIN CODE" functions page, the manager can access the individual set-up pages using the programming code when the truck is started:
- (1) Go to this page to add an operator with the related access code.
- (2) Go to this page to remove an operator. Available only to the manager.
- (3) On this page, the manager can change the access programming code. Factory setting: eight zeros "00000000".
- (4) It is possible to set a manual logout or an automatic logout.
- (5) It is possible to set the number of seconds of inactivity of the machine after which it will be "logged out".
- (6) A maximum time can be set for entering the pin when the truck is switched on. Once the time has elapsed, the entered code is erased and the operator must start typing the access code again.
- Press the key (7) to return to the main page or the key (8) to go back to the previous page.

NOTE

When a generic operator accesses the "PIN CODE" page, the only active function is Log out. All other functions are the sole responsibility of the manager who has the programming code.

Add user

- Entering this function lets you add a new operator. Type in the access code of the new operator and press "OK" to confirm and return to the previous page.
- On this page, the manager can change the an operator's access code by deleting the code that is present and typing in a new code. Using the arrows (1) and (2) you can scroll through the list of operators.

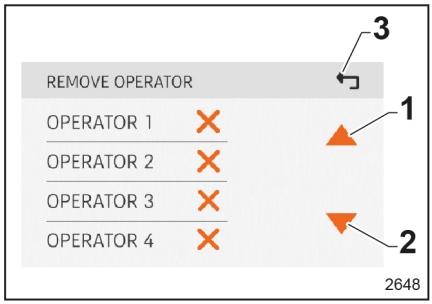


NOTE

- *The maximum number of operators that can be stored in the memory is ten.*
- *Only operator one, with the access code "12345", is set as the factory setting.*

Remove operator

To delete an operator, press "X" next to the number. To scroll through the list of operators, use the arrows (1) and (2).

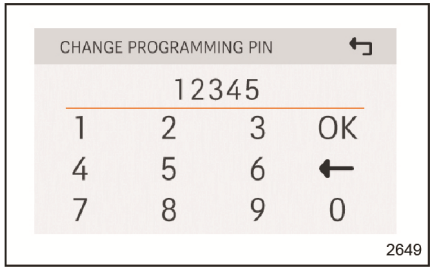


NOTE

If you delete an operator, the numbers of the other operators remain the same. For example with four operators, if I delete operator number "2" the remaining operators will be "1", "3" and "4".

Change pin

On this page, the manager can change the access PIN. Delete the existing pin and type in a new pin, then press "OK" to confirm and go back to the previous page.



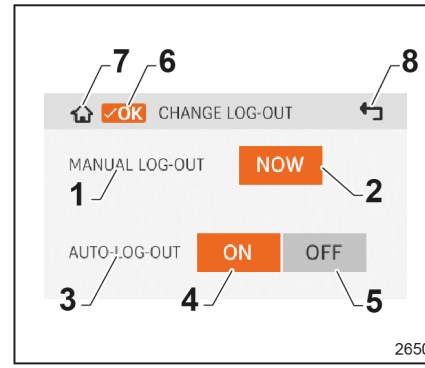
Change Logout

-On this page you can set the log-out modes:

- (1) Manual log-out, pressing the "NOW" button (2) logs out immediately
- (3) Auto logout, to set automatic logout press the "ON" button (4); to deactivate it press the "OFF" button (5).

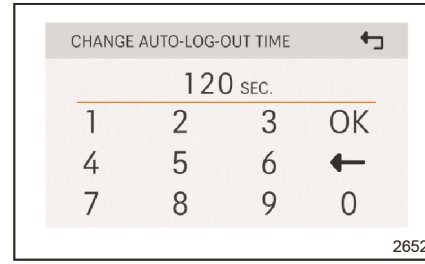
With automatic logout activated, the truck logs out after a defined period of inactivity that can be set in the "Logout time" function.

- Press the key (6) "OK" or (7) to confirm your choices and return to the main page.
- Press the key (8) to return to the previous page without saving any changes.



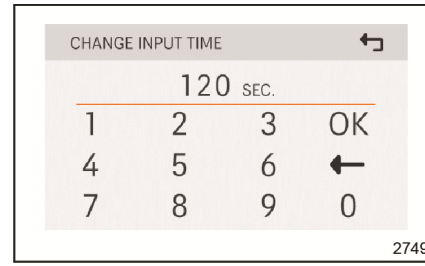
Change auto Logout time

- Set the period of inactivity after which the truck logs out, then press "OK" to confirm the setting and go back to the previous page.



Change input time

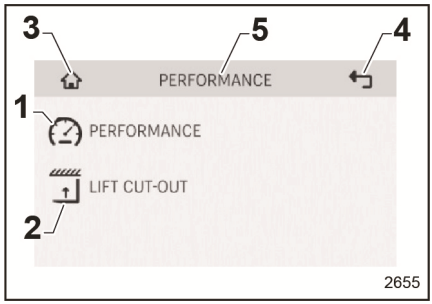
- Set the maximum time allowed for the operator to enter the access code at startup, then press "OK" to confirm the setting and return to the previous page.



Performance (5)

The following settings can be configured on this page:

- (1) "Performance" In this section, you can customise the performance of Hare mode (with *).
- (2) "Lift cut-out" In this section you can set one or two lift cut-outs (available only as an option with DLC3). When the set height is reached, the lifting of the load stops, awaiting confirmation from the operator via the dedicated screen.
- Press the key (3) to return to the main page or the key (4) to go back to the previous page.



Performance (11)

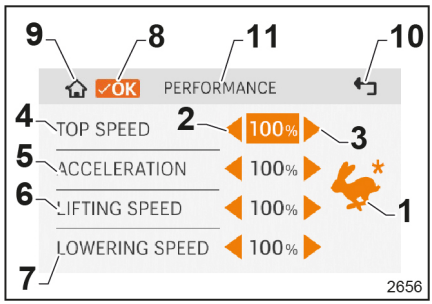
It is possible to reduce the maximum performance as a percentage compared to Hare mode (without *) to create a personalised drive mode.

Editable fields:

- (4) maximum speed of truck movement as a %.
- (5) Maximum acceleration of the truck as a %.
- (6) Maximum lifting speed of the forks as a %.
- (7) Maximum lowering speed of the forks as a %.

To make changes:

- Click on the field to be modified (coloured orange) then use the arrows (2) and (3) to increase or decrease the % value (the maximum value that can be set is 100%).
- Press the key (8) "OK" or (9) to confirm your choices.
- Press the key (10) to go back to the previous page without saving any changes.



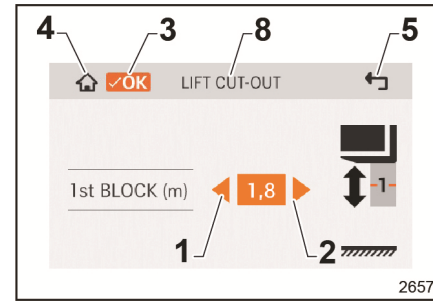
Lift Cut-out (8) (option that can only be activated when DLC3 is active)

⚠ CAUTION

The installed cut-out system functions as a height preselector and must not be considered to be a safety system. The operator must pay particular attention when lifting and lowering the forks. The operator in particular must take care to insert the forks correctly in the load and to avoid striking objects, ceilings, doors, shelving etc.

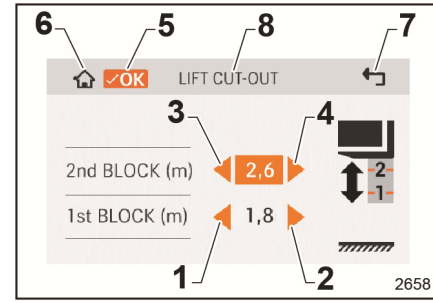
– **Version with only one lift cut-out**

- To change the lift cut-out height, use the arrows (1) or (2), once the height is set press the button (3) "OK" or (4) to confirm the setting and return to the main page.
- Press the key (5) to go back to the previous page without saving any changes.



– **Version with two lift cut-outs**

- To change the height of the first or second lift cut-out, use the or arrows (1, 2) or (3, 4).
- Press the key (5) "OK" or (6) to confirm the setting and return to the main page
- Press the key (7) to go back to the previous page without saving any changes.

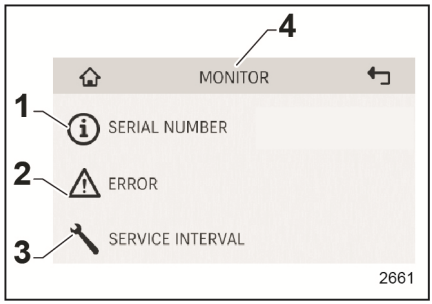


NOTE

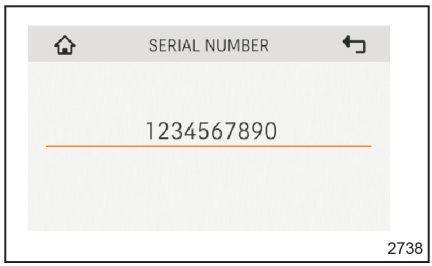
The lift height of the second cut-out must be higher than the lift height of the first cut-out.

Monitor (4)

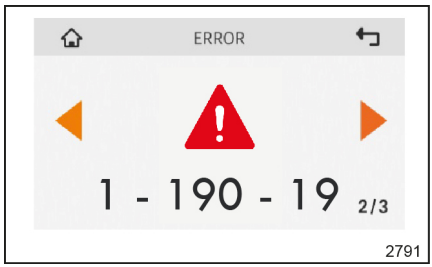
This page shows:



– (1) the truck serial number



– (2) the list of active/present alarms

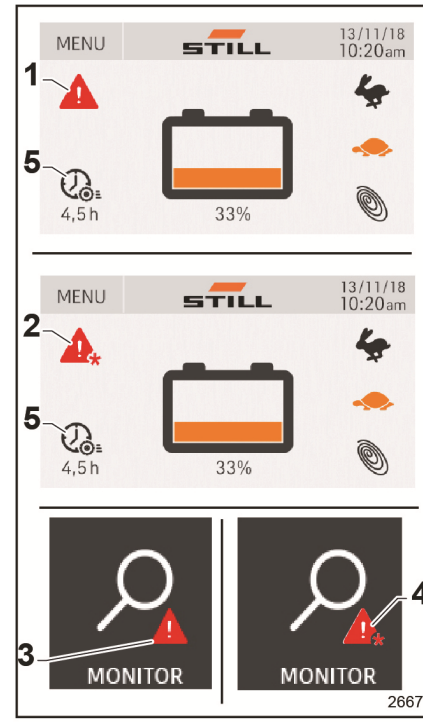


– (3) the number of days until the next maintenance (if the notification option is not active, this page indicates "0 days". In this case, the information "0 days" should not be ignored).



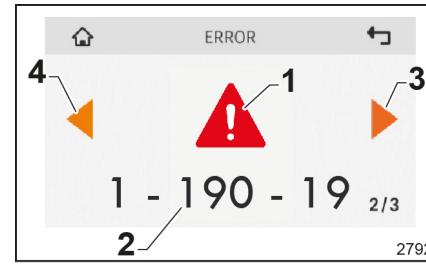
Blocking alarms

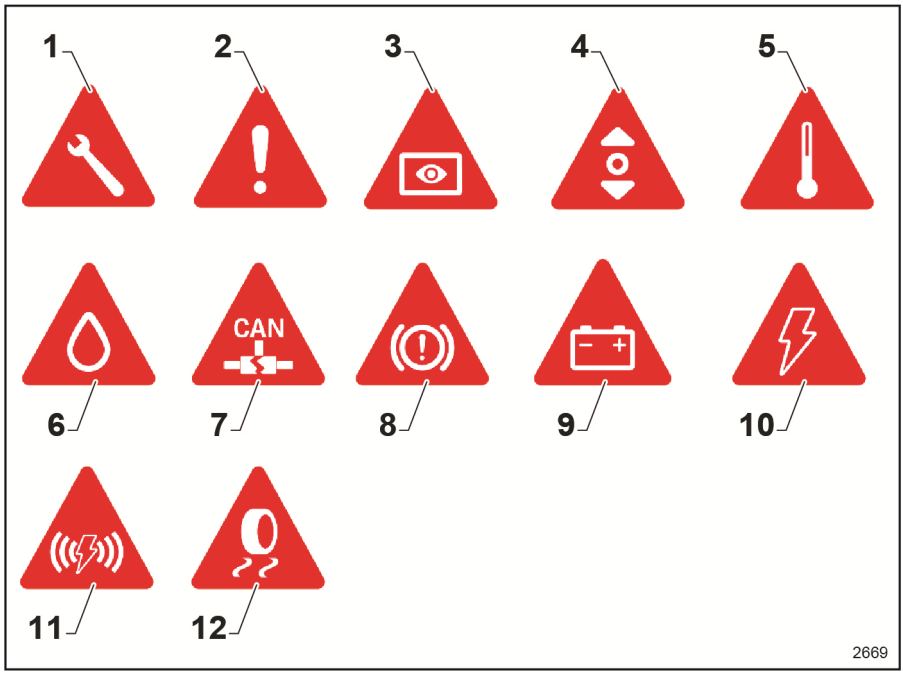
If one or more blocking alarms is activated during use, the symbol (1) or (2) is displayed on the main page. In the main "MENU", the symbols (3) and (4) appear. Pressing the symbol (1) or the symbol (2) takes you straight to the error page. Pressing the symbol (5) displays the total operating hours of the truck. After ten seconds or when the symbol (5) is pressed again, the previous screen (estimated remaining operating hours) is displayed again.



Alarm codes

On the alarms page (if there are active alarms), the icon (1) is displayed with the error code (2) below. If there are multiple errors, they can be viewed by scrolling through the pages using the arrows (3) and (4).





Overview of possible alarms that can be displayed:

- **(1)**The alarm warns you that the deadline for the scheduled maintenance has been reached or is approaching. Contact the Technical Service Department to carry out the servicing work
- **(2)**The alarm is a generic alarm. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.
- **(3)**The alarm indicates a problem with the display. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.
- **(4)**The alarm indicates that there is a generic driving control problem. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.
- **(5)**The alarm indicates that there is a problem with the truck overheating. Switch off the truck and wait for it to cool down before

switching it on again. Contact the Technical Service Department if the alarm reappears

- **(6)**The alarm indicates that there is a problem with the hydraulic system of the truck. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears
- **(7)** The alarm indicates that there is a problem with data transfer between the various controllers in the truck. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.
- **(8)**The alarm indicates that there is a problem with the braking system of the truck. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.
- **(9)**The alarm indicates that there is a problem with the battery. Charge the battery. If the alarm remains, contact the Technical Service Department
- **(10)**The alarm indicates that there is a problem with the electrical system of the truck. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.
- **(11)**The alarm indicates that there is a malfunction of a sensor in the truck. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.
- **(12)**The alarm indicates that there is a problem with the truck's driving system. Switch the truck off and on again and contact the Technical Service Department if the alarm reappears.

Warnings

Overview of possible warnings that can be displayed:

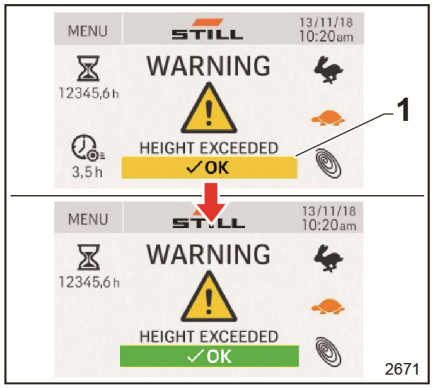
– **Driving control warning** ▷

The warning indicates that when the auxiliary hydraulic function option is active, driving control is disabled. Disable the auxiliary hydraulic function by operating the auxiliary hydraulic function controls to restore the driving control of the truck. For more information, see Chapter 3 (options and variants).



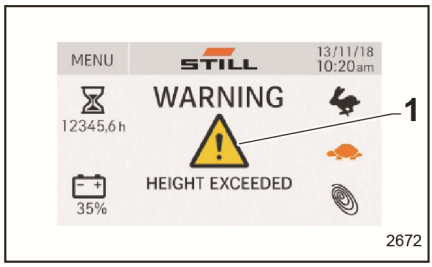
– **Lift cut-out warning** ▷

The warning indicates that the maximum fork lift height setting has been reached. In order to raise the forks higher, press and hold the yellow bar (1) with "OK" until it turns green. The forks can now be lifted above the cut-out height. The following page will appear on the display to warn the operator to take particular care when moving the load.



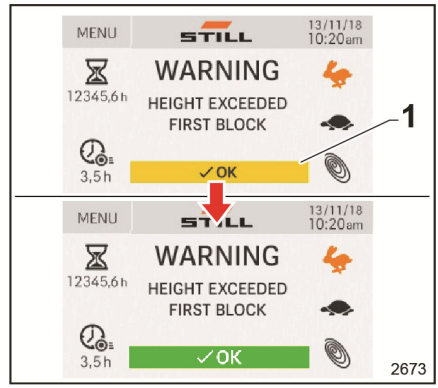
– ▷

The warning with the symbol (1) is displayed until the forks are lowered below the preset cut-out height.

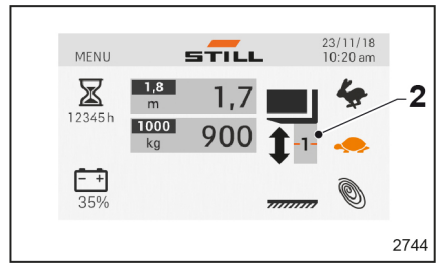


– **Lift cut-out warning (with DLC3 only)** ▷

The warning indicates that the fork lift height setting for the first cut-out has been reached. In order to raise the forks higher, press and hold the yellow bar (1) with "OK" until it turns green. When it is released, the display returns to the main screen.

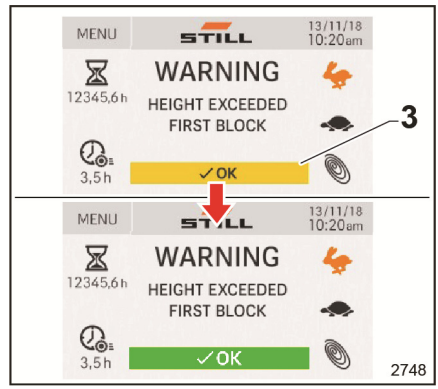


– The symbol (2) indicates that the first lift cut-out has been exceeded. ▷

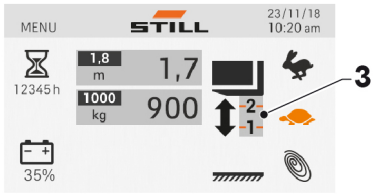


– When the second cut-out setting is reached, the following screen will appear: ▷

The warning indicates that the fork lift height setting for the second cut-out has been reached. In order to raise the forks higher, press and hold the yellow bar (3) with "OK" until it turns green. When it is released, the display returns to the main screen.



– The symbol (3) indicates that the second lift cut-out has been exceeded. ▷



2745

– **Side protection warning** ▷

The warning may appear on the display when lifting to approximately 1700 to 1800 mm from the ground (only for trucks with platform and side protection). To switch off the warning on the display, lower the forks or close both operation side protections.

⚠ CAUTION

The operator must assess whether to close the side protections before lifting the forks higher.



2676

– **Incorrect starting procedure warning** ▷

The warning appears on the display when the starting procedure for the truck is incorrect. There are two ways to erase the warning from the display and unlock the truck:

- Release the tiller and all the controls and then switch on the truck again.
- Or, release the travel controls, push the tiller to the lower end position and then to the upper end position.



2677

– **Lower the straddles warning** ▷

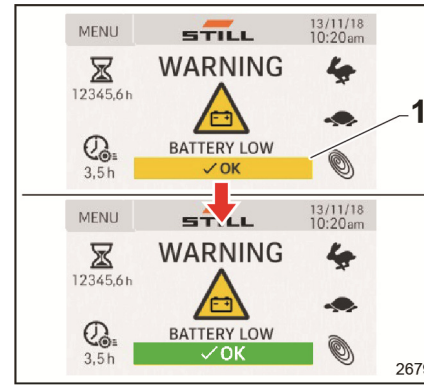
The warning may appear on the display when lifting to approximately 1700 to 1800 mm from the ground (only for trucks with initial lift). The message warns the operator that, for safety reasons, the straddles must be lowered in order to lift the forks higher.



2678

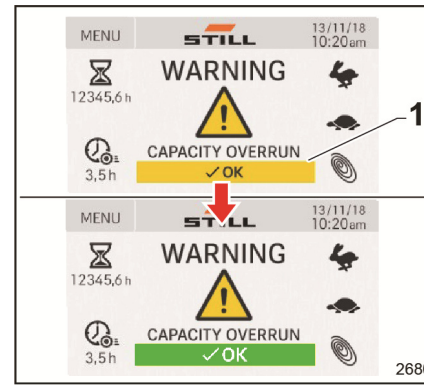
– **Low battery warning**

The warning warns the operator that the battery charge is low. To continue using the truck, press and hold the yellow bar (1) with "OK" until it turns green. When it is released, the display returns to the main screen. Recharging the battery as soon as possible is recommended.



– **Stability warning (DLC3 only)**

The warning warns the operator that the truck has a possible stability problem between the weight of the lifted load and the lift height of the load, or vice versa. To continue lifting the forks, press and hold the yellow bar (1) with "OK" until it turns green. When it is released, the display returns to the main screen. For more information, see the dedicated chapter (DLC3).



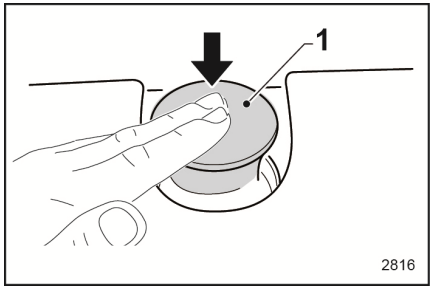
⚠ DANGER

Loss of stability

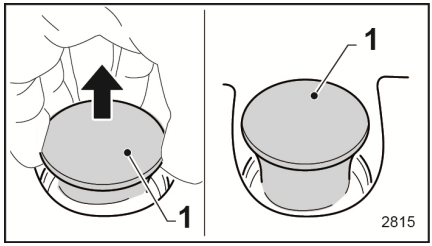
If the lifting operation continues despite the warning messages and warning sounds, the operator may lose control of the stability of the truck. The operator will then be liable in the event of an accident.

Emergency shutdown button

– Pushing the emergency shutdown button **(1)** will lock all of the functions on the truck. Push the button all the way in. The button should lock down in the position reached.



– To restore the operating conditions, eliminate the causes of the emergency and release the tiller to the rest position. Finally, unlock the emergency button **(1)** by pulling it upwards.



⚠ DANGER

This button (1) must be used only in emergencies; the repeated use of this device may cause problems with the electronic equipment or malfunctions.

⚠ DANGER

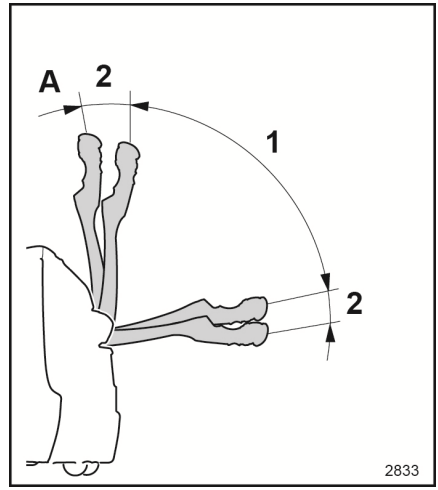
Do not place objects of any kind on or near the emergency button. The emergency button and the areas of the truck close to it must always be clear.

Do not allow objects to obscure the button (1) or to interfere with its proper operation.

Tiller

Tiller positions

Position the tiller in accordance with the truck functions ▷



With the truck stopped, the two following tiller positions are available:

- **Position (1) = working position.**
  In this position, the operator can begin travel using the throttle.
  In this position, the operator can begin lifting or lowering the forks using the appropriate button.
  In this position, the operator can raise or lower the straddles; for versions with straddle initial lift only.
- **Position (2) = braking position.**
  In this position the drive is locked and the parking brake is engaged.

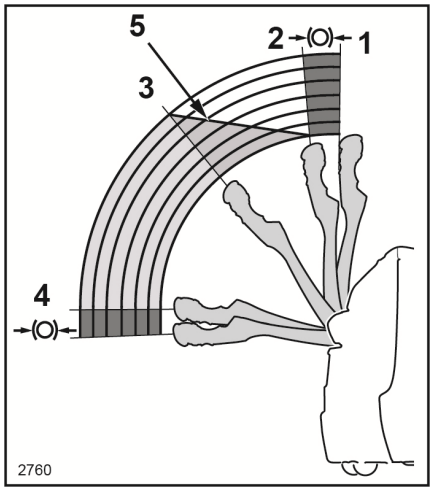
NOTE

- *In this position, lifting and lowering of the forks and straddles, if fitted, are blocked.*
- *When the tiller is released, it automatically returns to position (A), the braking position.*

⚠ WARNING

Make sure that the optional clipboard or any other optional equipment or obstructions are not preventing the tiller from returning to the vertical position.

OptiSpeed tiller (optional)



The different work zones of the tiller depending on the tilt are explained below:

- In zone (1), the brake is applied and the truck cannot be moved.
- In zone (2), the maximum authorised speed varies according to the tilt of the tiller. The reference (5) represents the curve of the speed inside zone (2). The more the tiller is tilted, the faster the speed.
- In zone (3), the truck can reach its maximum speed.

In zone (4), the brake is applied and the truck cannot be moved.

⚠ WARNING

During use, tilt the tiller and gradually change the speed of travel using the throttle in accordance with the above.

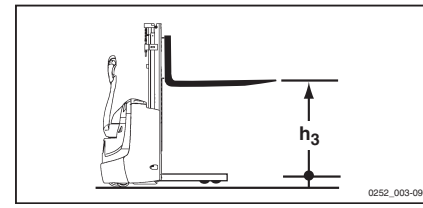
Types of lift mast

Your truck may be fitted with one of the following masts:

- Simplex (E)
- Telescopico (T)
- Telescopico compatto (C)
- NiHo (N)
- Triplex (D)

Simplex

When the "lift" button is pressed, the fork carriage rail is raised by a height h3 by the central cylinder via the lifting chains.

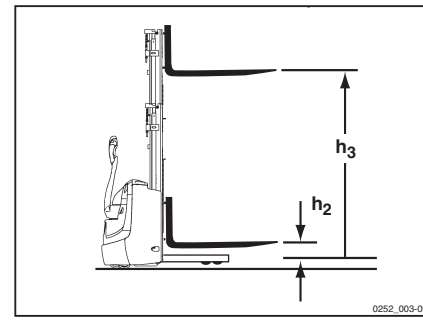


Telescopic

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

⚠ CAUTION

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

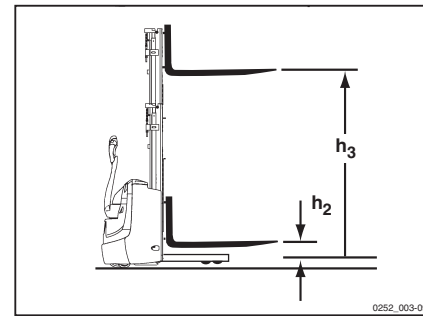


Compact telescopic

When the "lift" button is pressed, the inner mast is raised by the central cylinder via the lifting chains.

⚠ CAUTION

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

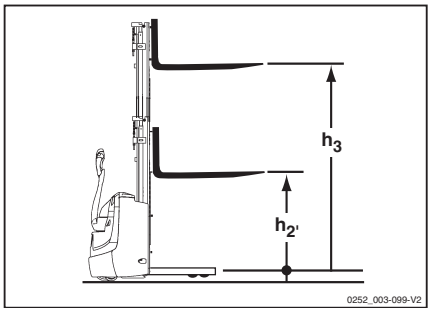


NiHo

When the "lift" button is pressed, the fork carriage is raised to the top of the internal mast (h2') by the central cylinder, then the lateral cylinders raise the internal mast up to the maximum height (h3).

⚠ CAUTION

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

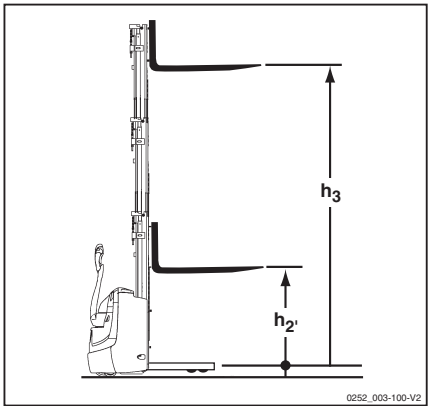


Triplex

This function is identical to that of the NiHo mast, with the addition of a third mast stage that gives a greater lift height for the same vertical height of the closed lift.

⚠ CAUTION

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



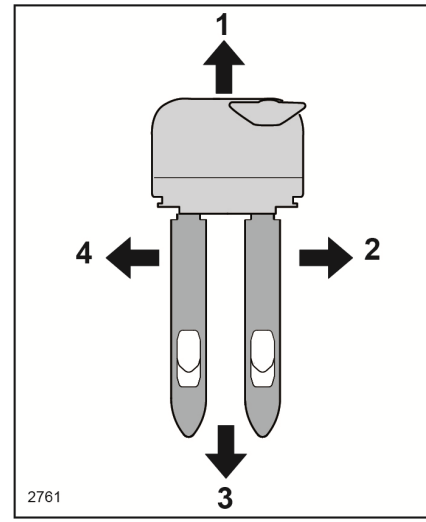
Definition of directions

Direction of movement defined by the regulations:

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

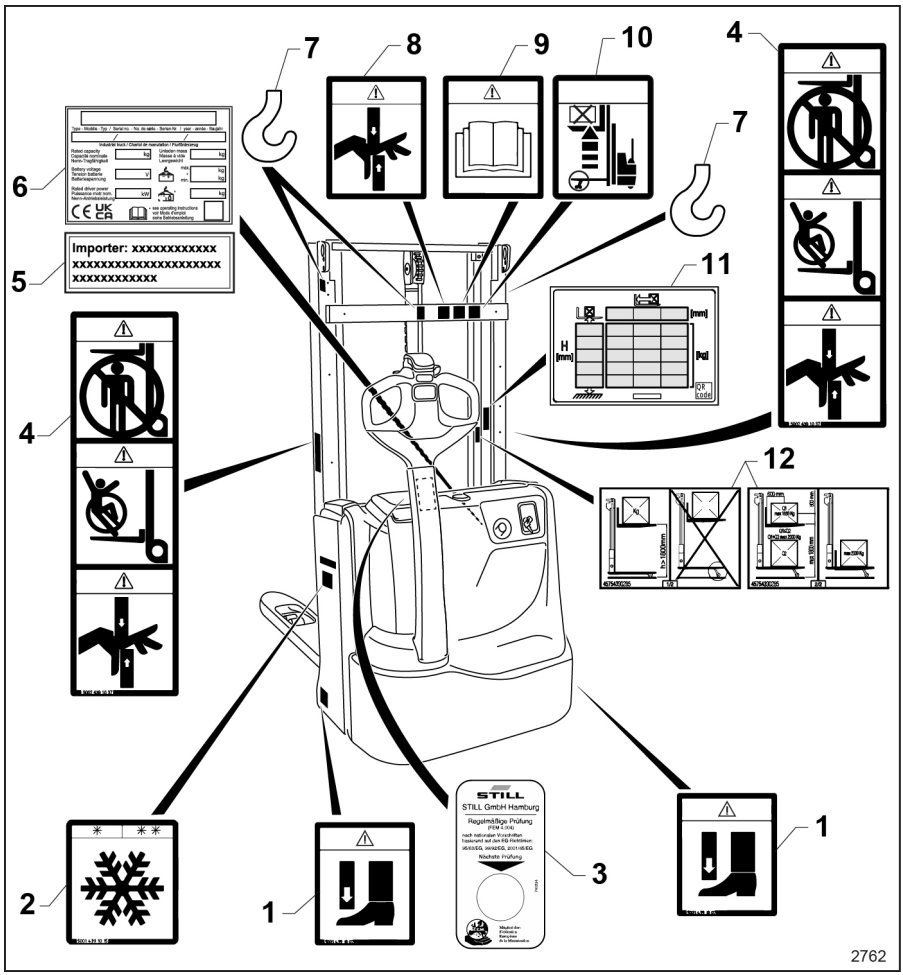
To make the reading device easier to interpret, the direction of travel will also be described in the following sections as follows:

- (1) Direction of travel towards the operator
- (3) Direction of travel towards the forks



Markings

Location of labels



Description of labels

(1) This label (only present on certain truck versions) indicates the risk of crushing feet. Keep your feet away from moving parts (moving chassis, straddles and forks).

(2) This label, where present, indicates that the truck is set up as the cold store version (optional). For more information, refer to the section that outlines the correct operation of the truck in the cold store version.

(3) This label, where present, indicates the date of the truck's periodic safety inspection.

(4) This label appears on the lifting mast and 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.

(5) This label, where present, shows the importer for the UK market (optional).

(6) This label shows the truck's nominal values. It is explained in detail on the following pages.

(7) This label indicates where to attach the truck's lifting hook. For more information, refer to the section that outlines how to lift the truck using a crane boom.

(8) This symbol appears on the lift mast and indicates danger of cutting due to the mast's moving parts. Keep your hands away from the mast's moving parts.

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

(10) This label is present only on the version with initial lift. This is indicated on the identification plate by (i). The label indicates that it is prohibited to lift a load more than 300 mm from the ground while the straddles are raised. To lift a load more than 300 mm from the ground, the straddles must be on the ground.

(11) This label shows the truck's capacity values (kg). It is explained in detail on the following pages.

(12) This label is present only on the double pallet stacker version. This is indicated on the identification plate by (d). It provides information on handling loads using the double pallet stacker truck version. It is explained in detail on the following pages.

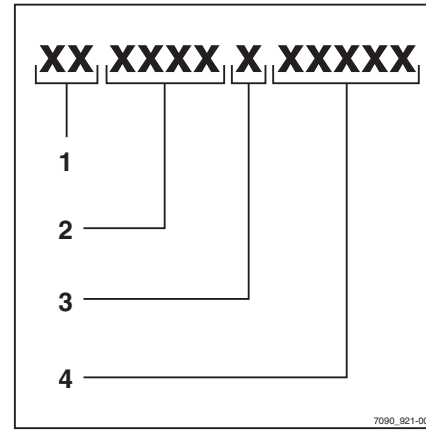
Serial number

NOTE

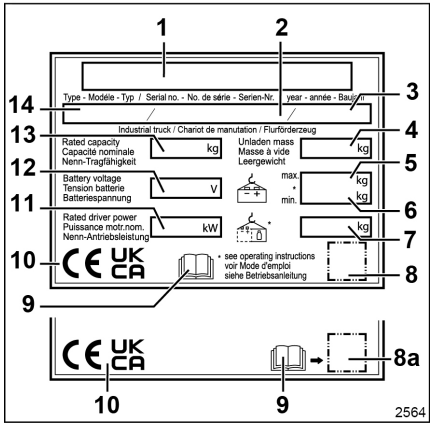
Please quote the truck's serial number for all technical questions.

The serial number contains the following information:

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



Identification plate



DANGER

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

NOTE

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

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

Capacity rating plate ▷

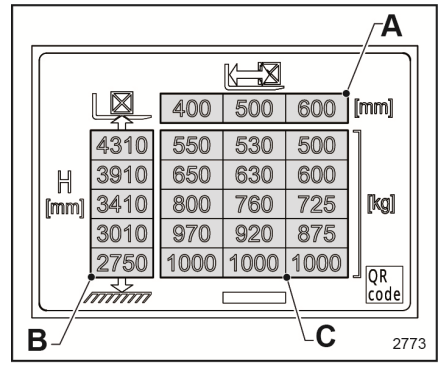
– The plate contains the following information:

- **(A)** = distance from the centre of gravity of the load on the forks to the fork carriage (in mm):

  - Horizontal distance between the centre of gravity of the load and the forks.

  - Vertical distance between the centre of gravity of the load on the forks and the upper surface of the forks.

-
- **(B)** = lift height of the forks from the ground (in mm)
- **(C)** = maximum permissible loading weight (in kg)



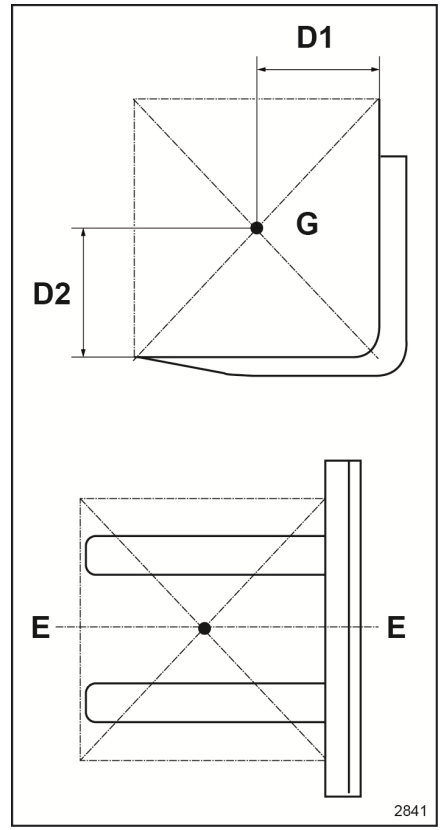
⚠ WARNING

The illustrations are only examples.

Only the values shown on the capacity rating plate that appears on the truck should be taken into consideration.

⚠ DANGER

The values indicated on the capacity rating 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. Both the distance (D1) and the distance (D2) of the centre of gravity of the load (G) must be less than the value (A) on the capacity rating plate.



NOTE

The load must be placed on the forks so that the load centre of gravity is on the median plane (E-E).

⚠ DANGER

Risk of accident when forks are changed:

If the forks are changed and a different type of forks to the original forks is fitted, the residual capacity may change.

In these cases, a new capacity plate with the appropriate recalculations must be fitted. Contact the authorised technical service centre for more information.

If a truck is supplied without forks, the residual capacity plate for standard forks is affixed (see chapter 6 "Technical Data").

Additional labels for double pallet stacker version "-D"

Description of labels

The labels shown in this section are only present on trucks with the double pallet stacker option "-D".

The labels provide information on handling loads using the double pallet stacker truck version "-D".

⚠ DANGER

Read the following information carefully.

Strictly adhere to the recommendations and prohibitions.

⚠ CAUTION

When using the truck in double pallet stacker mode (only permitted if the double pallet stacker" -D" option is fitted), keep the forks below the height indicated on the safety labels described below in this section. The forks are also locked by a sensor on the lift. The sensor stops the forks from lifting above a certain height when the straddles are raised. In double pallet stacker mode, the forks cannot be raised any higher.

⚠ CAUTION

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

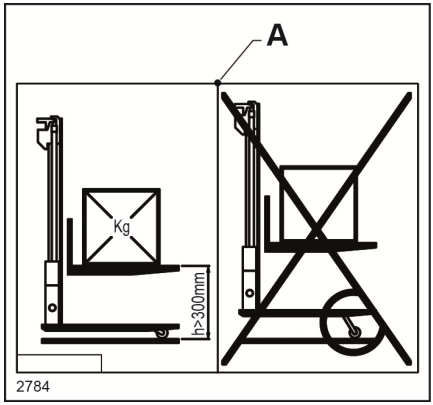
There are no automatic safety systems.

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

⚠ CAUTION

The values indicated on the label refer to compact and homogeneous loads and must not be exceeded, otherwise the stability of the truck and the load-bearing capacity of the structures may be compromised. The loads (kg) refer to a centre of gravity position of 600 mm or less.

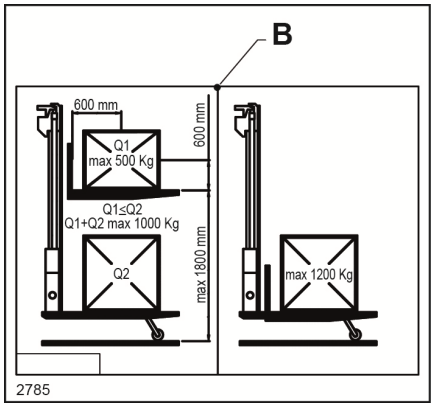
Label on all models with the double pallet stacker option



The label (A) displays information on **using the truck as a pallet stacker**:

- When raising the forks, the fork lift stops upon reaching the sensor positioned on the truck mast. To raise the forks further, lower the straddles all the way to the ground. The fork control will then become active again.
- If there is no load on the straddles, you must not transport loads on the forks when they are raised more than 300 mm from the ground.
- The residual capacities are indicated on the capacity plate (for more information on the capacity plate, see the dedicated section in Chapter 3).

Label only present on EXV12C trucks with the double pallet stacker option "-D"



On the left-hand side, the label (B) displays information **on using the truck as a double pallet stacker**:

- Only transport loads on the forks with a centre of gravity distance, both horizontal (distance from the fork carriage rail) and vertical (distance from the supporting surface on the forks), of 600 mm or less.
- If two loads are being transported, the load height on the forks in relation to the supporting surface of the truck must be a maximum of 1800 mm.
- (Q1+Q2)

  The total permissible capacity is 1000 kg. This means that the sum of the load on the straddles and the load on the forks must not exceed 1000 kg.
- (Q1≤ Q2)

  The weight of the load on the forks (Q1) must be less than or equal to the weight of the load on the straddles (Q2).
- (Q1 max 500kg)

  500 kg is the maximum permissible weight for the load on the forks (Q1).
- Some examples of **correctly transporting and lifting** loads. In this case, transporting and lifting loads is permitted:

  - 300 kg on the forks (Q1) and 400 kg (Q2) on the straddles.

  - 500 kg on the forks (Q1) and 500 kg (Q2) on the straddles. The example demonstrates a situation at maximum capacity.
- Some **forbidden examples of incorrectly transporting and lifting loads!** In this case, transporting and lifting loads is not permitted:

  - 600 kg on the forks (Q1) and 400 kg on the straddles (Q2). The load on the forks (600 kg) (Q1) is greater than the maximum permissible capacity. The maximum permissible load is Q1 = 500 kg. In this case, we have the following additional error: The load on the forks (600 kg) (Q1) is mistakenly greater than the load on the straddles (400 kg) (Q2). Remember that we must always have (Q1≤ Q2).

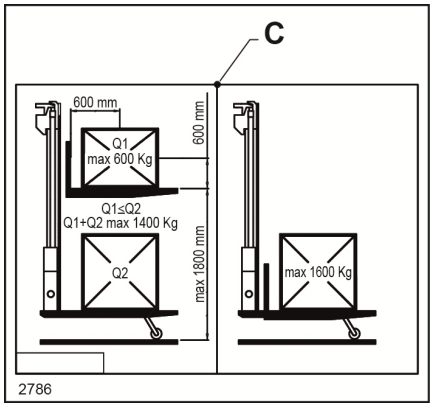
  - Incorrectly transporting/lifting loads is forbidden! 400 kg on the forks (Q1) and 700 kg on the straddles (Q2). The maximum capacity of the truck has been mistakenly exceeded i.e. Q1 (400 kg) + Q2 (700 kg)=1100 kg. The maximum permissible capacity is (Q1+Q2=1.000kg).

On the right-hand side, the label (B) displays information **on using the truck as a transporter**:

- (max 1200kg)

  When transporting a load on the fork, the maximum capacity of the truck is 1200 kg. The forks are lowered until they are resting on the straddles, and the straddles are raised using the initial lift control.

Label only present on EXV14C and EXV16C trucks with the double pallet stacker option "-D".



On the left-hand side, the label (C) displays information **on using the truck as a double pallet stacker**:

- Only transport loads on the forks with a centre of gravity distance, both horizontal (distance from the fork carriage rail) and vertical (distance from the supporting surface on the forks), of 600 mm or less.
- If two loads are being transported, the load height on the forks in relation to the supporting surface of the truck must be a maximum of 1800 mm.
- (Q1+Q2)

  The total permissible capacity is 1400 kg. This means that the sum of the load on the straddles and the load on the forks must not exceed 1400 kg.
- (Q1≤ Q2)

  The weight of the load on the forks (Q1) must be less than or equal to the weight of the load on the straddles (Q2).
- (Q1 max 600kg)

  600 kg is the maximum permissible weight for the load on the forks (Q1).
- Some examples of **correctly transporting and lifting** loads. In this case, transporting and lifting loads is permitted:

  - Correctly transporting/lifting loads: 300 kg on the forks (Q1) and 400 kg (Q2) on the straddles.

  - Correctly transporting/lifting loads: 600 kg on the forks (Q1) and 800 kg (Q2) on the straddles.

  - Correctly transporting/lifting loads: 400 kg on the forks (Q1) and 1000 kg (Q2) on the straddles.

  - Correctly transporting/lifting loads: 600 kg on the forks (Q1) and 600 kg (Q2) on the straddles. The example demonstrates a situation at maximum capacity.
- Some **forbidden examples of incorrectly transporting and lifting loads!** In this case, transporting and lifting loads is not permitted:

  - 700 kg on the forks (Q1) and 400 kg on the straddles (Q2). The load on the forks (700 kg) (Q1) is greater than the maximum permissible capacity. The maximum permissible load on the forks is 600 kg (Q1). In this case, we have the following additional error: The load on the forks (700 kg) (Q1) is mistakenly greater than the load on the straddles (400 kg) (Q2). Remember that we must always have (Q1≤ Q2).

  - 700 kg on the forks (Q1) and 800 kg on the straddles (Q2). The maximum capacity of the truck has been mistakenly exceeded i.e. Q1 (700 kg) + Q2 (800 kg)=1500 kg. The maximum permissible capacity is (Q1+Q2=1.400kg).

On the right-hand side, the label (C) displays information **on using the truck as a transporter**:

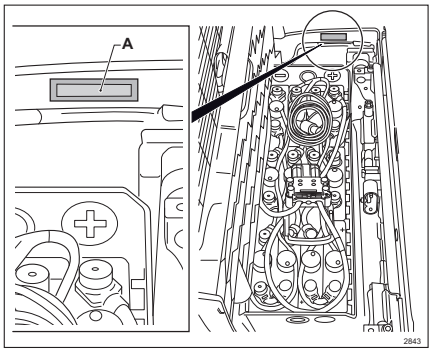
- (max 1600kg)

  When transporting a load on the fork, the maximum capacity of the truck is 1600 kg. Forks lowered until they are resting on the straddles, and straddles raised using the initial lift control.

Chassis frame labelling

The truck's production number is marked (A) on the chassis frame.

▷



Options and variants

Options and variants

Specific instructions for options and variants are given in the following sections.

⚠ CAUTION

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

Do not install options or attachments without the manufacturer's consent.

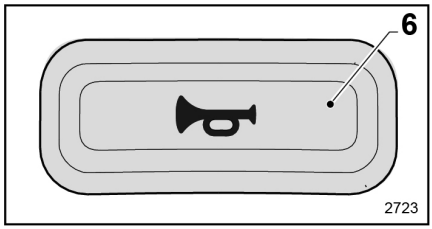
NOTE

Some options are NOT available for all models. For more information, please refer to the price list and contact the authorised sales network.

Horn button (variants)

The horn (6) is available in two variants:

- Version with quieter warning sound
- Version with louder warning sound



NOTE

It is the responsibility of the employer (before purchasing the truck) to carry out a proper risk assessment based on the operating noise in the work environment. After purchase, it should also be possible to change the intensity of the warning sound via an after-sales operation. Contact the manufacturer's authorised sales network for more information.

Safety Light light

The light (1) projects a blue circle onto the ground (2). The light (1) allows detection of industrial trucks in good time in driving zones with poor visibility (e.g. aisles and tall shelves), as well as at blind junctions.

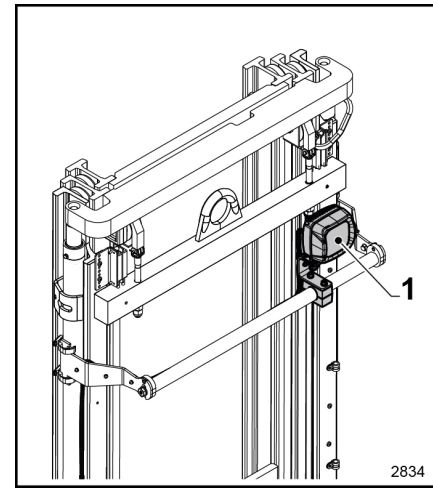
The light (1) comes on when the truck is travelling in the direction of the operator.

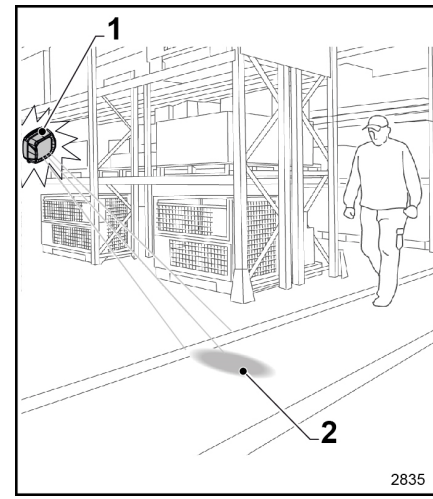


⚠ WARNING

Eye damage

Looking directly at the BlueSpot device can damage your eyes. Therefore, **do not** look directly at the BlueSpot device.





Dynamic Load Control (DLC) — Optional

⚠ DANGER

Risk of accidents

The system does not activate any blocks or other safety systems; it only provides visual information for the operator relating to the load moved.

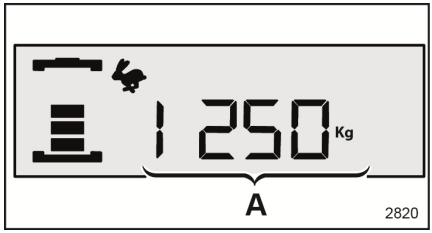
The operator using the truck is the only person responsible for the safety and stability of the truck and/or the load.

The operator must remain constantly vigilant, observe safety guidelines and follow the indications given by the capacity designation plate of the truck.

Version "DLC 1"

The basic version, "DLC 1", informs the operator about:

- (A) Loading weight on the forks. The value shown in the picture is an example.



⚠ DANGER

The system detects the loading weight (A) present on the forks with a tolerance of ±50 kg.

Consider the aforementioned tolerance during truck manoeuvres.

Dynamic Load Control (DLC) via touch display – optional

The display screen shows information relating to the optional "Dynamic Load Control"

This option is available in different versions. Because of this, the information that appears on the display varies depending on the version installed on the truck.

⚠ DANGER

Risk of accidents

The system does not activate any blocks or other safety systems; it only provides visual information for the operator relating to the load moved.

The operator using the truck is the only person responsible for the safety and stability of the truck and/or the load.

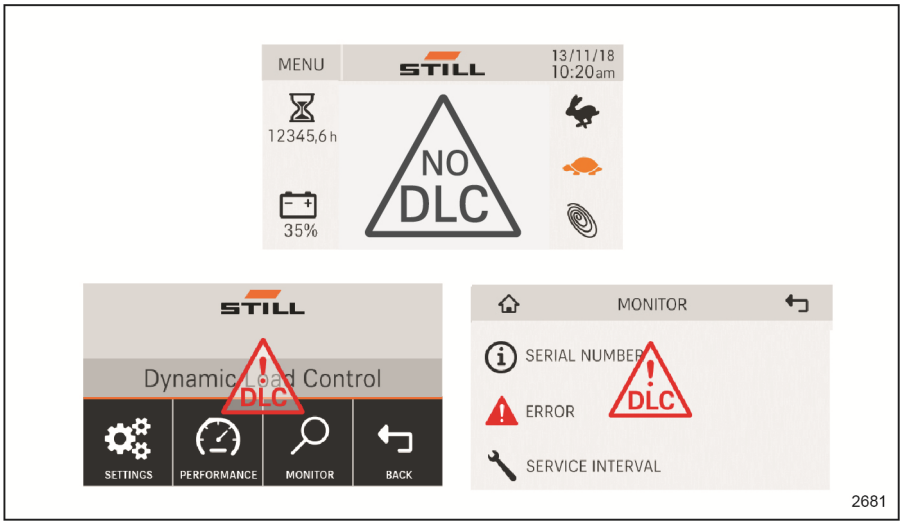
The operator must remain constantly vigilant, observe safety guidelines and follow the indications given by the capacity designation plate of the truck.

⚠ CAUTION

Risk of improper use of the truck.

The operator must be adequately trained on the various features of this function.

Warning "NO DLC"



On the main page, on the menu page and on the monitor page, the flashing warning "NO DLC" may appear.

The warning indicates that the "Dynamic Load Control" system is not active as it is not able to provide information relating to the load on the forks.

The warning appears in the following circumstances:

- When straddles are raised (only for "i" version trucks, which are set up with straddles initial lift). To remove the warning from the display, completely lower the initial lift straddles. The display will then show information again relating to the "Dynamic Load Control".
- With the forks higher than the sensor (1700 mm) positioned on the column. The display will again show information relating to the "Dynamic Load Control", but only after the forks have been lowered to a height below the sensor.

Available versions

- Version "DLC 1"
- Version "DLC 2"
- Version "DLC 3"

The available versions of the optional "Dynamic Load Control" are described below.

Version "DLC 1"

The basic version, "DLC 1", informs the operator about:

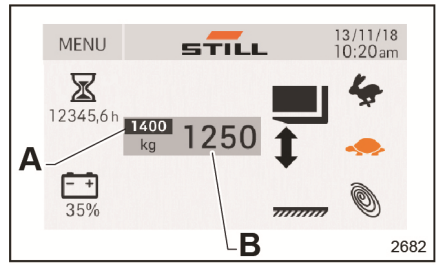
- (A) Maximum capacity of the truck (nominal load)
- (B) Loading weight on the forks

⚠ DANGER

The system detects the loading weight present on the forks (B) with a tolerance of ±50 kg.

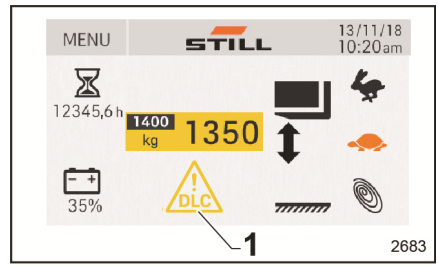
Consider the aforementioned tolerance during truck manoeuvres.

Never exceed the maximum capacity of the truck (A).

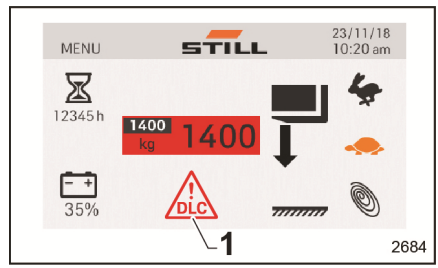


Alarms "DLC 1"

– The yellow flashing warning triangle (1) on the display indicates that the load on the forks is at the limit of the maximum capacity of the truck.

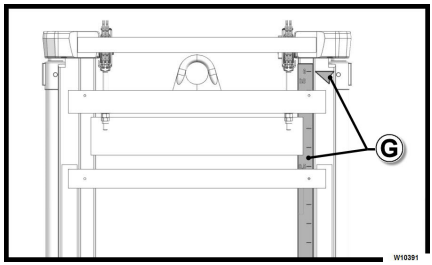


– The red flashing warning triangle (1) on the display indicates that the load on the forks has reached or exceeded the limit of the maximum capacity of the truck.



Version "DLC 2"

– With the "DLC 2" version, an adhesive string (G) is always present on the column of the truck. The adhesive string has green, yellow and orange sections and is also marked to indicate the lift height of the forks. The strings indicate h3 (lift stroke).



The "DLC 2" version informs the operator about:

- (C) Maximum capacity of the truck (nominal load)
- (D) Loading weight on the forks
- (E) Maximum permitted fork height with the load (D) without compromising the stability of the truck and/or the load
- (F) In this zone of the display, the position of the forks and the load displayed varies according to the maximum permitted fork height (E). In the same zone of the display, the column is displayed coloured (it may be displayed in three colours: green only; a section of green and a section of yellow; or a section of green, a section of yellow and a section of orange). The colours of the column shown on the screen correspond to those of the adhesive string (G).

⚠ DANGER

The information provided by the option help the operator to identify the maximum permitted fork height with the load (D) without compromising the stability of the truck and/or the load.

Do not exceed the maximum height indicated (E). Risk of tipping and/or overturning.

⚠ DANGER

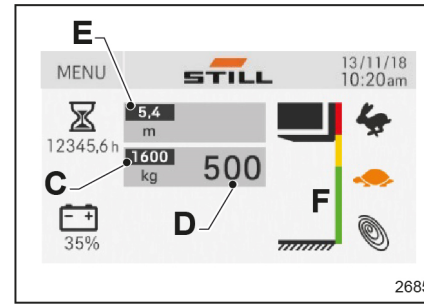
The system detects the loading weight present on the forks (D) with a tolerance of ±50 kg.

Consider the aforementioned tolerance during truck manoeuvres.

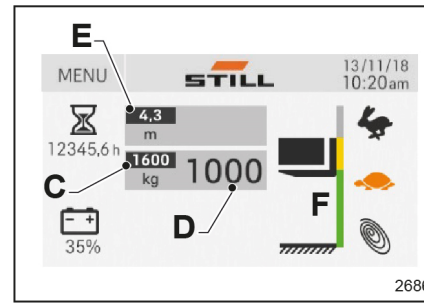
Never exceed the maximum capacity of the truck (C).

To assist with understanding the information on the display with version "DLC 2" of the option, three examples relating to a truck with a nominal capacity of 1600 kg (C) are given below.

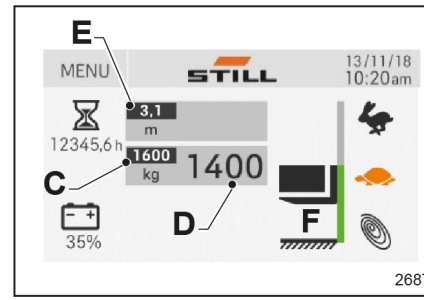
– First example: The load on the forks (D) of 500 kg may be raised to a maximum of 5.4 m (E). The zone (F) indicates that the 500 kg load may be raised up to the red zone, which can be easily identified on the coloured adhesive string (G). ▷



– Second example: The load on the forks (D) of 1000 kg may be raised to a maximum of 4.3 m (E). The zone (F) indicates that the 1000 kg load may be raised up to the yellow zone, which can be easily identified on the coloured adhesive string (G). ▷

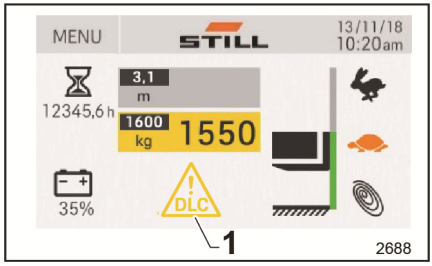


– Third example: The load on the forks (D) of 1400 kg may be raised to a maximum of 3.1 m (E). The zone (F) indicates that the 1400 kg load may be raised to the green zone, which can be easily identified on the coloured adhesive string (G). ▷

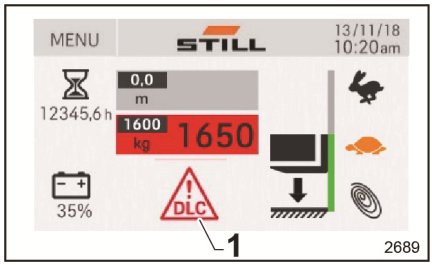


Alarms "DLC 2"

– The yellow flashing warning triangle (1) on the display indicates that the load on the forks is at the limit of the maximum capacity of the truck. ▷



– The red flashing warning triangle (1) on the display indicates that the load on the forks has reached or exceeded the limit of the maximum capacity of the truck. ▷



Version "DLC 3" ▷

The "DLC 3" option allows you to:

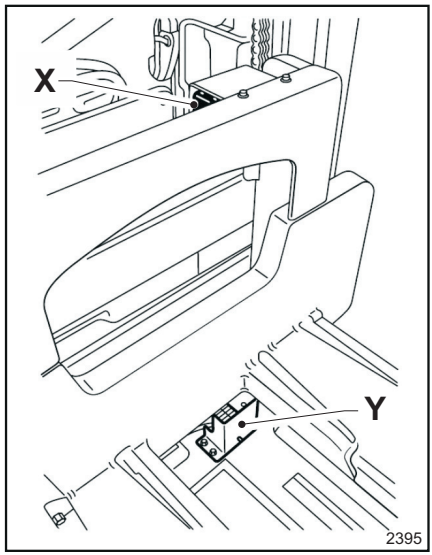
- Manage the residual capacity of the truck in relation to the weight of the load and the height of the mast.
- Manage the truck's performance data.

This option is not compatible with the cold store option.

The "DLC 3" option system is equipped with a height sensor consisting of two distinct components:

- (X), called the slave.
- (Y), called the master.

The two components (X) and (Y) communicate with each other using ultrasound.



NOTE

For trucks with a triple mast exceeding 4 metres, the component (Y) moves. The component (Y) is located in the lower crossmember of the mast.

⚠ CAUTION

Risk of loss of warranty.

The unit (X) contains a battery. Only a technician authorised by the service centre may replace this battery.

⚠ DANGER

The system detects the loading weight present on the forks with a tolerance of ±50 kg.

Consider the aforementioned tolerance during truck manoeuvres.

Never exceed the maximum capacity of the truck.

Managing residual capacity

The "DLC 3" option shows relative values for height and load. This option is, however, only a driving aid and the operator must remain constantly vigilant.

⚠ WARNING

There is a risk of hitting a shelf or a load

The values displayed on the screen (height and load) are provided for informational purposes only. Due to the tolerance range, the values cannot be used for precision operations.

The operator must check that the forks are at the correct height for handling loads on a shelf.

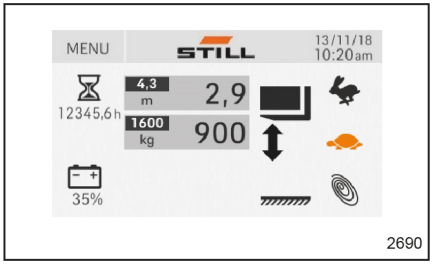
First "DLC 3" option example: reading the screen

– The weight of the load on the forks is 900 kg (± 50 kg).

– The forks are at a height of 2.9 m.

– The maximum permissible height of the forks with a load of 900 kg is 4.3 m.

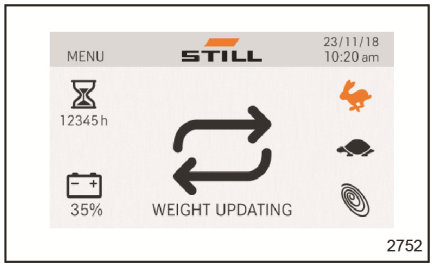
▷



NOTE

It may be necessary to update the weight. The update is performed automatically by the software.

– While the weight is being updated, the following page is displayed: ▷



Second "DLC 3" option example: The forks have reached a lift height very close to the maximum permissible values.

– The maximum permissible height of the forks is 4.3 m. ▷

– The forks are at a height of 4.2 m.

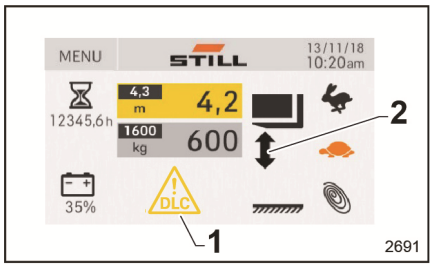
The following warnings inform the operator that the height of the forks **(4.2 m) is very close to the maximum permissible lift height (4.3 m)**:

- Audible warning. The truck emits a warning sound.
- Visual warning. A **yellow** flashing warning triangle symbol (1) appears on the display.

– The arrow (2) shown on the display indicates that it is still possible to continue to raise or lower the forks with due caution.

The load capacity values are NOT the cause of the danger and warning signals:

- The weight of the load on the forks is 600 kg (± 50 kg).
- The maximum permissible load on the forks is 1600 kg.



Third "DLC 3" option example: The weight of the load on the forks is very close to the maximum permissible capacity.

– The weight of the load on the forks is 1550 kg (± 50 kg).

– The maximum permissible load on the forks is 1600 kg.

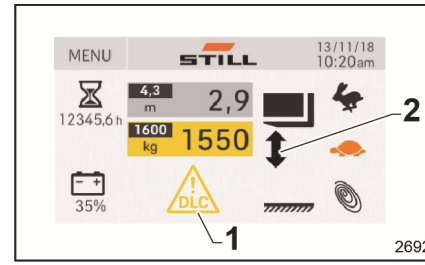
The following signals warn the operator that the weight of the load on the forks is **(1550 kg ± 50 kg) and is very close to the maximum permissible load on the forks (1600 kg)**:

- The truck emits a warning sound (once)
- At the same time, a **yellow** flashing warning triangle symbol (1) appears on the display.

– The arrow (2) shown on the display indicates that it is still possible to continue to raise or lower the forks with due caution.

The height of the forks is NOT the cause of the danger and warning signals:

- The maximum permissible height of the forks is 4.3 m.
- The forks are at a height of 2.9 m.



Fourth "DLC 3" option example: If the forks reach or exceed the maximum permissible height.

– the forks with the load have reached the maximum permissible height (4.3 m)

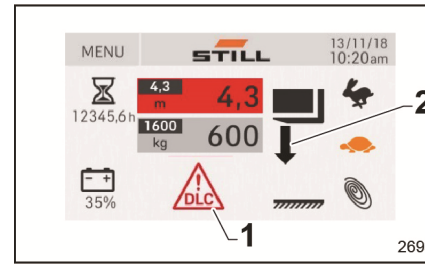
The following signals warn the operator that the forks have reached or exceeded the maximum permissible height (4.3 m):

- The truck emits a warning sound (once)
- At the same time, a **red** flashing warning triangle symbol (1) appears on the display.

– The arrow (2) shown on the display is pointing downwards. The operator must lower the forks. The warning triangle symbol will then disappear. The truck does NOT automatically stop the lifting of the forks!

The weight of the forks is NOT the cause of the danger and warning signals:

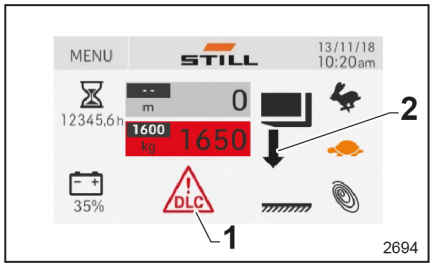
- The maximum permissible weight is 1600 kg
- the weight lifted is 600 kg.



NOTE

When the weight lifted is greater than the permissible weight, a similar display will appear.

Fifth "DLC 3" option example: If the weight of the load on the forks exceeds the maximum permissible capacity.



– The weight of the load on the forks is 1650 kg (± 50 kg).

– The maximum permissible load on the forks is 1600 kg.

The following signals warn the operator that the weight of the load on the forks is **(1650 kg ±50 kg) and exceeds the maximum permissible capacity (1600 kg):**

- The truck emits a warning sound
- At the same time, a **red** flashing warning triangle symbol (1) appears on the display.

– The arrow (2) shown on the display is pointing downwards. The operator must lower the forks. The warning triangle symbol will then disappear and the warning sound will stop.

– The truck stops the forks lifting!

– The operator can, however, continue lifting by authorising the operation. For more information on how to authorise the operation, read the section entitled "Warnings" in Chapter 3.

⚠ WARNING

Risk of loss of stability

When driving the truck, the forklift operator must not use MP3 players or any other devices that can distract their attention from the surrounding work environment. The operator must pay particular attention in noisy environments. The operator may not hear the warning sounds.

Managing truck performance data

The "DLC 3" option allows a more linear adaption of truck speed.

This speed is calculated based on:

- Load height
- Load weight

⚠ DANGER

Risk of accident

It is forbidden to drive with a load in the raised position.

Regulations for using the DLC 3

⚠ WARNING

There is a risk of hitting a shelf or a load

The values displayed on the screen (height and load) are provided for informational purposes only. Due to the tolerance range, the values cannot be used for precision operations.

The operator must check that the forks are at the correct height for handling loads on a shelf.

Starting the truck

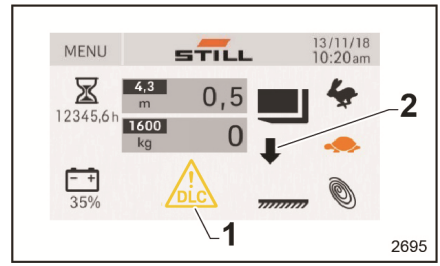
NOTE

The forks must be in the lowered position when the truck is started.

If the forks are in the raised position when the truck is started, the DLC 3 icon is displayed.

A yellow triangle symbol (1) appears on the display.

The display indicates that the forks must be lowered. The arrow (2) points downwards.



During work

The forks must be lowered regularly when the truck is in use.

If the forks remain in the raised position for more than four hours:

– A warning sound is emitted.

– The DLC 3 icon is shown on the display.

– A yellow triangle appears on the display.

– On the display, the arrow points downwards only.

– The forks must be lowered immediately.

If the operator does not immediately lower the forks, travel speed and lifting speed are automatically reduced.

In the event of error code L354

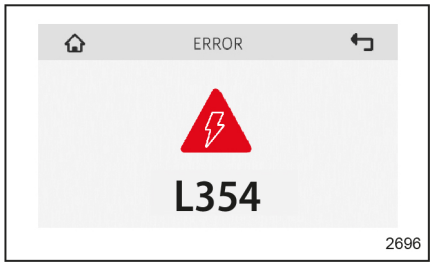
Error code L354 (1) may be displayed on the screen.

It is therefore necessary to check that:

- There is nothing obstructing the field between the two sensors. The field may be obstructed by an object.
- The sensors are clean.

After these checks, the forklift operator must restart the truck.

If the error code L354 is displayed again after the restart, contact the service centre.



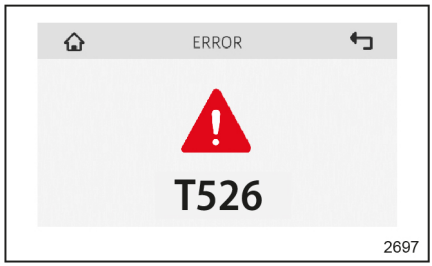
In the event of error code T526

Error code T526 is displayed on the screen to warn the operator that the sensor battery is discharged. Contact a service centre authorised by the manufacturer.

⚠ CAUTION

Risk of loss of warranty.

Only a technician authorised by the service centre may replace this battery.



Straddle automatic lowering (optional function, also referred to as "auto-initial lowering")

This option is available for all trucks equipped with straddle initial lift/lowering (initial lift). The option is not available for the double pallet stacker truck version.

If the truck has the option, the straddles lower automatically when the forks (during lifting) reach the height of the sensors positioned at the top of the mast. The precise position of the

sensors varies depending on the truck model. Naturally, this function will not work if the straddles are fully lowered.

Accessories mounting bar with data socket

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

The pre-wired data socket (6) connected to the truck has the following features:

- Nominal voltage 24 V
- 5 A maximum 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)

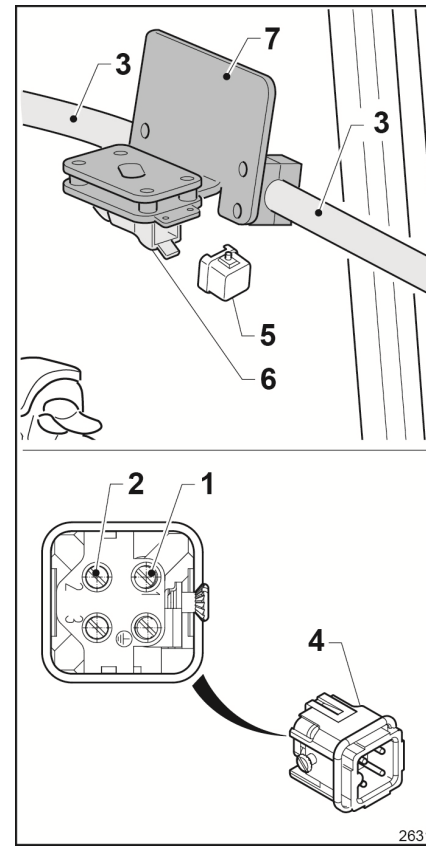
⚠ DANGER

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 Attachment mounting bar
4 Plug to be wired
5 Plug
6 Data socket
7 Data terminal support

⚠ CAUTION

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

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

Battery electrolyte level indicator LED (optional) ▷

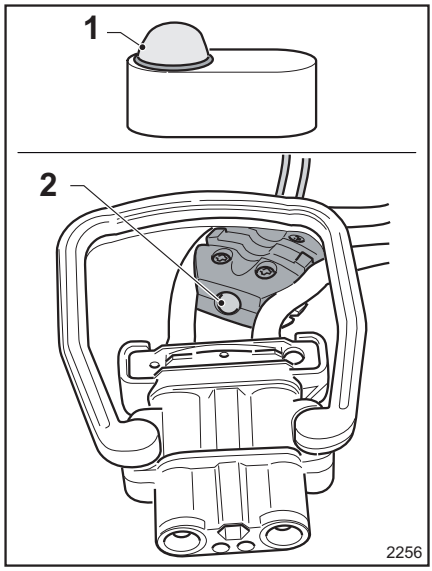
There are two versions of the LED:

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

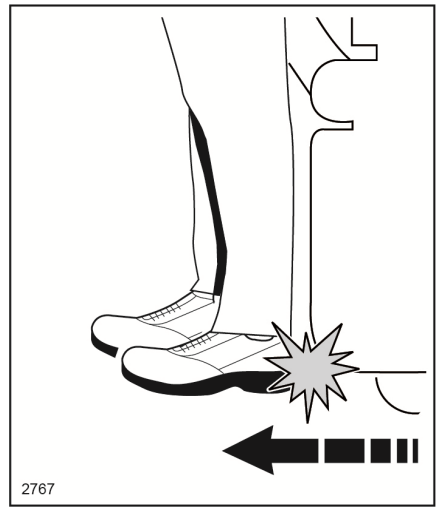
The LED indicates whether it is necessary to top up the distilled water in the battery.

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.



Intelligent fender (active foot protection) (optional)



The intelligent fender (Smart bumper) is an optional function available in two variants:

- STOP function
- STOP & GO function

The intelligent fender (Smart bumper) is activated via an integrated sensor in the truck's fender area.

Variant 1 - Intelligent fender (Smart bumper) with STOP function

Reverse travel (direction of the forks):

- The foot protection function does not activate when the truck is travelling in the direction of the forks.

Forward travel (direction of the operator):

- When you kick the fender, the truck activates controlled braking and then comes to a standstill.
- The procedure for resuming forward travel (direction of the operator) after the truck has stopped is explained below:

  - Deactivate the intelligent fender (Smart bumper) function by moving your foot or any other object that has caused it to activate.

  - Then release the travel controls.

  - Finally, turn the travel controls back in the direction of the operator.

Variant 2 - Intelligent fender (Smart bumper) with STOP & GO function

Reverse travel (direction of the forks):

- The foot protection function does not activate when the truck is travelling backward in the direction of the forks.

Forward travel (direction of the operator):

- When you kick the fender, the truck begins controlled braking and then comes to a standstill. Then, the direction of travel is automatically reversed (direction of the forks) for a few moments.
- The procedure for resuming forward travel (direction of the operator) after the truck has stopped is explained below:

- Deactivate the intelligent fender (Smart bumper) function by moving your foot or any other object that has caused it to activate.
- Then release the travel controls.
- Finally, turn the travel controls back in the direction of the operator.

Autolift light(optional)

The Autolift light option allows the forks to be raised or lowered using the keypad shown in the illustration.

⚠ DANGER

Risk of crushing feet when lowering the forks!

The operator must keep their feet away from the edge of the truck and must not place their feet under the forks.

⚠ DANGER

Risk of impact when raising and lowering the forks!

The operator must keep their body away from the forks, the load on the forks and the moving parts of the mast.

⚠ DANGER

Risk of objects falling off the forks

Ensure that loads are compact and well positioned on the forks to prevent the loads from falling. The operator must wear protective footwear and be careful to avoid any injury caused by loads falling off the forks.

⚠ WARNING

Tampering with the truck's components, safety systems etc. is forbidden

If you find any operating errors or anomalies when using the truck, do not use the truck and inform your employer

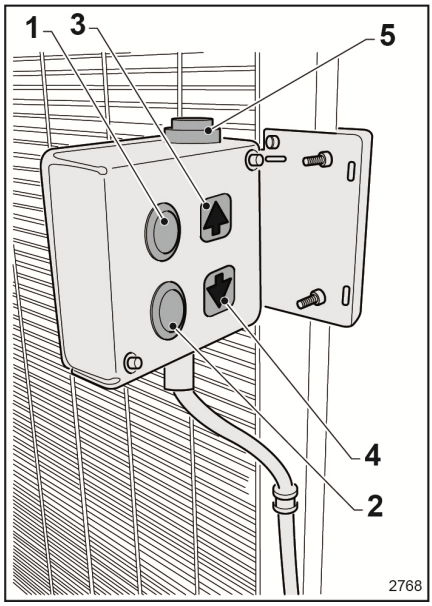
Operator position:

- The operator must be positioned alongside the truck, on the side where the keypad is located.

Enabling controls:

- For safety reasons, the Autolift light controls are only enabled when the truck is turned on and the tiller is in the vertical rest position.
- The controls do not activate fork lifting at heights above approximately 1500 mm from the ground.
- The controls do not activate fork lowering at heights below approximately 150 mm from the ground.

Lifting and lowering the forks using Autolift light ▷



Fork lifting

- The button (1) as indicated by the arrow (3) operates the fork lifting.
- To raise the forks, press the consent button (5) and the button (1) at the same time.

  - A short press on the button (1) will cause the forks to move upwards for a default period of time. To modify the default fork travel duration, contact the service centre authorised by the manufacturer.

  - Pressing and holding the button (1) will cause the forks to move upwards and stop at the height reached when the operator releases the button (1).

Fork lowering

- The button (2) as indicated by the arrow 4 is for lowering the forks.
- To lower the forks, press the consent button (5) and the button (2) at the same time.

  - A short press on the button (2) will cause the forks to lower for a default period of time. To modify the default fork travel duration, contact the service centre authorised by the manufacturer.

  - Pressing and holding the button (2) will cause the forks to move downwards and stop at the height reached when the operator releases the button (2).

4

Operation

Authorised and safe use

Intended use of the trucks

⚠ CAUTION

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

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

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

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

Safety instructions for using the truck

Behaviour when driving

The operator must obey the same rules within the plant as on the road. The operator must drive at a speed appropriate for the driving conditions. For example, the operator should drive slowly around corners, when entering and travelling through narrow passageways, when driving through swing doors, at blind spots, or on uneven surfaces. The operator must always maintain a safe 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 the truck while sitting down is prohibited.

Please remember the following:

- Drive the truck as described in the "Operator positions" section.
- 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.

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 working with the truck immediately if the people do not leave the danger area despite the warnings.

⚠ 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!

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

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.

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.

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.

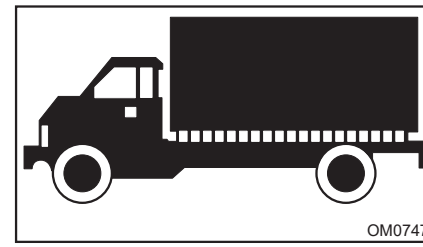
Risks

Risks on traffic routes must be signalled by road signs or possibly by additional warning notices.

Transporting and lifting the truck

Transporting the truck

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



Transporting

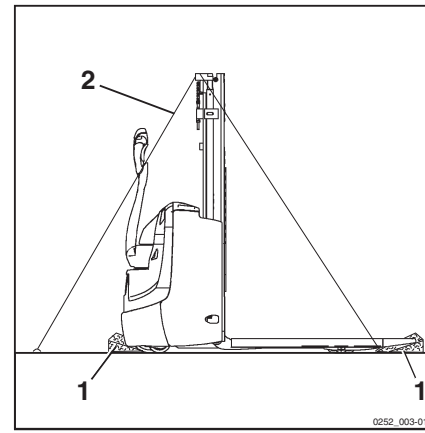
– Pull out the battery female connector (if present).

Inserting chocks

– Secure the truck against (1) accidental sliding or rolling away by placing chocks under the wheels.

Securing with ropes

– Attach the securing ropes (2) to the mast.



Climatic Conditions for Transport and Storage

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

Loading and unloading the truck

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

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

Depending on the type of mast on the truck, a rope sling can be fastened to the truck and the truck can then be lifted as follows:

- Via a single eyelet positioned centrally on the truck mast
- Or via two eyelets positioned on either side of the truck mast

General recommendations

⚠ CAUTION

Before loading and/or unloading the truck, always switch off the truck and disconnect the battery.

Never attach or sling the truck by the tiller or other points not designed for this.

⚠ DANGER

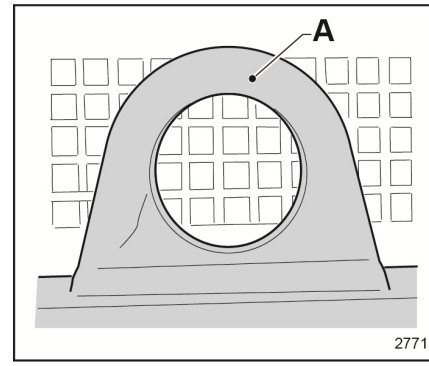
Use a crane with a suitable lifting capacity for the weight of the truck, which is indicated on its data plate. Also take into account the weight of the battery fitted (if applicable) by referring to the relevant identification plate. Lifting operations must be performed by qualified personnel. DO NOT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

⚠ DANGER

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

Lifting with a crane or a bridge crane for the mast version with a single central eyelet ▷

– Insert the hook through the special eyelet (A) on the mast (designed for lifting the truck with its battery). The lifting capacity of the hook and the rope sling must be sufficient to bear the weight of the truck (with its battery). The position is indicated by a hook symbol.



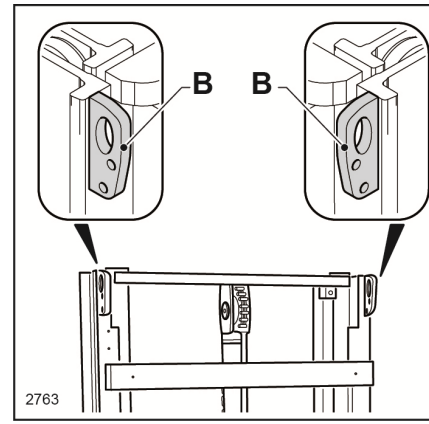
Lifting with a crane or a bridge crane for the mast version with two side eyelets ▷

– Insert the hooks into both eyelets (B) on the mast (designed for lifting the truck with its battery). The lifting capacity of the hooks and the rope slings must be sufficient to bear the weight of the truck (with its battery). The position is indicated by a hook symbol.

⚠ CAUTION

Use only the two side eyelets on the mast to lift the truck

Do not lift the truck by only one of the two side eyelets



Breaking-In

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

List of daily 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.

NOTE

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

Visual checks

- Check the exterior of the vehicle for damage
- Visually check the uncovered sections of hydraulic hoses and pipes to ensure that they are in good condition and that there are no hydraulic oil leaks
- Check that the battery and cables are in good condition and correctly attached
- Check that the battery male connector is correctly attached
- Visually check that the forks or other load-carrying equipment show NO obvious damage (e.g. bends, cracks, significant wear)
- Check that the drive wheel and load wheels show no signs of damage or significant wear
- Check that the drive wheel and load wheels are correctly attached
- 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 bearing guides of the mast must be coated in a visible film of grease
- Check that all labels are present and legible. Please refer to the relevant section in Chapter 3
- Check the hand protection on the truck mast. Check that it is present, correctly attached and for any damage
- Check that all covers and hoods are correctly attached, intact and closed
- With the forks lowered, check that the mast chains are undamaged and that they are evenly and adequately tensioned
- Check that the operator is physically able to reach and operate all the controls (especially the anti-crush protective device and the emergency stop button)
- Check that there are no objects on the truck that could obstruct access to the controls or restrict visibility when driving

Operational checks

⚠ DANGER

Ensure that the test zone is free of people and objects, both in front of and behind the truck. Perform this check on a flat surface. Drive very slowly during the operational tests.

Check that the buttons return automatically to their initial positions

- One at a time, push the control buttons and then release them. Check that each button returns automatically to its initial position. The buttons must not remain activated or stuck

Check the drive control throttle

- Turn the drive control throttle and then release it. Check that the throttle automatically returns to the initial position when it is released. The throttle must not remain activated or locked
- Start the truck, drive the truck slowly and then release the throttle. During travel, check that the truck brakes and stops

Check that the return-to-position function of the tiller works correctly

- Lower the tiller and release it. The tiller must return to the vertical position

Check that the horn works correctly

- Push the horn button and check that it works correctly

Check that the emergency stop button works correctly

- Start the truck, drive the truck slowly and then press the emergency off switch.
- Restore the operating conditions of the emergency stop button.

Use the tiller to check correct brake operation

- Start the truck, drive slowly and tilt the tiller into the working position. Check that the truck brakes and stops when the tiller is released during travel
- Start the truck, drive slowly and tilt the tiller down as far as it will go. Check that the truck brakes and stops

Check that the belly switch works correctly

- Start the truck, guide the truck slowly towards you
- Activate the belly switch with your hands. The truck will stop and then accelerate in the opposite drive direction. Release the belly safety switch. The truck will come to a stop.

⚠ DANGER

DO NOT use the truck, but call the technical service department, if you notice any malfunctions or if you have any doubts about its correct operation.

Ergonomic dimensions

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

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

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

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

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

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

⚠ WARNING

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

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

Operator position

Operator's position for version without platform

The driving position is in pedestrian version (driving on "the ground"). The operator should drive the truck using the driving and lifting controls located on the helm head.

⚠ DANGER

All other positions should be considered incorrect and dangerous.

⚠ DANGER

Sitting on the truck is strictly prohibited.

⚠ DANGER

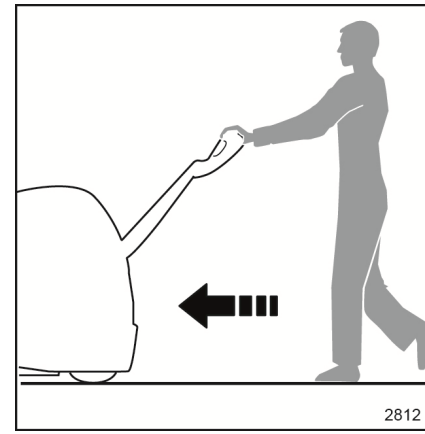
Risk of feet being crushed.

Ensure that your feet are sufficiently far away from the truck chassis.

NOTE

In the following images, the truck model shown is an example and is for illustrative purposes only.

Recommended operator position for picking up and depositing the load. ▷

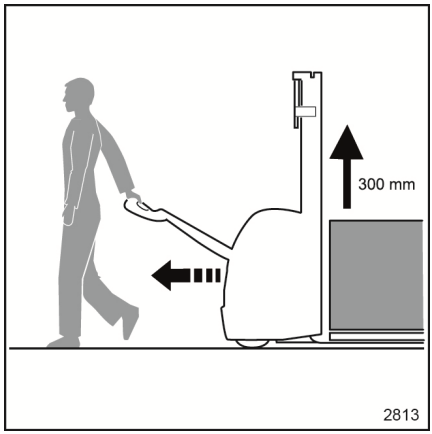


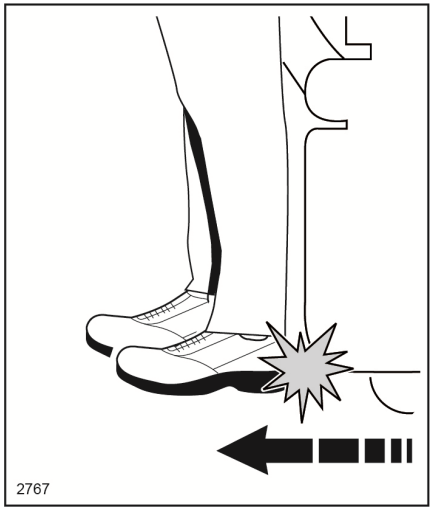
Recommended operator position during the preferred direction of travel (opposite direction to the forks) ▷

⚠ DANGER

Risk of crushing feet

Ensure that your feet are placed far enough away from the truck chassis





Using the truck

Stopping the truck in emergencies

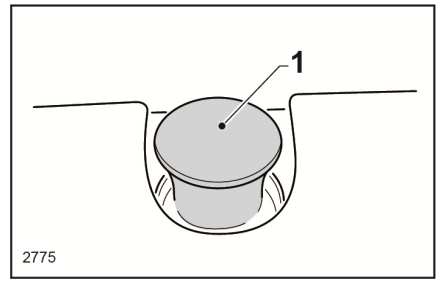
In an emergency, the power supply to all functions on the truck can be shut down through the emergency stop button.

– Push the emergency shutdown button (1). This blocks all of the truck functions, so the truck will brake and stop.

– Before restoring operating conditions, eliminate the causes of the emergency.

– Release the tiller to the rest position.

– To restart the truck, pull the emergency stop button upwards.



NOTE

For more information, refer to the section in Chapter 3 that explains the various positions of the emergency stop button.

⚠ CAUTION

The EMERGENCY stop button should be activated only and exclusively when absolutely necessary. It is not intended for habitual use during normal operation. If the button (1) is activated, all the truck functions will lock.

Starting the truck

- Carry out all of the daily checks to be performed by the operator.
- Check that the emergency shutdown button is not pressed. If the emergency shutdown button is pressed, pull it upwards to release it and allow the truck to start.
- Place the tiller in the vertical position.
- To start the truck, turn the ignition key. If there is no switch key present, the following variants may be present to start the truck:

  - On/off button. Press the on/off button and then enter the operator's Pin code to start the truck.

  - On/off numeric keypad. Enter the operator's Pin code to start the truck.

- If the truck has a numeric keypad rather than a key, enter the appropriate Pin code.
- Check the display for any indicator lights.
- Check the battery charge status on the display and replace or charge the battery if necessary.

⚠ CAUTION

Switching the truck on and off is only permitted when the truck is stationary. It is prohibited to switch off the truck when the truck is still moving. For emergency shutdown, you must only use the special emergency stop button.

Truck travel

– Firmly hold one of the tiller handles (1) on one side.

– Lower the tiller into the driving position (Y).

NOTE

In the lower (X) or upper (Z) zone, truck traction is not enabled.

NOTE

For details on driving a truck equipped with the "OptiSpeed" option, see the relevant section.

NOTE

One of the travel controls (2) or (3) on the tiller can be operated with the right or left hand. Always operate the travel controls slowly, as the truck responds instantly. Aggressive acceleration and braking and sudden reversing must be avoided.

Forward travel (direction of the operator)

– Turn the travel control (2) and (3) towards "B".

– Increasing the angle of rotation of the travel control in relation to the neutral position increases the travel speed of the truck.

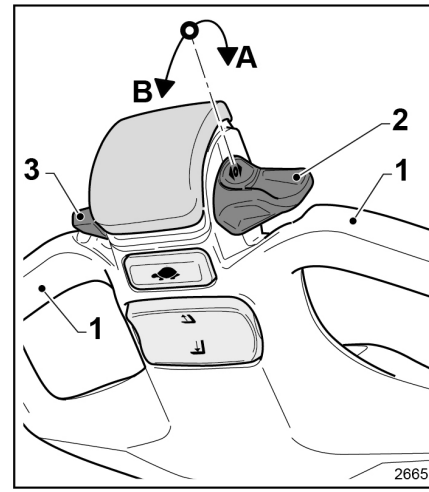
– Reducing the angle of rotation of the travel control in relation to the neutral position brakes the truck electrically.

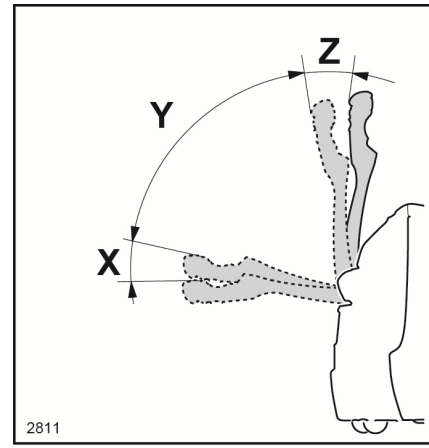
Reverse travel (direction of the forks)

– Turn the travel control (2) and (3) towards "A".

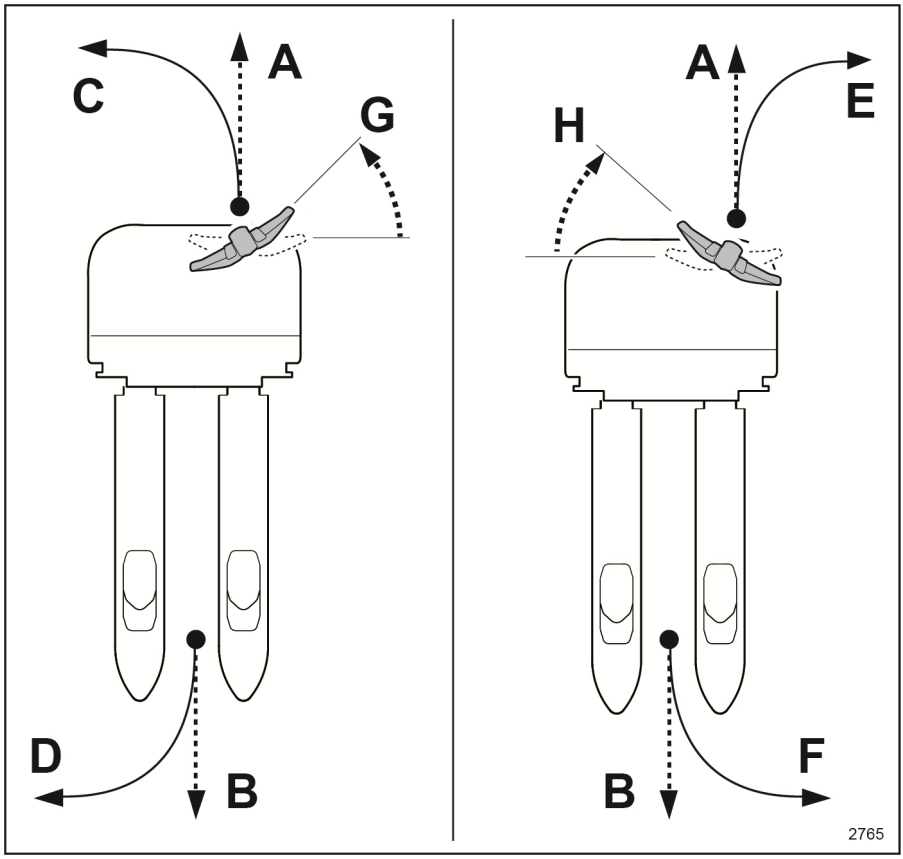
– Increasing the angle of rotation of the travel control in relation to the neutral position increases the travel speed of the truck.

– Reducing the angle of rotation of the travel control in relation to the neutral position brakes the truck electrically.





Truck steering direction



Use the tiller to steer during travel.

- When the tiller is turned anti-clockwise (G) while travelling towards (A), the truck steers towards (C)
- When the tiller is turned anti-clockwise (G) while travelling towards (B), the truck steers towards (D)
- When the tiller is turned clockwise (H) while travelling towards (A), the truck steers towards (E)
- When the tiller is turned clockwise (H) while travelling towards (B), the truck steers towards (F)

Reversing the direction of travel

Reverse direction without a load on the forks

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

Reverse direction with a load on the forks

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

⚠ CAUTION

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

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 ways:

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

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

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

Braking using the travel controls

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

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

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

- When driving the truck, turn the travel control beyond the neutral position in the opposite direction to the truck's direction of travel. The truck will decelerate more forcefully but will come to a gradual stop. When the truck stops (zero speed), put the travel control in the neutral position. Caution: If you do not put the travel control in the neutral position, the truck will resume travel in the opposite direction. For more information, see also the section ⇒Chapter "Reversing the direction of travel", Page 123

⚠ CAUTION

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

⚠ CAUTION

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

⚠ WARNING

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

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

Braking using the tiller (service braking)

Braking using the tiller can be performed in the following ways:

- During travel, push the tiller to the upper end position. The truck will decelerate very sharply to a stop.
- During travel, push the tiller to the lower end position. The truck will decelerate very sharply to a stop.
- During travel, release the tiller. The tiller will automatically return to the upper end position. The truck will decelerate very sharply to a stop.

⚠ WARNING

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

The operator must consider this factor while driving.

⚠ CAUTION

In dangerous situations, always brake using the service brake.

To activate the service brakes, always push the tiller as far as it will go.

Parking brake

- When the traction control throttle is released, the truck stops using the electromagnetic brake when its speed approaches 0 km/h or when the tiller returns to the vertical position

Parking and stopping the truck

⚠ WARNING

Do not park the truck on a slope.

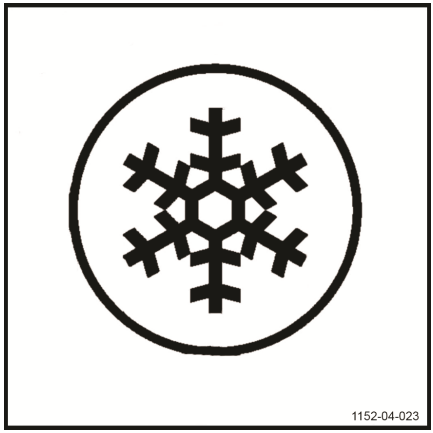
Never leave the truck with the forks raised.

– Park in pre-arranged and designated areas.
– Lower the forks to the ground.
– Switch off the truck.
– Press the emergency shutdown button.

⚠ 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).

Using the truck in cold-storage rooms (optional)



⚠ CAUTION

Risk of serious damage to standard trucks if used in cold-storage rooms

Only trucks with the cold store option may be used in cold-storage rooms

Trucks designed for use in cold-storage rooms are identified by a specific cold store label.

Area of use

Trucks with the cold store option can be used in two different areas:

- **Field of operation 1**: The truck can be used at a temperature of -5°C and, for short periods, at a temperature of -10°C. It must be parked outside the cold-storage room.
- **Field of operation 2 (input/output applications)**: The truck must be used alternately inside and outside the cold-storage room. The truck can withstand temperatures from -32°C to +45°C. Specific rules must be followed to prevent damage to the truck and to prevent the formation of water (see next paragraph). Park the truck outside the cold store.

Precautions for use

The difference in temperature between the inside of the cold-storage room and the outside of the cold-storage room can cause condensation water to form on the truck.

This water can freeze when the truck goes back inside the cold-storage room and hinder the moving parts of the truck.

Water forms when the truck is outside the cold-storage room for more than ten minutes. It is therefore essential to leave the truck outside the cold store for 30 minutes to allow any traces of condensation to disappear.

⚠ DANGER

Do not allow condensation to freeze and form ice on the truck!

If condensation freezes inside the cold-storage room, do not try to move the blocked parts. Risk of permanent damage to the truck.

Parking

⚠ DANGER

The truck must be parked outside the cold store.

Parking the truck inside the cold store can cause serious damage to electrical and mechanical equipment (seals, hoses, rubber and synthetic parts).

⚠ CAUTION

Do not leave discharged or unused batteries in the cold store.

Risk of permanent damage.

Moving the load

Safety guidelines for handling loads

⚠ 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

Risk of accident when forks are changed:

If the forks are changed and a different type of forks to the original forks is fitted, the residual load capacity may change. In these cases, a new capacity plate with the appropriate recalculations must be fitted. For more information, please refer to the approved technical service centre.

If a truck is supplied without forks, the residual capacity plate for standard forks is affixed (see chapter 6 "Technical Data").

⚠ 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.

–



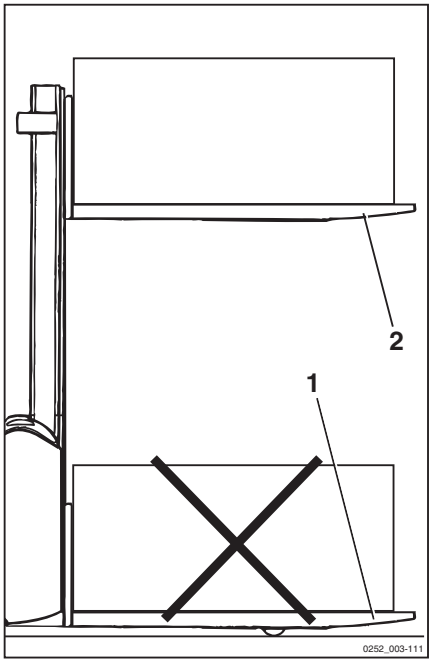
⚠ CAUTION

Pallet condition

Insert the forks into the pallets from the correct side, i.e. the open side, as shown in the illustration.

Ensure that the pallet is in good condition before commencing any operation.

–



⚠ CAUTION

Transporting loads on the straddles (1) is prohibited.

Loads may only be transported on the forks (2).

Transporting loads on the straddles is only permitted for the range of trucks designed to perform the double pallet stacker function. ⇒Chapter "Additional labels for double pallet stacker version "-D"", Page 81

⚠ DANGER

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

⚠ DANGER

The loads must be arranged so that they cannot slip or overturn and fall to the ground. In order to guarantee load stability, make sure that the load is balanced and centred on the forks.

⚠ 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.

⚠ CAUTION

Do not touch nearby loads or loads beside or in front of the load being handled

Arrange loads with a small space between them to prevent them coming into contact with one another.

⚠ 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.

⚠ CAUTION

Risk of loss of stability.

When removing the load from the shelf, do not use the initial lift control (if the truck has one) in order to maintain maximum stability and avoid any risk of tipping the truck. This operation is prohibited both when picking up and when depositing the load on the shelf.

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.

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Example	
Weight of the load to be lifted:	1000 kg (C)
Distance between the load centre of gravity - fork carriage:	500 mm (A)
Permissible lift height:	2750 mm (B)

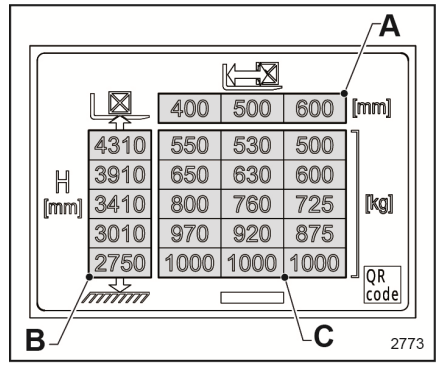
⚠ WARNING

The illustrations are only examples.

Only the values stated on your truck's plate should be taken into consideration.

⚠ 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.



(A) Distance from the centre of gravity of the load on the forks to the fork carriage (in mm)
(B) Lift height of the forks from the ground (in mm)
(C) Maximum permissible loading weight (in kg)

Reduce lowering speed of the forks near the lower end position (soft stop)

The truck is equipped with a system for reducing the lowering speed of the forks near the lower end position.

The function prevents the forks from striking the chassis.

NOTE

To avoid the load striking the floor, the operator must reduce the lowering speed (using the proportional controls on the tiller head).

Automatic reduction of the driving speed in relation to the lift height (if present)

Some trucks, depending on the equipment purchased, are supplied with two height sensors (side-by-side and positioned at the top of the lift mast):

- As soon as the forks move past the sensors during lifting, the truck's driving speed automatically decelerates.

NOTE

If the forks are lowered below the sensor height during travel (drive throttle rotated), depending on the truck setting, automatic speed reduction may remain active or deactivate (contact a service centre authorised by the manufacturer for more information).

To eliminate automatic driving speed reduction if this remains active, fully release the drive throttle after lowering the forks below the sensor height. At this point, if the throttle is turned again the truck will continue without the previous automatic speed reduction.

Picking up the load

Load pick up from the ground

– Approach the load with caution and with as much precision as possible.

– Lower the forks and the straddles so that they can easily be inserted into the pallet.

– Slowly insert the forks at the centre of the load to be lifted.

⚠ CAUTION

Insert the forks without bumping into either the shelving or the load.

– Insert the forks under the load. Keep inserting the forks until the load is resting against the fork carriage and/or the centre of gravity is in line with the values indicated on the capacity plate.

⚠ DANGER

Take care if part of the forks protrudes from the load to be lifted

Do not strike the wall, the shelving or other loads and/or objects behind the load to be picked up.

– Lift the load a few centimetres from the ground and read the "Transporting loads" section.

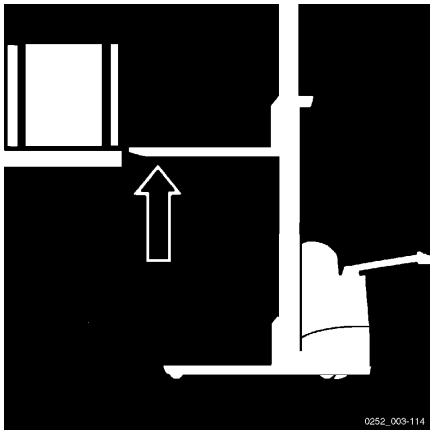
Load pick up from shelving

– Approach the shelving at moderate speed. Use the drive control throttles to gradually slow down and stop the truck perpendicular to the shelving. ▷



– Check that there is sufficient space between the forks and the shelving.

– Raise the forks until you reach the correct fork insertion height. ▷

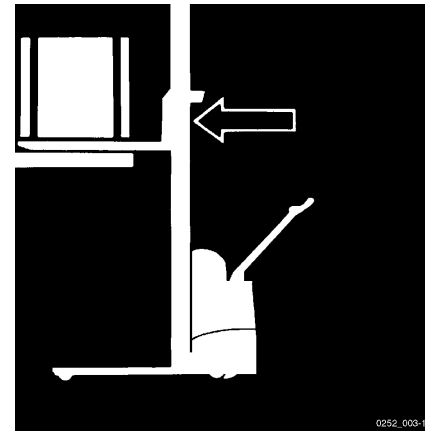


– Move the truck slowly forwards to insert the forks into the load.

⚠ CAUTION

Insert the fork without bumping into either the shelving or the load.

– Insert the forks under the load. Keep inserting the forks until the load is resting against the fork carriage and/or the centre of gravity is in line with the values indicated on the capacity plate. ▷



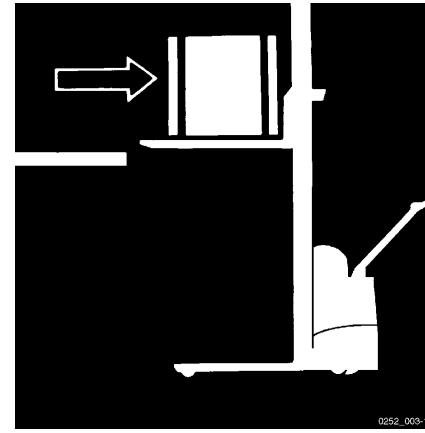
⚠ DANGER

Take care if part of the forks protrudes from the load to be lifted

Do not strike the wall, the shelving or other loads and/or objects behind the load to be picked up.

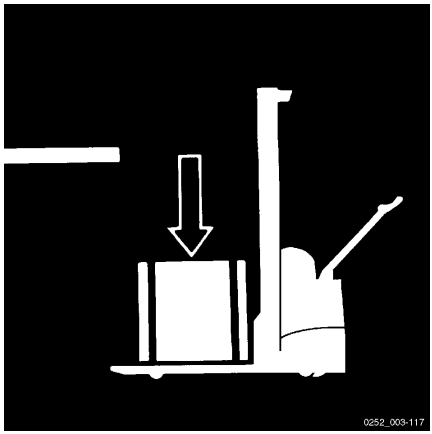
– Raise the load a few centimetres until it is resting fully on the forks. If the load is stable and secure on the forks, proceed with the following steps. In the event of uncertainty and/or a load that is not properly secure or stable, lower the forks and place the load back on the shelving.

– Put the tiller in the driving position. Look in the direction of movement to check that the way is clear. Turn the throttle in the direction of travel towards the operator and drive very slowly and carefully in a straight line away from the shelves. Brake gradually. ▷



– Check that there is sufficient space between the forks or the load and the shelving.

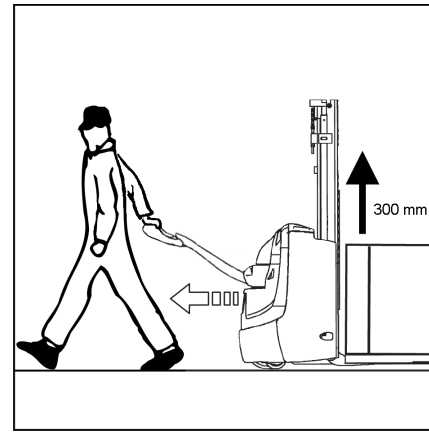
– Lower the load to the transport position, approximately 300 mm from the ground, and read the "Transporting loads" section. ▷



Transporting loads

In general, loads must be transported individually or on a suitable support (e.g. on a pallet). Simultaneous transport of multiple loads is only permitted if the requirements in terms of the safety and intended use of the truck are met.

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, especially 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.

Depositing a load on the ground

- Approach the load deposit area.
- Lower the fork arms until the load is deposited in the required area, then free the forks from any contact with the pallet or container.
- Look in the direction of movement before moving the truck.
- Check that the truck's path is free of any objects, people and obstacles of any type.
- Look in the direction of movement and simultaneously proceed very slowly to fully extract the forks from the load.

⚠ DANGER

Risk of injury and crushing for the operator! Risk of damage to the truck and the goods

During the entire load placement operation, be careful not to hit any obstacles. You must maintain an adequate safety distance from obstacles (e.g. other pallets, protruding objects, shelving etc.).

⚠ DANGER

Never leave the truck with the forks raised, whether loaded or not.

Driving on slopes

Instructions

Before approaching a slope with the truck, the operator must check and verify the following:

- When driving the truck up or down slopes, you must not exceed the values indicated for slopes in the "Technical data" paragraph. The reported values represent the maximum theoretical slope that the truck can handle with and without a load. The operator must keep in mind that the actual values could be lower depending on the wear on the truck or its parts, the shape of the slope's edges and the traction between the truck's wheels and the surface of the slope
- The surface of the uphill or downhill slope is clear of objects and sufficiently lit
- The surface of the uphill or downhill slope must not be slippery; it must provide adequate grip for the truck. Consider the ambient conditions
- The operator must ensure that the load or parts of the truck do not come into contact with the ground at the upper and lower ends of the slope

⚠ WARNING

Risk of tipping and accident

Reduce speed and drive slowly and carefully on uphill and downhill slopes.

⚠ DANGER

Risk of tipping

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

⚠ WARNING

When travelling on a slope with a load on the forks, the load on the forks must be facing uphill.

⚠ DANGER

Risk of accident and falling

Keep the truck at the required safety distance from the edges of uphill and downhill slopes.

⚠ CAUTION

In certain cases, driving with the forks pointing towards the top of the slope is permitted, even if the truck is not loaded.

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

⚠ DANGER

Risk of accident

Do not park on a slope. If, in an emergency, you have to do so, apply the parking brake and block the wheels with wheel chocks.

Using the truck on a lift

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

Slowly drive the truck onto the lift load-first.

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

⚠ WARNING

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

⚠ CAUTION

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

Using the truck on the loading bridge and inside a container

⚠ DANGER

Risk of accident

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

You must drive onto the loading bridge slowly and carefully.

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

The lorry driver and the forklift operator must be in agreement to prevent the truck from moving during loading and unloading.

Towing trailers

The forklift is not qualified to tow trailers.

Charging the battery

General rules for charging batteries

⚠ CAUTION

Charge the battery with the truck turned off and the battery hood open.

You can only detach the male connector from the female connector (if present) when the truck is switched off.

⚠ DANGER

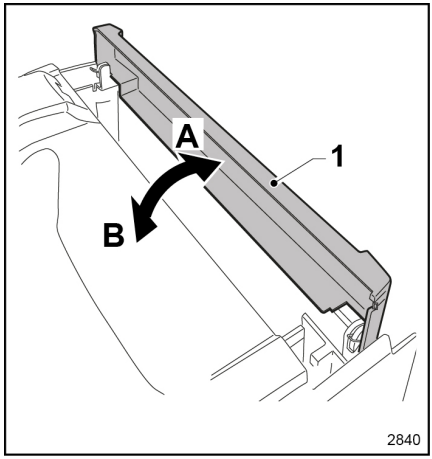
The battery must be charged in rooms that comply with applicable regulations. Refer to the battery and battery charger manuals to see the charging procedures, level checks etc., checking the battery type (gel, lead etc.) and making sure of the voltage and current delivered. Excessive currents can damage the battery and cause dangerous situations. As regards safety precautions, follow the instructions given in the battery manual and those included in the "Safety guidelines" of this manual. Before recharging, the battery cables and the battery charger cables must be checked for damage and replaced if necessary. Do not place objects on the battery during charging.

⚠ DANGER

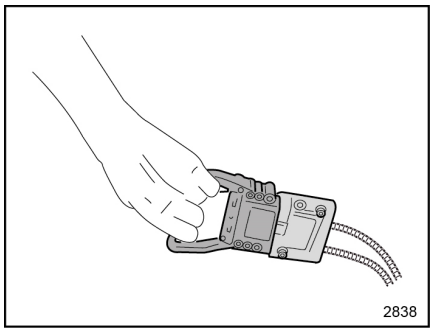
Charging cables (mains cable for on-board battery charger, power cables for external charger) must not be placed on mechanical components (e.g. forks) to avoid the risk of short circuit.

Charging using an external battery charger

Instructions for charging the battery ▷



– Access the top part of the battery. To access the battery and the respective male/female connector, open the battery compartment cover (1) towards (A). Hold the cover open.
– Disconnect the battery male connector and female connector (if present).
– Connect the battery female connector to the external battery charger to begin charging.
– Turn on the external battery charger.
– After the battery charging operation is completed, switch off the battery charger.
– Remove the female connector from the battery charger.
– Reconnect the battery male connector to the female connector (if present).
– Close the battery cover towards (B).



⚠ WARNING

Danger of crushing hands and items

Be sure not to leave anything between the battery cover and the edge of the chassis when closing the cover.

⚠ DANGER

It is absolutely forbidden to use the truck with the covers open.

In order to use the truck, the covers for access to the inner parts must be closed and secured properly.

⚠ DANGER

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

Access to the inner parts of the truck by personnel not authorised by the manufacturer is forbidden.

Charging the battery with the direct charging system (optional) ▷

NOTE

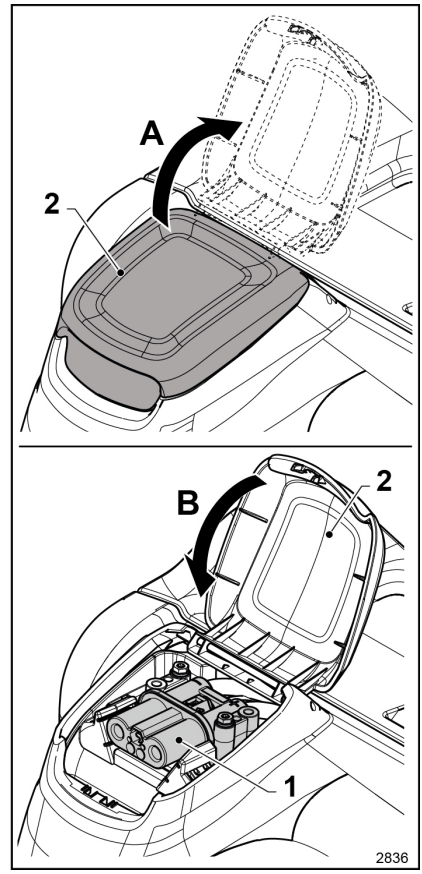
The socket (1) shown is for illustrative purposes only.

– Park on a level surface.

– Switch off the truck. Charge the battery with the truck switched off.

Course of action:

- Open (towards A) the door (2).
- Connect the socket (1) to the external charger.
- When the charging phase is complete, remove the plug from the socket (1).
- Close (towards B) the door (2).



On-board battery charger

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

⚠ DANGER

The on-board charger can be connected to a 2P+T 230 V 16 A socket. You must ensure that this socket is electrically protected by a Type A circuit breaker (RCD).

Make sure that the mains supply voltage complies with the battery charger's working voltage. The electrical system must comply with the current national regulations.

⚠ CAUTION

Charge the battery with the truck switched off.

The truck cannot be used during charging.

⚠ DANGER

Before recharging, it is necessary to ensure that the location chosen for recharging satisfies all of the safety requirements. The battery must be charged in rooms that comply with applicable regulations. Refer to the battery manual for information about charging procedures, level checks etc.

Check the battery type (gel, lead etc.), voltage and current delivered. Excessive currents can damage the battery and cause dangerous situations. As regards safety precautions, follow the instructions given in the battery manual and those included in the "Safety guidelines" of this manual. A lead battery produces explosive gases during charging. Make sure that the charging area is compliant with legal regulations and is thereby well ventilated.

⚠ DANGER

If the truck is fitted with an on-board battery charger, connecting the battery to an external battery charger is strictly prohibited.

It is strictly forbidden to use an on-board battery charger other than the original one installed by the truck manufacturer.

⚠ CAUTION

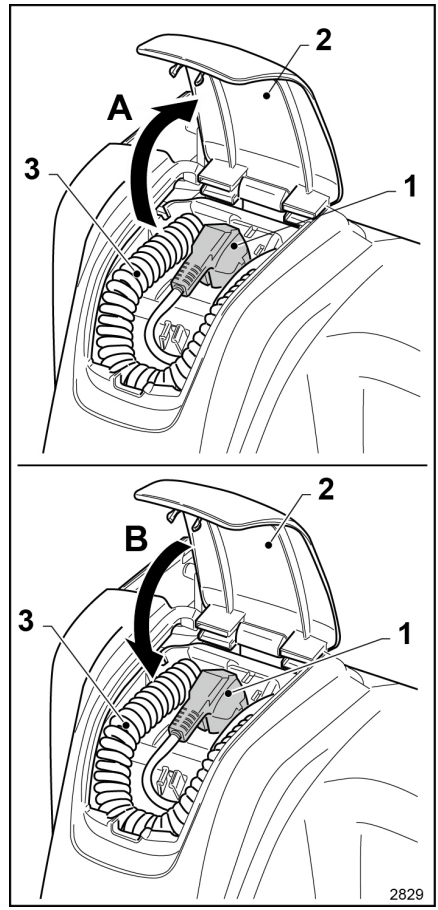
Risk of damage to the power cable resulting in electric shocks and/or burns! Park the truck near the socket. The power cable for the on-board battery charger must not be taut during connection and charging. Make sure that the cable does not come into contact with certain parts of the truck (forks, mast, wheels etc.) to prevent damage.

Do not pinch the charging cable when closing the hood that covers the plug for the on-board battery charger. The power cable must be checked regularly as part of periodic statutory checks and maintenance operations.

⚠ CAUTION

Disconnect the plug from the socket when the battery is fully charged. It is also possible to interrupt the charging procedure by removing the plug from the socket (lithium-ion batteries only).

Plug for charging the battery with on-board battery charger (optional) ▷



NOTE

The plug (1) shown is for illustrative purposes only. Different types of plug may be fitted to the truck depending on the market (European Community, United Kingdom, Switzerland etc.).

– Park on a level surface.

– Switch off the truck. Charge the battery with the truck switched off.

Course of action:

- Open (towards A) the door (2).
- Take the plug (1) and connect it to the mains socket.
- When the charging phase is complete, remove the plug (1) from the mains socket.
- Put the plug (1) back in its housing. Correctly position the electric cable (3) inside the housing.
- Close (towards B) the door (2).

⚠ CAUTION

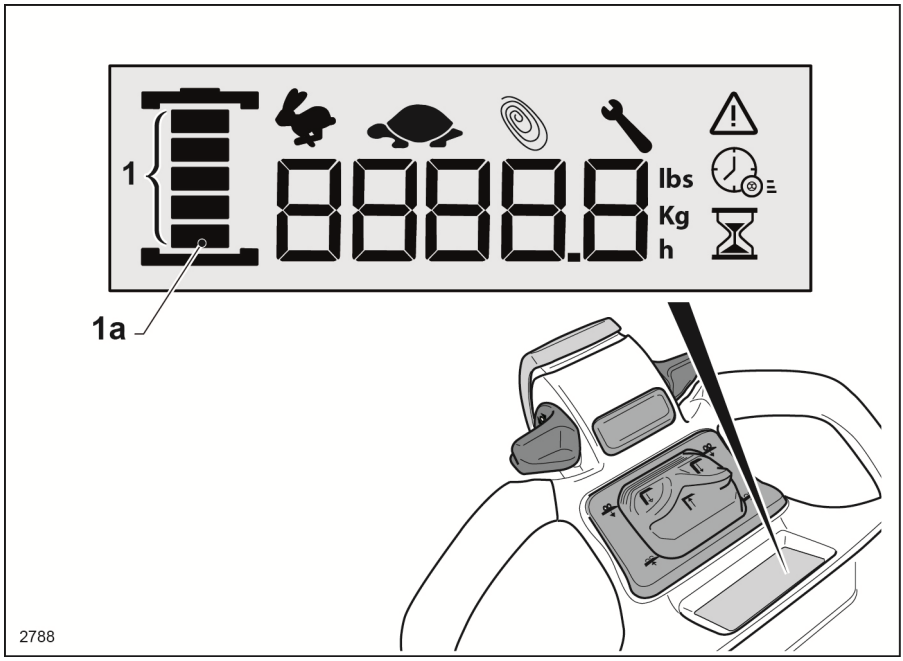
Electrical risks

Do not pinch the charging cable (3) when closing the door (2).

Never attempt to drive the truck during the charging phase. Do not drive the truck until the cable (3) and plug (1) have been correctly stored in their housing.

Display screens

Basic display screens during charging of the battery



- **(1)** Battery charge level indicator
- Battery fully charged: all five bars are lit on the display. As the battery discharges, the number of bars on the display gradually decreases.
- Battery with charge reduced to approximately 20%:

  - If you are using a lithium battery, the last bar stays on with a steady light.

  - If you are using another battery type (e.g. a lead battery), the last bar stays on with a flashing light. Charging the truck is recommended.

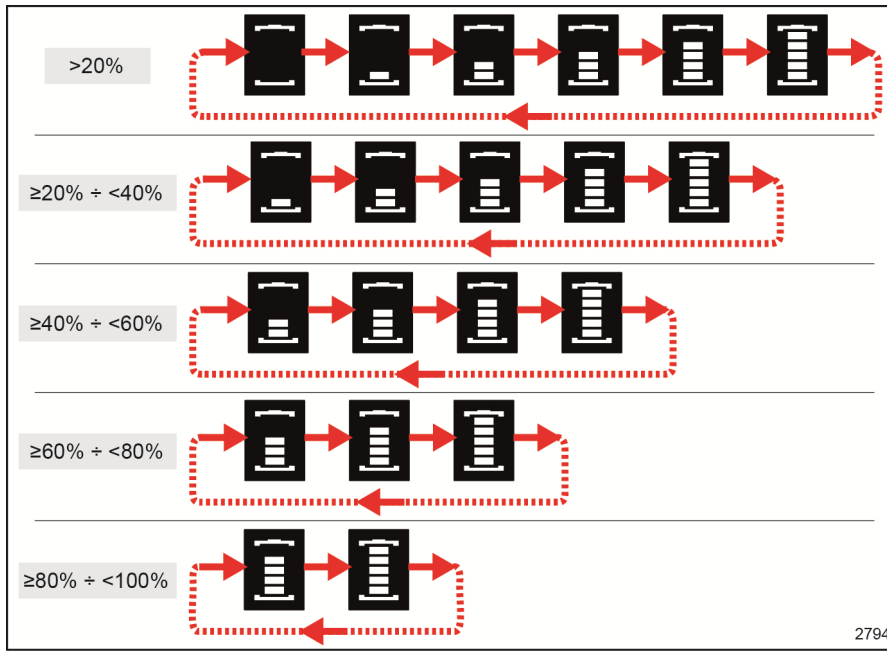
  - Charging the truck battery is recommended.
- Battery with charge reduced to approximately 10%:

  - If you are using a lithium battery, only the last bar **(1a)** stays on with a white flashing light.

- If you are using another battery type (e.g. a lead battery), only the last bar stays on with a red steady light.
- With less than 10% residual charge, truck performance may become restricted. For example, reduction of the maximum speed or blocking of fork lifting.
- Charge the truck battery immediately.

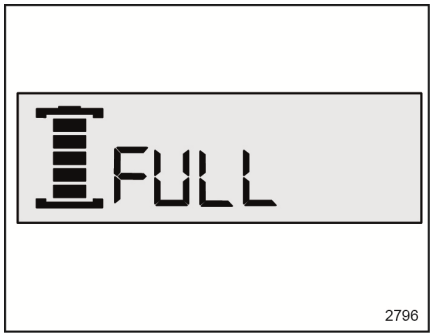
• Battery completely empty:
- Only the last bar stays on with a red flashing light.
- Charge the truck battery immediately.

Detailed analogue display sequence during charging



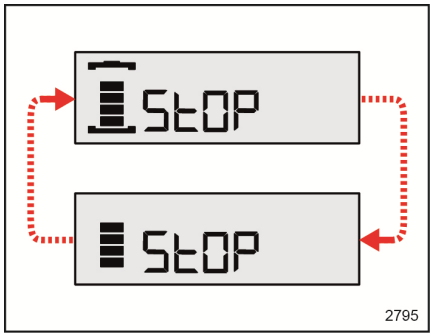
– When the battery is charging, the display shows that battery charging is in progress. The image of the battery icon changes continuously as shown in the sequence in the figure.

– The following screen appears on the display when the battery is fully charged. ▷

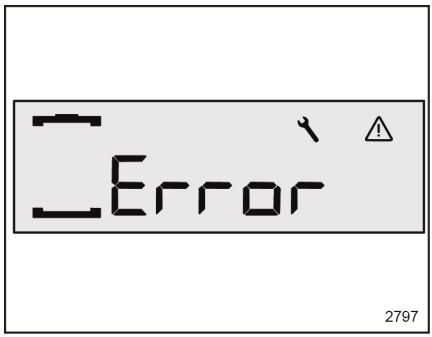


Battery charging alarms

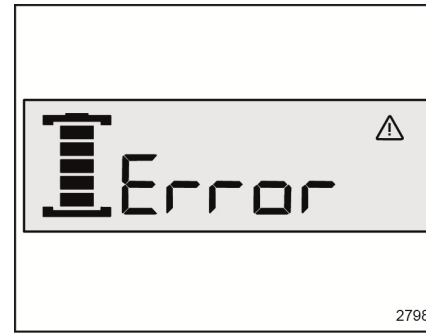
– Charging is paused or interrupted. ▷



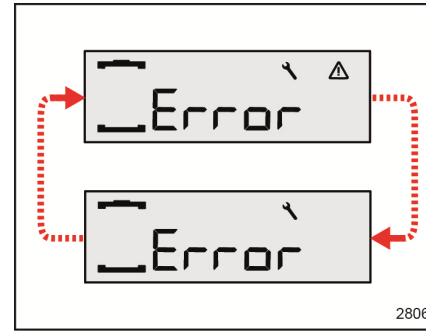
– Battery charge alarm disconnected. ▷



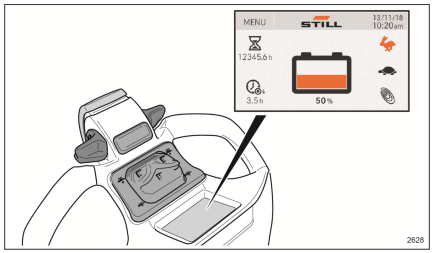
– Battery charge too long. ▷



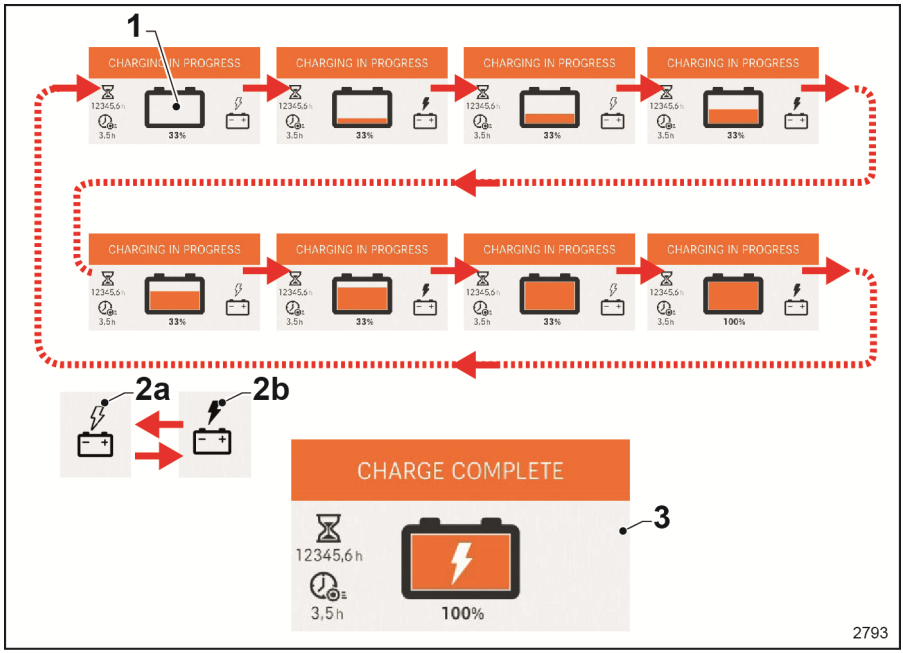
– Polarity reversed. ▷



Touch display screens during charging of the battery (optional) ▷



Detailed touch display sequence during charging



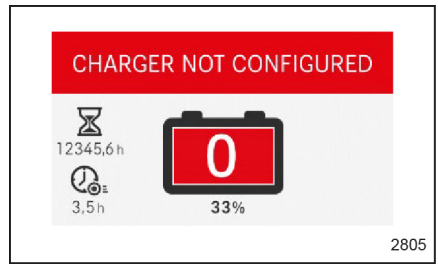
– When the battery is charging, the display shows that battery charging is in progress. The image of the battery icon (1) changes continuously as shown in the figure displaying a progressive battery state of charge; the icons (2a) and (2b) alternate.

– The icon (3) appears on the display when the battery is fully charged.

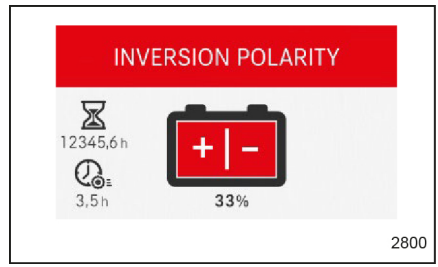
Battery charging alarms

When the battery is charging, the display may show the following alarms. If the same alarms reoccur after switching the truck on and off, contact the Technical Service Department.

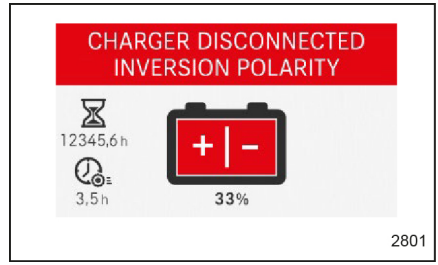
– Battery charger not configured. ▷



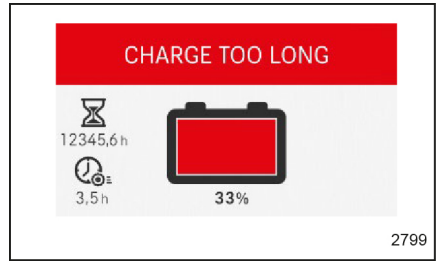
– Polarity reversed. ▷



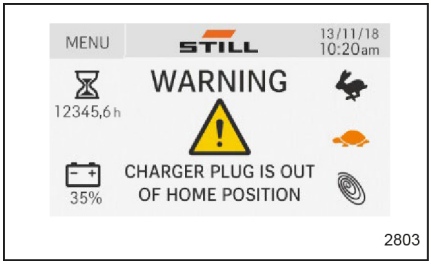
– Polarity reversed with charger disconnected. ▷



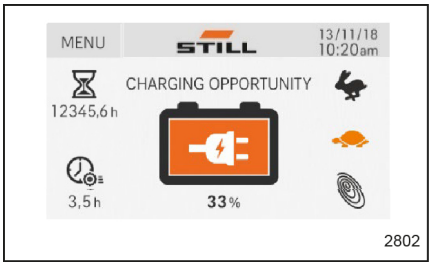
– Battery charging time too long. ▷



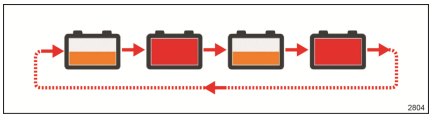
– The warning informs the operator that the plug must be correctly positioned in the appropriate location on the truck. ▷



– The warning advises the operator to recharge the battery (only present in trucks equipped with lithium batteries). ▷



– Lithium battery generic alarm (the example is for a battery 50% charged). ▷



Using the truck with extension leads

⚠ DANGER

The use of the truck with batteries connected via extension leads is permitted only with auxiliary cables with a maximum length of 3 m.

5

Maintenance

General maintenance information

The following instructions contain all the information required for maintenance of the truck. Carry out the servicing work in compliance with the service plan. This will ensure that the truck is reliable and in good working order and that the warranty remains valid.

Only genuine spare parts and lubricants recommended by the manufacturer may be used for servicing work.

⚠ CAUTION

Do not mix different types of grease or lubricating oil.

Maintenance is divided into:

- **Regular maintenance** (can be carried out by the user)

  Regular maintenance operations are outlined over the following pages. Regular maintenance can be carried out by the user of the truck. Alternatively, regular maintenance may be carried out by the manufacturer's authorised service network as part of the service plan.
- **Service plans** (only to be carried out by the manufacturer's authorised service network)

⚠ DANGER

Planned maintenance and repairs must be performed by the service network authorised by the manufacturer in order to keep the machine in perfect condition and compliant with technical specifications.

NOTE

Contact the authorised service network to arrange a maintenance contract suited to your truck.

⚠ CAUTION

Maintenance intervals are defined for standard use. In the following cases, it is necessary to reduce the interval between the various scheduled maintenance operations: in the event of use in dusty or salty environments, extremely high or low ambient temperatures, high levels of air humidity, particularly intense and heavy-duty uses, and specific national regulations for trucks or individual components.

Servicing and maintenance personnel training and qualification

Truck maintenance must only be carried out by qualified and authorised personnel.

The annual inspection for prevention of accidents at work must be carried out by a person qualified to do so. The person carrying out this inspection must provide their expertise and opinion without being influenced by economic factors or company internal issues. Safety is the only critical deciding factor.

The person responsible for carrying out the inspection must have sufficient knowledge and experience to be able to assess the condition of the truck and the efficiency of the protective installations in accordance with the technical regulations and principles established for checking industrial trucks.

Battery maintenance staff

Batteries must only be recharged, maintained and changed by specially trained personnel. Personnel must follow the manufacturer's instructions of the battery, the battery charger and the truck.

It is essential to follow the battery maintenance instructions and the battery charger operating instructions.

Preliminary maintenance operations

Do the following before performing maintenance operations:

- Position the truck on a flat surface and make sure that it cannot move accidentally
- Fully lower the forks
- Switch off the truck

⚠ DANGER

Before carrying out any work on the electrical system, push the emergency stop button.

For trucks with lithium (Li-ion) batteries, you must disconnect the battery connector before carrying out any work on the electrical system. Please refer to the supplementary booklet for more information on lithium batteries.

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.
– 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

Lifting the truck using a hydraulic jack

The instructions in this section for lifting the truck using a hydraulic jack permit visual checks only. The manufacturer does not authorise maintenance.
For servicing work, contact the authorised technical service centre.

⚠ DANGER

Lifting and using the jack incorrectly may cause the truck to slip and/or tip over. Possible consequences are a risk of damage to the truck and a risk of serious injury to the operator.

Do not place body parts under the truck. Keep hands and feet at a safe distance from the edge of the truck. The truck must be lifted with the utmost caution. This operation should preferably be carried out by the technical service centre.

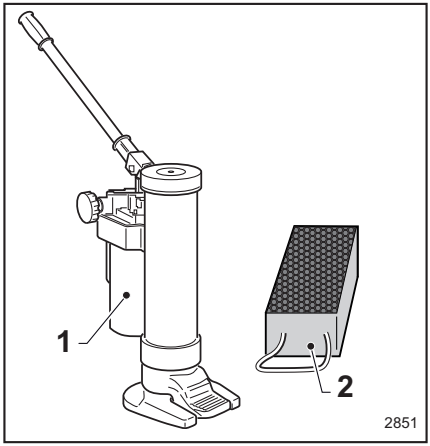
Necessary equipment

Jack **(1)** for lifting the truck:

- The hydraulic jack must be in good working order (there must be no oil leaks).
- Use a jack with a maximum capacity greater than the weight of the truck to be lifted (battery included).
- Carry out yearly safety inspections in accordance with national legislation.

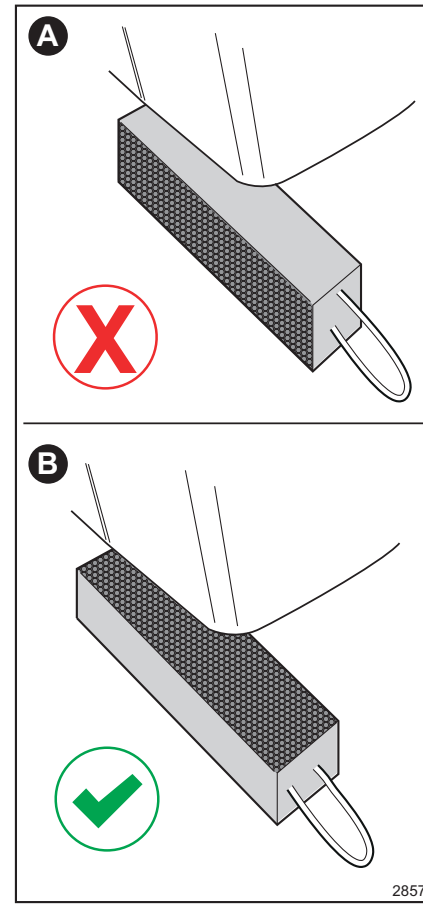
Blocks **(2)** to rest the truck on:

- Wooden blocks must not be used.
- Use only approved blocks made of composite material with a non-slip surface.
- The blocks must be in good condition and able to bear the weight of the truck.



Preliminary safety operations

- Park the truck safely in a suitable area.
- The working area where the truck is parked must be clean and not slippery (no oil, water etc.).
- Third parties must stay well clear of the dangerous work area. A safety zone must be defined before any work is carried out. This must be at least 2 metres away from the truck.
- Only lift the truck on a level surface.
- Carrying out service or maintenance work on a truck lifted by another person is strictly prohibited.
- Working under a suspended or raised load that is not adequately and securely supported on approved non-slip blocks is strictly forbidden.
- Before lifting the truck with the jack, position the truck against a wall (suitably resistant, e.g. not a plasterboard wall) to prevent the truck from slipping. Use a sheet to help protect the forks and the truck against cosmetic damage.
- Position the jack as defined (see following section). Make sure that the contact surfaces are sufficient and in good condition for lifting.
- When lifting with the jack, as soon as the wheels stop touching the ground, position the blocks at the jacking points (see following section). The blocks must be positioned to avoid the risk of the truck tipping to one side or the other. Symmetrical positioning on both sides of the truck is preferable.
- As soon as the truck has been raised to the correct height, it must rest securely on the blocks and the jack must be moved away.
- Only the truck chassis must be resting on the blocks. Resting parts of the truck that are not as stable and safe, such as rollers, wheels etc., on the blocks is forbidden.
- Under no circumstances should the blocks be placed on the smaller edge **(A)**. The blocks must be placed on the larger flat side **(B)** so that they are in contact with the non-slip surfaces. The truck must rest securely on the blocks.



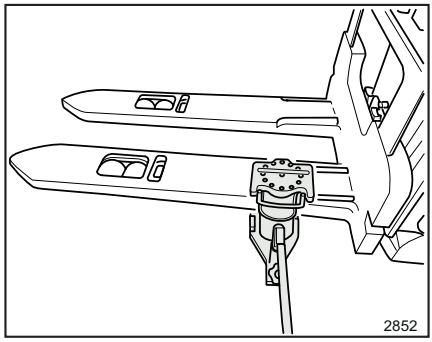
- Always check the stability of the truck when lifting it.
- Always check the stability of the truck after resting it on the blocks. The truck must rest securely on the blocks and must not move.

Procedure for lifting and securing the truck from the load-handling side

⚠ DANGER

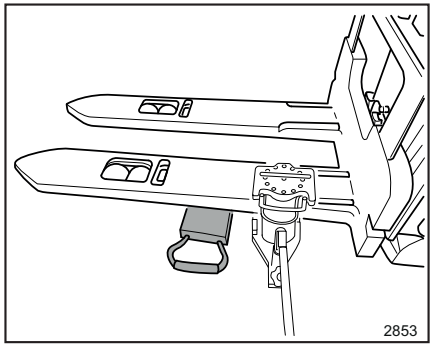
Risk of injury to the operator and damage to the truck. Lift and secure the truck from the load-handling side, strictly adhering to the preliminary safety operations described previously.

– Insert the hydraulic jack in the area shown in the illustration. ▷

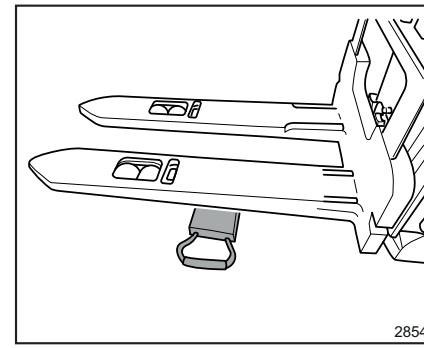


– Use the jack to lift the straddles adequately (the straddle frame must be supported, not just the forks).

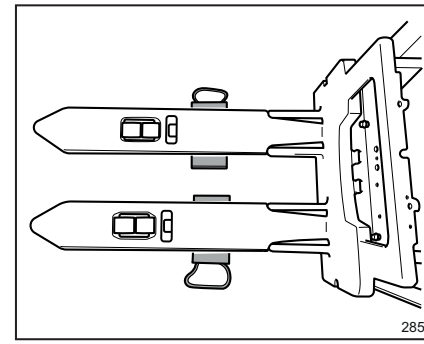
– Insert the block in the area indicated (do not place it under the load rollers). ▷



– Lower the jack so that the straddle frame is supported by the block. Move the hydraulic jack away. ▷



– Repeat the previous operations on the other side. Move the jack away. ▷



To remove the blocks:

– Insert the jack sideways under the straddles at the previous point.

– Lift until the truck rises above the block.

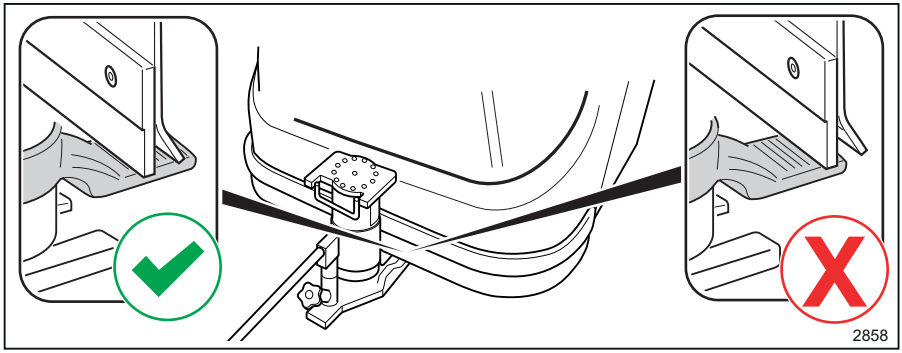
– Hold the handle and remove the block.

– Lower the jack until the load roller touches the floor.

– Move the hydraulic jack away.

– Repeat the previous operations on the other side. Move the jack away.

Procedure for lifting with a hydraulic jack and securing the truck from the driver's side



⚠ CAUTION

Before lifting and securing the driver's side chassis, you must follow the previous procedure, which explains how to lift and secure the truck from the load-handling side.

⚠ DANGER

Risk of injury to the operator and damage to the truck. Lift and secure the driver's side chassis, strictly adhering to the preliminary safety operations described previously.

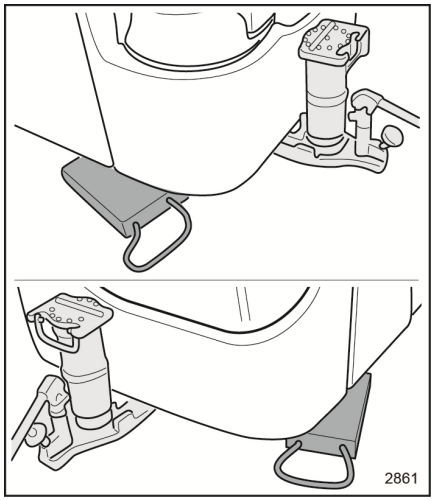
Procedure for placing blocks under the truck

– Insert the hydraulic jack in the area shown in the illustration.

– Use the jack to lift the truck adequately (the truck chassis must be supported).

– Insert two blocks, one on the right-hand side and one on the left-hand side of the truck, as shown in the illustration. Never place blocks under truck components such as pivot wheels, the drive wheel, reduction gear unit etc. Each block must be under both the drive chassis and the battery frame.
– Lower the jack so that the chassis is supported by the blocks. Move the hydraulic jack away.

▷



Procedure for removing the blocks

– Insert the jack under the chassis at the point used previously.
– Lift the truck until it rises above the two blocks.
– Hold the handle and remove the two blocks.
– Lower the jack until the drive wheel touches the floor.
– Move the hydraulic jack away.
– Remove the blocks from the truck on the load-handling side (fork side) as explained previously.

Battery replacement

Preparation

⚠ DANGER

The descriptions relating to battery replacement in this manual refer to lead batteries only.

Replacing or performing maintenance of any kind on lithium batteries is strictly prohibited. Contact the manufacturer's authorised technical service centre for more information.

Maintenance personnel

The battery may only be changed by specially trained personnel, in accordance with the manufacturer's instructions for the battery, the battery charger and the truck. The maintenance instructions for the battery must be observed.

Fire prevention precautions



⚠ WARNING

Do not smoke or use a naked flame when handling batteries. In the area designated for parking the truck to recharge the battery or battery charger, there should be no flammable materials or substances that can cause sparks within a radius of at least 2 metres. The charging area must be well ventilated. Keep a fire extinguisher at hand.

Parking the truck securely

Park the truck securely before carrying out work on the battery. The truck can only be operated when the battery cover is closed and the battery outlet is inserted. If the truck is enabled for side removal of the battery, the truck can only be operated once the battery is fixed in place properly using the battery locking system.

Battery maintenance

The covers of the battery cells must be kept dry and clean. Any leakage of battery acid must be neutralised immediately. Terminals

and soldering lugs must be clean and lightly greased with pole grease.

First installation or replacement of the truck battery

Only connect the battery specified by the manufacturer for the truck model purchased.

This applies both to the first installation of the battery (sale of the truck without a battery) and to the replacement of the battery.

⚠ DANGER

The weight and size of the battery influence the stability of the truck. The new battery must comply with the weight shown on the truck identification plate. The truck identification plate shows the maximum weight and minimum weight (kg) permitted for the battery to be installed.

⚠ CAUTION

When replacing the battery, check the type of battery on the truck (gel, lead etc.), the voltage (V) and the current delivered (Ah) and install a battery with the same specifications using the spare parts service authorised by the manufacturer. For more detailed information on the battery (V, Ah, technology), refer to the technical data chapter in the operating manual. If in doubt, consult the service network authorised by the truck manufacturer.

⚠ DANGER

The battery must be installed in accordance with technical regulations by specially trained personnel. Take care not to damage the wiring when replacing the battery. After installation, make sure to lock the battery properly inside the battery compartment using the appropriate clasps. Some trucks are equipped with battery clasps which must be adjusted precisely after the battery is installed. If in doubt, we recommend that you contact the authorised service network. Incorrect installation can cause accidents and injuries. The truck manufacturer is not liable for accidents/injuries caused by installations carried out by untrained personnel or installations not carried out in accordance with the technical regulations.

Replacing the lead battery with removal from the top ▷

⚠ DANGER

Only properly trained personnel are permitted to change the battery or perform maintenance.

– Before replacing the battery, carry out the preliminary operations for maintenance: park the truck on a flat surface, switch off the truck and then push the emergency off button.

Remove the battery cover:

- Open the battery cover (3).
- Turn the clasp (1) downwards towards (A).
- Turn the clasp (2) upwards towards (C).
- Pull the battery cover (3) upwards towards (E).
- Disconnect the socket from the battery male connector.

⚠ CAUTION

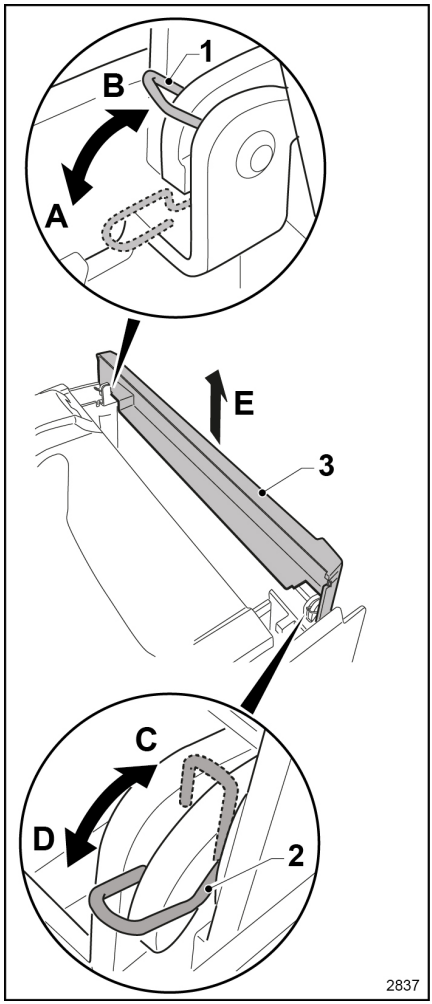
To decide which type of battery to use, check the battery characteristics provided in the "TECHNICAL DATA" chapter.



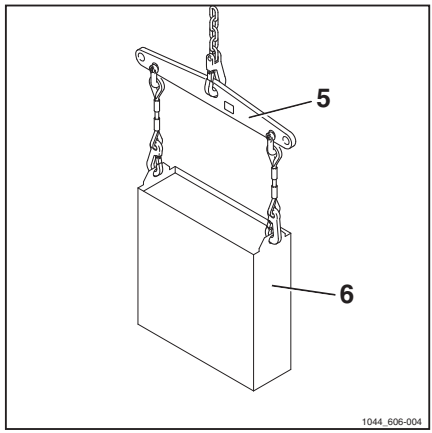
⚠ DANGER

Danger to life!

Use a crane with a suitable lifting capacity for the weight of the battery. Lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the truck. Do not stand in the danger area below suspended loads. Use NON-METALLIC rope slings. Make sure that the capacity of the slings is suitable for the battery weight. The rope slings must be pulled vertically. To prevent short circuits, it is recommended that batteries with polar terminals or unprotected connections be covered with a rubber mat.



– Attach the lifting device (5) correctly to the battery (6) (see the user manual of the lifting device). Insert the safety hooks of the sling into the appropriate battery slots. The entire sling must be suitably sized according to the weight of the battery.
– Lift the battery using a hoist that is suitably sized for the weight of the battery. Keep a sufficient safety distance between the battery and the truck to avoid damage to the truck. The hooks must be positioned so that they cannot fall on the battery cells when the lifting device is slackened.
– Replace the battery and refit it by following the steps in reverse order.



Refit the battery cover:

- Refit the battery cover (3) by following the steps in the reverse order to removal.
- Turn the clasp (1) upwards towards (B).
- Turn the clasp (2) downwards towards (D).
- Reconnect the socket to the battery male connector.
- Close the battery cover (3).

⚠ CAUTION

When closing the battery cover, take care to correctly position the cables of the battery male connector so as not to damage them.

Scheduled maintenance

Service plan

General note on maintenance operations
Maintenance work must be carried out by trained personnel. Special tools may also be required. Contact the Technical Service Center.

Annual maintenance
Preparatory tasks
Clean the truck
Error code history: read out and delete
Indicator: check the time and date
Enter the next maintenance interval
Transmission
Checking visually for any oil leakage & play on fixation
Steering
Steering: visually inspect the mounting of the tiller (play, damage)
Wheels
Visual inspection of wheels for wear, damage and foreign matter
Visually check that all wheels/rollers and the truck mast are properly tightened
Visual inspection of truck verticality and if necessary adjustment of stabilizer (castor wheels)
Brake
Checking the trucks brake functionality by executing an release of the tiller
Checking the trucks brake functionality by executing an emergency brake test
Instruments and Control
Checking for good condition of the instruments and control: defects, free/easy movement, right clearance, no clamping/blocking, pollution
Rollers
Rollers: check for any damage, foreign matter or signs of wear
Rollers: grease (if there is a lubrication nipple)
Intial Lift
Initial lift: Visual control of the kinematics, clearance, wear and tear, guidance of rollers
Grease the rods and levers (if there is a lubrication nipple)
Load lift system
Mast: visual check for function when lifting/lowering (clearance, abnormal noise)
Mast: lubricate the sliding tracks of the mast profiles
Mast: check visually that it is correctly mounted
Chassis and fork carriage: visual check for bendings, areas of abnormal wear and tear, cracks
Lift cylinders, chains, rollers and end stops: check the condition, mounting and operation

Annual maintenance
Lifting chain: Visual check, dimensional control (elongation measurement) and lubrication
Lifting chain: check presence of both nuts
Protective device: check that the anti-shearing protective guard is in place, is in good condition and is correctly mounted
Electrical system
Visual inspection of power cables, cable harness and connectors (cable protection e.g. corrugated pipe, abrasion, jamming, suficient clearance, etc.)
Battery: visual check of condition, cables and sockets, correct (engaged) fixation, damages of battery and tray
Battery: service the battery according to the manufacturer's instructions
On-board charger (if present): check that it is operating correctly: visual check of cable+plug, OBC condition (damage,dust), test charge, check that truck functions are disabled during charging
Check insulation for complete truck
Hydraulic system
Visual check of the hydraulic oil level
Checking the air breather of the hydraulic oil tank
Visual inspection of the hydraulic systems condition (pump unit, cylinders, pipe lines, hydraulic fittings, hoses) towards leakages, abrasion, jamming)
Final tasks
Carry out a functional test and a test drive
Labels: check the condition and the legibility
Attach the maintenance label

Additional for maintenance (5 years or 3000 hours)
Hydraulic system
Replacement of the hydraulic fluid and all filters in the hydraulic circuit
Checking the wear of the pump motor carbon brushes by dimensional control + cleaning (suction of dust)

Additional for maintenance (10.000 hours)
Transmission
Reduction gear unit: change the oil

ENVIRONMENT NOTE

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

Decommissioning

General Information

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

Forklift Towing

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

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

Temporary Putting Out of Commission

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

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

Checks and Inspections After a Long Period of Inactivity

⚠ DANGER

Perform the following operations before using the forklift:

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

⚠ DANGER

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

Permanent Putting Out of Commission (Demolition)

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

DANGER

Disassembly of the forklift for scrapping is extremely hazardous.

ENVIRONMENT NOTE

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

6

Technical data

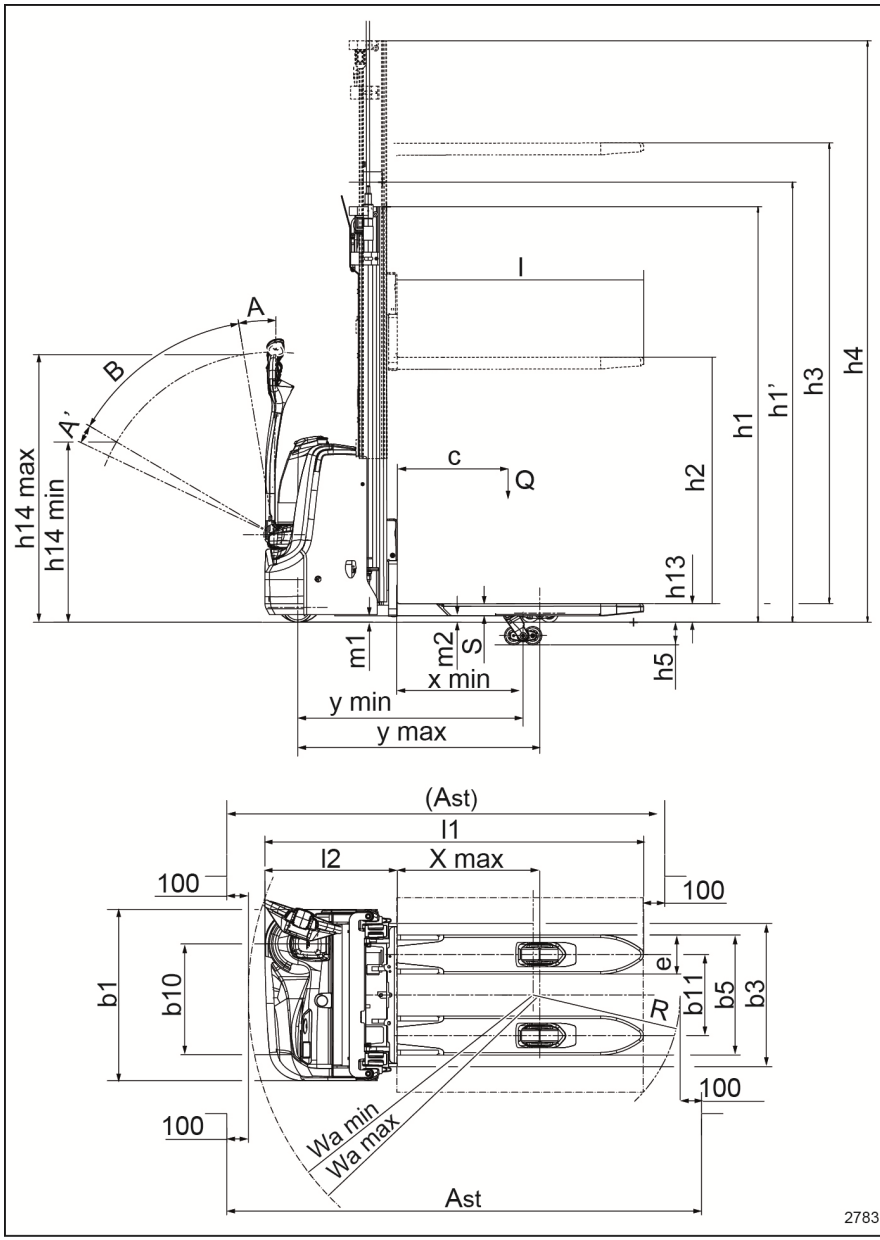
Eco-design requirements for electric motors and variable speed drives

All motors in this industrial truck are exempt from Regulation (EU) 2019/1781 because these motors do not meet the description given in Article 2 "Scope", Item (1) (a) and because of the provisions in Article 2 (2) (h) "Motors in cordless or battery-operated equipment" and Article 2 (2) (o) "Motors designed specifically for the traction of electric vehicles".

All variable speed drives in this industrial truck are exempt from Regulation (EU) 2019/1781 because these variable speed drives do not meet the description given in Article 2 "Scope", Item (1) (b).

Datasheet (VDI)

EXV 10 C datasheet (VDI)



			EXV 10 C				
1.2.1	Series		4596				
1.2.2	Mast		Simplex	TELE Compact	TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.0	1.0	1.0	1.0	1.0
1.6	Distance from load centre of gravity	c (mm)	600	600	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	715 2)	695 2)	695 2)	695 2)	639
1.9	Wheelbase	y (mm)	1123 4)				
2.1	Service weight (battery included)	(kg)	564 6)	640 6)	657 6)	675 6)	790 6)
2.2	Axle load, with front/rear load	(kg)	512 / 1052	545 / 1095	557 / 1100	570 / 1105	589 / 1201
2.3	Axle load, without front/rear load	(kg)	410 / 154	460 / 180	473 / 184	485 / 190	555 / 235
3.1	Tyres		Polyurethane				
3.2	Tyre size, front	(mm)	∅ 230 x 75				
3.3	Tyre size, rear	(mm)	1 x ∅ 85 x 85				
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54				
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2				
3.6	Tyre tread, front	b_{10} (mm)	516				
3.7	Tyre tread, rear	b_{11} (mm)	380 (7)				
4.2	Height, mast lowered	h_1 (mm)	See mast table				
4.3	Free lift	h_2 (mm)	See mast table				
4.4	Lift height	h_3 (mm)	See mast table				
4.5	Height, mast deployed	h_4 (mm)	See mast table				
4.6	Initial lift	h_5 (mm)	-				

			EXV 10 C				
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 [8]				
4.10	Height of the control arms	h_8 (mm)	80				
4.15	Fork height, lowered	h_{13} (mm)	86				
4.19	Overall length	l_1 (mm)	1718 [4] [9] [10]	1738 [4] [9] [10]	1738 [4] [9] [10]	1738 [4] [9] [10]	1794 [4] [10]
4.20	Length to the fork surface	l_2 (mm)	568 [4] [9] [10]	588 [4] [9] [10]	588 [4] [9] [10]	588 [4] [9] [10]	644 [4] [10]
4.21	Total width	b_1 (mm)	800 [11]				
4.22	Fork dimensions	s/e/l (mm)	65 [12] / 180 / 1150				55 / 182 / 1150
4.24	Fork carriage width	b_3 (mm)	533 [12]				670
4.25	Fork spread	b_5 (mm)	560 [14]				
4.31	Ground clearance, with load, below the mast	m_1 (mm)					
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30				
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2256 (2027) [4] [15] [16]	2265 (2047) [4] [15] [16]	2265 (2047) [4] [15] [16]	2265 (2047) [4] [15] [16]	2292 (2103) [4] [15]
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2221 (2077) [4] [15] [17]	2236 (2097) [4] [15] [17]	2236 (2097) [4] [15] [17]	2236 (2097) [4] [15] [17]	2281 (2153) [4] [15]
4.35	Turning radius	Wa (mm)	1392 [4] [15]				
5.1	Travel speed with/without load	(km/h)	6 / 6				
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6				
5.2	Lifting speed with/without load	(m/s)	0.13 / 0.20	0.13 / 0.25	0.18 / 0.32	0.17 / 0.29	0.17 / 0.28
5.3	Lowering speed with/without load	(m/s)	0.23 / 023	0.30 / 0.30	042 / 0.36	0.40 / 0.32	0.40 / 0.34
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	5% / 10%				
5.10	Service brake		Electromagnetic				

			EXV 10 C	
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.1	
6.2	Lift motor, nominal power at S3	(kW)	2.2 / 5%	3.0 / 11%
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no	
6.4	Battery voltage/rated capacity K_5	(V/Ah)	Compact, lithium-ion 24 V 3.0 / 3.6 kWh	
6.5	Battery weight ±5%	(kg)	21	
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.52	
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.3	
6.7	Output turnover according to VDI 2198	(t/h)	40	
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	42	
8.1	Traction controller		AC control	
10.7	Noise level at the driver's ear	(dBA)		

(1) capacity on main lift / capacity on initial lift / capacity for double pallet transport (on main lift + on load arms); the double-level version is only available for TELE and HILO masts with lift h_3 > 4000 mm and for the Triplex mast

(2) with fork carriage s=65 mm (built-in); with fork carriage s=55 mm (separate) -32 mm for simplex mast; -35 mm for TELE Compact, TELE and HILO mast

(3) wheel arms raised

(4) with 11 container; with 95 container 1.2 t +55 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(7) with fork spread b_5=560 mm; with b_5=520 mm -40 mm (not in combination with the double-level option)

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

(9) with fork carriage s=55 mm (separate) +32 mm for simplex mast; +35 mm for TELE Compact, TELE and HILO mast

(10) with passive foot protection +15 mm; with active foot protection +23 mm

(12) with built-in fork carriage; with separate fork carriage s=55 mm and b_3 = 711 mm

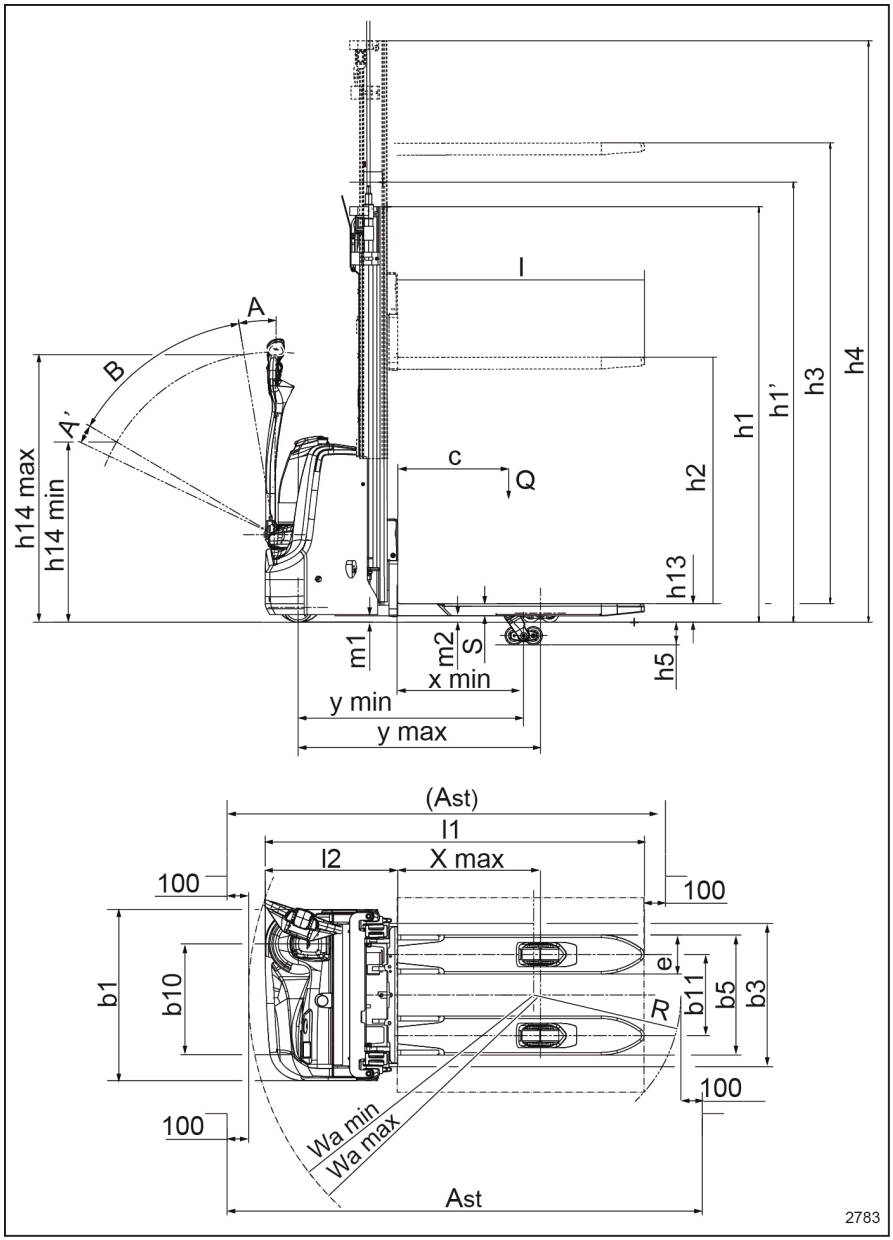
(14) another fork spread is available: b_5 = 520 mm only with 95 container and not in combination with the double-level option

(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are calculated for special cases where the swivel range R is free

(16) with fork carriage s=65 mm; with fork carriage s=55 mm +15 mm (+32 for value in brackets) for simplex mast; +17 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

(17) with fork carriage s=65 mm; with fork carriage s=55 mm +25 mm (+32 for value in brackets) for simplex mast; +28 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

EXV 10 C -I (initial lift) / - D (double stacker) datasheet (VDI)



			EXV 10 C -I (initial lift)		
1.2.1	Series		4596		
1.2.2	Mast		TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.0	1.0	1.0
1.6	Distance from load centre of gravity	c (mm)	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	785 / 707 2) 3)	785 / 707 2) 3)	730 / 652 3)
1.9	Wheelbase	y (mm)	1282 / 1204 3) 4)		
2.1	Service weight (battery included)	(kg)	724 6)	742 6)	857 6)
2.2	Axle load, with front/rear load	(kg)	596 / 1128	608 / 1134	627 / 1230
2.3	Axle load, without front/rear load	(kg)	518 / 206	530 / 212	599 / 258
3.1	Tyres		Polyurethane		
3.2	Tyre size, front	(mm)	∅ 230 x 75		
3.3	Tyre size, rear	(mm)	2 x ∅ 85 x 85		
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54		
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2		
3.6	Tyre tread, front	b_{10} (mm)	516		
3.7	Tyre tread, rear	b_{11} (mm)	380 (7)		
4.2	Height, mast lowered	h_1 (mm)	See mast table		
4.3	Free lift	h_2 (mm)	See mast table		
4.4	Lift height	h_3 (mm)	See mast table		
4.5	Height, mast deployed	h_4 (mm)	See mast table		
4.6	Initial lift	h_5 (mm)	125		
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 (8)		

			EXV 10 C -I (initial lift)		
4.10	Height of the control arms	h_8 (mm)	80		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1806 [4) 9) 10)]	1806 [4) 9) 10)]	1862 [4) 10)]
4.20	Length to the fork surface	l_2 (mm)	656 [4) 9) 10)]	656 [4) 9) 10)]	712 [4) 10)]
4.21	Total width	b_1 (mm)	800 [11)]		
4.22	Fork dimensions	s/e/l (mm)	65 [12)] / 180 / 1150		55 / 180 / 1150
4.24	Fork carriage width	b_3 (mm)	533 [12)]		670
4.25	Fork spread	b_5 (mm)	560 [14)]		
4.31	Ground clearance, with load, below the mast	m_1 (mm)			
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 / 145 [3)]		
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2335 (2110) [3) 4) 15) 16)]	2335 (2110) [3) 4) 15) 16)]	2361 (2165) [3) 4) 15)]
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2302 (2160) [3) 4) 15) 17)]	2302 (2160) [3) 4) 15) 17)]	2345 (2215) [3) 4) 15)]
4.35	Turning radius	Wa (mm)	1540 [4) 15)] / 1467 [3) 4) 15)]		
5.1	Travel speed with/without load	(km/h)	6 / 6		
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6		
5.2	Lifting speed with/without load	(m/s)	0.18 / 0.32	0.17 / 0.29	0.17 / 0.28
5.3	Lowering speed with/without load	(m/s)	0.42 / 0.36	0.40 / 0.32	0.40 / 0.34
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	5% / 10%		
5.10	Service brake		Electromagnetic		
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.1		
6.2	Lift motor, nominal power at S3	(kW)	3.0 / 11%		

			EXV 10 C -I (initial lift)
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage/rated capacity K_5	(V/Ah)	Compact, lithium-ion 24 V 3.0 / 3.6 kWh
6.5	Battery weight ±5%	(kg)	21
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.52
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.3
6.7	Output turnover according to VDI 2198	(t/h)	40
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	42
8.1	Traction controller		AC control
10.7	Noise level at the driver's ear	(dBA)	

(1) capacity on main lift / capacity on initial lift / capacity for double pallet transport (on main lift + on load arms); the double-level version is only available for TELE and HILO masts with lift h_3 > 4000 mm and for the Triplex mast

(2) with fork carriage s=65 mm (built-in); with fork carriage s=55 mm (separate) -32 mm for simplex mast; -35 mm for TELE Compact, TELE and HILO mast

(3) wheel arms raised

(4) with 11 container; with 95 container 1.2 t +55 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(7) with fork spread b_5=560 mm; with b_5=520 mm -40 mm (not in combination with the double-level option)

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

(9) with fork carriage s=55 mm (separate) +32 mm for simplex mast; +35 mm for TELE Compact, TELE and HILO mast

(10) with passive foot protection +15 mm; with active foot protection +23 mm

(11) with passive foot protection +21 mm; with active foot protection +34 mm

(12) with built-in fork carriage; with separate fork carriage s=55 mm and b_3 = 711 mm

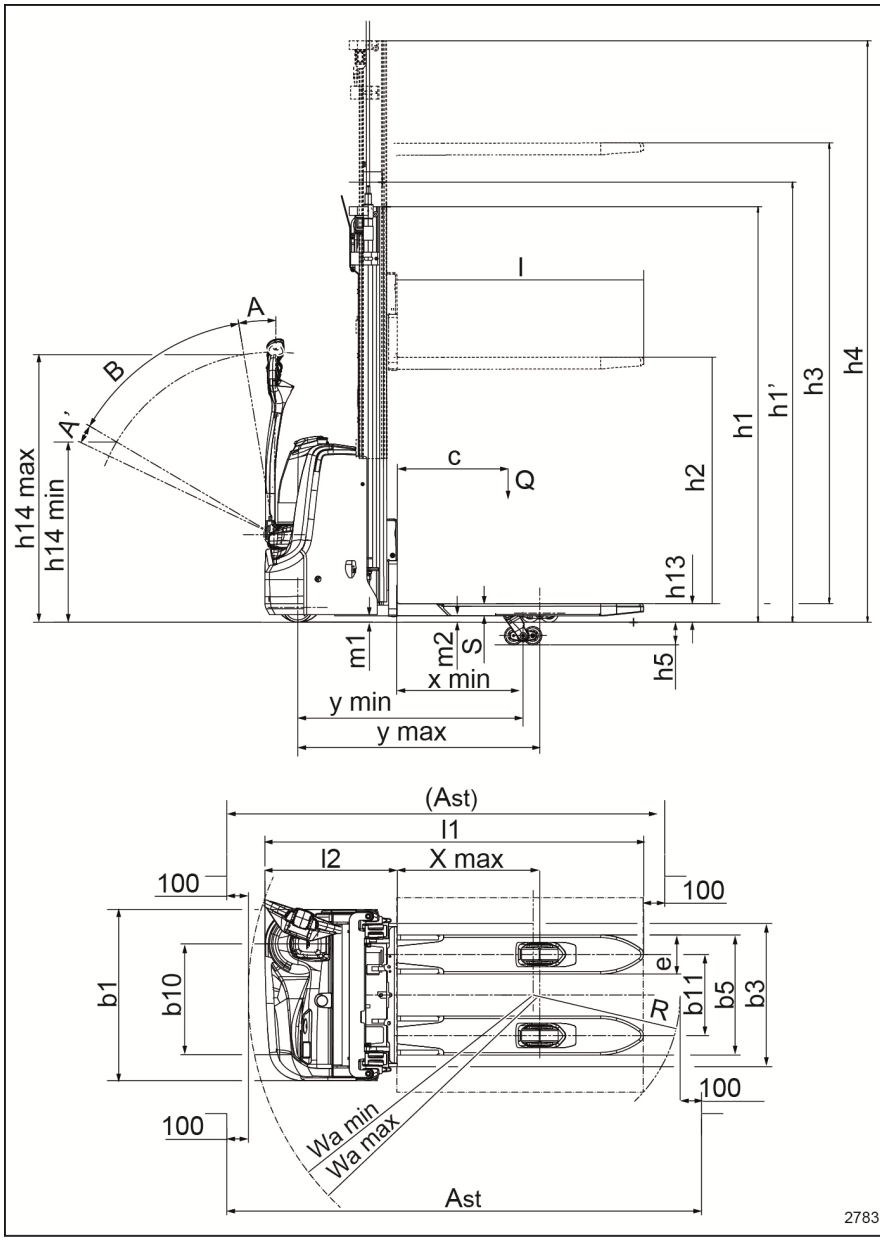
(14) another fork spread is available: b_5 = 520 mm only with 95 container and not in combination with the double-level option

(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are calculated for special cases where the swivel range R is free

(16) with fork carriage s=65 mm; with fork carriage s=55 mm +15 mm (+32 for value in brackets) for simplex mast; +17 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

(17) with fork carriage s=65 mm; with fork carriage s=55 mm +25 mm (+32 for value in brackets) for simplex mast; +28 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

EXV 12 C datasheet (VDI)



			EXV 12 C			
1.2.1	Series		4596			
1.2.2	Mast		TELE Compact	TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.2	1.2	1.2	1.2
1.6	Distance from load centre of gravity	c (mm)	600	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	695 [2)]	695 [2)]	695 [2)]	639
1.9	Wheelbase	y (mm)	1123 [4)]			
2.1	Service weight (battery included)	(kg)	704 [6)]	721 [6)]	739 [6)]	854 [6)]
2.2	Axle load, with front/rear load	(kg)	614 / 1290	626 / 1295	638 / 1301	648 / 1406
2.3	Axle load, without front/rear load	(kg)	512 / 192	525 / 196	537 / 202	607 / 247
3.1	Tyres		Polyurethane			
3.2	Tyre size, front	(mm)	∅ 230 x 75			
3.3	Tyre size, rear	(mm)	1 x ∅ 85 x 85			
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54			
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2			
3.6	Tyre tread, front	b_{10} (mm)	516			
3.7	Tyre tread, rear	b_{11} (mm)	380 [(7)]			
4.2	Height, mast lowered	h_1 (mm)	See mast table			
4.3	Free lift	h_2 (mm)	See mast table			

			EXV 12 C			
4.4	Lift height	h_3 (mm)	See mast table			
4.5	Height, mast deployed	h_4 (mm)	See mast table			
4.6	Initial lift	h_5 (mm)	-			
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 (8)			
4.10	Height of the control arms	h_8 (mm)	80			
4.15	Fork height, lowered	h_{13} (mm)	86			
4.19	Overall length	l_1 (mm)	1738 4) 9) 10)	1738 4) 9) 10)	1738 4) 9) 10)	1794 4) 10)
4.20	Length to the fork surface	l_2 (mm)	588 4) 9) 10)	588 4) 9) 10)	588 4) 9) 10)	644 4) 10)
4.21	Total width	b_1 (mm)	800 11)			
4.22	Fork dimensions	s/e/l (mm)	65 12) / 180 / 1150			55 / 182 / 1150
4.24	Fork carriage width	b_3 (mm)	533 12)			670
4.25	Fork spread	b_5 (mm)	560 14)			
4.31	Ground clearance, with load, below the mast	m_1 (mm)				
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30			
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2265 (2047) 4) 15) 16)	2265 (2047) 4) 15) 16)	2265 (2047) 4) 15) 16)	2292 (2103) 4) 15)

			EXV 12 C			
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2236 (2097) [4] [15] [17]	2236 (2097) [4] [15] [17]	2236 (2097) [4] [15] [17]	2281 (2153) [4] [15]
4.35	Turning radius	Wa (mm)	1392 [15]			
5.1	Travel speed with/without load	(km/h)	6 / 6			
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6			
5.2	Lifting speed with/without load	(m/s)	0.11 / 0.25	0.16 / 0.32	0.15 / 0.29	0.15 / 0.28
5.3	Lowering speed with/without load	(m/s)	0.30 / 0.30	0.42 / 0.36	0.40 / 0.32	0.40 / 0.34
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	5% / 10%			
5.10	Service brake		Electromagnetic			
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.1			
6.2	Lift motor, nominal power at S3	(kW)	2.2 / 5%	3.0 / 11%		
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no			
6.4	Battery voltage/rated capacity K_5	(V/Ah)	Compact, lithium-ion 24 V 3.0/3.6 kWh			
6.5	Battery weight ±5%	(kg)	21			
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.55			
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.3			
6.7	Output turnover according to VDI 2198	(t/h)	48			
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	48			
8.1	Traction controller		AC control			
10.7	Noise level at the driver's ear	(dBA)				

(2) with fork carriage s=65 mm (built-in); with fork carriage s=55 mm (separate) -32 mm for simplex mast; -35 mm for TELE Compact, TELE and HILO mast

(3) wheel arms raised

(4) with 11 container; with 95 container 1.2 t +55 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(7) with fork spread b_5=560 mm; with b_5=520 mm -40 mm (not in combination with the double-level option)

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

(9) with fork carriage s=55 mm (separate) +32 mm for simplex mast; +35 mm for TELE Compact, TELE and HILO mast

(10) with passive foot protection +15 mm; with active foot protection +23 mm

(11) with passive foot protection +21 mm; with active foot protection +34 mm

(12) with built-in fork carriage; with separate fork carriage s=55 mm and b_3 = 711 mm

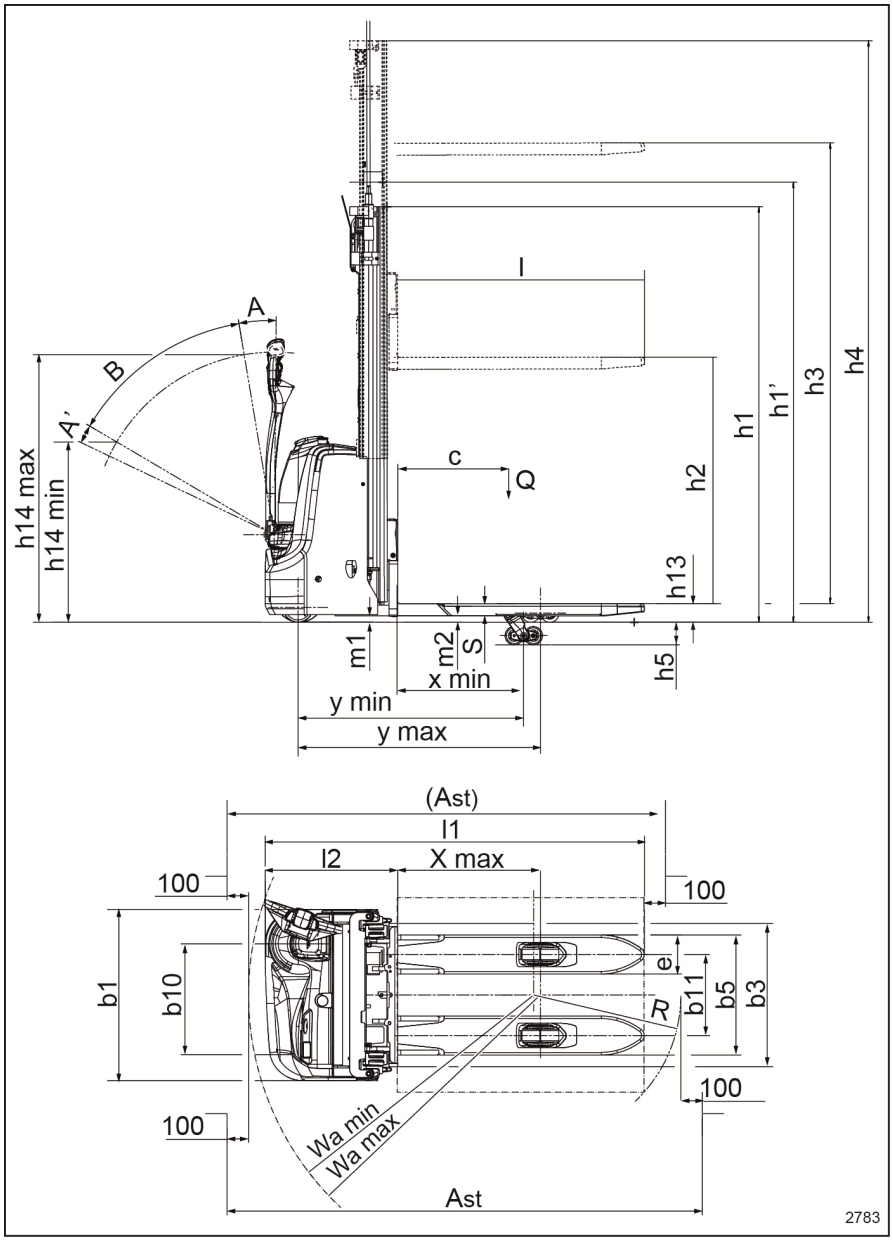
(14) another fork spread is available: b_5 = 520 mm only with 95 container and not in combination with the double-level option

(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are calculated for special cases where the swivel range R is free

(16) with fork carriage s=65 mm; with fork carriage s=55 mm +15 mm (+32 for value in brackets) for simplex mast; +17 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

(17) with fork carriage s=65 mm; with fork carriage s=55 mm +25 mm (+32 for value in brackets) for simplex mast; +28 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

EXV 12 C -I (initial lift) / -D (double stacker) datasheet (VDI)



			EXV 12 C -I (initial lift) / - D (double stacker)		
1.2.1	Series		4596		
1.2.2	Mast		TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.2 / 1.2 / 0.5 + 0.5 [1)]		
1.6	Distance from load centre of gravity	c (mm)	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	785 / 707 [2) 3)]	785 / 707 [2) 3)]	730 / 652 [3)]
1.9	Wheelbase	y (mm)	1282 / 1204 [3) 4)]		
2.1	Service weight (battery included)	(kg)	783 [6)]	802 [6)]	917 [6)]
2.2	Axle load, with front/rear load	(kg)	659 / 1324	671 / 1331	682 / 1435
2.3	Axle load, without front/rear load	(kg)	564 / 219	577 / 255	646 / 271
3.1	Tyres		Polyurethane		
3.2	Tyre size, front	(mm)	∅ 230 x 75		
3.3	Tyre size, rear	(mm)	2 x ∅ 85 x 85		
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54		
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2		
3.6	Tyre tread, front	b_{10} (mm)	516		
3.7	Tyre tread, rear	b_{11} (mm)	380 [(7)]		
4.2	Height, mast lowered	h_1 (mm)	See mast table		
4.3	Free lift	h_2 (mm)	See mast table		

			EXV 12 C -I (initial lift) / - D (double stacker)		
4.4	Lift height	h_3 (mm)	See mast table		
4.5	Height, mast deployed	h_4 (mm)	See mast table		
4.6	Initial lift	h_5 (mm)	125		
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 [8]		
4.10	Height of the control arms	h_8 (mm)	80		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1806 [4) 9) 10)]	1806 [4) 9) 10)]	1862 [4) 10)]
4.20	Length to the fork surface	l_2 (mm)	656 [4) 9) 10)]	656 [4) 9) 10)]	712 [4) 10)]
4.21	Total width	b_1 (mm)	800 [11)]		
4.22	Fork dimensions	s/e/l (mm)	65 [12)] / 180 / 1150		55 / 180 / 1150
4.24	Fork carriage width	b_3 (mm)	533 [12)]		670
4.25	Fork spread	b_5 (mm)	560 [14)]		
4.31	Ground clearance, with load, below the mast	m_1 (mm)			
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 / 145 [3)]		

			EXV 12 C -I (initial lift) / - D (double stacker)		
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2335 (2110) 3) 4) 15) 16)	2335 (2110) 3) 4) 15) 16)	2361 (2165) 3) 4) 15)
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2302 (2160) 3) 4) 15) 17)	2302 (2160) 3) 4) 15) 17)	2345 (2215) 3) 4) 15)
4.35	Turning radius	Wa (mm)	1540 4) 15) / 1467 3) 4) 15)		
5.1	Travel speed with/without load	(km/h)	6 / 6		
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6		
5.2	Lifting speed with/without load	(m/s)	0.16 / 0.32	0.15 / 0.29	0.15 / 0.28
5.3	Lowering speed with/without load	(m/s)	0.42 / 0.36	0.40 / 0.32	0.40 / 0.34
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	8% / 15%		
5.10	Service brake		Electromagnetic		
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.1		
6.2	Lift motor, nominal power at S3	(kW)	3.0 / 11%		
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no		
6.4	Battery voltage/rated capacity K_5	(V/Ah)	Compact, lithium-ion 24 V 3.0 / 3.6 kWh		
6.5	Battery weight ±5%	(kg)	21		
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.55		
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.3		
6.7	Output turnover according to VDI 2198	(t/h)	48		
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	48		
8.1	Traction controller		AC control		
10.7	Noise level at the driver's ear	(dBA)			

(1) capacity on main lift / capacity on initial lift / capacity for double pallet transport (on main lift + on load arms); the double-level version is only available for TELE and HILO masts with lift h_3 > 4000 mm and for the Triplex mast

(2) with fork carriage s=65 mm (built-in); with fork carriage s=55 mm (separate) -32 mm for simplex mast; -35 mm for TELE Compact, TELE and HILO mast

(3) wheel arms raised

(4) with 11 container; with 95 container 1.2 t +55 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(7) with fork spread b_5=560 mm; with b_5=520 mm -40 mm (not in combination with the double-level option)

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

(9) with fork carriage s=55 mm (separate) +32 mm for simplex mast; +35 mm for TELE Compact, TELE and HILO mast

(10) with passive foot protection +15 mm; with active foot protection +23 mm

(11) with passive foot protection +21 mm; with active foot protection +34 mm

(12) with built-in fork carriage; with separate fork carriage s=55 mm and b_3 = 711 mm

(14) another fork spread is available: b_5 = 520 mm only with 95 container and not in combination with the double-level option

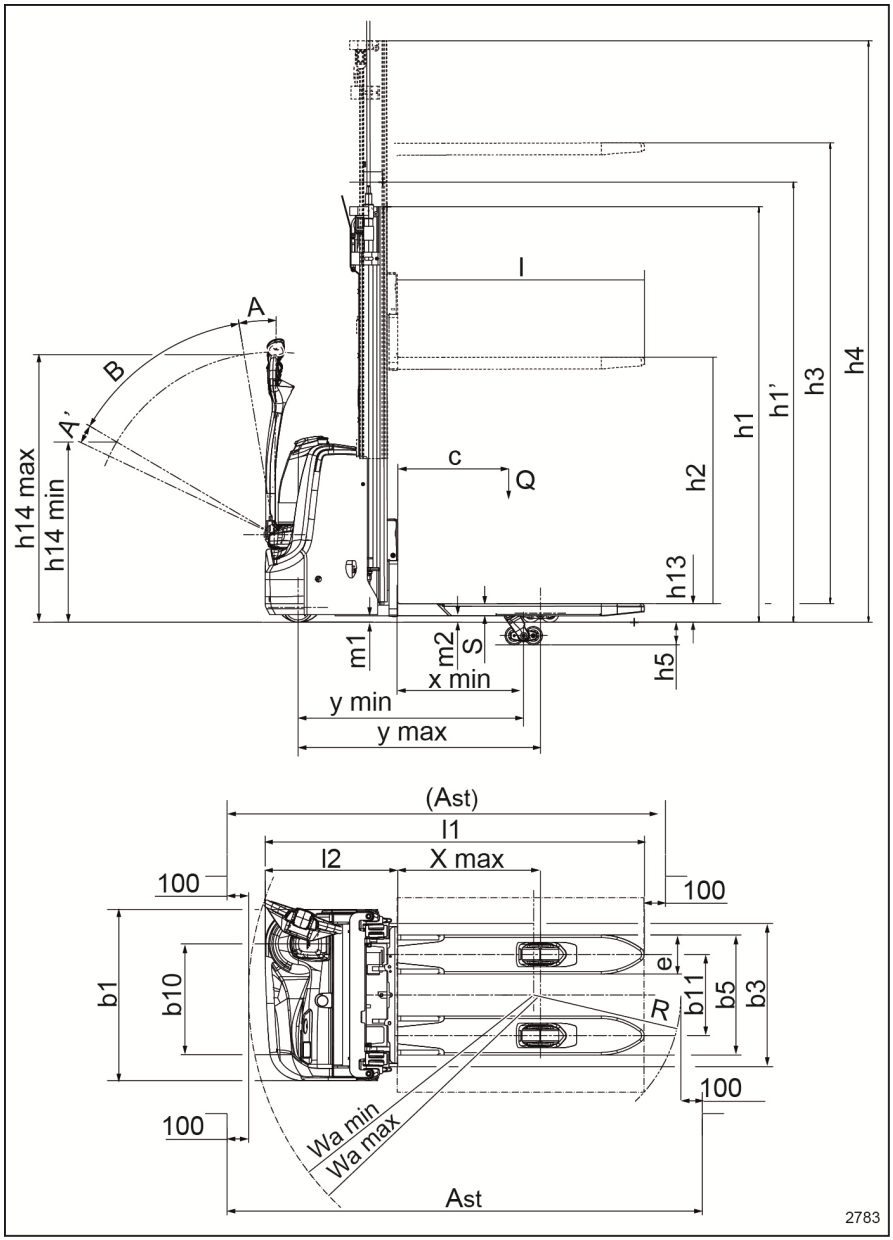
(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are calculated for special cases where the swivel range R is free

(16) with fork carriage s=65 mm; with fork carriage s=55 mm +15 mm (+32 for value in brackets) for simplex mast; +17 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

(17) with fork carriage s=65 mm; with fork carriage s=55 mm +25 mm (+32 for value in

brackets) for simplex mast; +28 mm (+35 for value in brackets) for TELE Compact, TELE and HILO mast

EXV 14 C datasheet (VDI)



			EXV 14 C		
1.2.1	Series		4596		
1.2.2	Mast		TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.4	1.4	1.4
1.6	Distance from load centre of gravity	c (mm)	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	721	721	696
1.9	Wheelbase	y (mm)	1237 [5]		
2.1	Service weight (battery included)	(kg)	977 [6]	993 [6]	1111 [6]
2.2	Axle load, with front/rear load	(kg)	837 / 1540	847 / 1546	893 / 1618
2.3	Axle load, without front/rear load	(kg)	700 / 277	710 / 283	785 / 326
3.1	Tyres		Polyurethane		
3.2	Tyre size, front	(mm)	∅ 230 x 75		
3.3	Tyre size, rear	(mm)	1 x ∅ 85 x 85		
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54		
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2		
3.6	Tyre tread, front	b_{10} (mm)	516		
3.7	Tyre tread, rear	b_{11} (mm)	380		
4.2	Height, mast lowered	h_1 (mm)	See mast table		
4.3	Free lift	h_2 (mm)	See mast table		

			EXV 14 C		
4.4	Lift height	h_3 (mm)	See mast table		
4.5	Height, mast deployed	h_4 (mm)	See mast table		
4.6	Initial lift	h_5 (mm)	-		
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 [8]		
4.10	Height of the control arms	h_8 (mm)	80		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1826 [5) 10)]	1826 [5) 10)]	1851 [5) 10)]
4.20	Length to the fork surface	l_2 (mm)	676 [5) 10)]	676 [5) 10)]	701 [5) 10)]
4.21	Total width	b_1 (mm)	800 [11)]		
4.22	Fork dimensions	s/e/l (mm)	55 [13)] / 182 / 1150		
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Fork spread	b_5 (mm)	560		
4.31	Ground clearance, with load, below the mast	m_1 (mm)			
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30		

			EXV 14 C		
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2360 (2127) [5] [15]	2360 (2127) [5] [15]	2371 (2152) [5] [15]
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2322 (2177) [5] [15]	2322 (2177) [5] [15]	2341 (2202) [5] [15]
4.35	Turning radius	Wa (mm)	1498 [5] [15]		
5.1	Travel speed with/without load	(km/h)	6 / 6		
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6		
5.2	Lifting speed with/without load	(m/s)	0.14 / 0.27	0.14 / 0.25	0.14 / 0.25
5.3	Lowering speed with/without load	(m/s)	0.42 / 0.27	0.40 / 0.22	0.40 / 0.26
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	5% / 10%		
5.10	Service brake		Electromagnetic		
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.3		
6.2	Lift motor, nominal power at S3	(kW)	3.0 / 11%		
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no		
6.4	Battery voltage/rated capacity K_5	(V/Ah)	24 V 2PzS-B 200 Ah		
6.5	Battery weight ±5%	(kg)	195		
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.69		
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.4		
6.7	Output turnover according to VDI 2198	(t/h)	53		
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	45		
8.1	Traction controller		AC control		
10.7	Noise level at the driver's ear	(dBA)			

(5) with 95 container 1.6 t; with container 112 +65 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

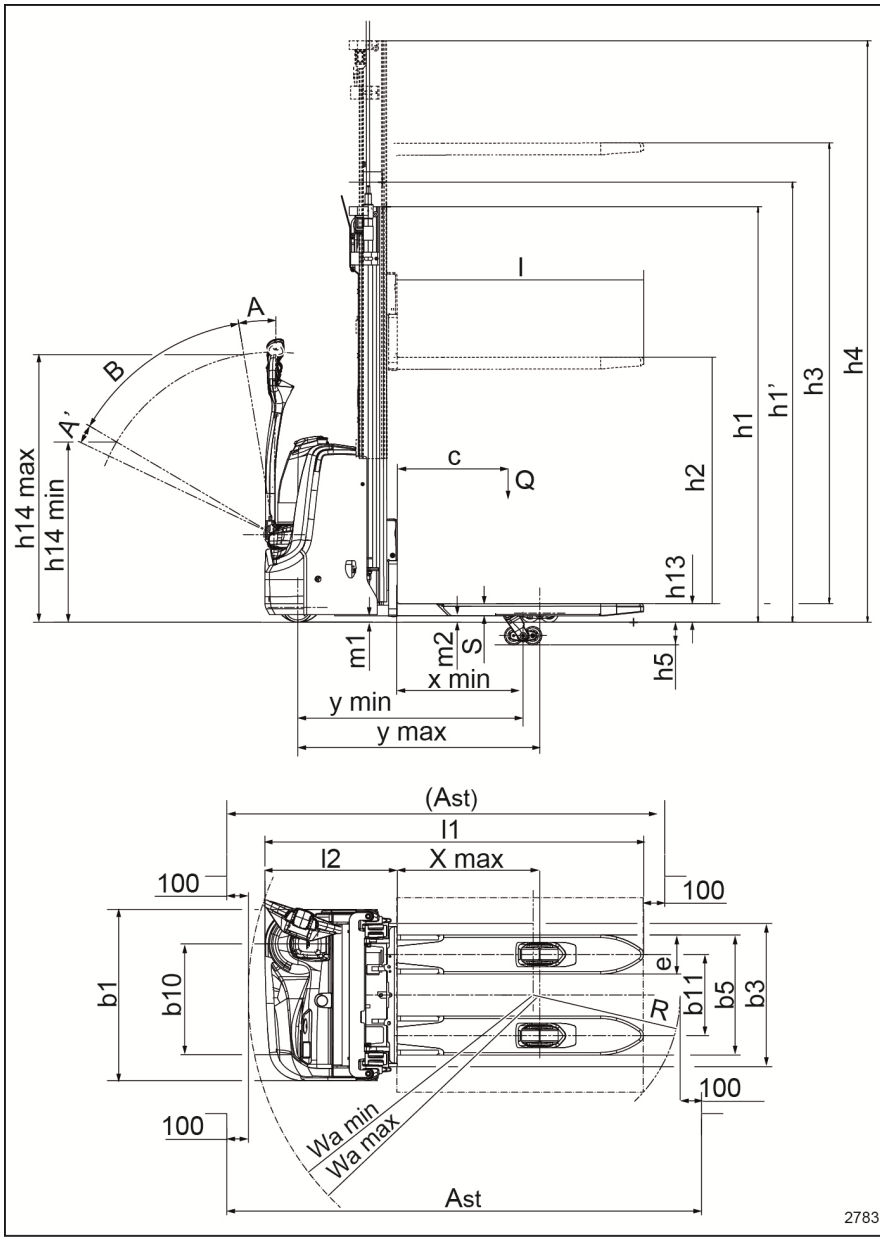
(10) with passive foot protection +15 mm; with active foot protection +23 mm

(11) with passive foot protection +21 mm; with active foot protection +34 mm

(13) with fork carriage with non-bending forks s=71 mm

(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are calculated for special cases where the swivel range R is free

EXV 14 C -I (initial lift) / -D (double stacker) datasheet (VDI)



			EXV 14 C -I (initial lift) / -D (double stacker)		
1.2.1	Series		4596		
1.2.2	Mast		TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.4 / 1.6 / 0.6 + 0.8 [1)]	1.4 / 1.6 / 0.6 + 0.8 [1)]	1.4 / 1.6 / 0.6 + 0.8 [1)]
1.6	Distance from load centre of gravity	c (mm)	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	733 / 688 [3)]	733 / 688 [3)]	707 / 662 [3)]
1.9	Wheelbase	y (mm)	1317 / 1272 [3) 5)]		
2.1	Service weight (battery included)	(kg)	1023 [6)]	1039 [6)]	1157 [6)]
2.2	Axle load, with front/rear load	(kg)	791 / 1632	800 / 1639	842 / 1715
2.3	Axle load, without front/rear load	(kg)	713 / 310	722 / 316	793 / 364
3.1	Tyres		Polyurethane		
3.2	Tyre size, front	(mm)	∅ 230 x 75		
3.3	Tyre size, rear	(mm)	2 x ∅ 85 x 85		
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54		
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2		
3.6	Tyre tread, front	b_{10} (mm)	516		
3.7	Tyre tread, rear	b_{11} (mm)	380		
4.2	Height, mast lowered	h_1 (mm)	See mast table		
4.3	Free lift	h_2 (mm)	See mast table		

			EXV 14 C -I (initial lift) / -D (double stacker)		
4.4	Lift height	h_3 (mm)	See mast table		
4.5	Height, mast deployed	h_4 (mm)	See mast table		
4.6	Initial lift	h_5 (mm)	110		
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 [8]		
4.10	Height of the control arms	h_8 (mm)	80		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1894 [5] [10]	1894 [5] [10]	1919 [5] [10]
4.20	Length to the fork surface	l_2 (mm)	744 [5] [10]	744 [5] [10]	769 [5] [10]
4.21	Total width	b_1 (mm)	800 [11]		
4.22	Fork dimensions	s/e/l (mm)	55 [13] / 182 / 1150		
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Fork spread	b_5 (mm)	560		
4.31	Ground clearance, with load, below the mast	m_1 (mm)			
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 / 130 [3]		

			EXV 14 C -I (initial lift) / -D (double stacker)		
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2406 (2192) 3) 5) 15)	2406 (2192) 3) 5) 15)	2419 (2218) 3) 5) 15)
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2380 (2242) 3) 5) 15)	2380 (2242) 3) 5) 15)	2400 (2268) 3) 5) 15)
4.35	Turning radius	Wa (mm)	1573 5) 15) / 1530 3) 5) 15)		
5.1	Travel speed with/without load	(km/h)	6 / 6		
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6		
5.2	Lifting speed with/without load	(m/s)	0.14 / 0.27	0.14 / 0.25	0.14 / 0.25
5.3	Lowering speed with/without load	(m/s)	0.42 / 0.27	0.40 / 0.22	0.40 / 0.26
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	7% / 15%		
5.10	Service brake		Electromagnetic		
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.3		
6.2	Lift motor, nominal power at S3	(kW)	3.0 / 11%		
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no		
6.4	Battery voltage/rated capacity K_5	(V/Ah)	24 V 2PzS-B 200 Ah		
6.5	Battery weight ±5%	(kg)	195		
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.69		
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.4		
6.7	Output turnover according to VDI 2198	(t/h)	53		
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	45		
8.1	Traction controller		AC control		
10.7	Noise level at the driver's ear	(dBA)			

(1) capacity on main lift / capacity on initial lift / capacity for double pallet transport (on main lift + on load arms); the double-level version is only available for TELE and HILO masts with lift h_3 > 4000 mm and for the Triplex mast

(3) wheel arms raised

(5) with 95 container 1.6 t; with container 112 +65 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

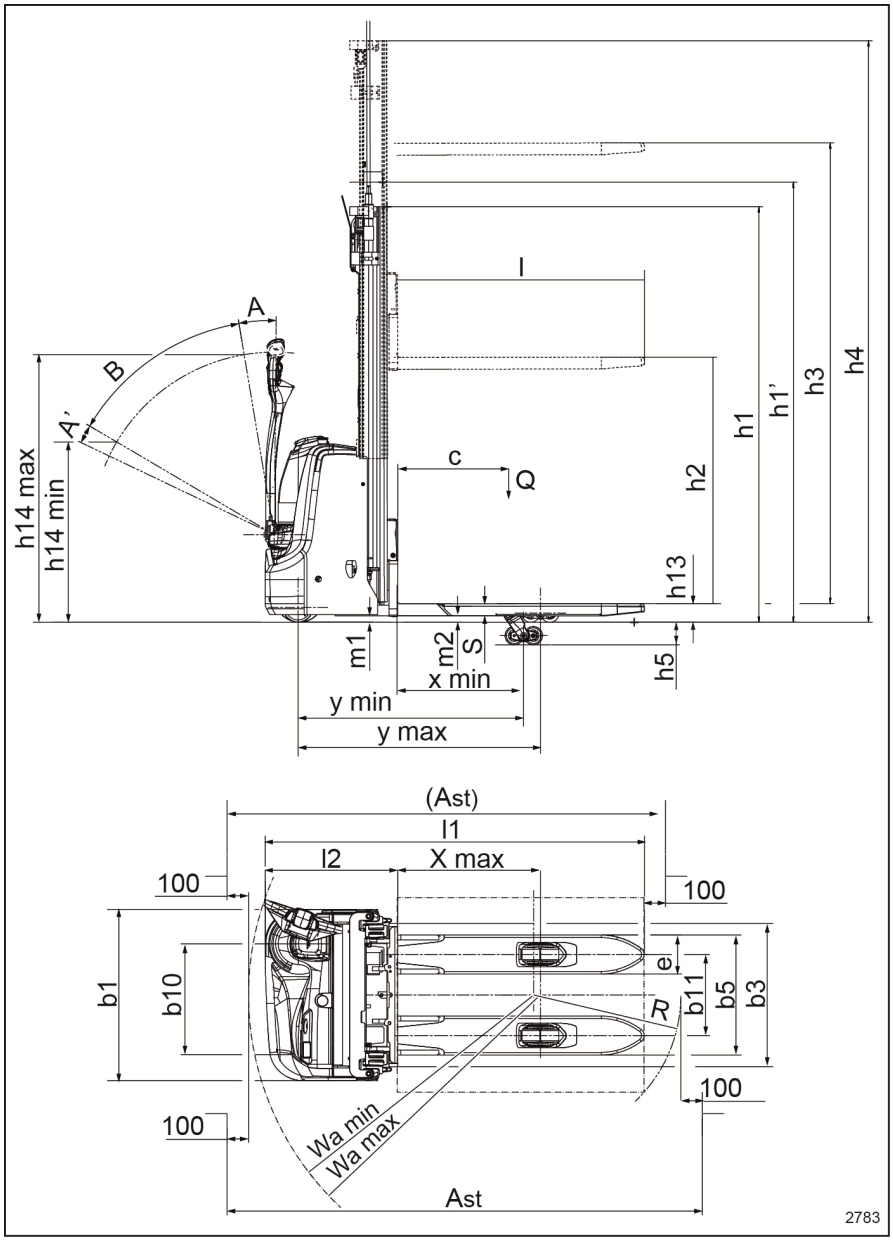
(10) with passive foot protection +15 mm; with active foot protection +23 mm

(11) with passive foot protection +21 mm; with active foot protection +34 mm

(13) with fork carriage with non-bending forks s=71 mm

(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are calculated for special cases where the swivel range R is free

EXV 16 C datasheet (VDI)



			EXV 16 C		
1.2.1	Series		4596		
1.2.2	Mast		TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.6	1.6	1.6
1.6	Distance from load centre of gravity	c (mm)	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	721	721	696
1.9	Wheelbase	y (mm)	1237 [5]		
2.1	Service weight (battery included)	(kg)	977 [6]	993 [6]	1111 [6]
2.2	Axle load, with front/rear load	(kg)	856 / 1721	866 / 1727	908 / 1803
2.3	Axle load, without front/rear load	(kg)	700 / 277	710 / 283	785 / 326
3.1	Tyres		Polyurethane		
3.2	Tyre size, front	(mm)	∅ 230 x 75		
3.3	Tyre size, rear	(mm)	1 x ∅ 85 x 85		
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54		
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2		
3.6	Tyre tread, front	b_{10} (mm)	516		
3.7	Tyre tread, rear	b_{11} (mm)	380		
4.2	Height, mast lowered	h_1 (mm)	See mast table		
4.3	Free lift	h_2 (mm)	See mast table		

			EXV 16 C		
4.4	Lift height	h_3 (mm)	See mast table		
4.5	Height, mast deployed	h_4 (mm)	See mast table		
4.6	Initial lift	h_5 (mm)	-		
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 [8]		
4.10	Height of the control arms	h_8 (mm)	80		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1826 [5] [10]	1826 [5] [10]	1851 [5] [10]
4.20	Length to the fork surface	l_2 (mm)	676 [5] [10]	676 [5] [10]	701 [5] [10]
4.21	Total width	b_1 (mm)	800 [11]		
4.22	Fork dimensions	s/e/l (mm)	55 [13] / 182 / 1150		
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Fork spread	b_5 (mm)	560		
4.31	Ground clearance, with load, below the mast	m_1 (mm)			
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30		

			EXV 16 C		
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2360 (2127) [5) 15)]	2360 (2127) [5) 15)]	2371 (2152) [5) 15)]
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2322 (2177) [5) 15)]	2322 (2177) [5) 15)]	2341 (2202) [5) 15)]
4.35	Turning radius	Wa (mm)	1498 [5) 15)]		
5.1	Travel speed with/without load	(km/h)	6 / 6		
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6		
5.2	Lifting speed with/without load	(m/s)	0.13 / 0.27	0.13 / 0.25	0.13 / 0.25
5.3	Lowering speed with/without load	(m/s)	0.42 / 0.27	0.40 / 0.22	0.40 / 26
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	5% / 10%		
5.10	Service brake		Electromagnetic		
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.3		
6.2	Lift motor, nominal power at S3	(kW)	3.0 / 11%		
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no		
6.4	Battery voltage/rated capacity K_5	(V/Ah)	24 V 2PzS-B 200 Ah		
6.5	Battery weight ±5%	(kg)	195		
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.74		
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.4		
6.7	Output turnover according to VDI 2198	(t/h)	60		
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	49		
8.1	Traction controller		AC control		
10.7	Noise level at the driver's ear	(dBA)			

(5) with 95 container 1.6 t; with container 112 +65 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

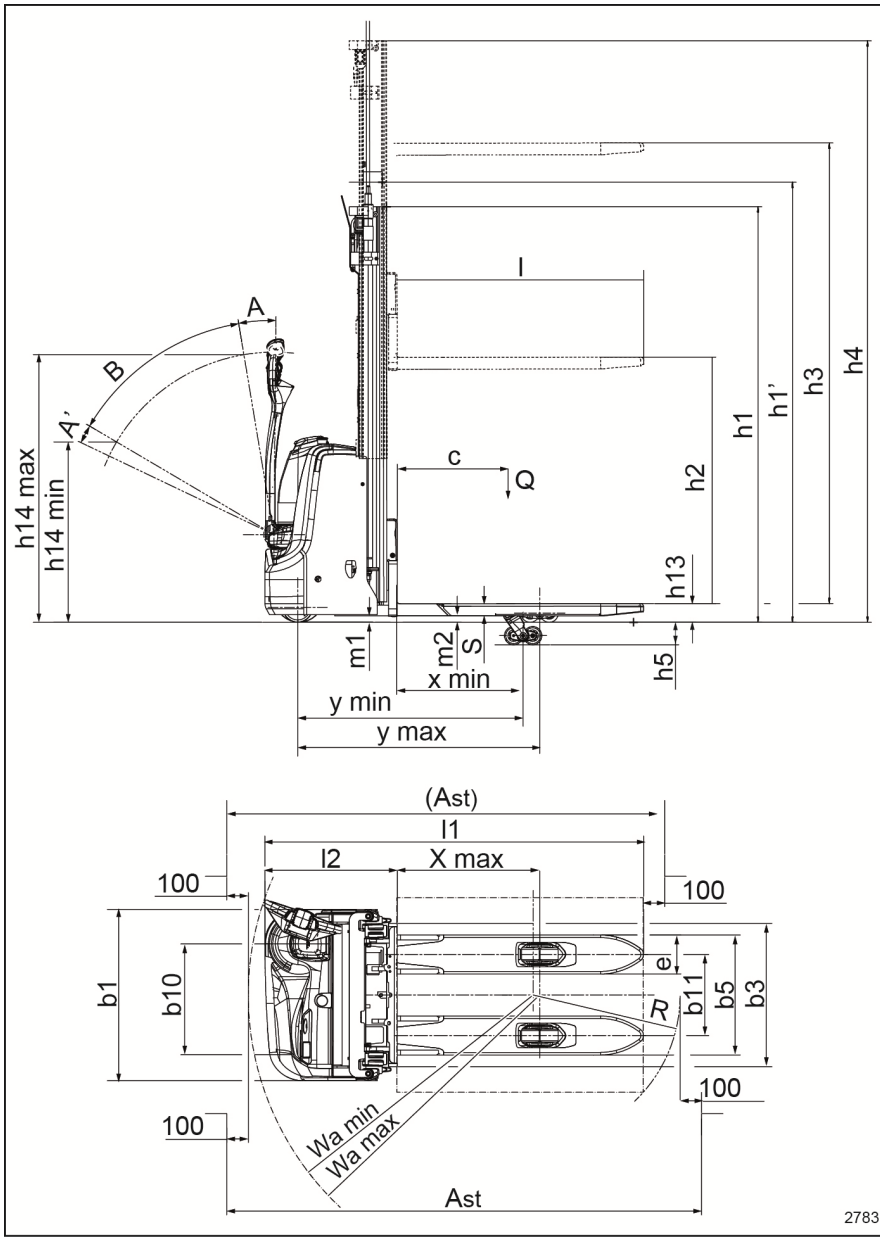
(10) with passive foot protection +15 mm; with active foot protection +23 mm

(11) with passive foot protection +21 mm; with active foot protection +34 mm

(13) with fork carriage with non-bending forks s=71 mm

(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are calculated for special cases where the swivel range R is free

EXV 16 C -I (initial lift) / -D (double stacker) datasheet (VDI)



			EXV 16 C -I (initial lift) / -D (double stacker)		
1.2.1	Series		4596		
1.2.2	Mast		TELE	HILO	Triplex
1.3	Transmission		Electric	Electric	Electric
1.4	Operator type		Pedestrian mode	Pedestrian mode	Pedestrian mode
1.5	Nominal capacity / nominal load	Q (t)	1.6 / 1.6 / 0.6 + 0.8 [1]	1.6 / 1.6 / 0.6 + 0.8 [1]	1.6 / 1.6 / 0.6 + 0.8 [1]
1.6	Distance from load centre of gravity	c (mm)	600	600	600
1.8	Load distance, from the centre of the axle to the fork	x (mm)	733 / 688 [3]	733 / 688 [3]	707 / 662 [3]
1.9	Wheelbase	y (mm)	1317 / 1272 [3] [5]		
2.1	Service weight (battery included)	(kg)	1023 [6]	1039 [6]	1157 [6]
2.2	Axle load, with front/rear load	(kg)	804 / 1819	814 / 1825	851 / 1906
2.3	Axle load, without front/rear load	(kg)	713 / 310	722 / 316	793 / 364
3.1	Tyres		Polyurethane		
3.2	Tyre size, front	(mm)	∅ 230 x 75		
3.3	Tyre size, rear	(mm)	2 x ∅ 85 x 85		
3.4	Additional wheels (dimensions)	(mm)	∅ 140 x 54		
3.5	Wheels, number front/rear (x = driven wheels)		1 x -1 / 2		
3.6	Tyre tread, front	b_{10} (mm)	516		
3.7	Tyre tread, rear	b_{11} (mm)	380		
4.2	Height, mast lowered	h_1 (mm)	See mast table		
4.3	Free lift	h_2 (mm)	See mast table		
4.4	Lift height	h_3 (mm)	See mast table		
4.5	Height, mast deployed	h_4 (mm)	See mast table		
4.6	Initial lift	h_5 (mm)	110		

			EXV 16 C -I (initial lift) / -D (double stacker)		
4.9	Tow bar height in driving position min./max.	h_{14} (mm)	841 / 1249 [8]		
4.10	Height of the control arms	h_8 (mm)	80		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1894 [5] [10]	1894 [5] [10]	1919 [5] [10]
4.20	Length to the fork surface	l_2 (mm)	744 [5] [10]	744 [5] [10]	769 [5] [10]
4.21	Total width	b_1 (mm)	800 [11]		
4.22	Fork dimensions	s/e/l (mm)	55 [13] / 182 / 1150		
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Fork spread	b_5 (mm)	560		
4.31	Ground clearance, with load, below the mast	m_1 (mm)			
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 / 130 [3]		
4.34.1	Aisle width for pallet 1000 x 1200 crosswise	Ast (mm)	2406 (2192) [3] [5] [15]	2406 (2192) [3] [5] [15]	2419 (2218) [3] [5] [15]
4.34.2	Aisle width for pallet 800 x 1200 lengthwise	Ast (mm)	2380 (2242) [3] [5] [15]	2380 (2242) [3] [5] [15]	2400 (2268) [3] [5] [15]
4.35	Turning radius	Wa (mm)	1573 [5] [15] / 1530 [3] [5] [15]		
5.1	Travel speed with/without load	(km/h)	6 / 6		
5.1.1	Driving speed with/without load, backwards	(km/h)	6 / 6		
5.2	Lifting speed with/without load	(m/s)	0.13 / 0.27	0.13 / 0.25	0.13 / 0.25
5.3	Lowering speed with/without load	(m/s)	0.42 / 0.27	0.40 / 0.22	0.40 / 0.26
5.8	Maximum gradeability S2 = 5 min. with/without load	(%)	7% / 15%		
5.10	Service brake		Electromagnetic		

			EXV 16 C -I (initial lift) / -D (double stacker)
6.1	Traction motor, rating S2 = 60 min.	(kW)	1.3
6.2	Lift motor, nominal power at S3	(kW)	3.0 / 11%
6.3	Battery complies with DIN 43531/35/36; A, B, C, no		no
6.4	Battery voltage/rated capacity K_5	(V/Ah)	24 V 2PzS-B 200 Ah
6.5	Battery weight ±5%	(kg)	195
6.6	Energy consumption according to DIN EN 16796	(kWh/h)	0.74
6.6.1	Equivalent CO_2 emissions	(kg/h)	0.4
6.7	Output turnover according to VDI 2198	(t/h)	60
6.8	Turnover efficiency according to VDI 2198	(t/kWh)	49
8.1	Traction controller		AC control
10.7	Noise level at the driver's ear	(dBA)	

(1) capacity on main lift / capacity on initial lift / capacity for double pallet transport (on main lift + on load arms); the double-level version is only available for TELE and HILO masts with lift h_3 > 4000 mm and for the Triplex mast

(3) wheel arms raised

(5) with 95 container 1.6 t; with container 112 +65 mm

(6) with mast 1.0-1.2 t: h_1=1940 mm and 11 container; with mast 1.4-1.6 t: h_1=1915 mm and 95 container 1.6 t

(8) from the axis of rotation of the throttle; in creep speed position +11 mm

(10) with passive foot protection +15 mm; with active foot protection +23 mm

(11) with passive foot protection +21 mm; with active foot protection +34 mm

(13) with fork carriage with non-bending forks s=71 mm

(15) with tiller in upper working position (10°) and turned fully clockwise; in creep speed position -13 mm Ast values in brackets are

calculated for special cases where the swivel range R is free

MAST TYPE 1.0 / 1.2 t

MAST TYPE 1.0 / 1.2 t		SIMPLEX			TELE Compact			
Lowered mast height	h_1 (mm)	1140	1940	2390	1490	1690	1940	2140
Height of mast with free lift 150 mm	h_1' (mm)	-	-	-	1565	1765	2015	2215
Free lift	h_2 (mm)	662 b)	1462 b)	1912 b)	150	150	150	150
Lift	h_3 (mm)	662	1462	1912	2024	2424	2924	3324
Height of mast, extended	h_4 (mm)	1140 c)	1940 c)	1940 c)	2502 c)	2902 c)	3402 c)	3827 c)

(a) only mast heights compatible with the optional truck version —D (double level)

(b) with fork carriage s=65 mm (built-in); with fork carriage s=65 mm (built-in) and load backrest 800 mm on forks: -404 mm; with fork carriage s=60 mm (separate) -4 mm; with fork carriage s=60 mm (separate) and load backrest 1000 mm on forks: -562 mm

(c) with fork carriage s=65 mm (built-in); with fork carriage s=65 mm (built-in) and load backrest 800 mm on forks: +404 mm; with fork carriage s=60 mm (separate) +4 mm; with fork carriage s=60 mm (separate) and load backrest 1000 mm on forks: +562 mm

MAST TYPE 1.0 / 1.2 t		TELE					
Lowered mast height	h_1 (mm)	1490	1690	1940	2140	2390	2590 a)
Height of mast with free lift 150 mm	h_1' (mm)	1565	1765	2015	2215	2465	2665
Free lift	h_2 (mm)	150	150	150	150	150	150

Lift	h_3 (mm)	2024	2424	2924	3324	3824	4224
Height of mast, extended	h_4 (mm)	2502 c)	2902 c)	3402 c)	3827 c)	4302 c)	4702 c)

(a) only mast heights compatible with the optional truck version —D (double level)

(c) with fork carriage s=65 mm (built-in); with fork carriage s=65 mm (built-in) and load backrest 800 mm on forks: +404 mm; with fork carriage s=60 mm (separate) +4 mm; with fork carriage s=60 mm (separate) and load backrest 1000 mm on forks: +562 mm

MAST TYPE 1.0 / 1.2 t		**HILO**					
Lowered mast height	h_1 (mm)	1490	1690	1940	2140	2390	2590 a)
Height of mast with free lift 150 mm	h_1‘ (mm)	-	-	-	-	-	-
Free lift	h_2 (mm)	1012 b)	1212 b)	1462 b)	1662 b)	1912 b)	2112 b)
Lift	h_3 (mm)	2024	2424	2924	3324	3824	4224
Height of mast, extended	h_4 (mm)	2502 c)	2902 c)	3402 c)	3827 c)	4302 c)	4702 c)

(a) only mast heights compatible with the optional truck version —D (double level)

(b) with fork carriage s=65 mm (built-in); with fork carriage s=65 mm (built-in) and load backrest 800 mm on forks: -404 mm; with fork carriage s=60 mm (separate) -4 mm; with fork carriage s=60 mm (separate) and load backrest 1000 mm on forks: -562 mm

(c) with fork carriage s=65 mm (built-in); with fork carriage s=65 mm (built-in) and load backrest 800 mm on forks: +404 mm; with fork carriage s=60 mm (separate) +4 mm; with fork carriage s=60 mm (separate) and load backrest 1000 mm on forks: +562 mm

MAST TYPE 1.0 / 1.2 t		TRIPLEX		
Lowered mast height	h_1 (mm)	1690 a)	1940 a)	2040 a)
Height of mast with free lift 150 mm	h_1‘ (mm)	-	-	-
Free lift	h_2 (mm)	1208	1458	1558
Lift	h_3 (mm)	3636	4386	4686
Height of mast, extended	h_4 (mm)	4118	4868	5168

(a) only mast heights compatible with the optional truck version —D (double level)

MAST TYPE 1.4 / 1.6 t

MAST TYPE 1.4 / 1.6 t		TELE						
Lowered mast height	h_1 (mm)	1415	1665	1915	2115	2365	2565 a)	2815 a)
Height of mast with free lift 150 mm	h_1‘ (mm)	1490	1740	1990	2190	2440	2640	2890
Free lift	h_2 (mm)	150	150	150	150	150	150	150
Lift	h_3 (mm)	1844	2344	2844	3244	3744	4144	4644
Height of mast, extended	h_4 (mm)	2364 c)	2864 c)	3364 c)	3764 c)	4264 c)	4664 c)	5164 c)

(a) only mast heights compatible with the optional truck version -D (double level)

(c) with load backrest 1000 mm on forks: +562 mm

MAST TYPE 1.4 / 1.6 t		HILO					
Lowered mast height	h_1 (mm)	1415	1665	1915	2115	2365	2565 a)
Height of mast with free lift 150 mm	h_1‘ (mm)	-	-	-	-	-	-
Free lift	h_2 (mm)	895 b)	1145 b)	1395 b)	1595 b)	1845 b)	2045 b)

Lift	h_3 (mm)	1844	2344	2844	3244	3744	4144
Height of mast, extended	h_4 (mm)	2364 c)	2864 c)	3364 c)	3764 c)	4264 c)	4664 c)

(a) only mast heights compatible with the optional truck version -D (double level)

(d) with load backrest 1000 mm on forks: -562 mm

(c) with load backrest 1000 mm on forks: +562 mm

MAST TYPE 1.4 / 1.6 t		TRIPLEX				
Lowered mast height	h_1 (mm)	1665 a)	1915 a)	2065 a)	2265 a)	2315 a)
Height of mast with free lift 150 mm	h_1‘ (mm)	-	-	-	-	-
Free lift	h_2 (mm)	1145 b)	1395 b)	1545 b)	1745 b)	1795 b)
Lift	h_3 (mm)	3516	4266	4716	5316	5466
Height of mast, extended	h_4 (mm)	4036 c)	4786 c)	5236 c)	5836 c)	5986 c)

(a) only mast heights compatible with the optional truck version -D (double level)

(d) with load backrest 1000 mm on forks: -562 mm

(c) with load backrest 1000 mm on forks: +562 mm

Oil and lubricant table

⚠ CAUTION

Use only the oils and lubricants specified in the table as they are approved by the manufacturer. Using oils and lubricants other than those indicated in the table may cause damage to the truck or cause the truck to malfunction. Contact your service centre for more information.

ENVIRONMENT NOTE

Oils and lubricants are toxic products. Refer to the safety guidelines for operating materials in the chapter on page "V".

	Volume [l]	Type		
		Standard	Cold store	Food industry
Hydraulic system	9	HLF 32	EQUIVIS XV32	NEVASTANE SH / SL 32
Reduction gear unit	0.7	TITAN SUPERGEAR 80W-90 GL4 ISO VG 150 or SAE 80W/90 in accordance with MIL-L-2105C or API GL5		MOBIL SHC 150 CIBUS
Generic lubricant	/	TUTELA MP02	STATERMELF EP2	MOBIL FM 222
Chain lubricant	/	STRUCTOVIS EHD	STRUCTOVIS FHD	

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STILL GmbH

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