Original instructions



Pallet stacker

EXV 14 / 16 / 20
EXV 14i / 16i / 20i
EXV-SF 14 / 16 / 20
EXV-SF 14i / 16i / 20i
EXP 14 / 16 / 20
EXV 14D / 16D / 20D
EXV-SF 14D / 16D / 20D
EXV BC 30





0301 0303 0305 0323 0324 0325
0326 0327 0328 0329 0330 0331
0332 0333 0334 0335 0336 0337
0338 0339 0340 2551 2560

first in intralogistics

45758043330 EN - 01/2025 - 06

Address of manufacturer and contact details

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Rules for the operating company of industrial trucks

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

This guide provides information for handling industrial trucks:

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

Internet address and QR code

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

1 Introduction

Forklift data . . . 2
General information . . . 2
Using the manual . . . 2
Date of edition and latest update of this manual . . . 4
Copyright and trademark rights . . . 4
Delivery of the forklift and documentation . . . 4
Digital operating instructions . . . 4
Spare parts list . . . 5
Conformity marking . . . 6
Declaration that reflects the content of the declaration of conformity . . . 7
Technical service and spare parts . . . 9
Type of use . . . 9
Working conditions . . . 10
Modifications to Forklift . . . 10
Modifications and retrofitting . . . 10
Applied equipment . . . 12
User obligations . . . 12
Environmental considerations . . . 13
Disposal of components and batteries . . . 13
Packaging . . . 14

2 Safety

Safety guidelines . . . 16
General warning . . . 16
General safety guidelines . . . 16
Flooring requirements . . . 17
Battery connection cables . . . 17
External electrical connections . . . 17
Requirements for the lead-battery charging area . . . 17
Safety guidelines for using the truck . . . 18
Safety guidelines relating to consumables . . . 19
Residual risk . . . 20
Residual dangers, residual risks . . . 20
Electromagnetic radiation . . . 21

Non-ionised radiation . . . 22
Electrostatic charge . . . 22
Noise . . . 22
Vibrations . . . 23
Modifications and retrofitting . . . 10
Declaration of conformity in accordance with the Radio Equipment Directive 2014/53/EU . . . 25
Safety tests . . . 26
Regular safety inspection of the truck . . . 26
Safety devices . . . 27
Location of safety devices . . . 27
Damage, defects and misuse of safety devices . . . 29

3 Overview

Technical description . . . 32
Overview . . . 34
Instruments and controls . . . 35
Start/stop variants . . . 35
Start/stop key . . . 35
Start/stop push-button (optional) . . . 36
Numeric keypad — Start-up using a PIN (option) . . . 37
Fleetmanager (Optional) . . . 38
Tiller controls . . . 41
Display variants . . . 48
Display . . . 48
Display touch . . . 52
Settings (9) . . . 55
Language (7) . . . 55
Units/Dateform (7) . . . 55
Date (9) . . . 56
Time (9) . . . 56
Display (6) . . . 57
PIN code (optional) . . . 58
Performance (5) . . . 61
Lift Cut-out (8) (option that can only be activated when DLC3 is active) . . . 62
Monitor (4) . . . 63

Blocking alarms . . . 64
Warnings . . . 67
Emergency shutdown handle . . . 71

Tiller . . . 72
Tiller positions . . . 72
Combi tiller (if present) . . . 74
OptiSpeed tiller (only present on EXV and EXVi versions) . . . 76

Types of lift mast . . . 77

Side protection . . . 79
Description . . . 79

Platform . . . 81
Description . . . 81

Definition of directions . . . 83

Markings . . . 84
Location of labels . . . 84
Serial number . . . 86
Nominal value designation plate . . . 87
Capacity plate . . . 88
Additional designation plate for the double pallet stacker version (EXV-D) . . . 89
Chassis frame labelling . . . 90

Options and variants . . . 91
List of options and variants . . . 91
Dynamic Load Control (DLC) — Optional . . . 93
Dynamic Load Control (DLC) via touch display – optional . . . 93
Regulations for using the DLC 3 . . . 93
Straddle automatic lowering (optional function, also referred to as "auto-initial lowering") . . . 105
Accessories mounting bar with data socket . . . 107
Battery electrolyte level indicator LED (optional) . . . 108
Belly switch (option) . . . 109
Auxiliary hydraulic lines (optional) . . . 110

4 Operation

Authorised and safe use . . . 116
Intended use of the trucks . . . 116
Safety instructions for using the truck . . . 116

Transporting and lifting the truck . . . 119
Transporting the truck . . . 119
Transporting . . . 119

Climatic Conditions for Transport and Storage . . . 119
Loading and unloading the truck . . . 120

Breaking-In . . . 121

Checks and actions prior to commissioning . . . 122
List of checks before use . . . 122

Ergonomic dimensions . . . 124

Operator position . . . 125
Operator's position for version without platform . . . 125
Operator position for version with platform . . . 127

Using the truck . . . 129
Stopping the truck in emergencies . . . 129
Starting the truck . . . 129
Truck travel . . . 130
Truck steering direction . . . 131
Reversing the direction of travel . . . 132
Truck brake systems . . . 132
Parking and stopping the truck . . . 133
Forklift Use in Cold-Storage Rooms . . . 135

Moving the load . . . 136
Safety guidelines for handling loads . . . 136
Checks to be carried out before lifting a load . . . 138
Adjusting the fork distance (if present) . . . 139
Reduce lowering speed of the forks near the lower end position (soft stop) . . . 140
Automatic reduction of the driving speed in relation to the lift height . . . 141
Picking up the load . . . 141
Transporting loads . . . 145
Depositing a load on the ground . . . 146
Driving on slopes . . . 147
Towing trailers . . . 148

Charging the battery . . . 149
Internal accessibility . . . 149
Charging the lead battery . . . 151
Charging curve selector (only with on-board battery charger) . . . 151
Recharging the battery using the on-board battery charger (optional) . . . 153
Recharging the battery using the on-board battery charger (optional) . . . 154

5 Maintenance

General maintenance information . . . 160

Preliminary maintenance operations . . . 161

Scheduled maintenance 162
Summary table of maintenance operations 162

Maintenance as required 165
Cleaning the Forklift 165
Lubricating and cleaning the lifting chains 165
Fuses 166
Replacing the battery 166
Preparation 166
First installation or replacement of the truck battery 167
Battery replacement with removal from the top 169
Replacing the battery with side removal 172

Decommissioning 175
General Information 175
Forklift Towing 176
Temporary Putting Out of Commission 176
Checks and Inspections After a Long Period of Inactivity 176
Permanent Putting Out of Commission (Demolition) 177

6 Technical data

Datasheet (VDI) 180

Datasheet (VDI) 214

Datasheet (VDI) 221

Batteries 224

Oil and lubricant table 226

Eco-design requirements for electric motors and variable speed drives 226

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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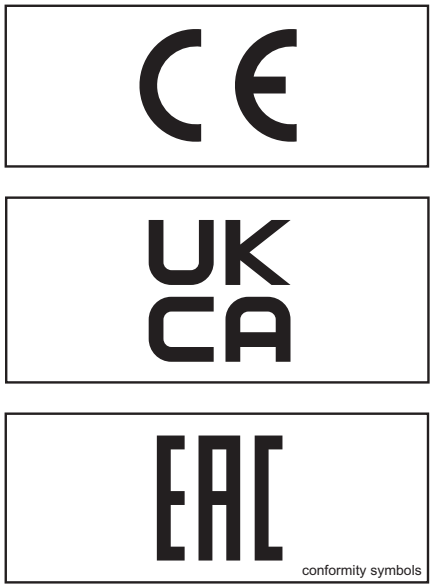
Conformity marking

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

⚠ CAUTION

Do not use the truck in dusty environments.

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

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

⚠ DANGER

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

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

Contact the authorised sales network for further information.

Modifications to Forklift

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

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

⚠ WARNING

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

⚠ DANGER

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

Modifications and retrofitting

If the industrial truck will be used for work that is not listed in the directives or in these instructions, the industrial truck must be converted or retrofitted for this purpose as required. Any structural modification can impair the 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, except for the EXV BC 30 model for which the median axis of the forks is offset by 96 mm from the median axis of the truck. Failure to observe this requirement can compromise the stability of the truck.
- 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.

Vibrations to which the body (legs) is exposed

The following values to which the body (legs) is exposed only apply to trucks with a folding platform that the operator is standing on.

The following value is valid for trucks with a capacity of 1400 kg and 1600 kg:

- $\bar{a}_{w,zF} = 0.60\ m/s^2$
  Uncertainty $K = \pm 0.18\ m/s^2$

The following value is valid for trucks with a capacity of 2000 kg:

- $\bar{a}_{w,zF} = 0.97\ m/s^2$
  Uncertainty $K = \pm 0.29\ m/s^2$

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

⚠ CAUTION

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

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.

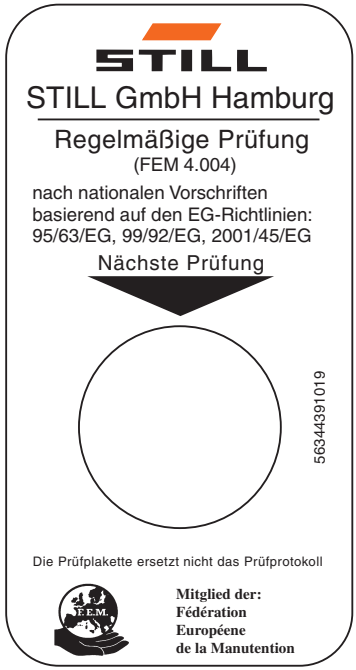
– Observe guidelines for checks carried out on the truck in accordance with FEM 4.004.

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

– Contact your service centre.

NOTE

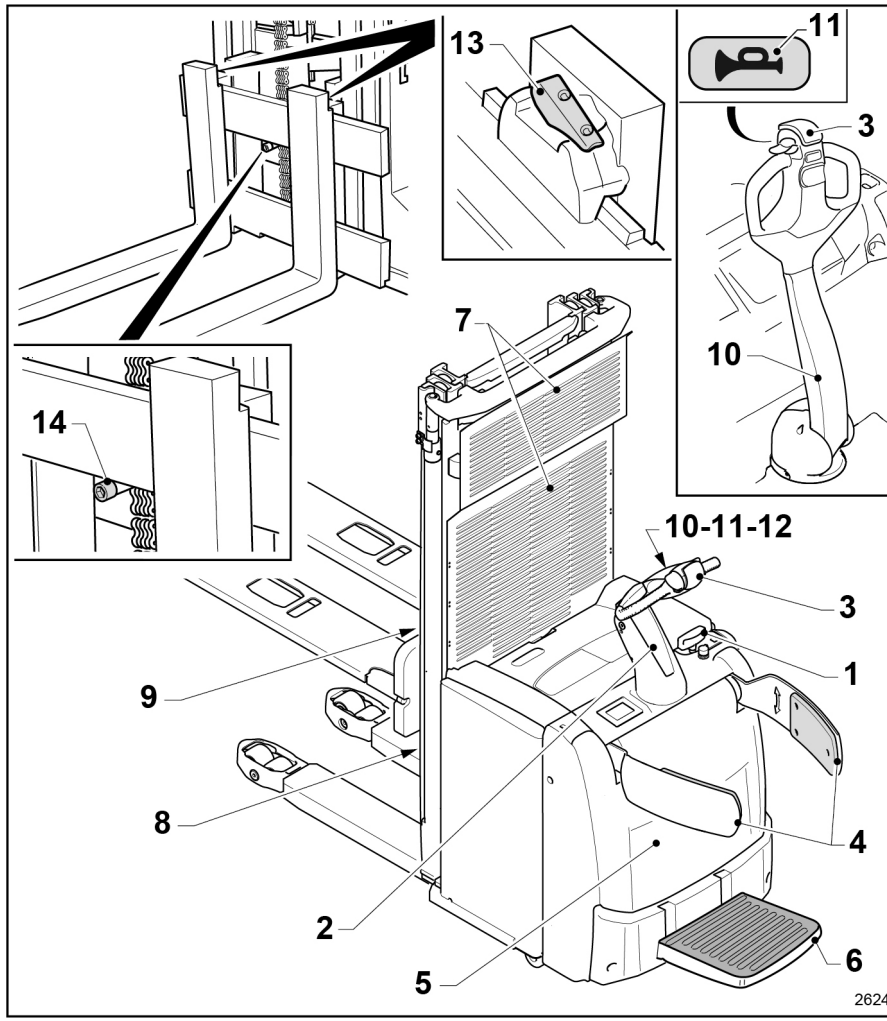
Observe the national regulations for your country!



Safety devices

Location of safety devices

Main safety devices on the truck



1 Emergency shutdown handle.
2 Tiller position sensor. The truck will not move if the tiller is not in the correct usage position
3 Operator belly switch.
4 Operator side protection. Prevents the operator from falling from the platform during ride-on driving (if present).
5 Protective covers fastened with screws. Do not use the truck without the protective covers

6 Presence sensor of the operator on the platform (if present). Only ride-on driving is allowed with the platform lowered.
7 Anti-shearing protective guard. Available in a version with a metal grille or in a version with a transparent plastic material.
8 Height sensors positioned on the lift mast. When the forks are lifted beyond the height of the sensors, the truck's driving speed automatically decelerates. Consult chapter 4 for further information.
9 Screw that acts as a mechanical stop. The screw prevents the unintentional extraction of the forks. Do not unscrew or remove the stop. Do not use the truck if the mechanical stop is missing (EXP only).
10 Automatic braking of the truck when the tiller is released by the operator
11 Horn. Used to indicate the presence of the truck during travel.
12 Combi tiller clasp closure sensor. If the clasp is not closed properly, the truck will not move.
13 Fork stop latches. Used to adjust the distance between the forks. Do not use the truck with the latches open (EXP only).

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

General characteristics

The trucks described in this manual EXV14, EXV16, EXV20, EXV14 i, EXV16i and EXV20i, EXV14-SF, EXV16-SF, EXV20-SF, EXV14i-SF, EXV16i-SF, EXV20i-SF, EXP14, EXP16, EXP20, EXV14D, EXV16D, EXV-SF 14D, EXV-SF 16, EXV20D, EXV-SF 20D are designed to handle and stack pallets inside shops, warehouses and factories.

Versions

- For the basic version (EXV and EXP) the operator always guides the truck in pedestrian mode (operated "from the ground)" as there is no platform.
- The version"SF" is provided with a platform for driving on board the truck. The operator can use the truck both in pedestrian mode (driving "on the ground") and in the mode of "driving on board" by getting up on to the appropriate operator's platform.
- The version"i" is prepared for lifting and lowering the spokes. It is available for both the basic version of the truck and for the version ."SF".
- The "D" version is designed to lift two loads at the same time. A load on the forks and a load on the straddles. This function is called double pallet stacker.

Lift

Nominal load:

- 1400 kg (EXV14, EXV14i, EXV14-SF, EXV14i-SF, EXP14, EXV14D, EXV-SF 14D)
- 1600 kg (EXV16, EXV16i, EXV16-SF, EXV16i-SF, EXP16, EXV16D, EXV-SF 16D)
- 2000 kg (EXV20, EXV20i, EXV20-SF, EXV20i-SF, EXP20, EXV20D, EXV-SF 20D)

Pump unit

- Power rating 3.2 kW

Different types of lift mast:

- Telescopic "post": two-section telescopic post without free lifting and two side cylinders
- "NiHo" post: two-section telescopic post with free lifting, lateral chains and two lateral cylinders plus a central cylinder
- Triplex "post" : three-section telescopic post with free lifting, lateral chains and two lateral cylinders plus a central cylinder

Driving

The 185-W electric steering motor operates the drive wheel using a reduction gear unit.

2.3-kW or 1.5-kW traction motor depending on the truck version.

On EXV, EXVi and EXP versions the operator guides the truck from the ground. A long ergonomic helm together with electric steering allows the operator to drive the truck without effort.

In versions EXV-SF the operator can drive the truck on land or on board. A strong ergonomic helm together with electric steering allows the operator to drive the truck without effort.

The tiller is used to activate the following controls:

- Steering
- Drive control throttle
- Horn
- Fork lifting and lowering buttons
- Anti-crush safety button
- Truck braking when the tiller reaches the upper end position and lower end position (service brake)
- Buttons for raising and lowering spokes (only for versions"i")

For safety reasons, the helm automatically returns to its initial position when released.

Braking system

Regenerative braking

Braking:

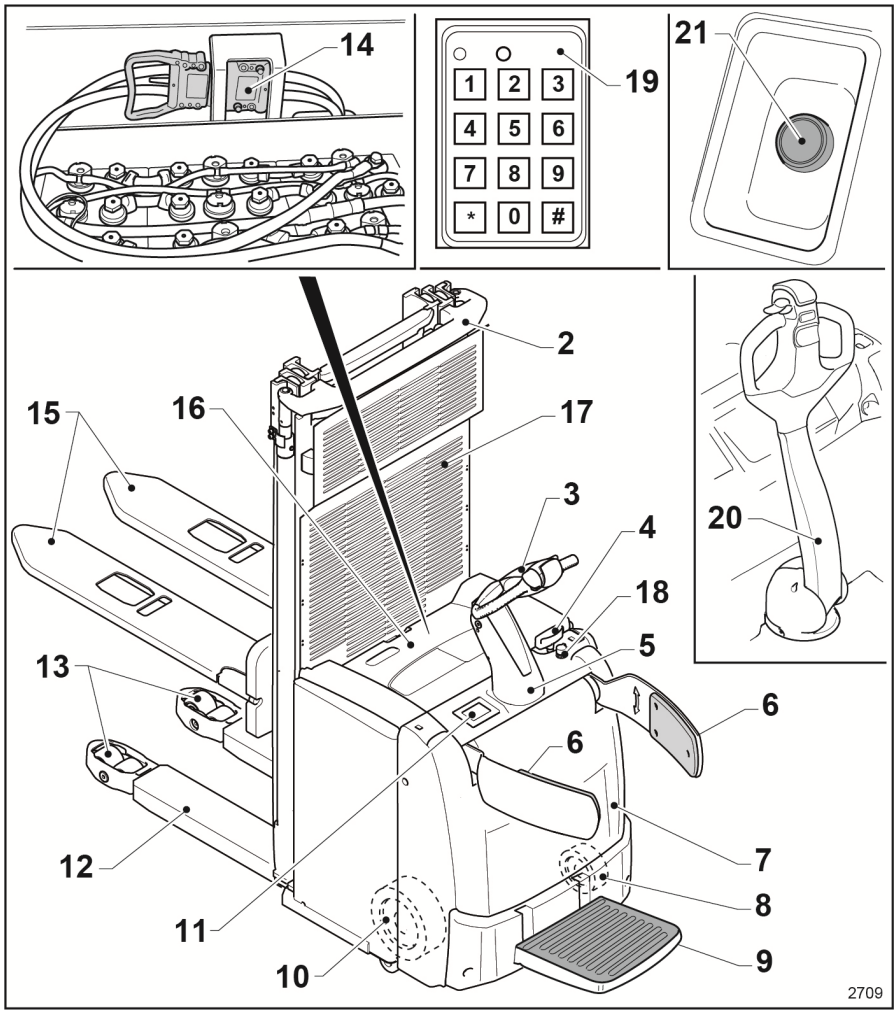
- when the accelerator is released,
- Select the direction of travel
- controlled by the anti-crush safety button
- electromagnetic safety device, controlled by the emergency stop handle
- electromagnetic safety device, controlled by the release of the tiller.
- safety electromagnetic, controlled when the tiller arm reaches the lower end position (service brake)
- Electromagnetic parking device, applied when there is a power cut.

On-board equipment

The on-board equipment includes:

- a glove compartment for storing adhesive tape, gloves,pens etc.,
- A switch for emergency shutdown located on the chassis
- A multifunction display.
- A4 paper spring holder

Overview

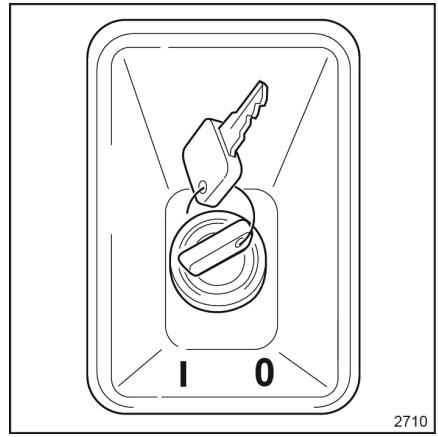


1	On / off key	12	Straddles
2	Lift mast	13	Load rollers
3	Tiller head	14	Battery plug and socket
4	Emergency shutdown handle	15	Forks
5	Tiller	16	Battery compartment hood
6	Operator side protection	17	Anti-shearing protective guard
7	Hood	18	Technical Service Department diagnostic test socket
8	Pivoting wheel	19	Digicode - Numerical keypad
9	Operator platform	20	Tiller
10	Drive wheel	21	Pin code - Truck start button
11	Display		

Instruments and controls

Start/stop variants

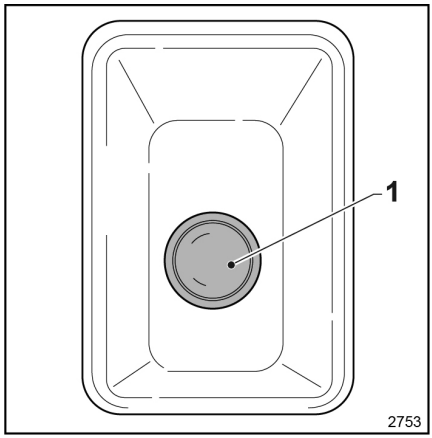
Start/stop key



The key has two positions:

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

Start/stop push-button (optional) ▷



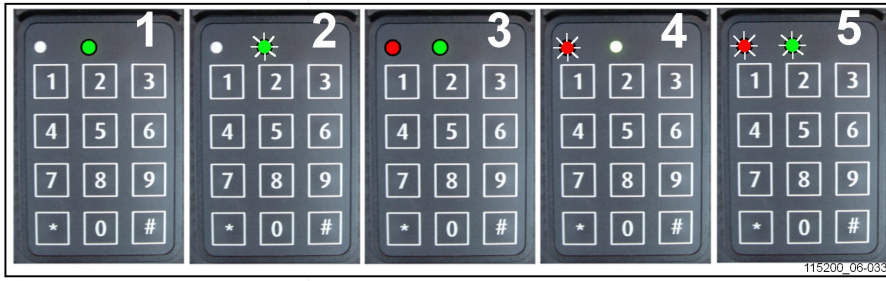
The truck can be equipped with a push-button (instead of the standard key) for switching the truck on and off.

- **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** ▷

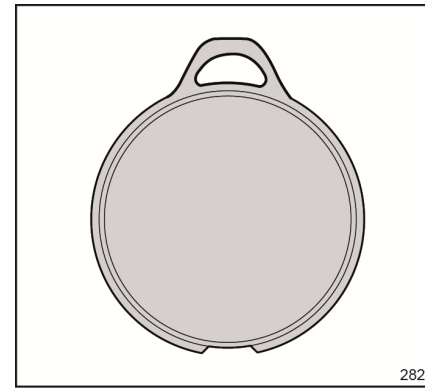


Illustration of the **reading device** variant ▷

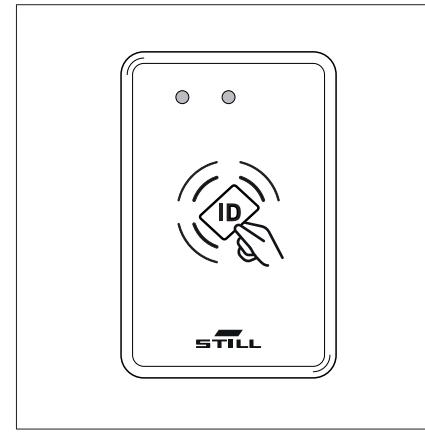
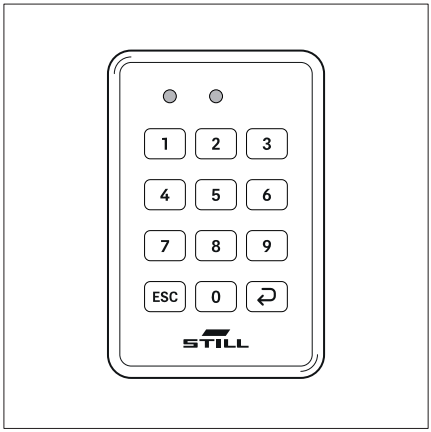
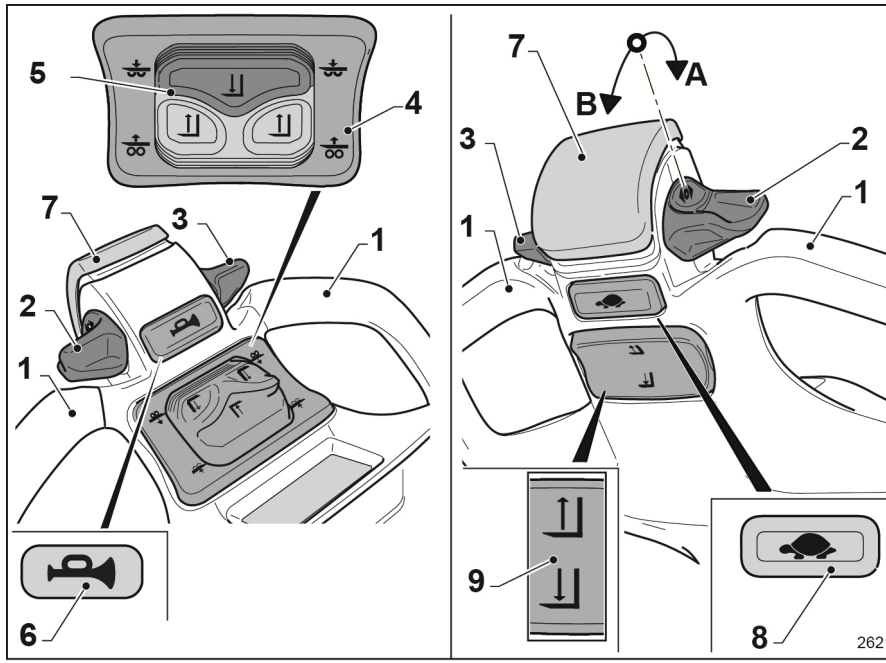


Illustration of the **keypad** variant ▷



Tiller controls



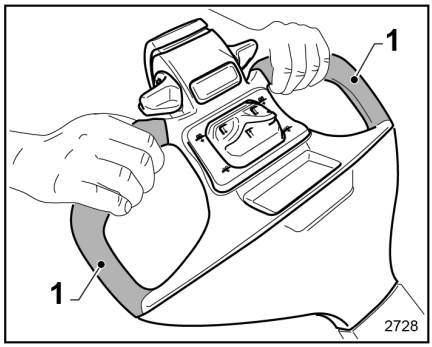
1 Tiller head handles
2 and 3 Drive control throttles
4 Straddle (optional) or fork (not proportional) control button
5 Fork lifting/lowering proportional control button
6 Horn button
7 Belly switch
8 Multifunction button
9 Fork lifting/lowering button (not proportional)

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.

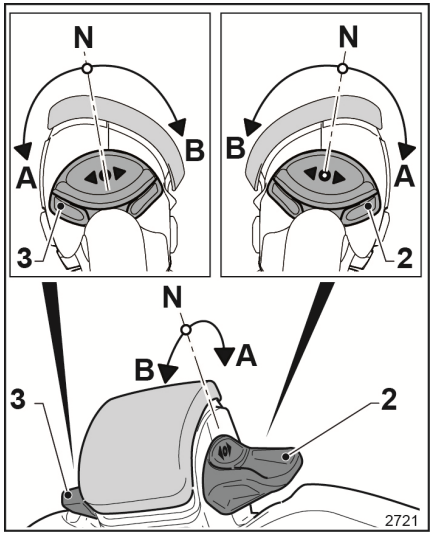


– **(2 - 3) Drive control throttles**

- 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.
- The operator can adjust the truck's speed of travel by turning the drive control throttles (2 - 3):

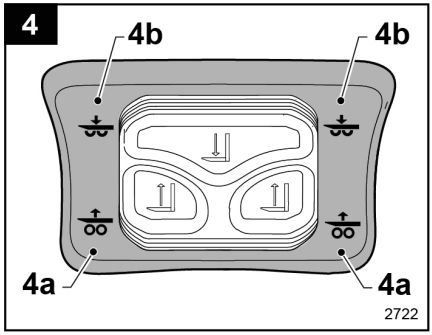
  - The more the drive control throttles (2 - 3) are turned in relation to the neutral position (N), the faster the truck's speed of travel.

  - The less the drive control throttles (2 - 3) are turned in relation to the neutral position (N), the slower the truck's speed of travel.
- 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.

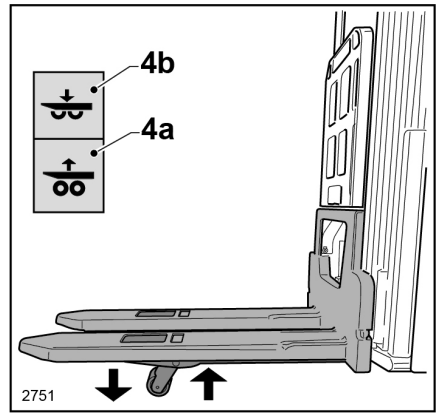


– **(4a) Straddle lifting**

- 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

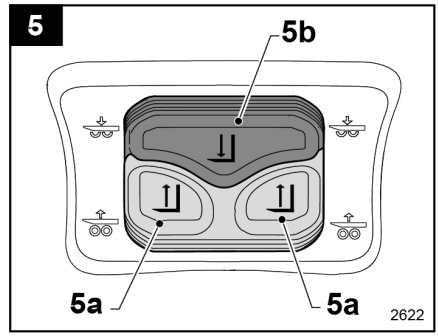
Risk of crushing feet!

Be careful not to put your feet under the straddles, particularly while using the straddle initial 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 multi-function 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

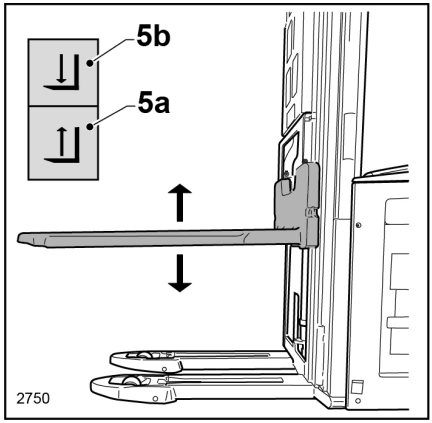
- *The button (5) is active when the tiller is tilted to the working position.*
- *The button (5) can be activated when the tiller is in the vertical position only if you hold down the multifunction button (8) and then press on the symbol (5a) or (5b).*
- *Please refer to the instructions on the multi-function 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.

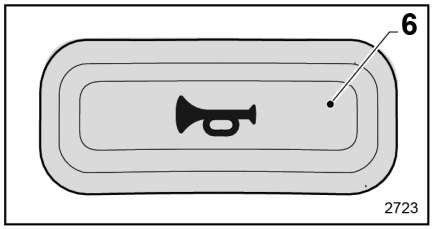
– **(5b) Fork lowering**

- 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).

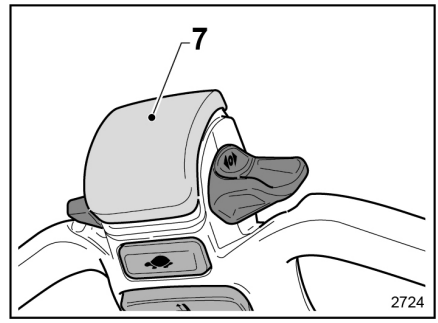


– **(6) Horn button** ▷

- 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.

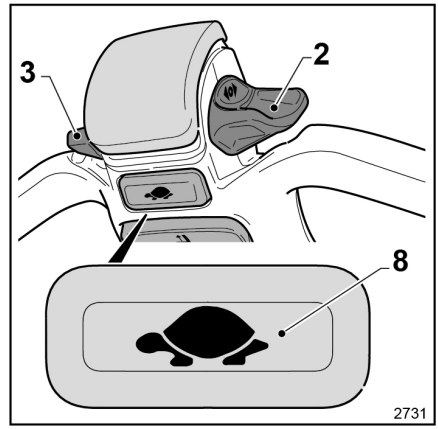
Description:

- 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 few seconds, as long as the button (7) is held down. 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 (usually when the tiller is in the vertical position, these controls are deactivated and the truck's parking brake is applied). This function is ideal for manoeuvres in tight spaces.
- To allow the user to choose their preferred driving performance when the tiller is tilted to the standard working position.

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).

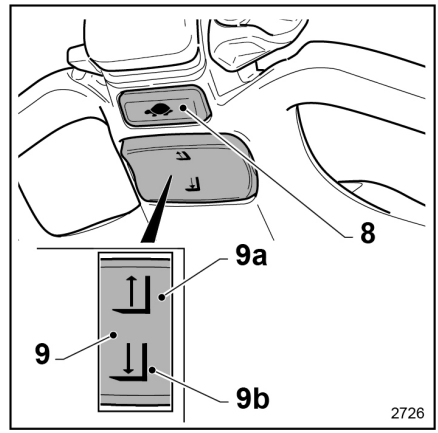
For straddle lifting/lowering (if option is present) with the tiller in the vertical position

- 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 will allow you to choose from the available driving performance options. Each time you press the button (8) twice in succession, a different level of driving performance is selected. For example, you can choose whether to use maximum performance (hare icon illuminated) or reduced performance (tortoise icon illuminated). 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

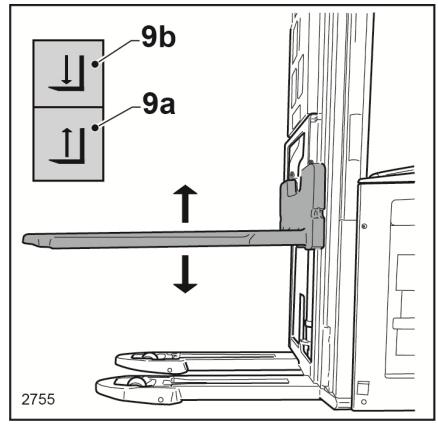
- *The button (9) is used to lift/lower the forks only when using the tiller in the vertical position. The button (9) is only activated with the tiller in the vertical position and the multifunction button (8) pressed.*
- *The button (9) is NOT active when the tiller is tilted to the working position.*
- *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.

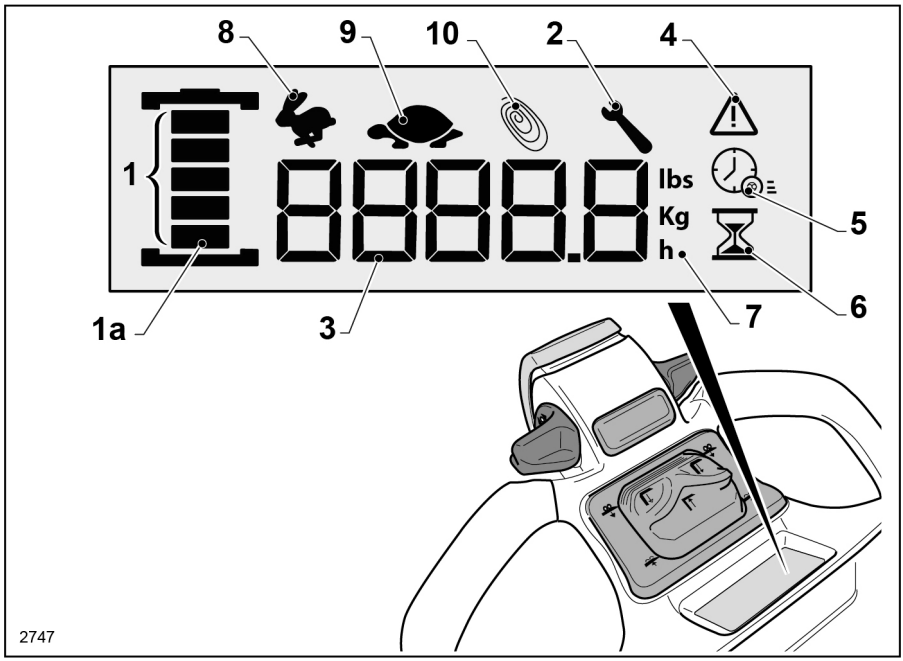
– **(9b) Fork lowering**

- 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.

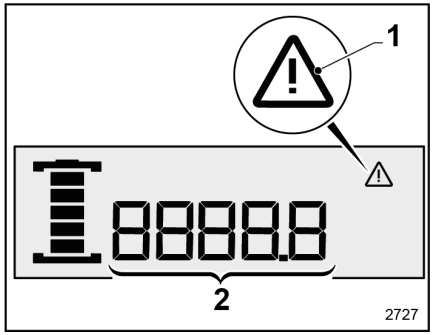
NOTE

- *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.*

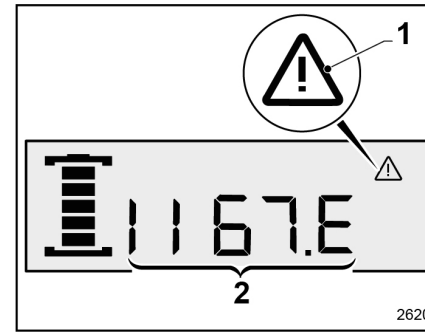
Alarms

– **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.

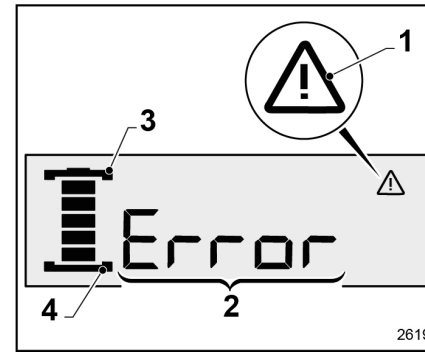
▷



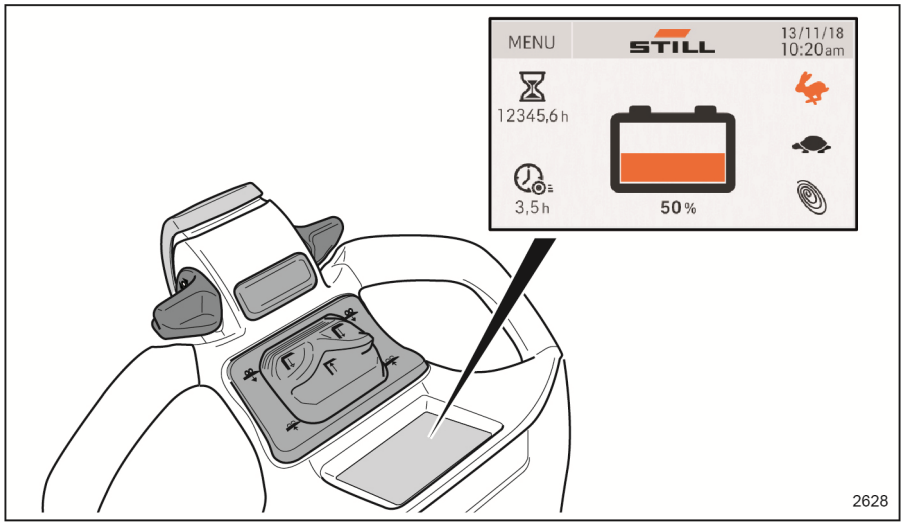
– **Generic alarm**. The alarm indicator light (1) lights up on the display and an error code appears in field (2). The alarm indicates that the truck may have various problems. Switch the truck off and on again. If the alarm appears again at start up, contact the technical service centre. In the meantime,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



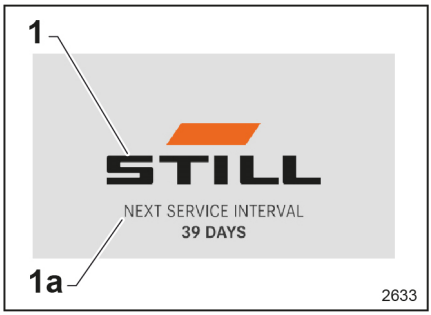
– **Specific alarm relating to charging via the on-board battery charger (if present)**. The alarm indicator light (1) lights up on the display. Field (2) displays `Error` and the segments (3 and 4) flash. The alarm indicates that the truck has problems with charging via the on-board charger. Switch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



Display touch

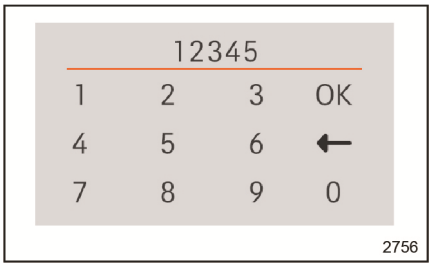


– **(1)** When the truck is started, the display lights up displaying the STILL logo ▷

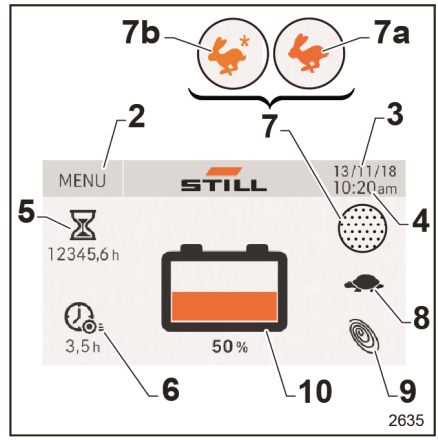


– **(1a)** for a few seconds the display shows the number of days until the next service, only if the notification option is active (contact the Technical Service Department for more information).

– 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.

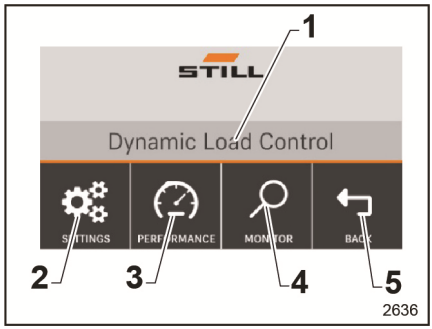
– **(2)**"Settings" – general display settings

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

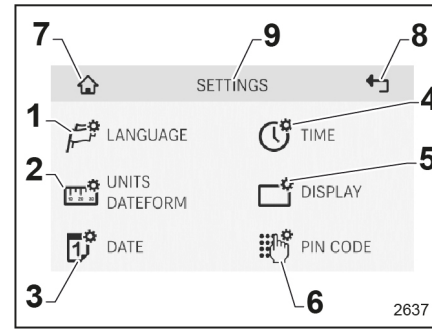
– **(4)**"Monitor" – analysis of the truck status

– **(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)

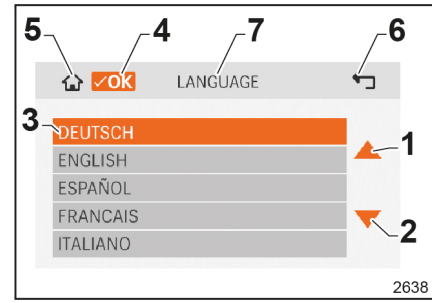


The following settings can be configured on this page:

- (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")

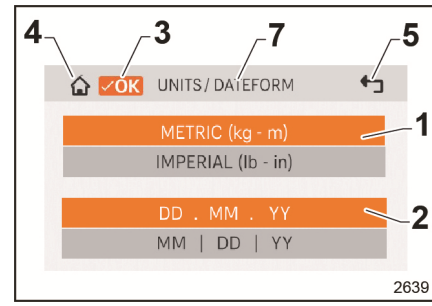
Language (7)



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)



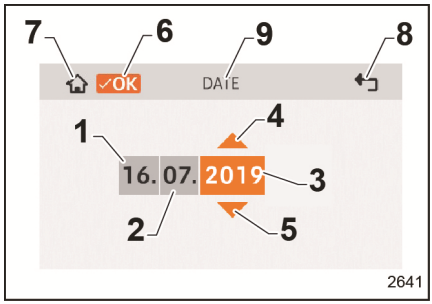
- Set the unit of measurement of weight, METRIC (kg - m) or IMPERIAL (lb - in). The selected line changes colour (1)

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.

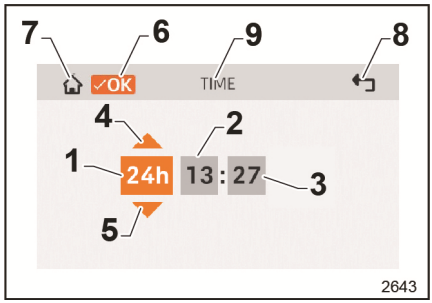
Date (9)

- 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.

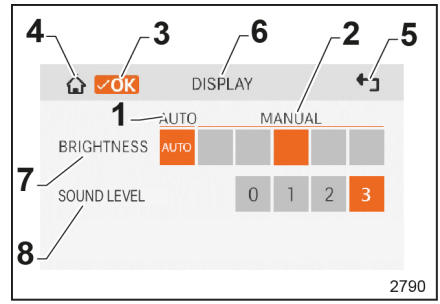


Time (9)

- 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).

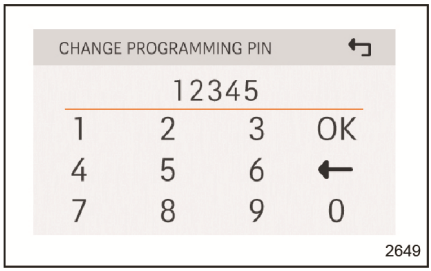
  - Pressing the field (0) will mean that the sound level will be at the minimum but will still be there. If the optional DLC is fitted, the specific sounds emitted by the DLC system will turn off completely. The selected sound level field lights up orange.

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

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

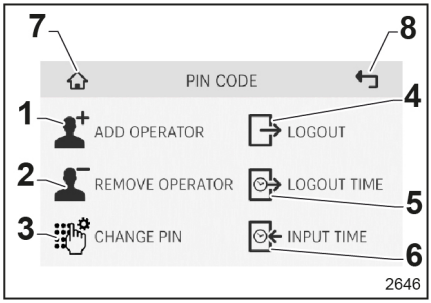
  - Pressing the field (3) sets the sound level to maximum.
- Press the key (3) "OK" or (4) to confirm your choices and return to the main page. Press the key (5) to go back to the previous page without saving any changes

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.



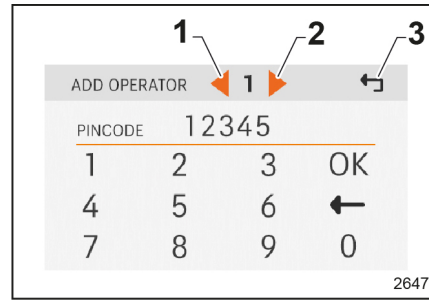
- From the main "PIN CODE" functions page, the manager can access the individual set-up pages using the programming code when the truck is started:
- (1) Go to this page to add an operator with the related access code.
- (2) Go to this page to remove an operator. Available only to the manager.
- (3) 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.

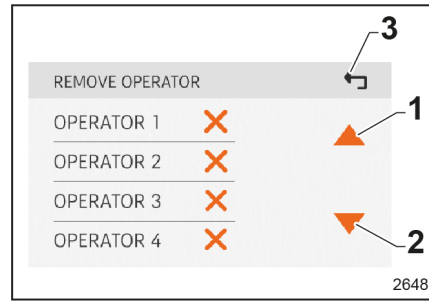


NOTE

- *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).

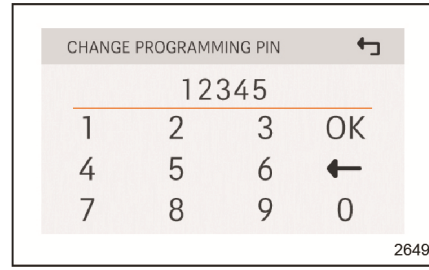


NOTE

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.



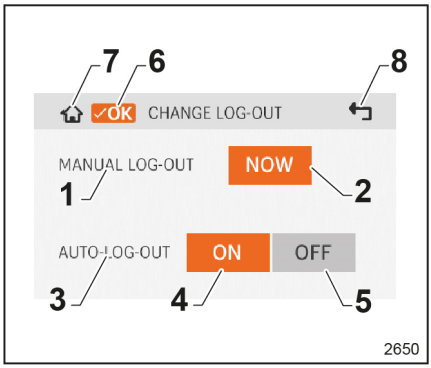
Change Logout

-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).

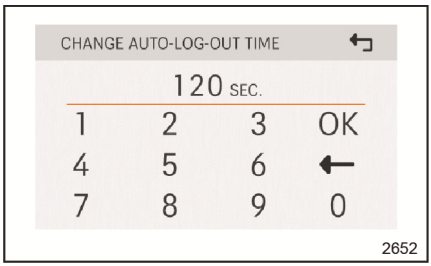
With automatic logout activated, the truck logs out after a defined period of inactivity that can be set in the "Logout time" function.

- 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.



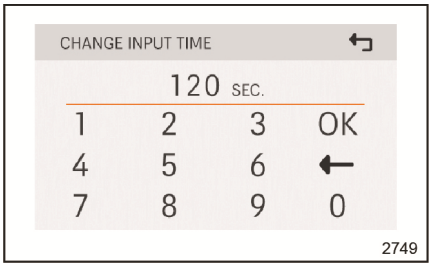
Change auto Logout time

- 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

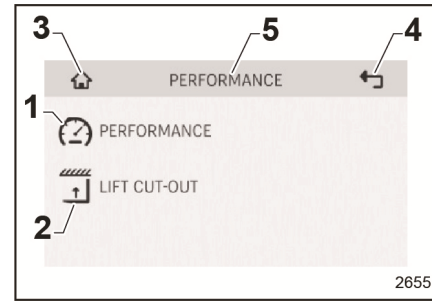
- Set the maximum time allowed for the operator to enter the access code at startup, then press "OK" to confirm the setting and return to the previous page.



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)

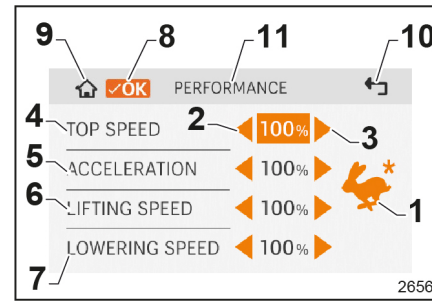
It is possible to reduce the maximum performance as a percentage compared to Hare mode (without *) to create a personalised drive mode.

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.



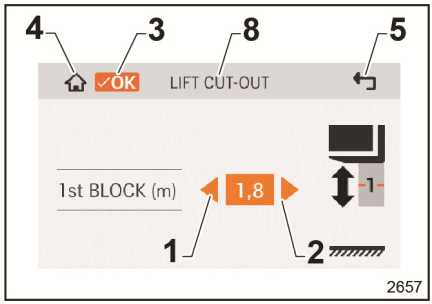
Lift Cut-out (8) (option that can only be activated when DLC3 is active)

⚠ 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.

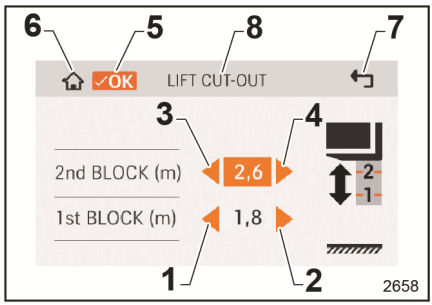
– **Version with only one lift cut-out** ▷

- 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.

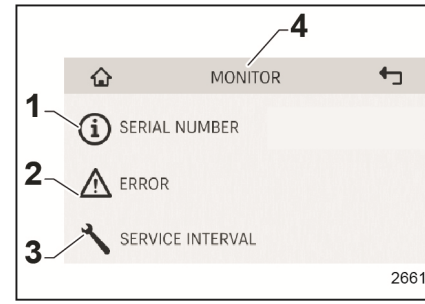


NOTE

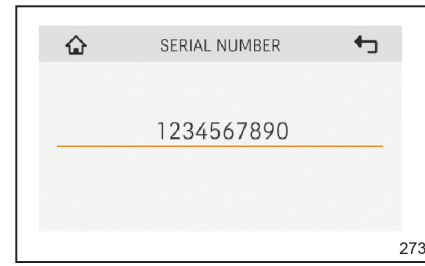
The lift height of the second cut-out must be higher than the lift height of the first cut-out.

Monitor (4)

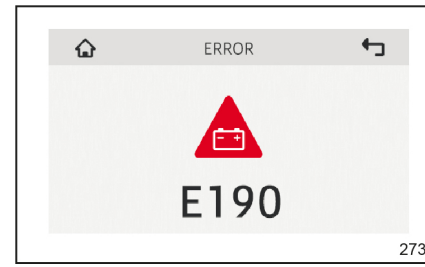
This page shows:



– (1) the truck serial number



– (2) the list of active/present alarms

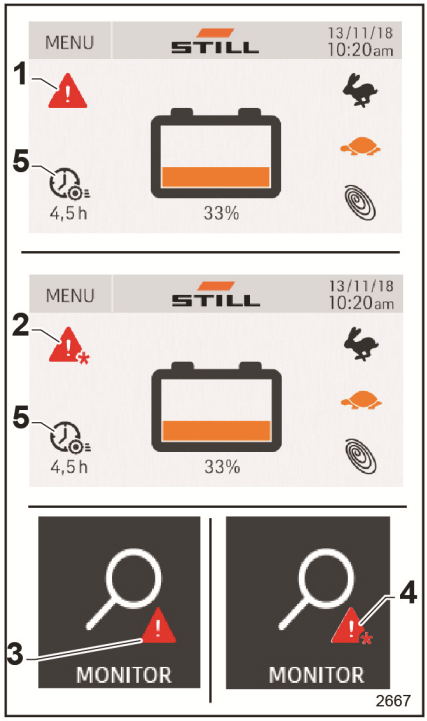


– (3) the number of days until the next maintenance (if the notification option is not active, this page indicates "0 days". In this case, the information "0 days" should not be ignored).



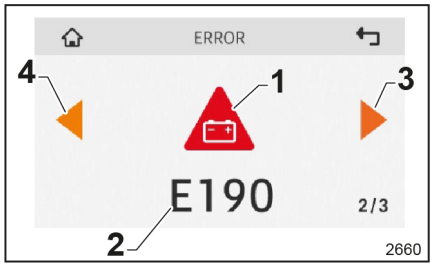
Blocking alarms

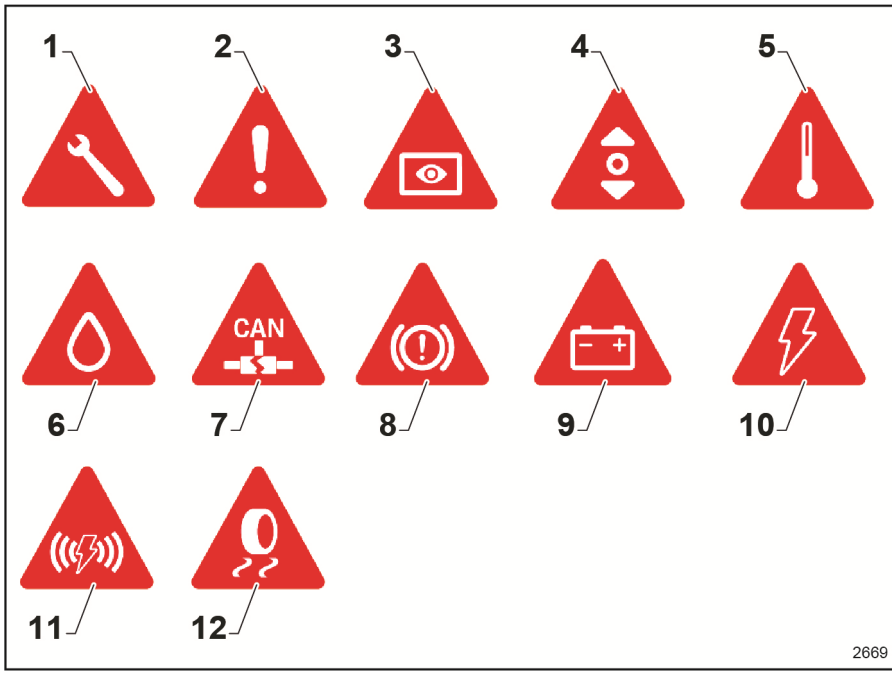
If one or more blocking alarms is activated during use, the symbol (1) or (2) is displayed on the main page. In the main "MENU", the symbols (3) and (4) appear. Pressing the symbol (1) or the symbol (2) takes you straight to the error page. Pressing the symbol (5) displays the total operating hours of 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:

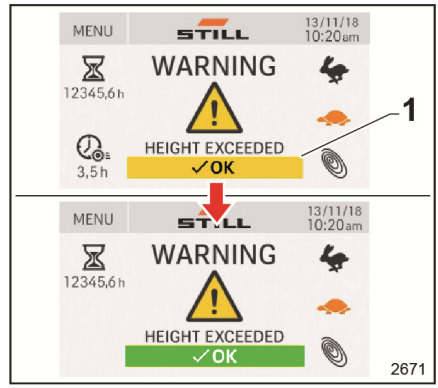
– **Driving control warning** ▷

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).



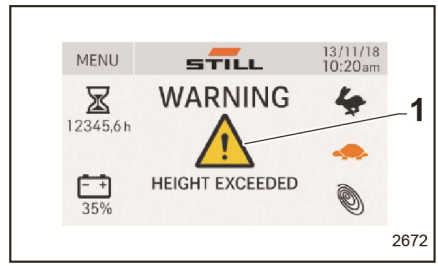
– **Lift cut-out warning** ▷

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.



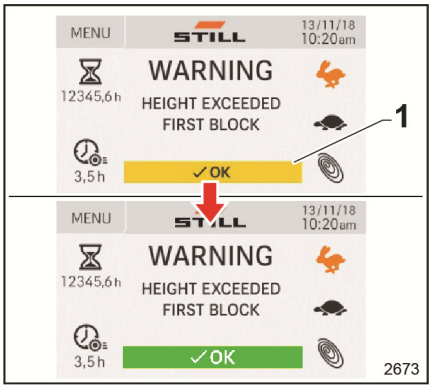
– ▷

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

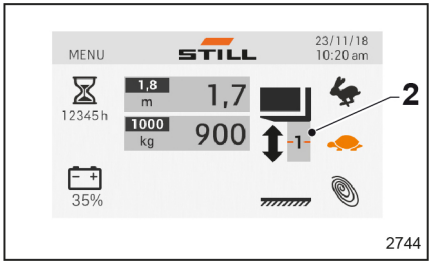


– **Lift cut-out warning (with DLC3 only)** ▷

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.

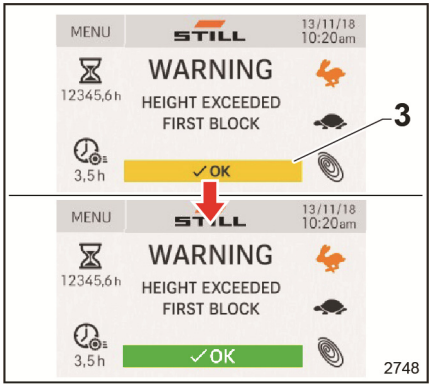


– The symbol (2) indicates that the first lift cut-out has been exceeded. ▷

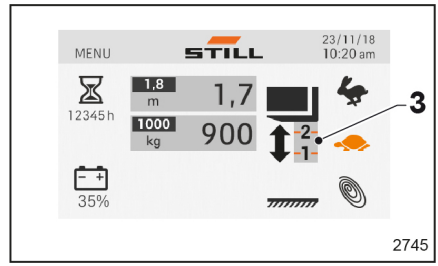


– When the second cut-out setting is reached, the following screen will appear: ▷

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:

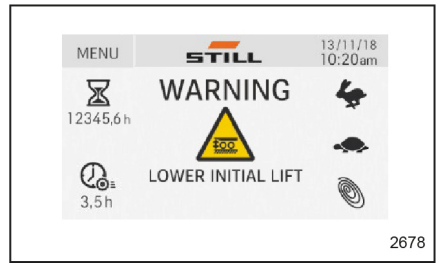
- Release the tiller and all the controls and then switch on the truck again.
- Or, release the travel controls, push the tiller to the lower end position and then to the upper end position.



2677

– **Lower the straddles warning** ▷

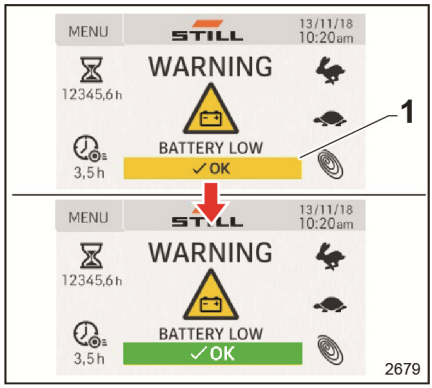
The warning may appear on the display when lifting to approximately 1700 to 1800 mm from the ground (only for trucks with initial lift). The message warns the operator that, for safety reasons, the straddles must be lowered in order to lift the forks higher.



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.



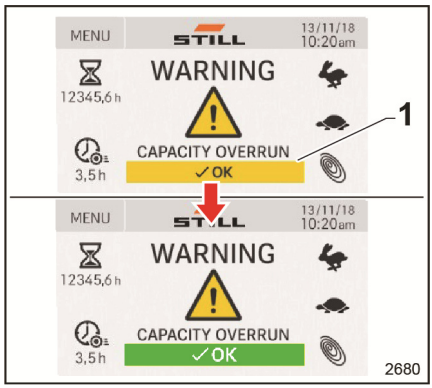
– **Stability warning (DLC3 only)** ▷

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

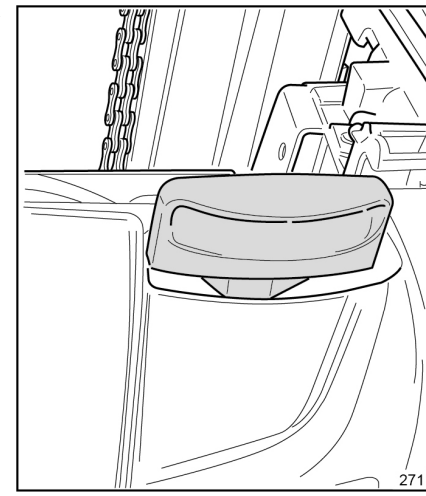
Loss of stability

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 handle

– Pushing the emergency shutdown handle will lock all of the functions on the truck. ▷



Tiller

Tiller positions

Position the tiller in accordance with the truck functions ▷

With the truck at a standstill, the three following tiller positions are available:

- Tiller position **(1)** = working position.
- Tiller position **(2)** = braking position.
- Tiller position **(A)** = braking position or position for use of the truck in confined spaces.

– **Tiller position (1) = working position.**

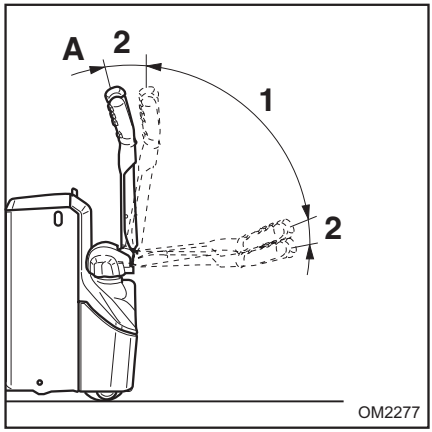
- In this position, the operator can begin travel using the throttle.

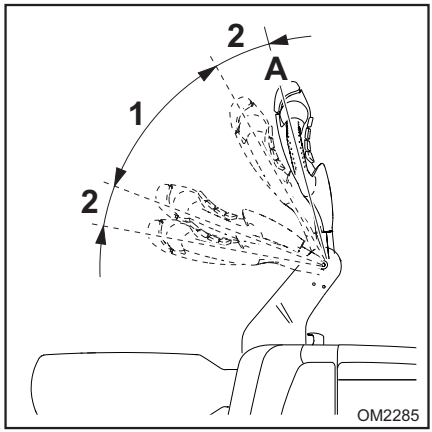
  In this position, the operator can begin lifting or lowering the forks using the appropriate throttle.

  In this position, the operator can raise or lower the straddles; for versions with straddle initial lift only.

– **Tiller position (2) = braking position.**

- In this position the drive unit is blocked and the parking brake is applied.





NOTE

- *In this position, lifting and lowering of the forks and straddles, if fitted, is blocked.*

NOTE

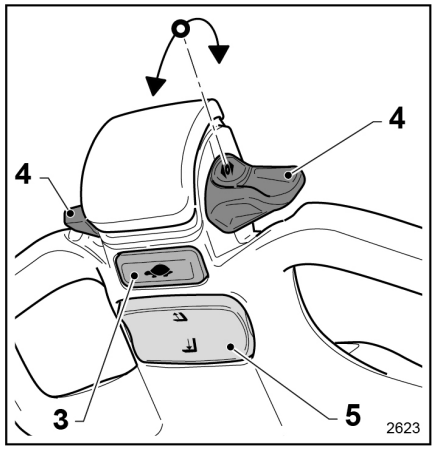
When the tiller is released, it automatically returns to position (A), the braking position.

– **Tiller position (A) = braking position or position for use of the truck in confined spaces**

Normally in this position the drive unit of the truck is blocked and the parking brake is applied (braking position). If necessary (when using the truck in confined spaces), the truck can also be operated with the tiller in the vertical position (A) by following the guidelines below:

- With the tiller in the vertical position (A), by pressing and holding the multifunction button (3) and simultaneously turning the drive control throttle (4), the truck moves at reduced speed.
- With the tiller in the vertical position (A), by pressing and holding the multifunction button (3) and simultaneously pressing the button (5), the forks can be moved.
- For more information on using the multifunction button (3), see the "tiller controls" paragraph in Chapter 3.

▷



Combi tiller (if present)

Instructions for opening the combi tiller

⚠ CAUTION

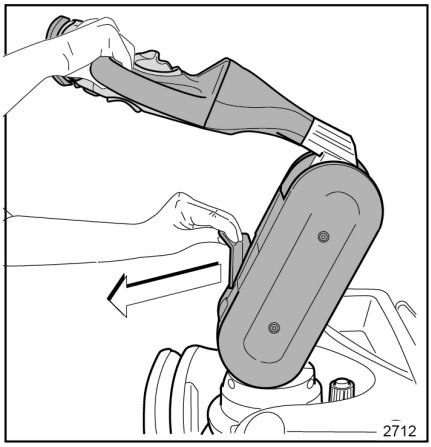
Perform the operation, preferably before starting the truck and only when the truck is stationary.

Carrying out the operation when the truck is moving is prohibited.

NOTE

The preferred means of use with the combi tiller open is in pedestrian mode (operated "from the ground").

– Open the clasp to release the tiller. ▷

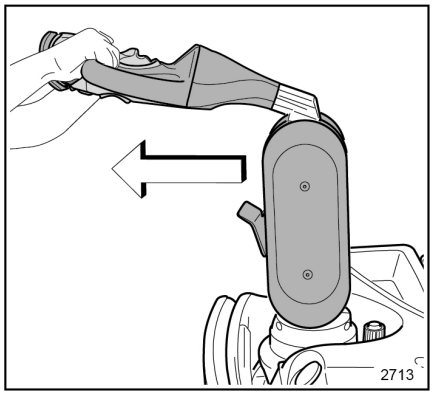


– Use the handle to pull the tiller to open it. ▷

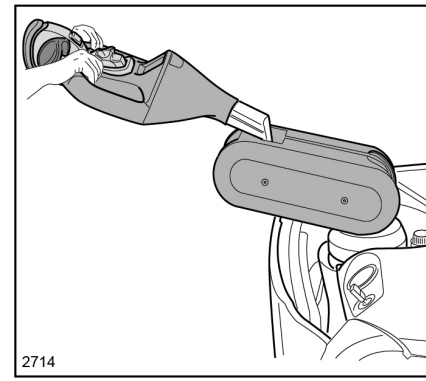
⚠ WARNING

Risk of crushing fingers

When you pull the tiller to open it, keep your fingers away from the tiller release clasp.



– The tiller is open.



Instructions for closing the combi tiller

⚠ CAUTION

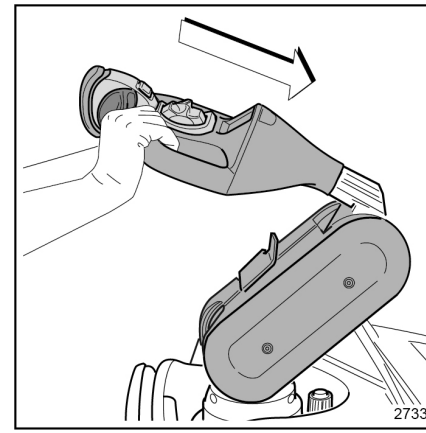
Perform the operation, preferably before starting the truck and only when the truck is stationary.

Carrying out the operation when the truck is moving is prohibited.

NOTE

The preferred means of use with the combi tiller closed is in ride on mode (operated from the platform).

– Use the handle to push the tiller to fold it.
– The clasp closes automatically to lock the tiller.



⚠ CAUTION

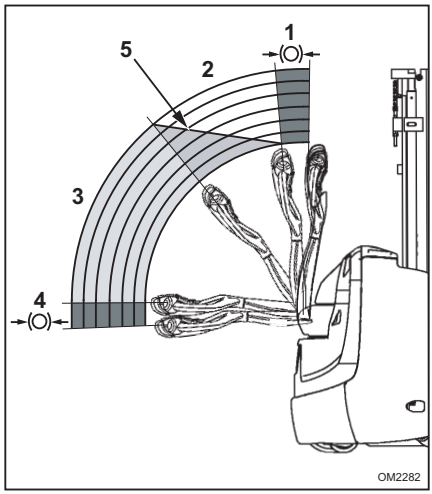
Check that the tiller is locked correctly.

OptiSpeed tiller (only present on EXV and EXVi versions) ▷

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).
- In zone (3), the truck can reach its maximum speed. The traction speed is proportional to the angular position of the throttle.

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 the throttle in accordance with the above.

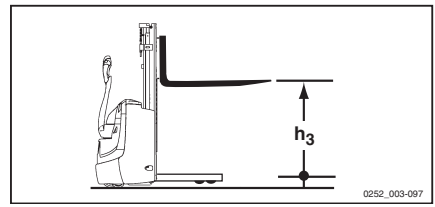
Types of lift mast

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

- Simplex
- Telescopic
- NiHo
- Triplex

Simplex

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

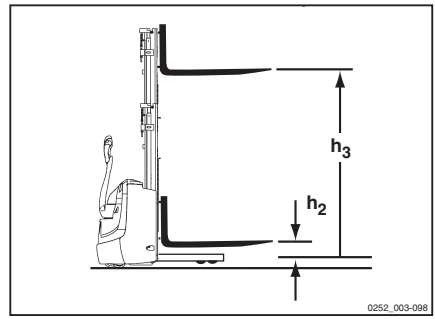


Telescopic

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

⚠ CAUTION

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

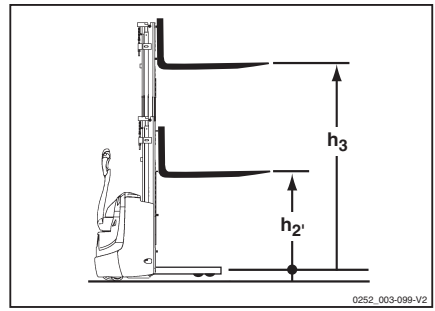


NiHo

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.

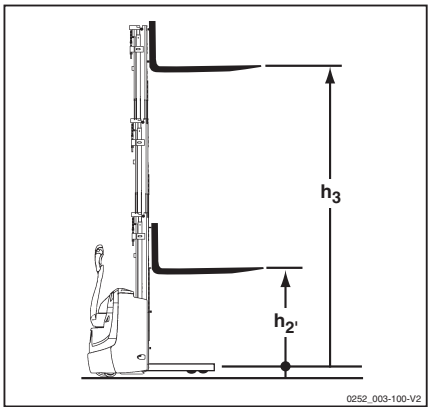


Triplex

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.



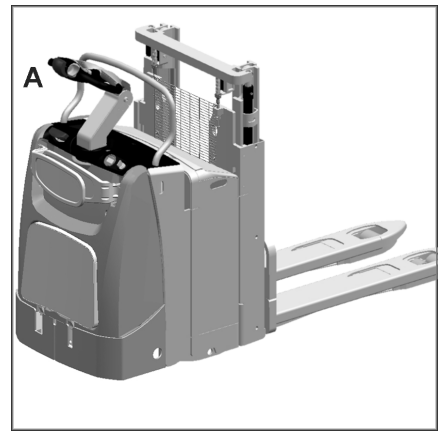
Side protection

Description

The side protection has been designed to protect the operator when the truck is used in ride on mode.

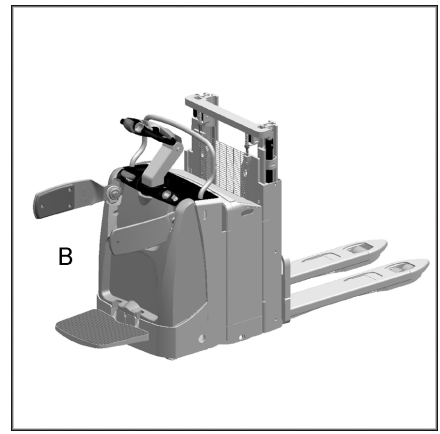
There are two positions:

– Position "**A**" = side protection closed. Position used when the operator is using the truck in pedestrian mode (operated from the "ground") with the platform closed. ▷



The truck also works with the side protection closed (Position "A") and also with the operator on board the truck. In this case the maximum travel speed of the truck will be automatically limited for safety reasons.

– Position "**B**" = side protection open. Position used with the operator on board the truck, standing on the platform. ▷



Opening and closing the side protection

– To open, pull the two operator side protective guards outwards.

– To close, push the two operator side protective guards inwards.

Adjusting the height of the side protection

– To adjust the height of the side protective guards according to the height of the operator, open the side protective guards, then manually pull the side protective guards upwards (three positions). To close the side protective guards, push them down until they reach the original, lowest position.

⚠ CAUTION

Always lower the side protection bars before re-closing them.

Otherwise the side protective guards will not close and this may damage the hoods.

⚠ DANGER

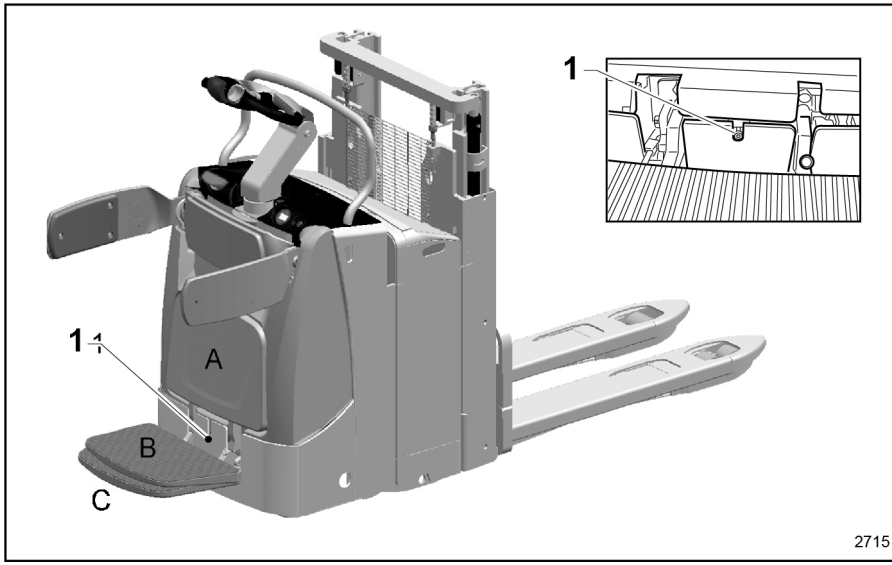
Do not sit on the side protection bars.

⚠ DANGER

Do not climb on the side protection bars.

Platform

Description



The platform can take three positions, **A, B and C**:

Position "A" = platform closed. This position is used when the truck is in pedestrian mode (operated from the "ground") with the side protection closed.

Position "B" = platform in the intermediate position: in this position, the drive unit of the truck is blocked.

Position "C" = platform in the operating position in ride on mode: this position is used in ride on mode.

In this position, the traction and truck speed depend on the position of the side protection:

- Side protection open: The truck can reach its maximum speed.
- Side protection closed: The truck speed is limited electronically.

NOTE

If the platform is closed "**A**" and the side protection is open, the drive unit is blocked.

Moving the platform

To lift or lower the platform, move the platform floor plate by hand.

⚠ CAUTION

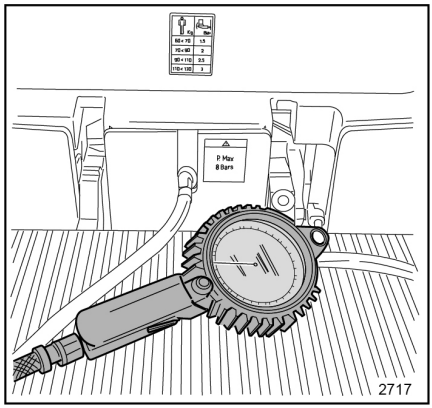
Danger of crushing hands.

When closing the platform, do not leave your hands between the platform and the hood.

Adjusting the platform

For improved damping of vibrations, the platform must be adjusted according to the weight of the operator.

Adjust the pressure of the damping system based on the weight of the operator using the valve (1).



Safety

⚠ DANGER

Risk of falling from the platform.

Position yourself correctly on the platform between the two side protection bars: standing up, facing the forks, with both feet inside the platform.

Turn corners at low speed.

Firmly grip the handle on the tiller head with your hands.

⚠ DANGER

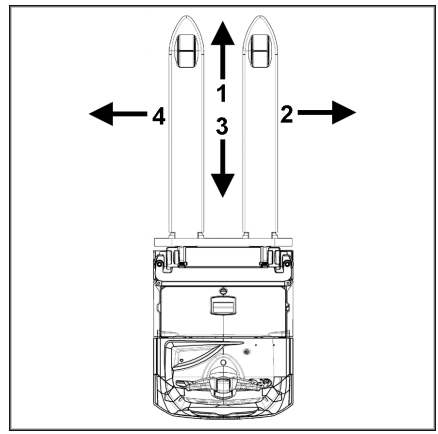
It is strictly prohibited to disable protective and safety devices.

Definition of directions

Definition of directions for EXV, EXVi, EXP, EXV D. Directions also valid for EXV-SF, EXVi-SF and EXV-SF D versions with closed platform and pedestrian mode

Direction of movement defined by the regulations:

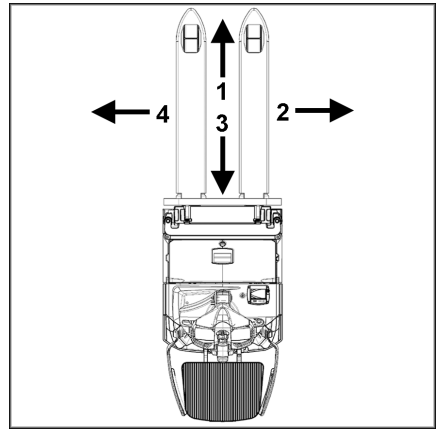
- Reverse travel (1)
- Left (2)
- Forwards travel (3). (Preferred direction of travel)
- Right (4)



Definition of directions for EXV-SF, EXVi-SF and EXV-SF D versions with platform lowered and when the operator is on board the truck

Direction of movement defined by the regulations:

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



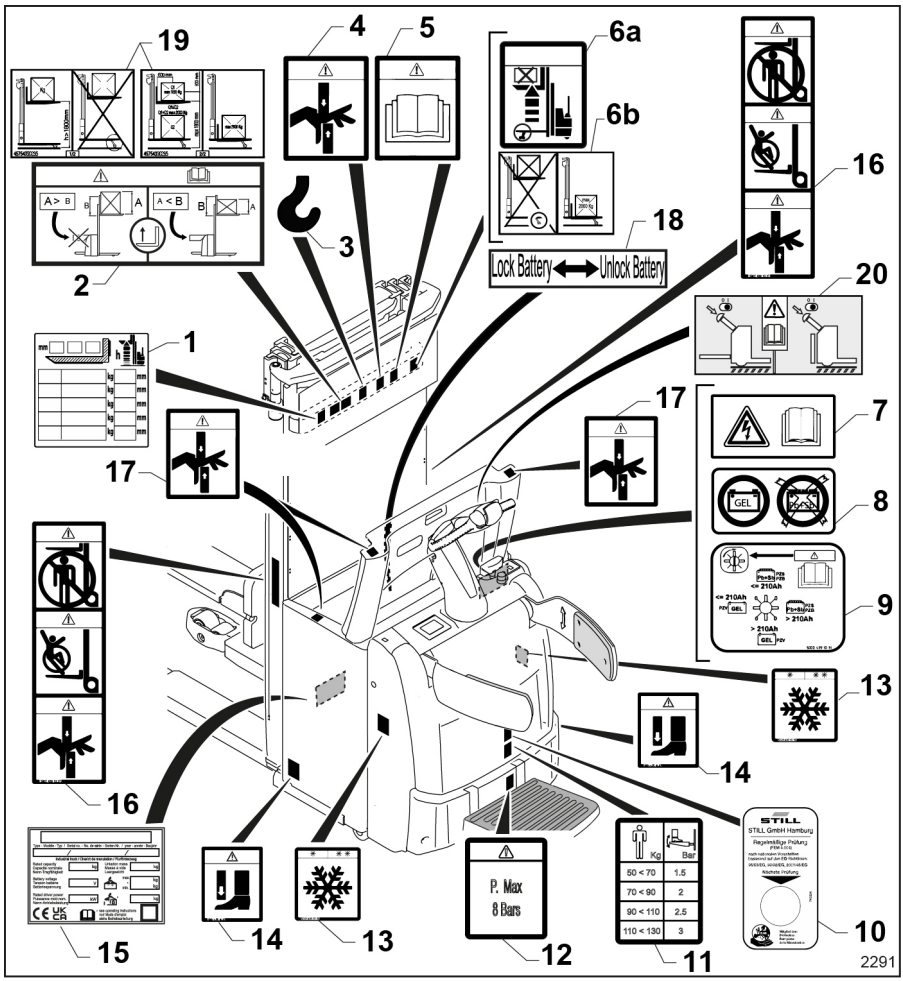
Conclusion

To make it easy for the reader to interpret, the direction of travel will always be defined in the following manner:

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

Markings

Location of labels



1	"Truck capacity diagram" label
2	"Operator side protection" usage label (for the version with operator platform only)
3	"Hook" symbol
4	"Danger of crushing hands" label
5	"Operating and maintenance manual" label
6a-6b	"Lifting danger" label (on initial lift chassis version only)
7	"Operating and maintenance manual" label
8	Version set up for gel batteries
9	"On-board battery charger" label
10	Annual testing label (Germany only)
11	"Operator platform capacity schematic view" label
12	"Maximum permissible pressure" label
13	"Cold store" label (on cold store version only)
14	"Danger of crushing feet" label (on initial lift chassis version only)
15	"Nominal value" designation plate
16	Warning label
17	"Danger of crushing hands" label

18 Lock Battery - Unlock Battery label
19 "Double pallet stacker" label (for double pallet stacker truck version only)
20 "Belly switch" label

Description of labels

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

(2) This symbol, where present, indicates the correct use of the operator side panels with forks raised more than 1700 mm from the ground (approximately 1800 mm with straddles raised). If the height of the load on the forks is **greater** than the height of the load rack, the side panels must be closed (see the left-hand side of the label). If the height of the load on the forks is **less** than the height of the load rack, the side panels can be opened (see the right-hand side of the label).

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

(4) This symbol appears on the lift mast and indicates danger of cutting due to the mast's moving parts.

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

(6a - 6b) The labels (6a) and (6b) are alternatives to one another. The label is present only on the version with initial lift (i). The label indicates that it is prohibited to lift a load more than 1800 mm from the ground while the straddles are raised.

(7) This label indicates that you should consult the specific operating and maintenance manual for the on-board battery charger.

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

(9) This label is only present on the version with the on-board battery charger. The label highlights the possibility of choosing the charging curve.

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

(11) This label is only present on the version with operator platform and side protection. The label indicates the setting pressure of the operator platform depending on the weight of the operator. 1.5 bar below 50 kg, 2 bar between 70 and 90 kg, 2.5 bar between 90 and 110 kg, 3 bar between 110 and 130 kg.

(12) This label is only present on the version with operator platform and side protection. The label indicates the maximum setting pressure for the operator platform. Caution: Increasing the pressure of the control system to greater than 8 bar is prohibited.

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

(14) This label is only present on the version with initial lift (i). The label indicates the danger of crushing feet under the straddles.

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

(16) This symbol appears on the lift 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.

(17) This label warns of the danger of crushing and/or cutting hands during operations required to check or replace the battery, especially when opening and/or closing the battery hood, and during battery replacement. Take care and keep your hands away from the edge of the chassis that acts as a compartment for the battery.

(18) This label is located on the lever that allows you to lock and/or unlock the battery. The label indicates the battery's lock status: (Lock

Battery) battery locked - (Unlock Battery) battery unlocked

(19) "Truck capacity diagram" label for double pallet stacker truck version.

(20) This label indicates that the "belly switch" is always active. An option is available that deactivates the operation of the button when driving with the operator on board the truck (for more information see the "options and variants "section in Chapter 3).

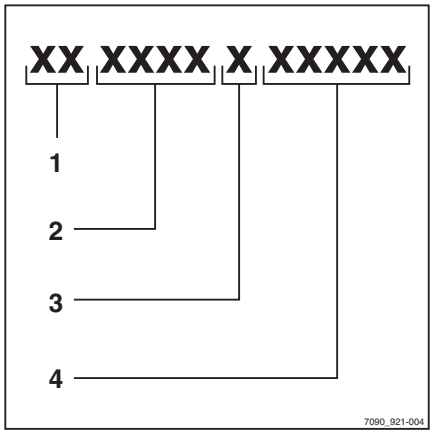
Serial number

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



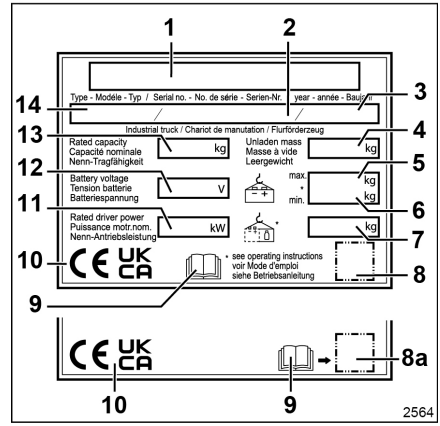
Nominal value designation plate ▷

⚠ DANGER

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

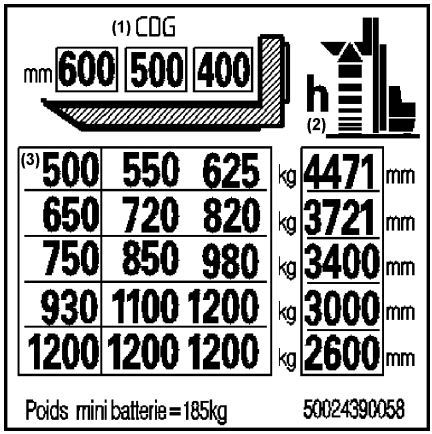
NOTE

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



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

Capacity plate



– The identification plate indicates the following data:

- **(1) CDG** = distance "C" from the centre of gravity of the load on the forks to the fork carriage (in mm)
- **(2) h** = lift height of the forks from the ground (in mm)
- **(3)** = maximum permissible loads "Q" (in kg)

⚠ WARNING

The illustrations are only examples.

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

⚠ DANGER

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

⚠ DANGER

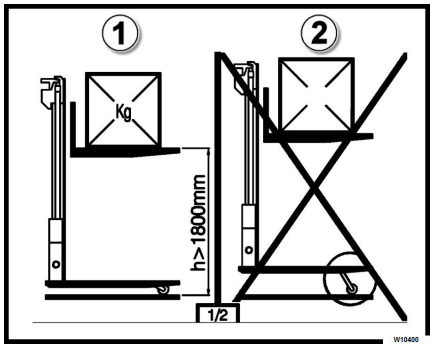
Risk of accident when forks are changed:

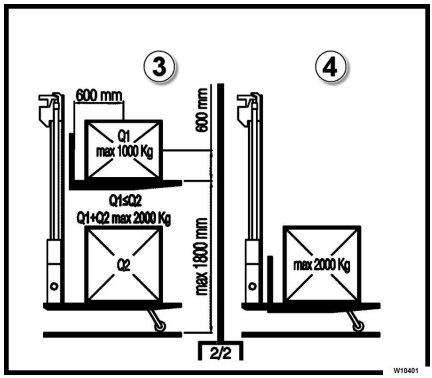
If the forks are changed and a different type of forks to the original forks is fitted, the residual load capacity changes.

When forks are changed, a new residual capacity plate must be affixed.

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

Additional designation plate for the double pallet stacker version (EXV-D)





Description of labels

These labels are present only on the double pallet stacker version (EXV-D). They provide information on handling loads with the double pallet stacker truck version.

⚠ DANGER

Read the following information carefully

Strictly adhere to the recommendations and prohibitions.

Notes relating to use of the truck as a pallet stacker (1) and (2):

- 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 carry loads on the forks when they are raised more than approximately 300 mm from the ground
- The residual capacities are indicated on the capacity plate

Notes relating to use of the truck as double pallet stacker (3).

- When using the double pallet stacker, the maximum total permitted load capacity of the truck is 2000 kg This means that the sum of the load on the straddles and the load on the forks must not exceed 2000 kg
- The load on the forks must be less than or equal to the load on the straddles with a maximum of 1000 kg

⚠ CAUTION

When used as a double pallet stacker, do not allow the forks to reach the height of the sensor on the mast.

The sensor will stop the lifting and forces the lowering of the straddles.

⚠ 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.

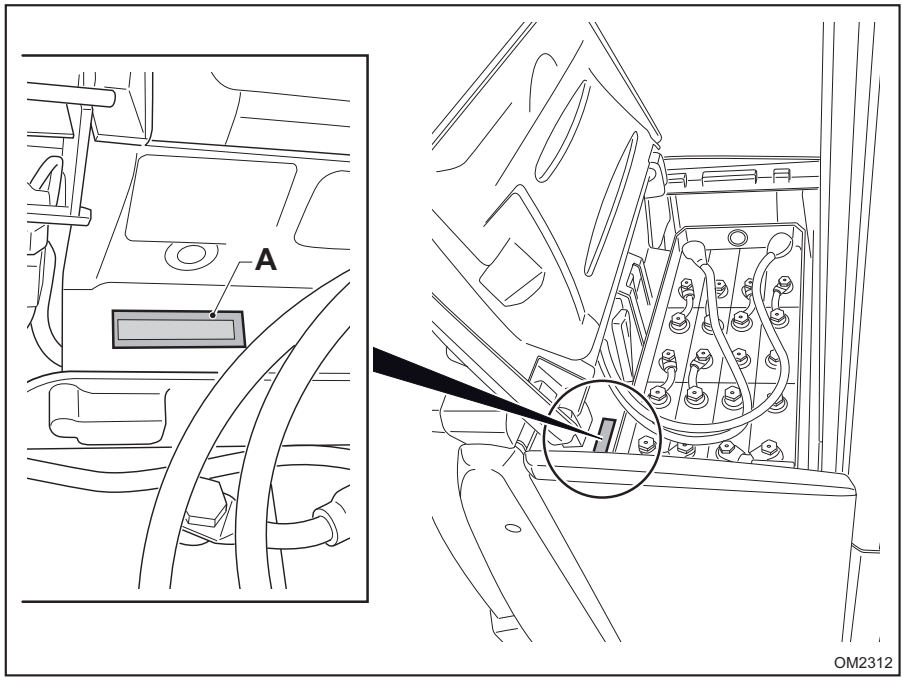
⚠ CAUTION

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 refer to centre of gravity distances up to 600 mm.

Notes relating to use of the truck as platform tractor (4):

- During transport, the maximum load capacity on the forks for the truck is 2000 kg Forks lowered until they are resting on the straddles, and straddles raised using the initial lift control

Chassis frame labelling



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

Options and variants

List of options and variants

List:

- Various types of tyre for the drive wheel
- Various types of load rollers
- Tiller always active (Creep Speed)
- Various types of battery
- Various lift masts and lift heights
- Various fork gauges and fork lengths
- Various types of load rack
- Version with moving straddles "i"(Initial lift)
- Access authorisation via: key or, alternatively, numeric keypad (Digicode)
- Fleet Manager
- Anti-shearing protective guard plate in transparent polycarbonate, positioned on the mast.
- Cold storage version (Cold store)
- Accessories mounting bar
- Accessories mounting bar with clipboard
- Accessories mounting bar with storage tray
- Accessories mounting bar with storage tray and clipboard
- Accessories mounting bar with data socket
- Pivoting wheel lubrication nipples
- Load roller lubrication nipples
- Various types of cables and plugs
- Various types of cables and additional plugs
- Built-in rectifier
- Battery electrolyte level indicator LED
- Centralised battery top-up with distilled water
- Extraction of the battery
- Automatic lowering of the straddles, when the forks are raised
- Dynamic Load Control (D.L.C.)

⚠ CAUTION

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

NOTE

The above list is only a summary. Some optionals are NOT available on all models. For more information, please refer to the price list and contact the authorised sales network.

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.

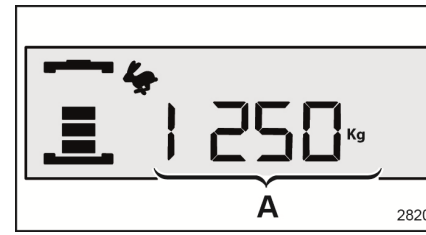
The operator using the truck is the only person responsible for the safety and stability of the truck and/or the load.

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.

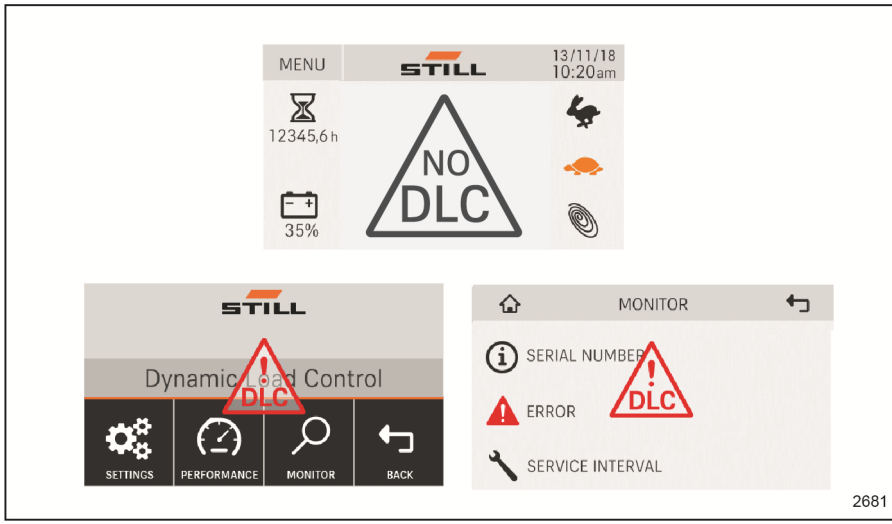
The operator must remain constantly vigilant, observe safety guidelines and follow the indications given by the capacity designation plate of the truck.

⚠ 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:

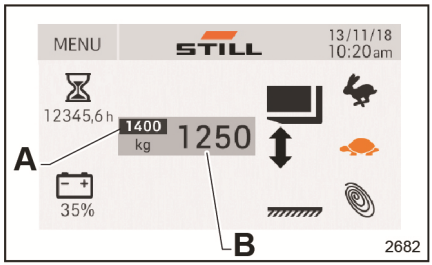
- (A) Maximum capacity of the truck (nominal load)
- (B) Loading weight on the forks

⚠ DANGER

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

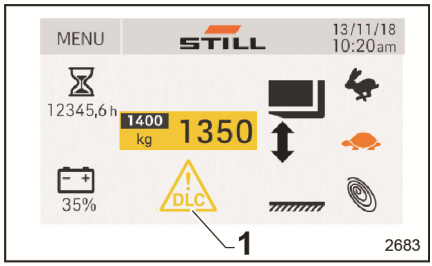
Consider the aforementioned tolerance during truck manoeuvres.

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

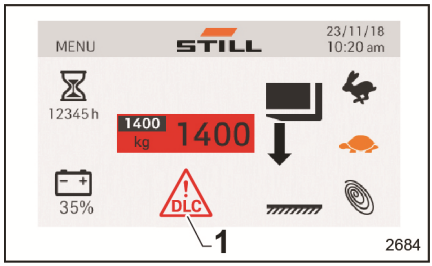


Alarms "DLC 1"

– 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.

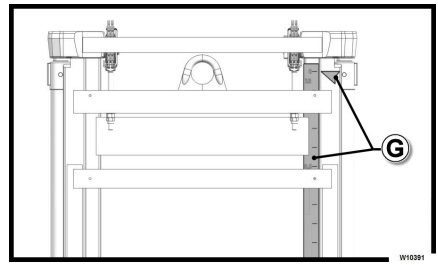


– The red flashing warning triangle (1) on the display indicates that the load on the forks has reached or exceeded the limit of the maximum capacity of the truck.



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

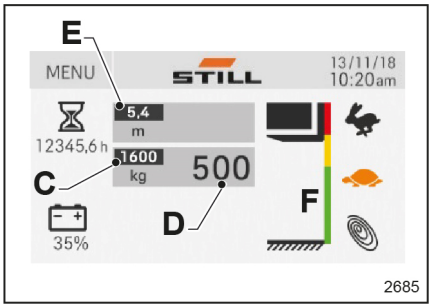
The system detects the loading weight present on the forks (D) with a tolerance of ±50 kg.

Consider the aforementioned tolerance during truck manoeuvres.

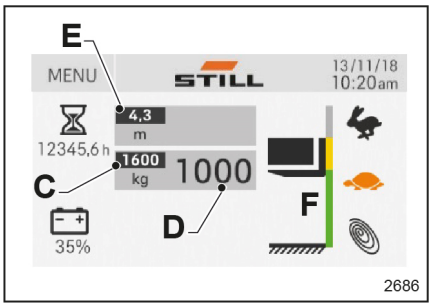
Never exceed the maximum capacity of the truck (C).

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.

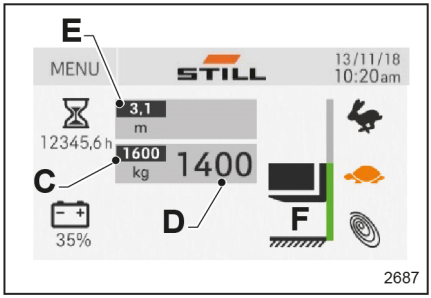
– First example: The load on the forks (D) of 500 kg may be raised to a maximum of 5.4 m (E). The zone (F) indicates that the 500 kg load may be raised up to the red zone, which can be easily identified on the coloured adhesive string (G). ▷



– 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). ▷

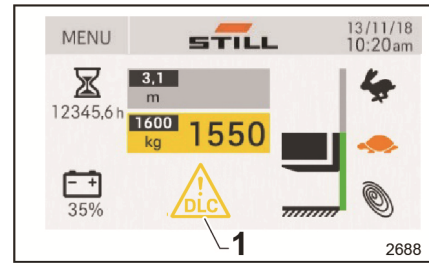


– Third example: The load on the forks (D) of 1400 kg may be raised to a maximum of 3.1 m (E). The zone (F) indicates that the 1400 kg load may be raised to the green zone, which can be easily identified on the coloured adhesive string (G). ▷

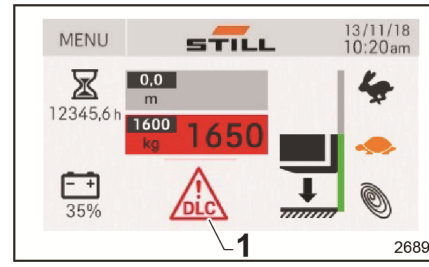


Alarms "DLC 2"

– 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:

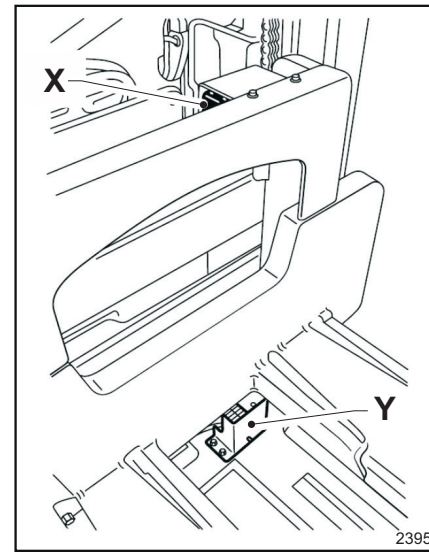
- Manage the residual capacity of the truck in relation to the weight of the load and the height of the mast.
- Manage the truck's performance data.

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

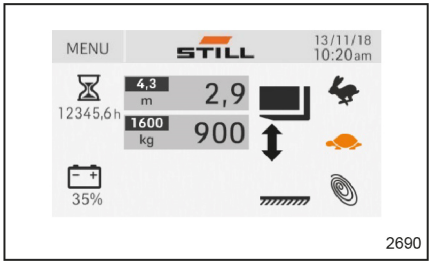
The values displayed on the screen (height and load) are provided for informational purposes only. Due to the tolerance range, the values cannot be used for precision operations.

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.

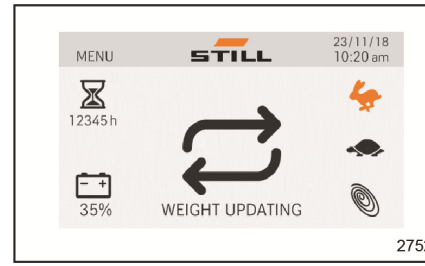
▷



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.

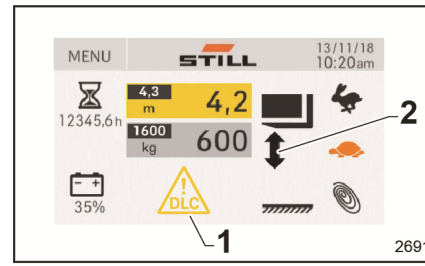
The following signals warn the operator that the height of the forks **(4.2 m) is very close to the maximum permissible lift height (4.3 m)**:

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

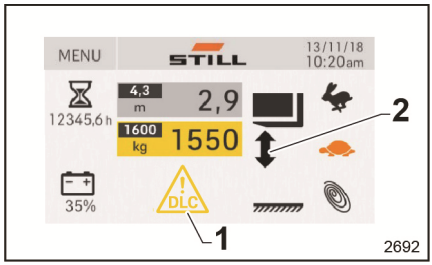
- The weight of the load on the forks is 600 kg (± 50 kg).
- The maximum permissible load on the forks is 1600 kg.



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.

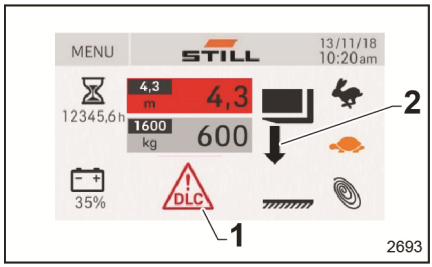
– The arrow (2) shown on the display indicates that it is still possible to continue to raise or lower the forks with due caution.

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):**

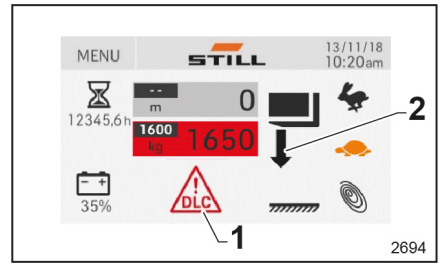
- The truck emits a warning sound
- At the same time, a **red** flashing warning triangle symbol (1) appears on the display.

– 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

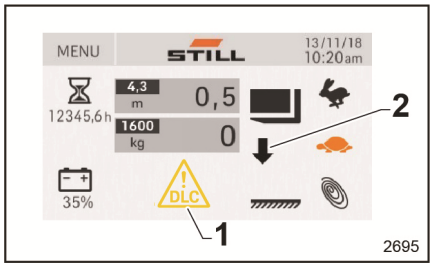
There is a risk of hitting a shelf or a load

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

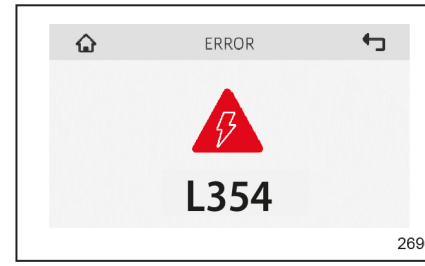
Error code L354 (1) may be displayed on the screen.

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.



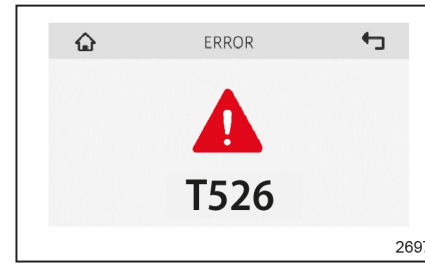
In the event of error code T526

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 is equipped with the option, the truck automatically lowers the straddles (if raised off the ground) during the fork lifting operation.

Operating limits:

- the automatic straddle lowering function is triggered by exceeding (when the forks are raised) the height of a sensor positioned below the lift mast (the sensor is approximately 400 mm above the ground).

NOTE

Variant! The truck manufacturer offers the option on various models. If you have purchased a model of truck equipped with the operator's platform, the straddle automatic lowering function is intentionally blocked for safety reasons when the operator guides the truck from the ground in pedestrian mode. In this case, the truck behaves in the same way as the standard version. With ride-on driving, the automatic function operates normally.

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.

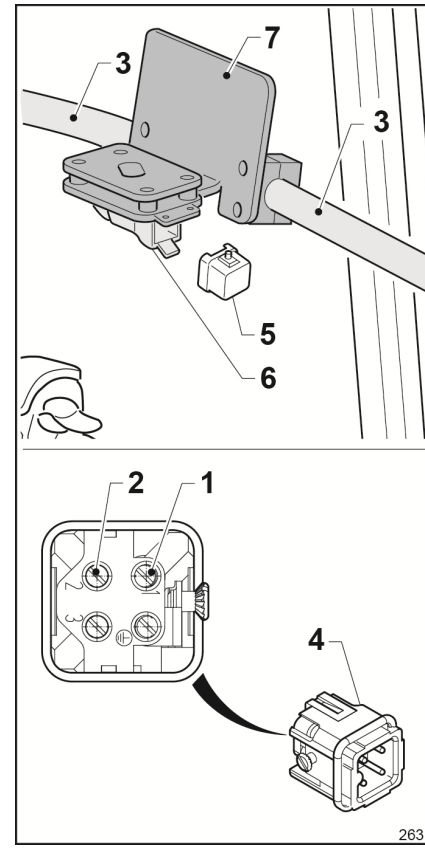
⚠ WARNING

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.

⚠ 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).



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

Battery electrolyte level indicator ▷ LED (optional)

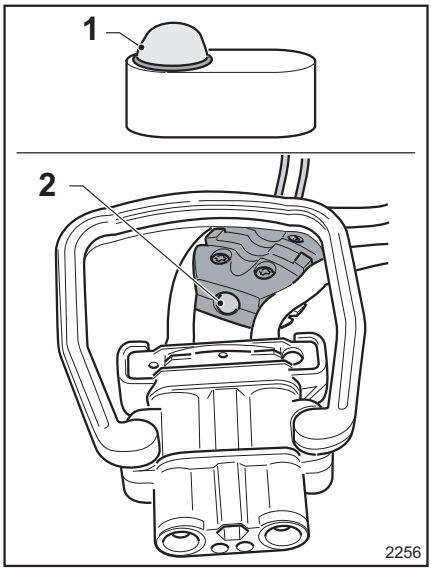
There are two versions of the LED:

- 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.



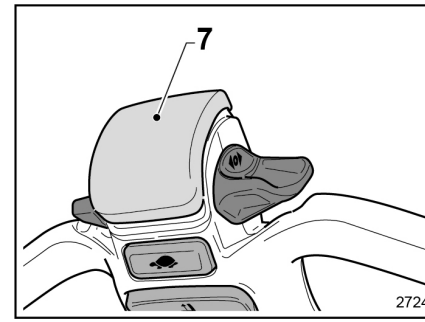
Belly switch (option)

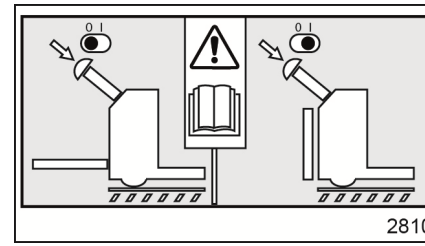
Belly switch (7):

- Only for trucks with an operator platform, an option is available that disables operation of the belly switch when the operator is driving on board the truck.

If this option is chosen/purchased:

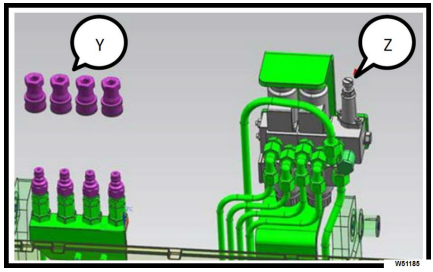
- When driving with the operator on board the truck, the operation of the button (7) will be **deactivated**. In this case, the label shown shall be affixed to the tiller head of the truck (see the left-hand side of the label).
- When driving with the operator in "pedestrian" mode, the button (7) will operate in the standard way (see the right-hand side of the label).





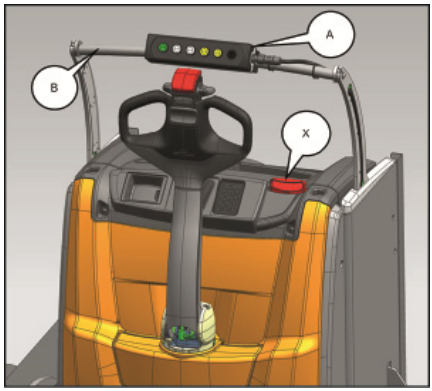
Auxiliary hydraulic lines (optional)

Notes relating to the application of the equipment



- The theoretical maximum flow rate that can be supplied to the quick-release couplings is 12 l/min. The theoretical super pressure that can be supplied by the pump to the quick-release couplings is approximately 230 bar. Adjust the super-pressure valve using the regulator **(Z)** positioned on the distributor valve assembly. Use suitable hydraulic equipment.
- The additional equipment must have a ¼" female connector **(Y)** to connect to the quick-release couplings on the truck (ISO7241-1 Type HP 08).
- In the version with two auxiliary hydraulic lines with clamps, the installer must be careful to connect the clamp to the two dedicated quick-release couplings, which can be identified by a black clip located on the coupling. It is strictly forbidden to connect the clamp anywhere else.
- To ensure safe use of the equipment fitted, please refer to the specific user manual for the equipment (e.g. clamp etc.).
- If you install additional equipment, you must affix to the truck an additional residual capacity plate for the truck with equipment. Observe the capacities and the load centres of gravity indicated on the additional capacity plate for the truck with equipment. The values indicated on the capacity plate refer to compact and homogeneous loads and must not be exceeded, otherwise the stability of the truck and the load-bearing capacity of the structures may be compromised.
- Apply the relevant labels (ISO 7000) to buttons that are not identified by a symbol that illustrates their function. To indicate to the driver the function performed by each button, apply the labels in accordance with the supplementary equipment installed.

Additional equipment control keypad



The specific commands for the additional hydraulic equipment are positioned on the keypad **(A)** fixed on the accessories mounting bar **(B)**. In case of emergency, press the relevant button **(X)**

The keypad (A) is available in four versions depending on the set-up requested by the customer:

- An auxiliary hydraulic line without clamp
- An auxiliary hydraulic line with clamp
- Two auxiliary hydraulic lines without clamp
- Two auxiliary hydraulic lines with clamp

Daily checks

- Before starting the shift, check that the keypad is operating correctly. Immediately advise your supervisors if the controls on the keypad are not operating correctly.

Operator position

- The keypad can only be used when the operator is on the tiller side. Its use is not permitted in any other position.

Use of the keypad

- The keypad can only be used when the truck is stationary
- Danger of crushing hands! Do not place your hands or other parts of your body between the moving parts of the mast.

- Standing alongside the mast or the forks is prohibited.
- You must not operate the controls without looking or without having an adequate and full view of the danger area around the truck and of the material to be handled.
- The truck must not be used by more than one person at once.

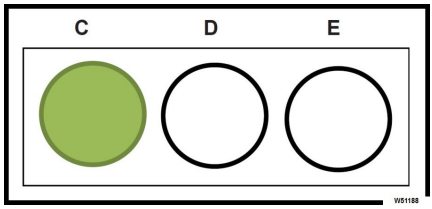
– The use of controls located on the keypad engages a safety system that locks all other truck functions (driving, lifting, lowering).

– When using the option, the display turns on the alarm indicator light. If the machine is equipped with a touch display, the following warning will be displayed, which varies depending on the language set (the image shows it in English):



- "Trazione disattivata - Idraulica addizionale attiva"
- "Traction inactive - Hydraulique add. Active"
- "Traction deactivated - Aux. hydraulic active"
- "Antrieb inaktiv - Zusatzhydraulik aktiv"
- "Tracción desactivado - Hidráulica adicional activa"
- "Tractie uitgeschakeld - Aux. hydraulische actief"

Keypad for an auxiliary hydraulic line without clamp

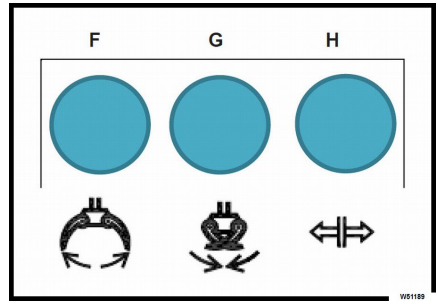


The keypad has three buttons:

- Consent button **C**, green
- Free button **D**, white
- Free button **E**, white
- Buttons **D** and **E** are intended for additional equipment for use by the customer, e.g. side shift or fork synchroniser

To activate one of the two commands **D** or **E**, hold down the green consent button **C** with one hand, and with the other hand press the required command **D** or **E**.

Keypad for an auxiliary hydraulic line with clamp



The keypad has three buttons:

- Button to open the clamp **F**, blue
- Button to close the clamp **G**, blue
- Consent button **H**, blue

Opening the clamp

- To open the clamp, hold down the consent button **H** and with your other hand press the button **F**.

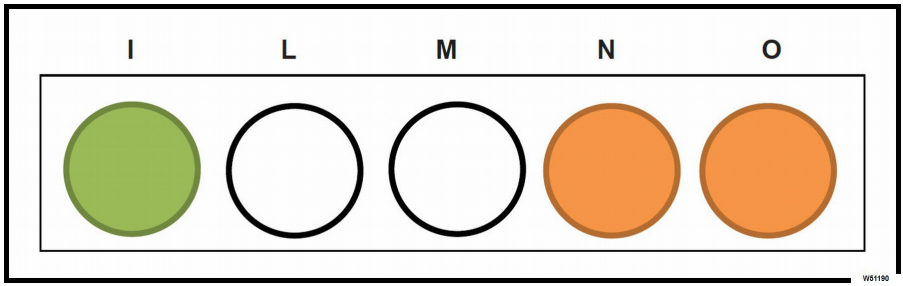
Closing the clamp

- To close the clamp, hold down the consent button **H** and with your other hand press the button **G**.

Switching between opening and closing the clamp:

- To switch between opening and closing the clamp, the user must remove both hands from the keypad and none of the buttons must be pressed.

Keypad for two auxiliary hydraulic lines without clamp



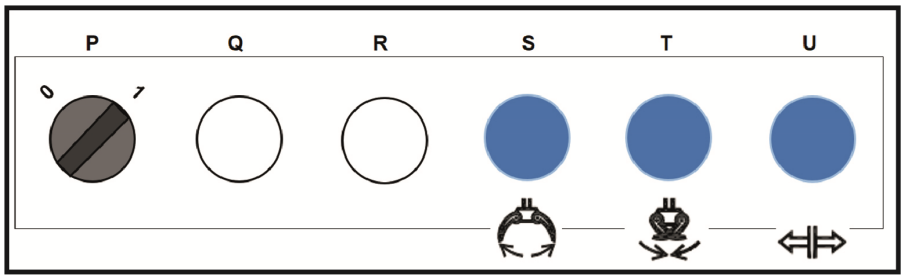
The keypad has five buttons:

- Consent button **I**, green
- Free button **L**, white
- Free button **M**, white
- Free button **N**, yellow
- Free button **O**, yellow
- Buttons **L**, **M**, **N** and **O** are intended for additional equipment, e.g. side shift or fork synchroniser

To activate one of the commands **L**, **M**, **N** or **O**, hold down the green consent button **I** with one hand, and with the other hand press the required command **L**, **M**, **N** or **O**.

Press commands **L**, **M**, **N**, **O** one at a time to avoid locking keypad operation. If the controls become locked, release all the buttons to restore correct operation of the keypad.

Keypad for two auxiliary hydraulic lines and clamp



The keypad has a selector and five buttons:

- On/off selector **P** To turn on the keypad, turn the selector to position **1**. To turn off the keypad, turn the selector to position **0**. Both positions are indicated on the label on the keypad.
- Free button **Q**, white
- Free button **R**, white
- Button to open the clamp **S**, blue
- Button to close the clamp **T**, blue
- Clamp consent button **U**, blue
- Buttons **Q** and **R** are intended for additional equipment, e.g. side shift or fork synchroniser.

To activate one of the two controls **Q** or **R**:

- Turn on the keypad using the selector **P**
- Then press the required command **Q** or **R**

Use of clamp commands:

- Turn on the keypad using the selector **P**
- To open the clamp, hold down the consent button **U** and with your other hand press the button **S**
- To close the clamp, hold down the consent button **U** and with your other hand, press the button **T**

Switching between opening and closing the clamp:

- To switch between opening and closing the clamp, the user must remove both hands from the keypad and none of the buttons must be pressed.

Before switching off the truck, turn the selector **P** to position **0**. The keypad will not work if the selector **P** is set to position **1** when the truck is started. To restore the correct operation of the keypad, turn the selector **P** to position **0**. Then switch the truck off and on again using the key.

Observe the sequence of commands given above.

Not respecting the sequence of commands will lock the keypad functions

- With selector **P** in position **1**, if you press one of the two commands **Q** or **R** when the clamp consent button **U** is pressed, the keypad functions will lock.
- With selector **P** in position **1**, if you press one of the two commands **Q** or **R** and then press one of the buttons **S**, **T** or **U**, the keypad functions will lock.

To restore correct operation of the keypad, release all the buttons and turn the selector **P** to position **0**.

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.

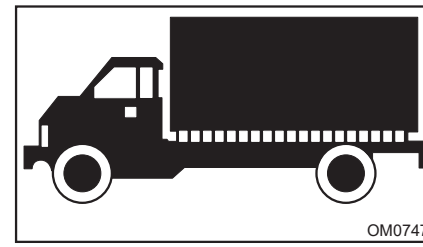
Risks

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

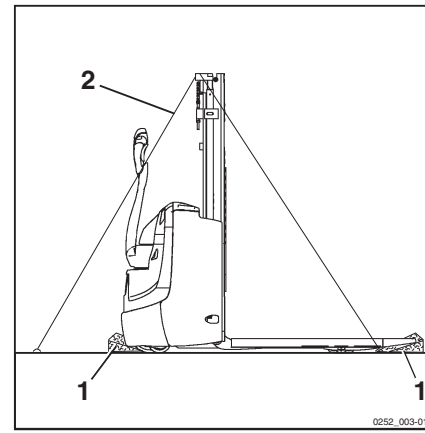
– Pull out the battery female connector (if present).

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

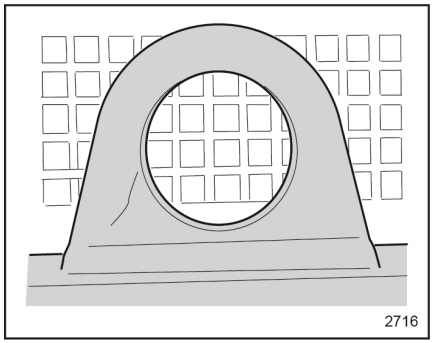
The forklift must be protected from atmospheric agents during transport and storage.

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.

Lifting with a crane or a bridge crane ▷



⚠ CAUTION

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.

– Thread the rope sling through the special eyelet 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.

⚠ 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.

Breaking-In

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

Checks and actions prior to commissioning

List of checks before use

⚠ WARNING

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

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

⚠ CAUTION

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

⚠ CAUTION

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

⚠ CAUTION

Drive very slowly during the operational tests.

⚠ CAUTION

Perform the braking checks in pedestrian mode (operated from the "ground").

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

- Check that there are NO oil leaks in the area under the truck.
- Visually check the uncovered sections of hydraulic hoses and pipes to ensure that they are in good condition and to detect any oil leaks.
- Check that there are no objects (wires of various types, nails, screws, pieces of tape etc.) impeding the operation of the wheels and rollers. The wheels and the load rollers must roll freely.
- The wheels must not show any sign of damage or heavy wear. They must be correctly mounted.
- The roller tracks of the column must be coated in a visible film of grease.
- The chains must be undamaged and must be evenly and adequately tensioned.
- Check that the battery cover is fully and properly closed.
- Test that all of the hoods and protective guards are present and check that they are correctly mounted.
- The mast protective screen must be intact and correctly mounted.
- There must be no objects on the truck that may limit visibility.
- Check that NO stickers are missing or damaged. Replace damaged or missing stickers in compliance with the marking position table.
- Visually check that the forks or other load-carrying equipment show NO obvious damage (e.g. bends, cracks, significant wear).
- Check that the battery male connector and female connector are fully intact and in good condition. Check that they are working correctly.
- Check that the start/stop key works correctly.
- Check the indications on the display.
- Check that the horn works correctly.
- Check that the buttons and the control throttles on the tiller are working correctly.
- One at a time, push the buttons and then release them. Check that the buttons return automatically to their initial positions. The buttons should not remain activated or stuck.
- 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.
- Test that the truck brakes and stops when the throttle is released while driving.
- Tilt the tiller, then release it. Check that the tiller automatically returns to the vertical position.

- Test that the truck brakes and stops when the tiller is released while driving.
- Check that the truck brakes and stops when the tiller is pushed all the way down while driving.
- Check that the emergency shutdown handle is operating correctly. Carry out the test when travelling towards the forks.
- Check that the anti-crush/operator anti-crush protective device is operating correctly.
- Check that the brake is operating correctly.
- Test that the electromagnetic brake works effectively.
- Check that the battery harness is in good condition.
- Check and test the battery electrolyte level and density as indicated in the battery instructions.
- The operator must be qualified to drive the truck. The operator must be able to reach the controls and operate them (especially the anti-crush protective device). Do not obstruct access to the controls.
- Check that the side protection panels are in good condition and are operating correctly (EXV-SF only).
- Visually check that the operator platform is in good condition and that it is operating correctly (EXV-SF only):

  - Climb onto the operator platform and turn on the truck.

  - Test that the truck goes into forwards/reverse travel using the control throttle.

  - Climb down from the step plate and visually check that the operator platform automatically moves to a rest position, tilted slightly upwards.

  - Stand to the side of the truck and make sure that the area in front of and behind the truck is clear.

  - Using a boom, tilt the tiller without turning and slightly rotate the control throttle towards the forks. Repeat the sequence, turning the throttle in the opposite direction. In both cases, test that the truck remains at a standstill. The truck must NOT move.

  - Push the platform upwards. Push the operator platform slightly to check that it automatically moves into a vertical, fully closed position. Caution: danger of crushing hands!

  - With the platform in a vertical position and the side panels open, check that the truck does NOT function!
- Check that the fork stop latches are in good condition, operating and positioned correctly (EXP only).
- Check that the fork stop latches are properly and completely closed (EXP only).
- Check that the forks are locked and cannot move accidentally (EXP only).
- Check for the presence and the correct positioning of the mechanical stop that prevents the unintentional extraction of forks (EXP only).

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

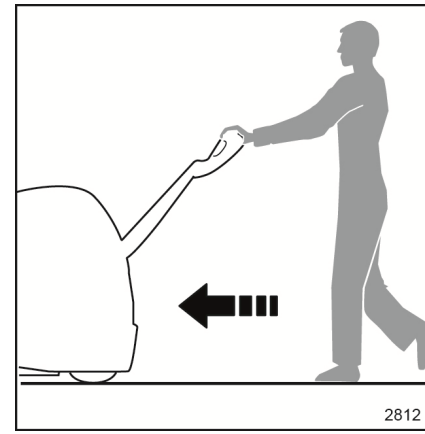
Risk of feet being crushed.

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. ▷

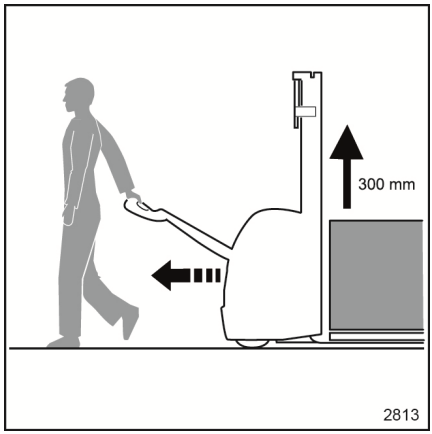


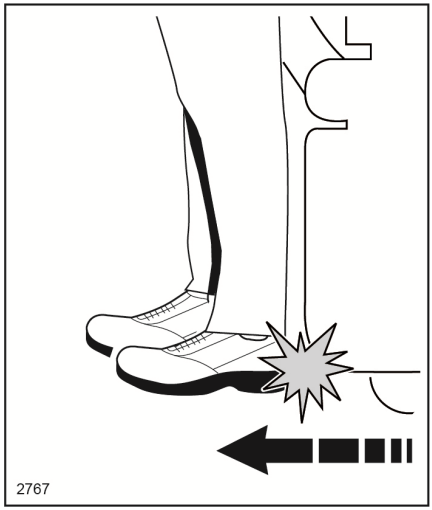
Recommended operator position during the preferred direction of travel (opposite direction to the forks) ▷

⚠ DANGER

Risk of crushing feet

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



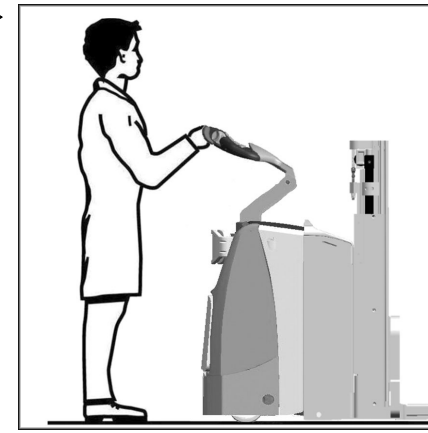


Operator position for version with platform

There are two driving positions:

- Pedestrian mode driving position — "operated from the ground"
- Ride on mode driving position

Pedestrian mode driving position — "operated from the ground"



The operator should drive the truck using the driving and lifting controls located on the tiller head.

In this configuration:

- The operator side protection panels are closed completely
- The platform is closed completely
- With standard tiller or combi tiller closed, the maximum speed of travel is limited for safety reasons.
- With combi tiller open, the maximum authorised speed is slightly higher, as the operator moves the truck from a greater safety distance.

⚠ CAUTION

The truck may only be operated in pedestrian mode if the side protection and the side panels are fully closed.

Otherwise the truck will not start.

⚠ CAUTION

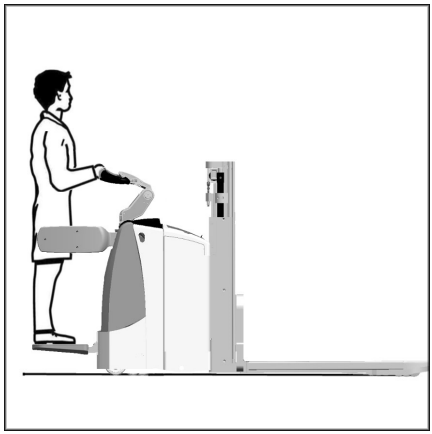
Risk of feet being crushed.

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

⚠ CAUTION

Sitting on the truck is strictly prohibited.

Ride on mode driving position



The operator should drive the truck using the driving and lifting controls located on the tiller head.

In this configuration:

- The platform must be fully open
- With the side protection closed, the maximum speed of travel is limited for safety reasons.
- With the side protection open, the maximum authorised speed is slightly higher, as the operator is driving in a safer situation, restrained by the side protection.

⚠ CAUTION

The truck may be operated in ride on mode with the side protection either open or closed.

⚠ CAUTION

In ride on mode, opening the combi tiller is prohibited.

If the clasp to close the tiller is not shut properly, the truck will not start.

⚠ DANGER

Risk of falling from the platform.

Position yourself correctly on the platform between the two operator side protection panels.

Turn corners at low speed.

While driving, firmly grip the handle on the tiller head with your hands.

⚠ DANGER

Do not sit down and do not climb on the side protection panels

Using the truck

Stopping the truck in emergencies

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

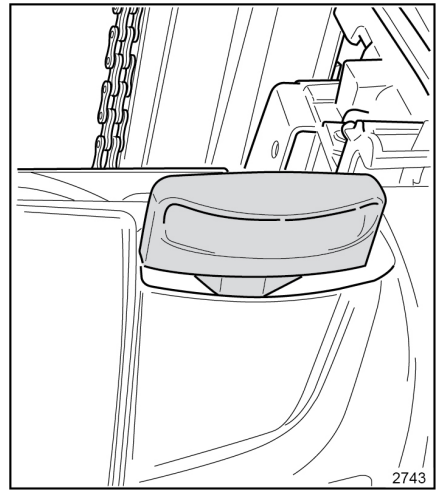
– Press the emergency shutdown handle. This blocks all of the truck functions, so the truck will brake and stop.

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

– Release the tiller to the rest position.

– To restart the truck, pull the emergency shutdown handle by lifting it.

▷



⚠ CAUTION

This protective device must be used only in emergencies; the repeated use of this device may cause problems with the electronic equipment or breakdowns.

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

Pedestrian drive mode version (operated from the "ground")

- Grip the tiller head correctly
- Tilt the tiller to the working position
- Select the desired direction of movement using the throttle; the truck speed is proportional to the angular position of the throttle
- Reduce the angle of rotation of the throttle compared to the neutral position to brake the truck electrically.

⚠ CAUTION

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

Ride-on drive mode version (only for version with platform)

- Grip the tiller head correctly
- Manually open the platform
- Manually open the operator protective guards
- Mount the platform
- Tilt the tiller to the working position
- Select the desired direction of movement using the throttle; the truck speed is proportional to the angular position of the throttle
- Reduce the angle of rotation of the throttle compared to the neutral position to brake the truck electrically.

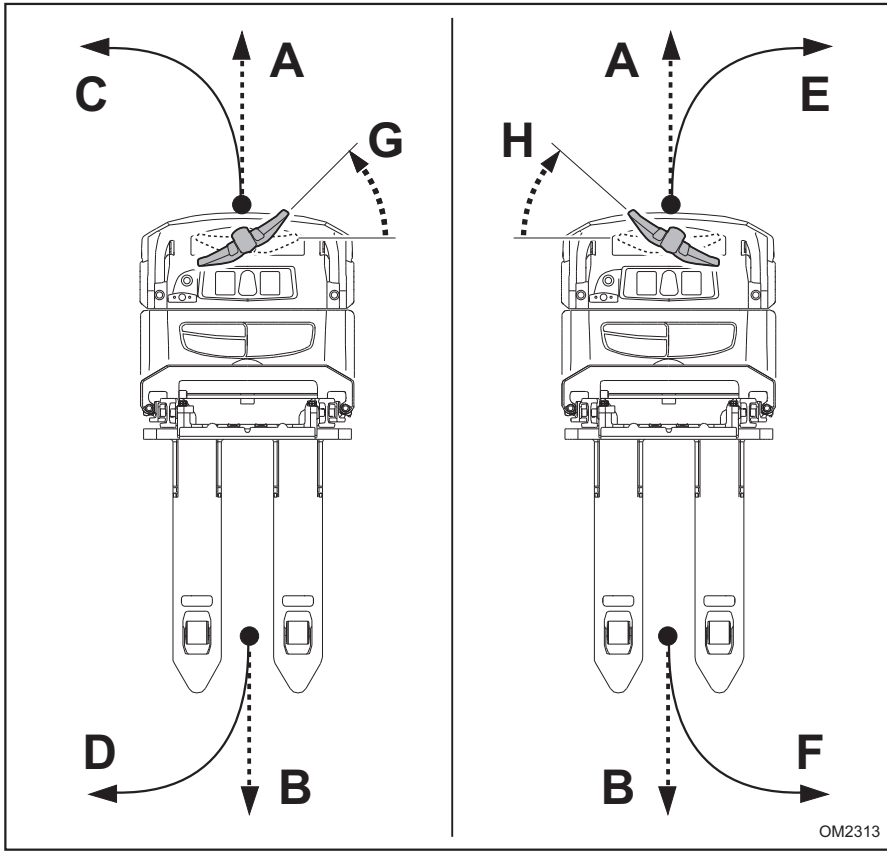
⚠ CAUTION

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

⚠ CAUTION

Keep both feet inside the platform

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 132

⚠ 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

- Parking in pre-arranged and designated areas.
- Lower the forks to the ground.
- Release the tiller to activate the parking brake.
- For the version with platform, close the platform and the operator's protective devices.
- Switch off the truck: by turning the key to position " 0" and remove the key from the panel or alternatively, if there is one, switch

off the truck by means of the numeric key-pad (Digicode),

⚠ DANGER

Park the truck in such a way as not to obstruct passageways and/or render unusable the emergency equipment (e.g. , fire extinguishers and fire hydrants).

Forklift Use in Cold-Storage Rooms.

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

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

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

⚠ CAUTION

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

⚠ CAUTION

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

Avoid the formation of ice on the truck!

⚠ CAUTION

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

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.

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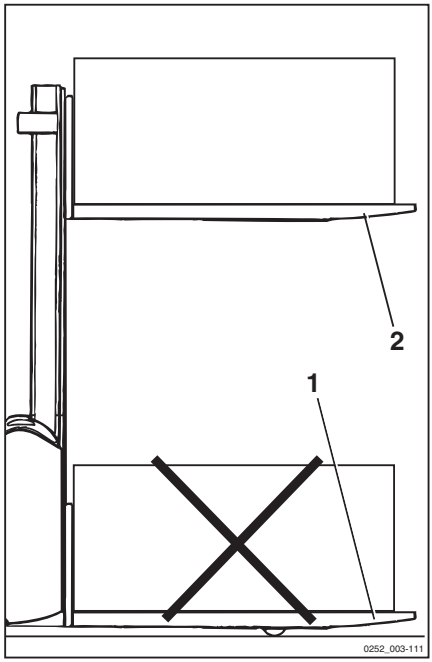
⚠ CAUTION

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 designation plate for the double pallet stacker version (EXV-D)", Page 89

⚠ 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.

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

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Example	
Weight of load to be lifted:	1200 kg (3)
Distance between the load centre of gravity/fork carriage:	600 mm (1)
Permissible lift height:	2600 mm (2)

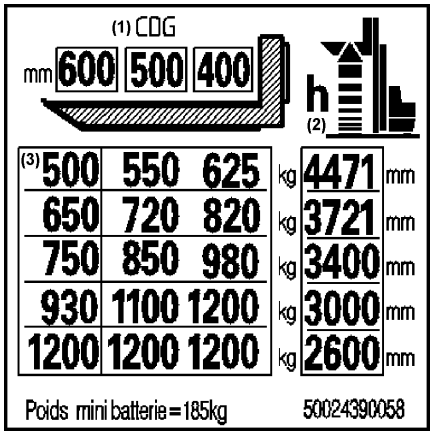
⚠ WARNING

The illustrations are only examples.

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

⚠ WARNING

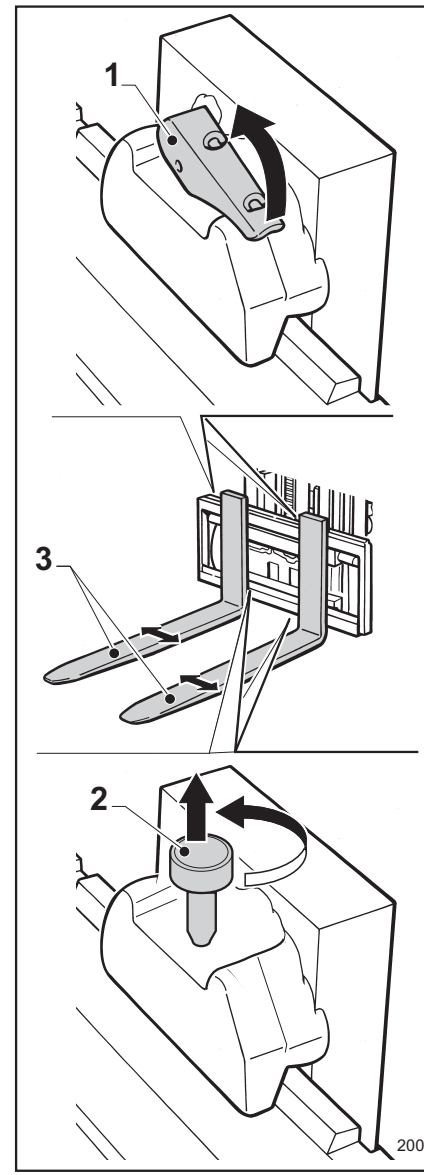
If small items are being transported or if the load exceeds the height of the fork carriage, a load protective guard must be installed to prevent the items from falling on the operator.



(1) CDG = distance "C" from the centre of gravity of the load on the forks to the fork carriage (in mm)
(2) h = lift height of the forks from the ground (in mm)
(3) Maximum permissible loads "Q" (in kg)

Adjusting the fork distance (if present)

– Raise the locking lever (1), or raise and rotate the knob (2) by 180° depending on the type of lock, (1) or (2), installed on the forks. ▷
– Move the fork arms (3) in relation to the dimensions of the load to be lifted.
– Lock the forks in position again by moving the lever (1) or knob (2) in the opposite direction and ensuring that the forks are locked in one of the notches on the fork carriage rail.



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. This function prevents the forks from striking the chassis and the load from hitting the floor.

Automatic reduction of the driving speed in relation to the lift height

As indicated in the chapter on safety devices, the truck is equipped with two sensors that trigger the automatic reduction of the truck's driving speed:

- The first sensor is positioned **below** the lift mast. This sensor triggers an automatic reduction of the truck's driving speed when the forks exceed the height of the lower sensor.
- The second sensor is positioned **at the top** of the lift mast. This sensor triggers an additional automatic reduction of the truck's driving speed when the forks exceed the height of the higher sensor.

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

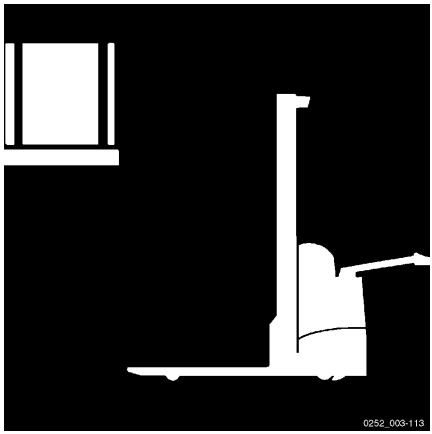
Do not strike the wall, the shelving or other loads and/or objects behind the load to be picked up.

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

Load pick up from shelving

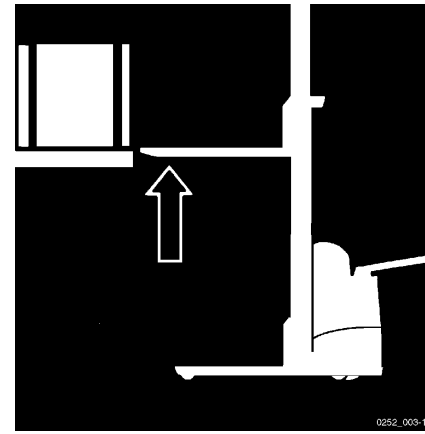
– Approach the shelving at moderate speed. Use the drive control throttles to gradually slow down and stop the truck perpendicular to the shelving. ▷

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



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

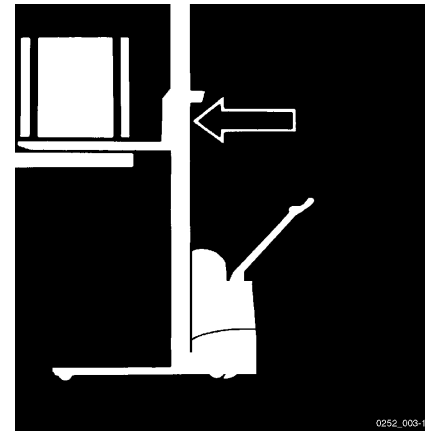
– Move the truck slowly forwards to insert the forks into the load.



⚠ 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. ▷



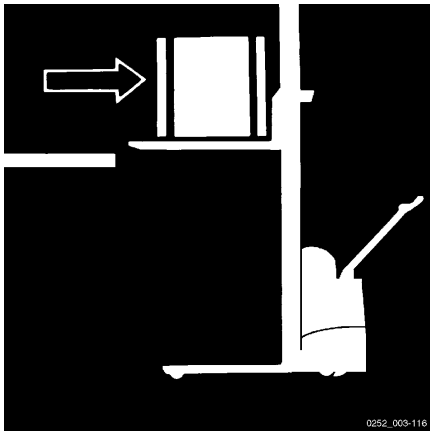
⚠ DANGER

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

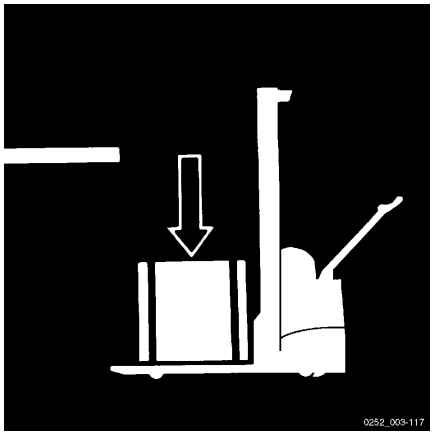
Do not strike the wall, the shelving or other loads and/or objects behind the load to be picked up.

– 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.



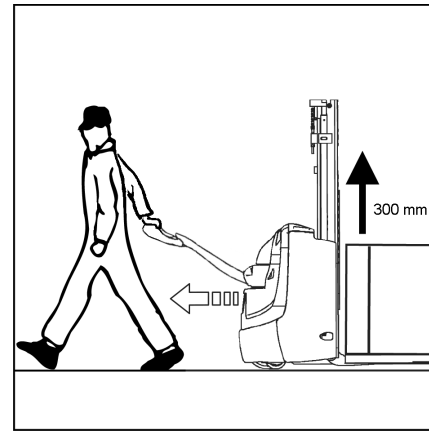
– Lower the load to the transport position, approximately 300 mm from the ground, and read the "Transporting loads" section. ▷



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

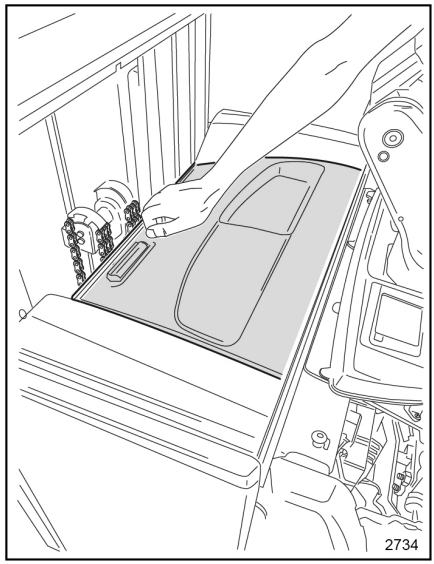
The forklift is not qualified to tow trailers.

Charging the battery

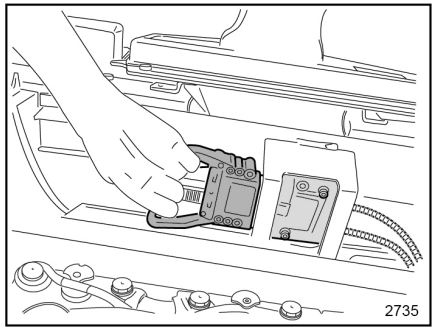
Internal accessibility

Opening the battery cover

– To access the battery and respective plug/ outlet, raise the battery compartment cover using the appropriate handle. ▷



– If you need to recharge the battery, disconnect the battery plug and socket by means of the appropriate handle. ▷



Closing the battery cover

– Close the battery cover.

⚠ WARNING

Danger of crushing.

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 lead battery

⚠ CAUTION

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

You can only remove the plug from the socket when the truck is switched off.

⚠ DANGER

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

- Access the upper part of the battery, open the battery hood and hold the hood open.
- Connect the battery outlet to the battery charger to begin charging
- Turn on the external battery charger
- After the battery charging operation is completed, switch off the battery charger
- Unplug the battery charger
- Plug the battery in again
- Close the battery hood

NOTE

Refer to the battery operating instructions for more information.

Charging curve selector (only with on-board battery charger)

The curve is selected using the selector located on the front face of the charger. The curve selector is protected by a cap.

⚠ CAUTION

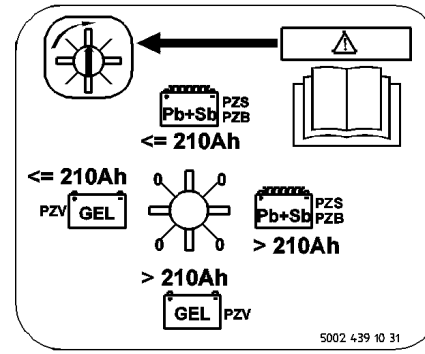
Risk of premature damage to the battery!

It is essential to select the correct type of battery on the selector.

The four thin lines indicate neutral positions. The charger does not flow and the two LEDs flash simultaneously to indicate that no curve has been selected.

The four thick lines indicate the four charging curves:

- open lead-acid battery with a capacity below 210 Ah,
- open lead-acid battery with a capacity greater than 210 Ah,



- gel battery with a capacity below 210 Ah,
- gel battery with a capacity greater than 210 Ah.

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

⚠ DANGER

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

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

⚠ CAUTION

Charge the battery with the truck switched off.

The truck cannot be used during charging.

⚠ DANGER

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

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

⚠ DANGER

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

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

⚠ CAUTION

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

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

⚠ CAUTION

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

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

⚠ CAUTION

Charge the battery with the truck turned off and the start key removed.

⚠ DANGER

The battery must be charged in rooms that comply with applicable regulations. Refer to the battery and battery charger manuals to see the charging procedures, level checks etc., checking the battery type (gel, lead etc.) and making sure of the voltage and current delivered. Excessive currents can damage the battery and cause dangerous situations. As regards safety precautions, follow the instructions given in the battery manual and those included in the "Safety guidelines" of this manual.

⚠ DANGER

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

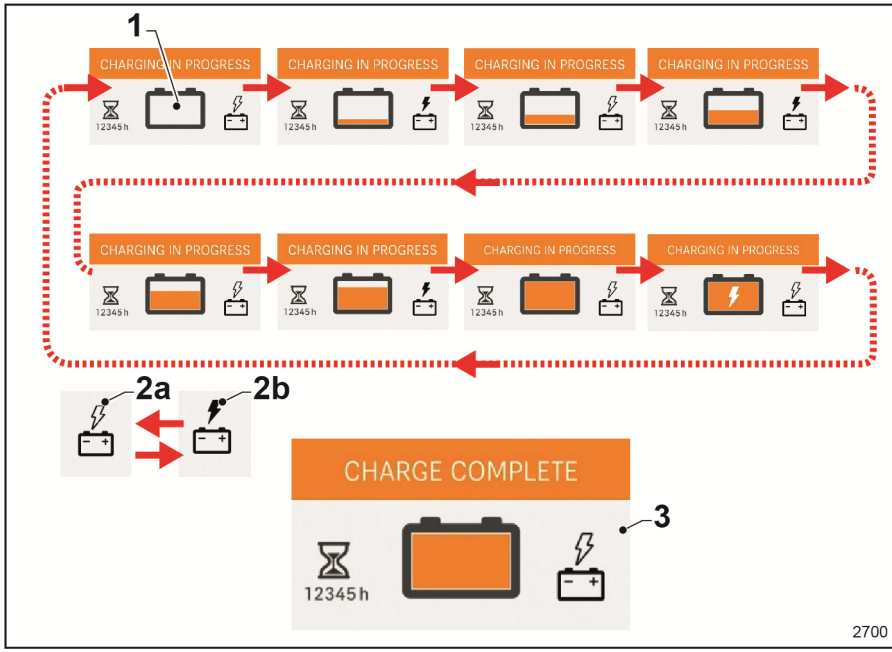
⚠ CAUTION

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

⚠ DANGER

The electrical system must comply with the current national regulations.

Touch display screens during charging of the battery with the on-board battery charger (optional)



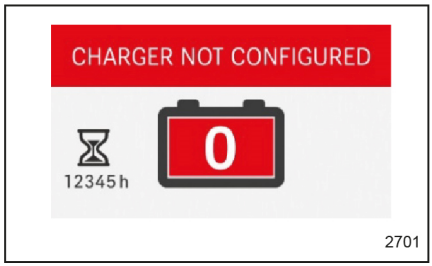
– During charging of the battery with the on-board battery charger, the display shows that battery charging is in progress. The image of the battery icon (1) changes continuously as shown in the figure displaying a progressive battery state of charge; the icons (2a) and (2b) alternate.

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

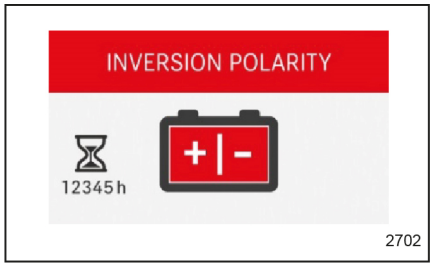
Alarms relating to battery charging with the on-board battery charger (optional)

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.

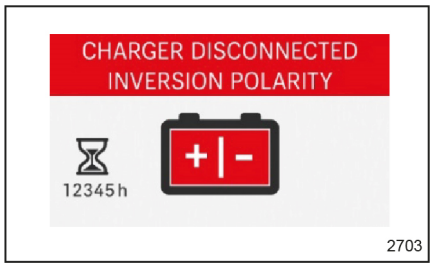
– Battery charger not configured. ▷



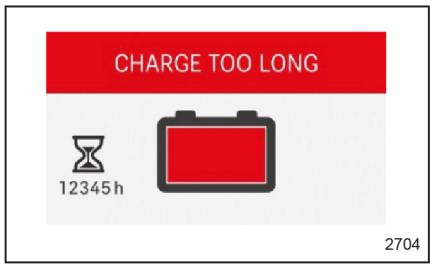
– Polarity reversed. ▷



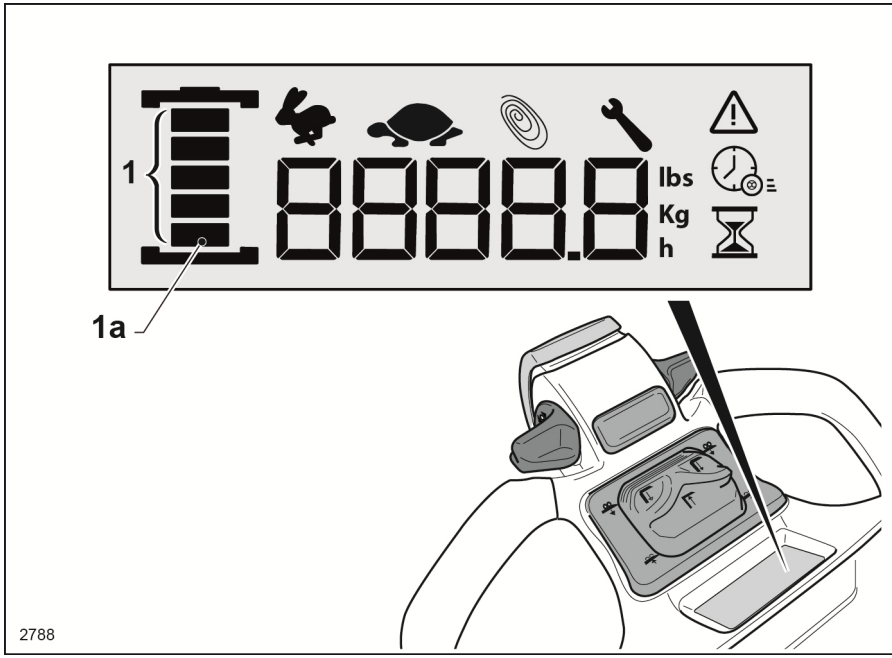
– Polarity reversed with charger disconnected. ▷



– Battery charging time too long. ▷



Analogue display screens during charging of the battery with the on-board battery charger (optional)



- **(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.

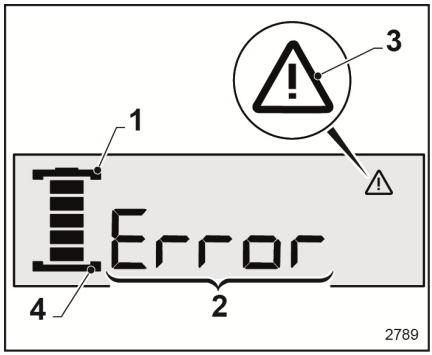
- If you are using another battery type (e.g. a lead battery), only the last bar stays on with a red steady light.
- With less than 10% residual charge, truck performance may become restricted. For example, reduction of the maximum speed or blocking of fork lifting.
- Charge the truck battery immediately.

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

Alarms relating to battery charging with the on-board battery charger (optional)

– **Specific alarm relating to charging via the on-board battery charger (if present)**. The alarm indicator light (3) lights up on the display. `Error` is displayed in field (2) and the segments (1 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.

▷



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.

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.

Scheduled maintenance

Summary table of maintenance operations

Servicing work every 1000 hours
Transmission
Reduction gear unit: visually check the mounting
Reduction gear unit: check for any leakage
Traction motor: visually check the mounting
Traction motor: clean the cooling fins
Chassis, bodywork and fittings
Battery hood: check
Battery support: check the side stops and their mountings
Battery support (side access): check the battery lock
Battery support (side access): check the roller frames
Battery support (side access): grease the roller frames
Folding platform and side protection (if present): grease
Load wheels: grease the bearings
Steering and wheels
Electric steering
Steering: visually check the mounting
Steering: visually check the mounting of the tiller and of the head (of the steering unit)
Steering: clean, check and grease the pinion gear and the ring gear
Wheels
Wheels: check for any damage, foreign matter and signs of wear
Wheels: check wheel tightness
Brakes
Brakes: check for signs of wear/adjustment
Brakes: check the truck braking
Truck
Pivoting wheel: check the height adjustment
Controls
Accelerator: check
Electrical system
Battery: check the battery condition and that it is correctly mounted
Battery: check the cables and sockets
On-board charger: clean
On-board charger: check operation
Cables and connectors: check the condition and positioning
Electrical components: clean

Servicing work every 1000 hours
Pump motor: clean and check the wear of the brushes
Test the insulation between the chassis and the electric motors
Test the insulation between the chassis and the electronic control
Fork lift height sensors: check and clean
On-board charger (if present): earthing and isolation circuit tests
Hydraulic system
Hydraulic system: replace the pressure filter
Pump unit: check mounting
Hydraulic system: check the oil level
Hydraulic system: check for any leaks
Hydraulic system: check the condition of the pipe lines
Load lift system
Mast: lubricate the sliding tracks of the mast and forks
Mast: check the mounting
Lift cylinders, chains, rollers and end stops: check the condition, mounting and operation
Lifting chain: clean, check, adjust and grease the chains▲
Forks: check that the forks are in good condition
Mobile chassis: check
Protective device: check the condition of the anti-shearing protective screen and check that it is correctly mounted
Check the tightness of the mounting bolts of the straddles (EXP only)
Initial lift "i"
Initial lift: grease the rods and levers
Initial lift: check the linkage

Further maintenance operations every 3000 hours
Transmission
Reduction gear unit: check the mounting
Chassis, bodywork and fittings
Folding platform and side protection: check the dampers, the suspension and the safety stop
Hydraulic system
Hydraulic system: check the hydraulic oil
Hydraulic system: replace the controller filters
Electrical system
Ultrasonic height sensor for the DLC 3 system: replace the battery
Load lift system
Mast: service the lift mast and check the lateral clearance of the pins

Further maintenance operations every 6000 hours
Chassis, bodywork and fittings
Folding platform and side protection: check the dampers, the suspension and the safety stop
Hydraulic system
Hydraulic system: replace the hydraulic oil

Further maintenance operations every 10,000 hours
Transmission
Reduction gear unit: change the oil

1000 [a] = To be repeated every 1000 hours (for example at 1000, 2000, 3000, 4000, 5000) or at least every 12 months (whichever comes first).

2000 [b] = To be repeated every 2000 hours. For example at 2000, 4000, 6000, 8000, 10,000 .

5000 [c] = To be repeated every 5000 hours. For example at 5000, 10,000, 15,000, 20,000 .

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

ENVIRONMENT NOTE

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

Maintenance 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.

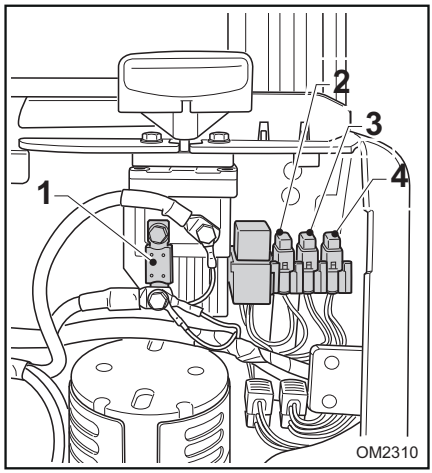
– Follow the manufacturer's guidelines before using a cleaning agent.

– 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

Fuses



- Turn off the truck and perform the preliminary maintenance operations

⚠ CAUTION

Before carrying out any operations on the electrical system, turn the truck power supply off by disconnecting the battery connector.

⚠ CAUTION

Before changing the fuse, eliminate the cause that led to its blowing. The blown fuse must only be changed with a fuse of the same amperage. Do not tamper with the truck's electrical system.

– Open the battery cover.

– Unplug the battery connector.

– Remove the cover to gain access to the fuse holder.

– The following fuses are found on the fuse holder:

Reference	Name	Description	Value
1	1F1 fuse	Main lifting and traction fuse	300 A
2	3F1 fuse	Electric steering fuse	30 A
3	1F3 fuse	Auxiliary supply fuse	7.5 A
4	1F4 fuse	Pump unit solenoid valve fuse	5 A

Replacing the battery

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

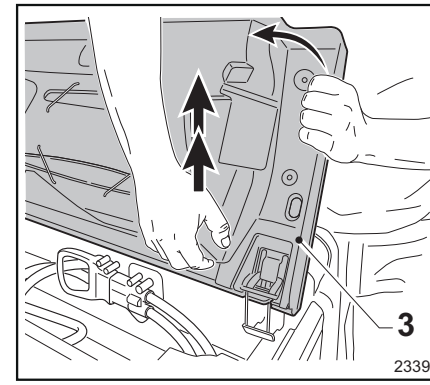
When replacing the battery, check the type of battery on the truck (gel, lead etc.), the voltage (V) and the current delivered (Ah) and install a battery with the same specifications using the spare parts service authorised by the manufacturer. For more detailed information on the battery (V, Ah, technology), 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.

Battery replacement with removal from the top

- Turn off the truck and perform the preliminary maintenance operations.
- To remove the battery hood (3): Open the battery hood, keep it in a vertical position, pull it upwards from one side and then from the other side to remove it from the mounting hooks.
- Disconnect the socket from the battery male connector.
- Insert the sling hooks 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.
- Replace the battery and refit it by following the steps in reverse order.



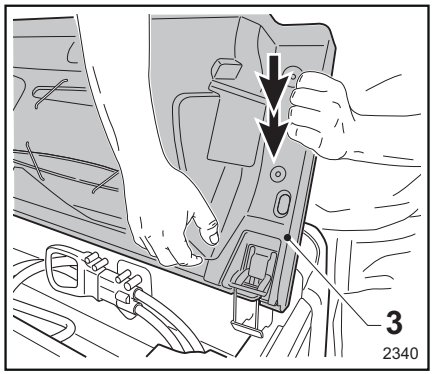
⚠ CAUTION

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

⚠ DANGER

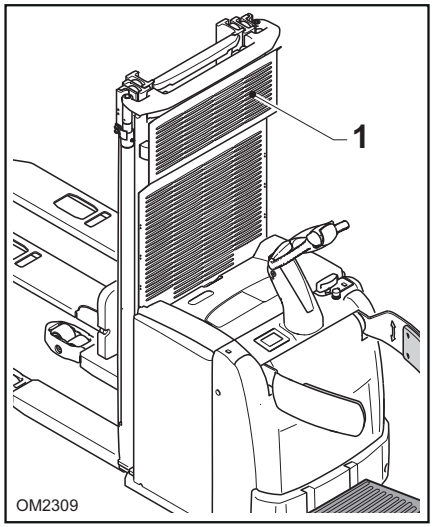
Use a crane with a suitable lifting capacity for the weight of the battery. Lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the truck. Do not stand in the danger area beneath suspended loads. Use NON METALLIC slings. Make sure that the lifting capacity of the slings is suitable for the weight of the battery. The 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.

– To refit the battery hood (3): Keep the hood in a vertical position, rest the hood on the mounting hooks, push it downwards from one side and then from the other side to secure it. ▷

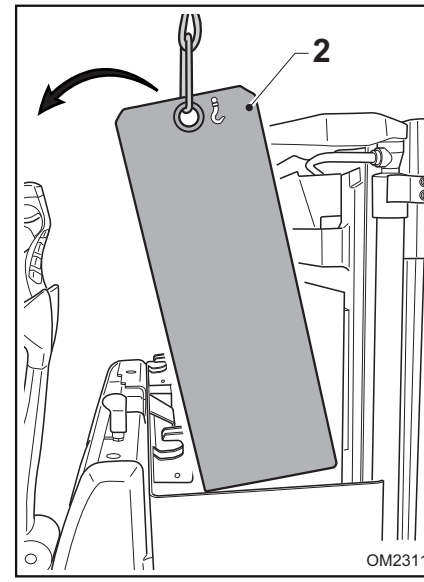


Additional precautions

– For trucks equipped with Duplex mast 1844/1415 and Simplex mast 1844/1415, the protective guard (1) must be removed before inserting and extracting the battery from the top (2). ▷



– When inserting and/or extracting the battery from the top (2), the battery must be tilted as shown. ▷



⚠ CAUTION

Before using the truck, refit the protective guard (1).

Using the truck without the anti-shearing protective guards is prohibited.

Replacing the battery with side removal

⚠ DANGER

Before changing the battery, park the truck. Ensure that the truck is on an even surface and cannot move accidentally.

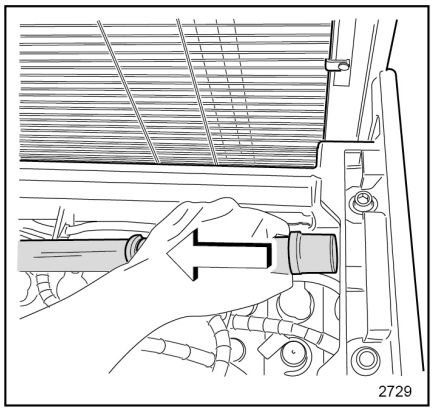
Ensure that the unlocked battery cannot slide off and fall onto the ground. Danger of crushing hands and feet and risk of battery acid spillage.

– Switch off the truck and perform the preliminary maintenance operations. ▷

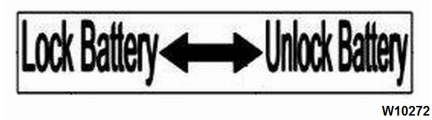
– Lift the battery hood (see the "Internal accessibility" section of the previous chapter)

– Detach the socket from the battery plug (see the "Internal Accessibility" section of the previous chapter)

– Push the lever to unlock the battery, as indicated by the white arrow in the adjacent picture.

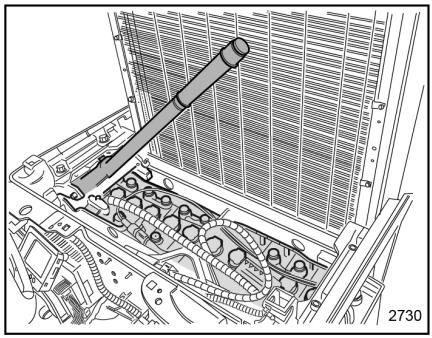


– The label written in English on the lever indicates "Lock Battery" in the direction to lock the battery and "Unlock Battery" in the direction to unlock the battery. ▷



– The spring of the battery lock lever will push the lever upwards. This will release the battery. ▷

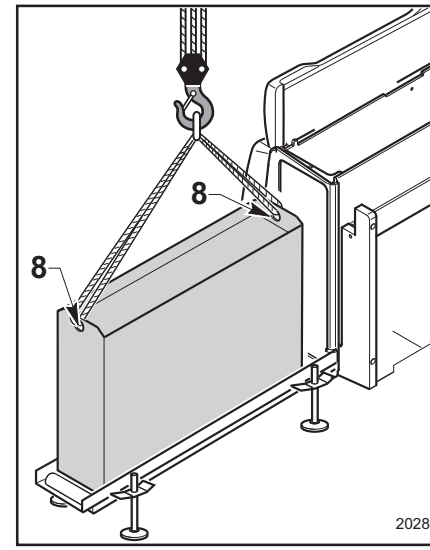
– Place the fixed roller unit for side removal of the manufacturer-approved battery next to the truck; position it so that it is still and stable; adjust the height of the roller unit so that it is level with the underside of the battery at the battery compartment.



⚠ DANGER

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

– Pull the battery outwards, sliding it along the rollers on the truck frame and positioning it on the previously prepared external roller unit.
– Hook the battery at the two points (8) with a sling or chain. ▷
– Lift the battery and remove it.

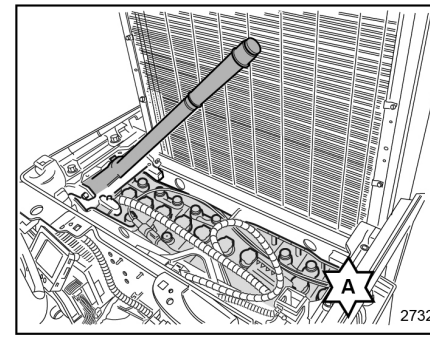


⚠ DANGER

Use a crane with a suitable lifting capacity for the weight of the battery. Lifting operations must be performed by qualified personnel. DO NOT stand within the crane's radius of action or near the truck. Do not stand in the danger area below suspended loads. Use NON-METALLIC rope slings. Make sure that the capacity of the slings is suitable for the battery weight. The rope slings must be pulled vertically. To prevent short circuits, it is recommended that batteries with polar terminals or unprotected connections be covered with a rubber mat.

– Replace the battery and refit it by following the above steps in reverse order.

– When installing the new battery, be particularly careful during the battery insertion stage. Push the battery inwards, sliding it along the rollers on the truck frame and positioning it on the previously prepared external roller unit. ▷



⚠ DANGER

"Danger of crushing hands" between the battery frame and the battery lock lever. Do not put your hands in zone "A" and keep all other parts of the body, such as the head, out of the way when inserting the battery. The operation must be performed by a single operator. The operator must follow the operating instructions given in this section, positioning himself on the same side as the battery side-removal roller unit.

⚠ CAUTION

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

⚠ CAUTION

When closing the battery hood, take care to correctly position the cables of the battery plug so as not to damage them.

NOTE

After positioning the battery holddown, check that there is little or no clearance in the battery compartment.

Decommissioning

General Information

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

Forklift Towing

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

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

Temporary Putting Out of Commission

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

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

Checks and Inspections After a Long Period of Inactivity

⚠ DANGER

Perform the following operations before using the forklift:

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

⚠ DANGER

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

Permanent Putting Out of Commission (Demolition)

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

DANGER

Disassembly of the forklift for scrapping is extremely hazardous.

ENVIRONMENT NOTE

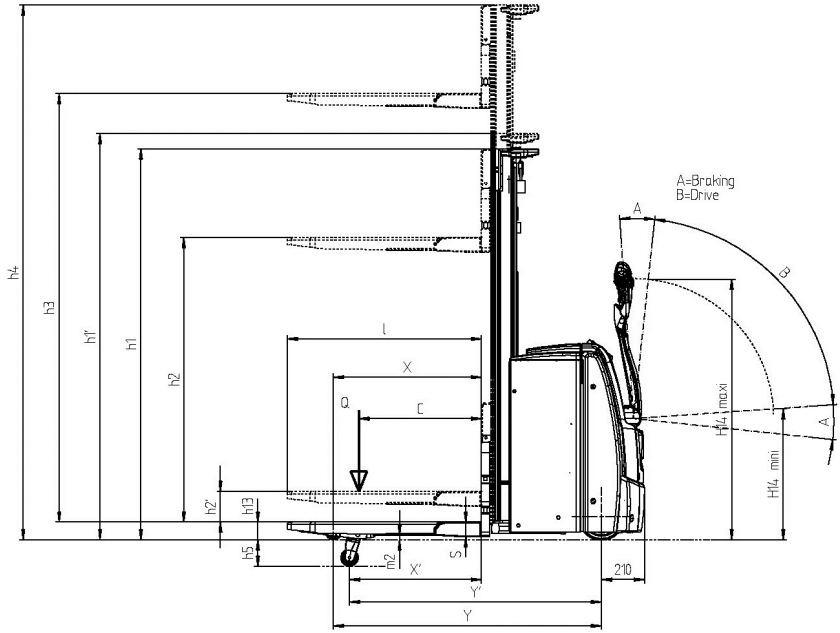
In particular, batteries, fluids (oils, fuels, lubricants, etc, electrical and electronic components and rubber components must be disposed of in compliance with specific local legislation for each type of material.

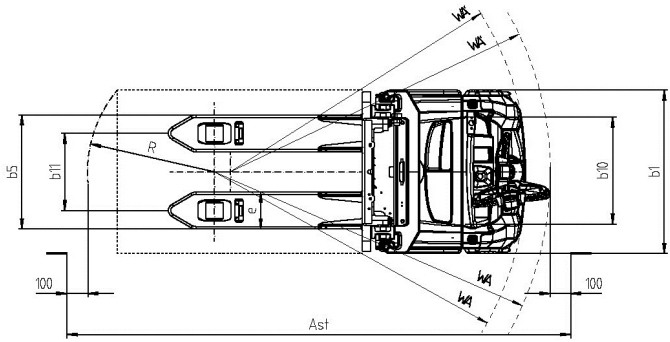
6

Technical data

Datasheet (VDI)

EXV 14/16/20 datasheet (VDI)





			EXV 14	EXV 16	EXV 20
1.3	Drive		Electric		
1.4	Operator type		Pedestrian		
1.5	Rated capacity/rated load	Q (kg)	1400	1600	2000
1.6	Load centre distance	c (mm)	600	600	600
1.8	Load distance, centre of drive axle to fork	x (mm)	724 (2)		
1.9	Wheelbase	y (mm)	1311 (4)	1311 (4)	1425
2.1	Service weight (incl. battery)	(kg)	1178 (5)	1178 (5)	1505 (5)
2.2	Axle loading, laden, drive end/load end	(kg)	964 / 1614	983 / 1795	1307 / 2198
2.3	Axle loading, unladen, drive end/load end	(kg)	867 / 311	867 / 311	1063 / 441
3.1	Tyres		Polyurethane		
3.2	Tyre size, drive end	(mm)	Ø 230 x L90		
3.3	Tyre size, load end	(mm)	Ø 85 x L85 (Ø 85 x L60) (6)		
3.4	Additional wheels (dimensions)	(mm)	Ø 150 x L50	Ø 150 x L50	2x Ø 140 x L50
3.5	Wheels, number drive end/load end (x=driven wheels)		1x + 1 / 2 (1x + 1 / 4) (6)		
3.6	Tread, drive end	b_{10} (mm)	534		
3.7	Tread, load end	b_{11} (mm)	380 / 500	380 / 500	370 / 470
4.2	Height, mast lowered	h_1 (mm)	1915		
4.3	Free lift	h_2 (mm)	150		
4.4	Lift	h_3 (mm)	2844	2844	2684
4.5	Height, mast extended	h_4 (mm)	3364	3364	3284
4.6	Initial lift	h_5 (mm)	/		
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	800 / 1250		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1950 (2) (4)	1950 (2) (4)	2065 (2)

			EXV 14	EXV 16	EXV 20
4.20	Length to face of forks	l_2 (mm)	800 (2) (4)	800 (2) (4)	915 (2)
4.21	Overall width	b_1 (mm)	800	800	810
4.22	Fork dimensions	s / e / l (mm)	55 (7) / 182 / 1150	55 (7) / 182 / 1150	73 (8) / 210 / 1150
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Distance between fork-arms	b_5 (mm)	560 / 680	560 / 680	580 / 680 - 570(8)
4.26	Width between wheel arms	b_4 (mm)	255 / 375	255 / 375	230 / 330
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30 (9)	30 (9)	20 (9)
4.34 .1	Working aisle width for pallets 1000 x 1200 crossways	A_{st} (mm)	2503 (4) / 2941 (4) (10) / 2386 (4) (11)	2503 (4) / 2941 (4) (10) / 2386 (4) (11)	2617 / 2605 (10) / 2500 (11)
4.34 .2	Working aisle width for pallets 800 x 1200 lengthways	A_{st} (mm)	2465 (4) / 2453 (4) (10) / 2348 (4) (11)	2465 (4) / 2453 (4) (10) / 2348 (4) (11)	2579 / 2567 (10) / 2462 (11)
4.35	Turning radius	Wa (mm)	1643 (4) / 1631 (4) (10) / 1526 (4) (11)	1643 (4) / 1631 (4) (10) / 1526 (4) (11)	1757 / 1745 (10) / 1640 (11)
5.1	Travel speed laden/unladen	km/h	6.0 / 6.0 (12)		
5.2	Lift speed laden/unladen	m/s	0.16 / 0.30	0.15 / 0.30	0.15 / 0.30
5.3	Lowering speed laden/unladen	m/s	0.40 / 0.35	0.40 / 0.35	0.31 / 0.31
5.8	Max. gradeability S2 = 5 min laden/unladen	(%)	10 / 23 (13)	10 / 23 (13)	8 / 23 (15)
5.10	Service brake		Electric		
6.1	Drive motor, rating S2 = 60 min	(kW)	1.5		
6.2	Lift motor, rating at S3 15 %	(kW)	3.2		
6.3	Battery according to DIN 43531/35/36; A, B, C, no		2 PzS (tray 112)	2 PzS (tray 112)	3 PzS (tray 113)
6.4	Battery voltage / nominal capacity K5	V/Ah	24 / 230	24 / 230	24 / 345
6.5	Battery weight ± 5 %	(kg)	212	212	288
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.78	0.82	0.94

			EXV 14	EXV 16	EXV 20
6.6.2	CO_2 equivalent emissions	kg /h	0.4	0.4	0.5
8.1	Drive control		AC control		
8.4	Sound level at driver's ear	dB (A)	≤ 66		

(1) In brackets: transpallet capacity on the load arms with initial lift.

(2) Value for Tele or NiHo mast (x - 26 mm; l_1 , l_2 + 26 mm with Triplex mast)

(3) Fork arms raised

(4) + 75 mm with battery 3 PzS and + 150 mm with 4 PzS

(5) Value with Tele mast h_1=1915 mm. For other values see the mast table.

(6) In brackets: truck fitted with tandem rollers (mandatory with crosswise pallet kit optional for EXV-SF 14 D, EXV-SF16 D, EXV-SF 20 D, $h1_3$= 91mm)

(7) Preferred while using GITTER BOX; a carriage with forks thickness s= 71 mm is also available.

(8) A carriage with orks s= 61 mm, e=201 mm and b_5=570 mm, preferred while using GITTER BOX. is also available.It is mandatory for EXV-SF 20 D.

(9) For masts 1.4 / 1.6 t and with forks thickness s=71 mm completely lowered, m_2 = 15 mm; for masts 2.0 t with forks s=73 mm completely lowered, m_2 = 13 mm; for D version trucks with crosswise pallet kit optional, m_2 = 25 mm.

(10) With drawbar in creep speed position

(11) Values related to the bumper, with drawbar not rotated, in creep speed position.

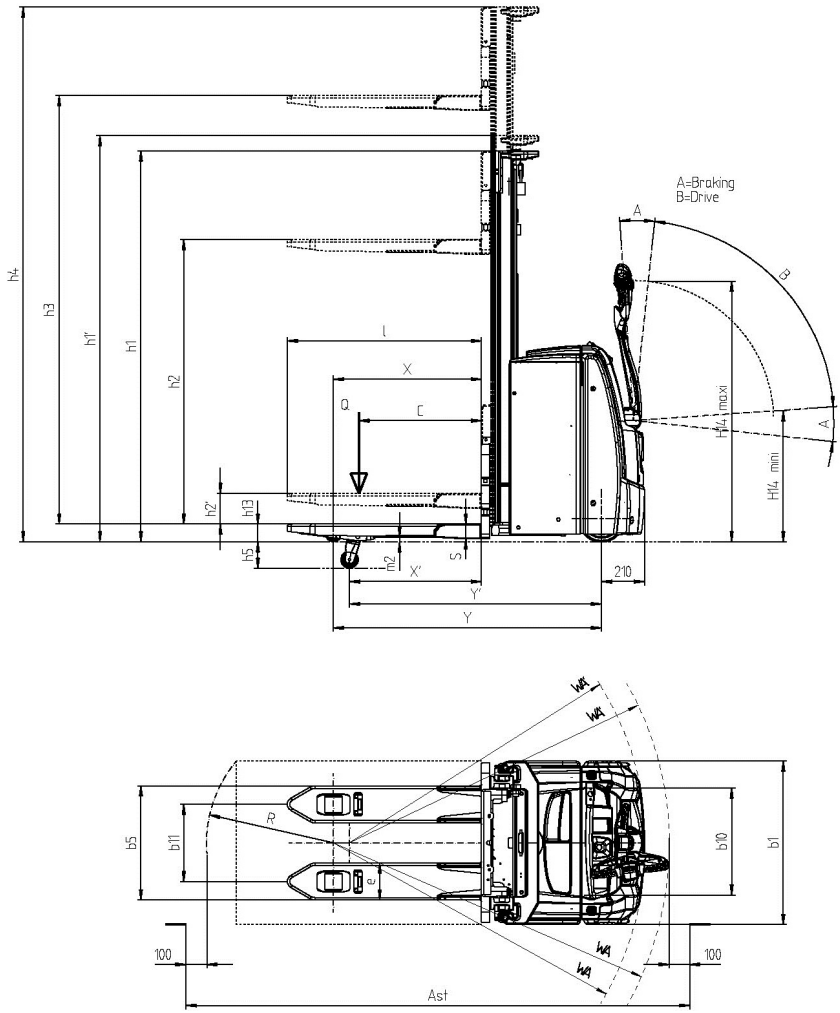
(12) ± 5%.

(13) On rounded edge slope with forks raised (geometric limit on unrounded edge slope = 9.2%).

(14) In brackets: (max gradeability with transpallet capacity 2000 kg on the load arms, with initial lift option)

(15) On rounded edge slope with forks raised (geometric limit on unrounded corner edge = 5.6%).

EXV 14/16/20 I datasheet (VDI)



			EXV 14i	EXV 16i	EXV 20i
1.3	Drive		Electric	Electric	Electric
1.4	Operator type		Pedestrian	Pedestrian	Pedestrian
1.5	Rated capacity/rated load	Q (kg)	1400 (2000) (1)	1600 (2000) (1)	2000 (2000) (1)
1.6	Load centre distance	c (mm)	600		
1.8	Load distance, centre of drive axle to fork	x (mm)	724 (2) / 646 (2) (3)		
1.9	Wheelbase	y (mm)	1311 (4) / 1233 (3) (4)	1311 (4) / 1233 (3) (4)	1425 / 1347 (3)
2.1	Service weight (incl. battery)	(kg)	1144 (4)	1144 (5)	1439 (5)
2.2	Axle loading, laden, drive end/load end	(kg)	889 / 1655	896 / 1847	1135 / 2303
2.3	Axle loading, unladen, drive end/load end	(kg)	836 / 308	836 / 308	1019 / 420
3.1	Tyres		Polyurethane		
3.2	Tyre size, drive end	(mm)	Ø 230 x L90		
3.3	Tyre size, load end	(mm)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L105 (Ø 85 x L80) (6)
3.4	Additional wheels (dimensions)	(mm)	Ø 150 x L50	Ø 150 x L50	2x Ø 140 x L50
3.5	Wheels, number drive end/load end (x=driven wheels)		1x + 1 / 2 (1x + 1 / 4) (6)		
3.6	Tread, drive end	b_{10} (mm)	534		
3.7	Tread, load end	b_{11} (mm)	380 / 500	380 / 500	370 / 470
4.2	Height, mast lowered	h_1 (mm)	1915		
4.3	Free lift	h_2 (mm)	150		
4.4	Lift	h_3 (mm)	2844	2844	2684
4.5	Height, mast extended	h_4 (mm)	3364	3364	3284
4.6	Initial lift	h_5 (mm)	110		
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	800 / 1250		
4.15	Fork height, lowered	h_{13} (mm)	86		

			EXV 14i	EXV 16i	EXV 20i
4.19	Overall length	l_1 (mm)	1950 (2) (4)	1950 (2) (4)	2065 (2)
4.20	Length to face of forks	l_2 (mm)	800 (2) (4)	800 (2) (4)	915 (2)
4.21	Overall width	b_1 (mm)	800	800	810
4.22	Fork dimensions	s / e / l (mm)	55 (7) / 182 / 1150	55 (7) / 182 / 1150	73 (8) / 210 / 1150
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Distance between fork-arms	b_5 (mm)	560 / 680	560 / 680	580 / 680 - 570 (8)
4.26	Width between wheel arms	b_4 (mm)	255 / 375	255 / 375	230 / 330
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 (9) / 130 (3)		
4.34.1	Working aisle width for pallets 1000 x 1200 crossways	A_{st} (mm)	2462 (3) (4) / 2450 (3) (4) (10) / 2347 (3) (4) (11)	2462 (3) (4) / 2450 (3) (4) (10) / 2347 (3) (4) (11)	2576 (3) / 2564 (3) (10) / 2461 (3) (11)
4.34.2	Working aisle width for pallets 800 x 1200 lengthways	A_{st} (mm)	2448 (3) (4) / 2436 (3) (4) (10) / 2333 (3) (4) (11)	2448 (3) (4) / 2436 (3) (4) (10) / 2333 (3) (4) (11)	2562 (3) / 2550 (3) (10) / 2447 (3) (11)
4.35	Turning radius	Wa (mm)	1565 (3) (4) / 1553 (3) (4) (10) / 1450 (3) (4) (11)	1565 (3) (4) / 1553 (3) (4) (10) / 1450 (3) (4) (11)	1679 (3) / 1667 (3) (10) / 1564 (3) (11)
5.1	Travel speed laden/unladen	km/h	6.0 / 6.0 (12)		
5.2	Lift speed laden/unladen	m/s	0.16 / 0.30	0.15 / 0.30	0.15 / 0.30
5.3	Lowering speed laden/unladen	m/s	0.40 / 0.35	0.40 / 0.35	0.31 / 0.31
5.8	Max. gradeability S2 = 5 min laden/unladen	(%)	10 (8) (14) / 22	10 (8) (14) / 22	8 / 23
5.10	Service brake		Electric		
6.1	Drive motor, rating S2 = 60 min	(kW)	1.5		
6.2	Lift motor, rating at S3 15 %	(kW)	3.2		
6.3	Battery according to DIN 43531/35/36; A, B, C, no		2PzS (tray 112)	2 PzS (tray 112)	3 PzS (tray 113)
6.4	Battery voltage / nominal capacity K5	V/Ah	24 / 230	24 / 230	24 / 345
6.5	Battery weight ± 5 %	(kg)	212	212	288

			EXV 14i	EXV 16i	EXV 20i
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.78	0.82	0.94
6.6.2	CO_2 equivalent emissions	kg/ h	0.4	0.4	0.5
8.1	Drive control		AC control		
8.4	Sound level at driver's ear	dB (A)	≤ 66		

(1) In brackets: transpallet capacity on the load arms with initial lift.

(2) Value for Tele or NiHo mast (x - 26 mm; l_1 , l_2 + 26 mm with Triplex mast)

(3) Fork arms raised

(4) + 75 mm with battery 3 PzS and + 150 mm with 4 PzS

(5) Value with Tele mast h_1=1915 mm. For other values see the mast table.

(6) In brackets: truck fitted with tandem rollers (mandatory with crosswise pallet kit optional for EXV-SF 14 D, EXV-SF16 D, EXV-SF 20 D, $h1_3$= 91mm)

(7) Preferred while using GITTER BOX; a carriage with forks thickness s= 71 mm is also available.

(8) A carriage with orks s= 61 mm, e=201 mm and b_5=570 mm, preferred while using GITTER BOX. is also available.It is mandatory for EXV-SF 20 D.

(9) For masts 1.4 / 1.6 t and with forks thickness s=71 mm completely lowered, m_2 = 15 mm; for masts 2.0 t with forks s=73 mm completely lowered, m_2 = 13 mm; for D version trucks with crosswise pallet kit optional, m_2 = 25 mm.

(10) With drawbar in creep speed position

(11) Values related to the bumper, with drawbar not rotated, in creep speed position.

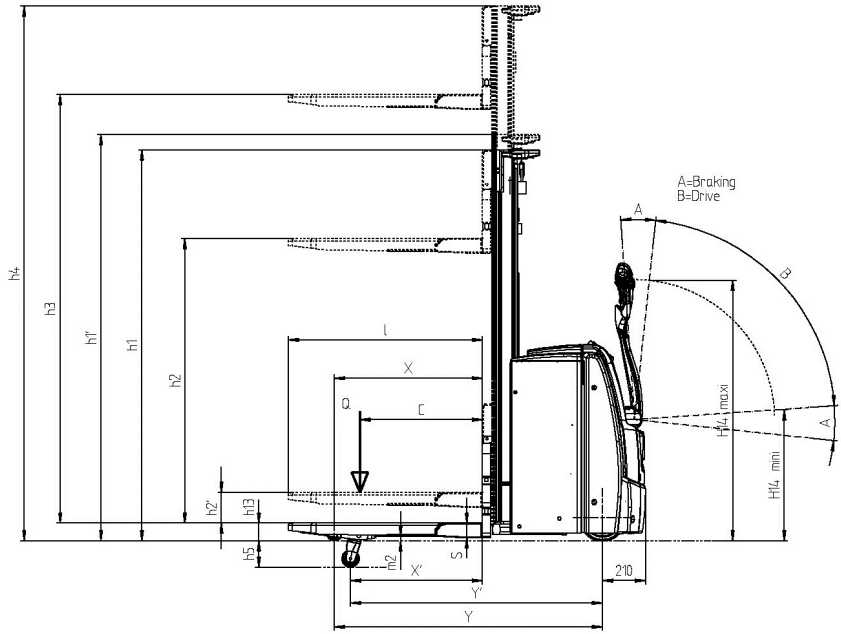
(12) ± 5%.

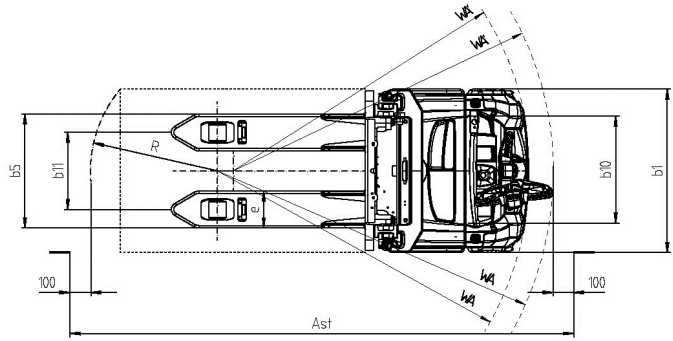
(13) On rounded edge slope with forks raised (geometric limit on unrounded edge slope = 9.2%).

(14) In brackets: (max gradeability with trans-pallet capacity 2000 kg on the load arms, with initial lift option)

(15) On rounded edge slope with forks raised (geometric limit on unrounded corner edge = 5.6%).

EXV 14/16/20 D datasheet (VDI)





			EXV 14 D	EXV 16 D	EXV 20 D
1.3	Drive		Electric	Electric	Electric
1.4	Operator type		Pedestrian	Pedestrian	Pedestrian

			EXV 14 D	EXV 16 D	EXV 20 D
1.5	Rated capacity/rated load	Q (kg)	1400 / 1000 + 1000 (2000) (1)	1600 / 1000 + 1000 (2000) (1)	2000 / 1000 + 1000 (2000) (1)
1.6	Load centre distance	c (mm)	600		
1.8	Load distance, centre of drive axle to fork	x (mm)	924 (2) / 846 (2) (3)		
1.9	Wheelbase	y (mm)	1511 (4) / 1433 (3) (4)	1511 (4) / 1433 (3) (4)	1625 / 1547 (3)
2.1	Service weight (incl. battery)	(kg)	1173 (5)	1173 (5)	1466 (5)
2.2	Axle loading, laden, drive end/load end	(kg)	1109 / 1464	1144 / 1629	1452 / 2014
2.3	Axle loading, unladen, drive end/load end	(kg)	885 / 288	885 / 288	1076 / 390
3.1	Tyres		Polyurethane		
3.2	Tyre size, drive end	(mm)	Ø 230 x L90		
3.3	Tyre size, load end	(mm)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L105 (Ø 85 x L80)(6)
3.4	Additional wheels (dimensions)	(mm)	Ø 150 x L50	Ø 150 x L50	2x Ø 140 x L50
3.5	Wheels, number drive end/load end (x=driven wheels)		1x + 1 / 2 (1x + 1 / 4) (6)		
3.6	Tread, drive end	b_{10} (mm)	534		
3.7	Tread, load end	b_{11} (mm)	380 / 500	380 / 500	370 / 470
4.2	Height, mast lowered	h_1 (mm)	1915		
4.3	Free lift	h_2 (mm)	150		
4.4	Lift	h_3 (mm)	2844	2844	2684
4.5	Height, mast extended	h_4 (mm)	3364	3364	3284
4.6	Initial lift	h_5 (mm)	110		
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	800 / 1250		
4.19	Overall length	l_1 (mm)	1950 (2) (4)	1950 (2) (4)	2065 (2)
4.20	Length to face of forks	l_2 (mm)	800 (2) (4)	800 (2) (4)	915 (2)

			EXV 14 D	EXV 16 D	EXV 20 D
4.21	Overall width	b_1 (mm)	800	800	810
4.22	Fork dimensions	s / e / l (mm)	55 / 182 / 1150	55 / 182 / 1150	61 / 201 / 1150
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Distance between fork-arms	b_5 (mm)	560	560	570
4.26	Width between wheel arms	b_4 (mm)	255	255	230
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 (9) / 130 (3)		
4.34.1	Working aisle width for pallets 1000 x 1200 crossways	A_{st} (mm)	2584 (3) (4) / 2572 (3) (4) (10) / 2469 (3) (4) (11)	2584 (3) (4) / 2572 (3) (4) (10) / 2469 (3) (4) (11)	2698 (3) / 2686 (3) (10) / 2583 (3) (11)
4.34.2	Working aisle width for pallets 800 x 1200 lengthways	A_{st} (mm)	2499 (3) (4) / 2487 (3) (4) (10) / 2384 (3) (4) (11)	2499 (3) (4) / 2487 (3) (4) (10) / 2384 (3) (4) (11)	2613 (3) / 2601 (3) (10) / 2498 (3) (11)
4.35	Turning radius	Wa (mm)	1765 (3) (4) / 1753 (3) (4) (10) / 1650 (3) (4) (11)	1765 (3) (4) / 1753 (3) (4) (10) / 1650 (3) (4) (11)	1879 (3) / 1867 (3) (10) / 1764 (3) (11)
5.1	Travel speed laden/unladen	km/h	6.0 / 6.0 (12)		
5.2	Lift speed laden/unladen	m/s	0.16 / 0.30	0.15 / 0.30	0.15 / 0.30
5.3	Lowering speed laden/unladen	m/s	0.40 / 0.35	0.40 / 0.35	0.31 / 0.31
5.8	Max. gradeability S2 = 5 min laden/unladen	(%)	10 (8) (14) / 22	10 (8) (14) / 22	8 / 23
5.10	Service brake		Electric		
6.1	Drive motor, rating S2 = 60 min	(kW)	1.5		
6.2	Lift motor, rating at S3 15 %	(kW)	3.2		
6.3	Battery according to DIN 43531/35/36; A, B, C, no		3 PzS (tray 112)	3 PzS (tray 112)	3 PzS (tray 113)
6.4	Battery voltage / nominal capacity K5	V/Ah	24 / 230	24 / 230	24 / 345
6.5	Battery weight ± 5 %	(kg)	212	212	288
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.78	0.82	0.94

			EXV 14 D	EXV 16 D	EXV 20 D
6.6.2	CO_2 equivalent emissions	kg/h	0.4	0.4	0.5
8.1	Drive control		AC control		
8.4	Sound level at driver's ear	dB (A)	≤ 66		

(1) In brackets: transpallet capacity on the load arms with initial lift.

(2) Value for Tele or NiHo mast (x - 26 mm; l_1 , l_2 + 26 mm with Triplex mast)

(3) Fork arms raised

(4) + 75 mm with battery 3 PzS and + 150 mm with 4 PzS

(5) Value with Tele mast h_1=1915 mm. For other values see the mast table.

(6) In brackets: truck fitted with tandem rollers (mandatory with crosswise pallet kit optional for EXV-SF 14 D, EXV-SF16 D, EXV-SF 20 D, $h1_3$= 91mm)

(7) Preferred while using GITTER BOX; a carriage with forks thickness s= 71 mm is also available.

(8) A carriage with orks s= 61 mm, e=201 mm and b_5=570 mm, preferred while using GITTER BOX. is also available.It is mandatory for EXV-SF 20 D.

(9) For masts 1.4 / 1.6 t and with forks thickness s=71 mm completely lowered, m_2 = 15 mm; for masts 2.0 t with forks s=73 mm completely lowered, m_2 = 13 mm; for D version trucks with crosswise pallet kit optional, m_2 = 25 mm.

(10) With drawbar in creep speed position

(11) Values related to the bumper, with drawbar not rotated, in creep speed position.

(12) ± 5%.

(13) On rounded edge slope with forks raised (geometric limit on unrounded edge slope = 9.2%).

(14) In brackets: (max gradeability with transpallet capacity 2000 kg on the load arms, with initial lift option)

(15) On rounded edge slope with forks raised (geometric limit on unrounded corner edge = 5.6%).

MAST TYPE 1.4 / 1.6 t

MAST TYPE 1.4 / 1.6 t		Telescopic						
Height of mast lowered	h_1 (mm) (a)	1415 (b)	1665 (b)	1915	2115	2365	2565	2815
Mast height with used free lift h_2=150 mm	h_1 (mm)	1490	1740	1990	2190	2440	2640	2890
Free lift	h_2 (mm) (c)	150	150	150	150	150	150	150
Lift height	h_3 (mm)	1844	2344	2844	3244	3744	4144	4644
Height - mast raised	h_4 (mm) (a) (d)	2364	2864	3364	3764	4264	4664	5164

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): - 566 mm, eccept for Telescopic mast

(d) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): + 566 mm

MAST TYPE 1.4 / 1.6 t

MAST TYPE 1.4 / 1.6 t		NiHo					
Height of mast lowered	h_1 (mm) (a)	1415 (b)	1665 (b)	1915	2115	2365	2565
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	-	-	-	-	-	-

Free lift	h_2 (mm) (c)	895	1145	1395	1595	1845	2045
Lift height	h_3 (mm)	1844	2344	2844	3244	3744	4144
Height - mast raised	h_4 (mm) (a) (d)	2364	2864	3364	3764	4264	4664

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): - 566 mm, eccept for Telescopic mast

(d) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): + 566 mm

MAST TYPE 1.4 / 1.6 t

MAST TYPE 1.4 / 1.6 t		**Triplex**						
Height of mast lowered	h_1 (mm) (a)	1665 (b)	1915	2065	2165	2265	2315	2365
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	-	-	-	-	-	-	-
Free lift	h_2 (mm) (c)	1145	1395	1545	1645	1745	1795	1845
Lift height	h_3 (mm)	3516	4266	4716	5016	5316	5466	5616
Height - mast raised	h_4 (mm) (a) (d)	4036	4786	5236	5536	5836	5986	6136

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): - 566 mm, eccept for Telescopic mast

(d) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): + 566 mm

MAST TYPE 2.0 t

MAST TYPE 2.0 t		Telescopic		
Height of mast lowered	h_1 (mm) (a)	1915	2115	2365
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	1990	2190	2440
Free lift	h_2 (mm) (c)	150	150	150
Lift height	h_3 (mm)	2684	3084	3584
Height - mast raised	h_4 (mm) (a) (d)	3284	3684	4184

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): - 566 mm, eccept for Telescopic mast

(d) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): + 566 mm

MAST TYPE 2.0 t

MAST TYPE 2.0 t		NiHo		
Height of mast lowered	h_1 (mm) (a)	1915	2115	2365

Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	-	-	-
Free lift	h_2 (mm) (c)	1315	1515	1765
Lift height	h_3 (mm)	2684	3084	3584
Height - mast raised	h_4 (mm) (a) (d)	3284	3684	4184

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): - 566 mm, eccept for Telescopic mast

(d) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): + 566 mm

MAST TYPE 2.0 t

MAST TYPE 2.0 t		**Triplex**		
Height of mast lowered	h_1 (mm) (a)	1665 (a)	1915	2065
Mast height with used free lift h_2=150 mm	h_1 (mm)	-	-	-
Free lift	h_2 (mm) (c)	1065	1315	1465
Lift height	h_3 (mm)	3276	4026	4476
Height - mast raised	h_4 (mm) (a) (d)	3876	4626	5076

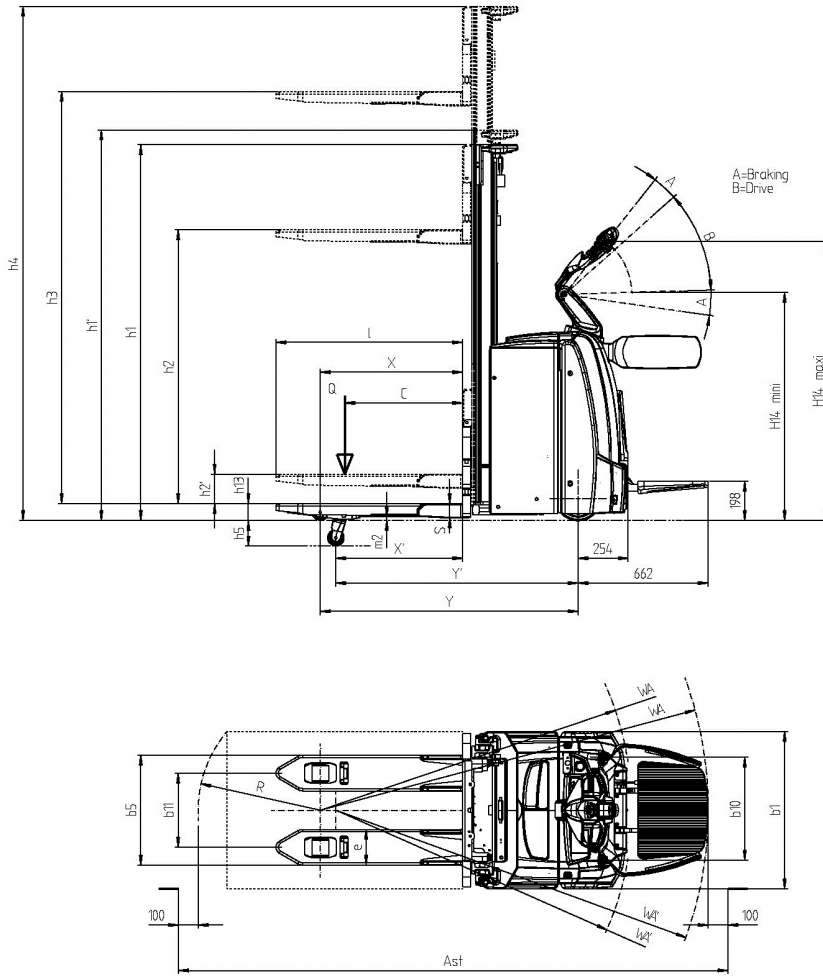
(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): - 566 mm, eccept for Telescopic mast

(d) With load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t): + 566 mm

EXV-SF 14/16/20 datasheet (VDI)



			EXV-SF 14	EXV-SF 16	EXV-SF 20
1.3	Drive		Electric	Electric	Electric
1.4	Operator type		Pedestrian / Standing	Pedestrian / Standing	Pedestrian / Standing
1.5	Rated capacity/rated load	Q (kg)	1400	1600	2000
1.6	Load centre distance	c (mm)	600		
1.8	Load distance, centre of drive axle to fork	x (mm)	724 (2)		
1.9	Wheelbase	y (mm)	1311 (4)	1311 (4)	1425
2.1	Service weight (incl. battery)	(kg)	1258 (5)	1258 (5)	1575 (5)
2.2	Axle loading, laden, drive end/load end	(kg)	1040 / 1619	1059 / 1800	1384 / 2191
2.3	Axle loading, unladen, drive end/load end	(kg)	955 / 304	955 / 304	1141 / 434
3.1	Tyres		Polyurethane		
3.2	Tyre size, drive end	(mm)	Ø 230 x L90		
3.3	Tyre size, load end	(mm)	Ø 85 x L85 (Ø 85 x L60) (6)		
3.4	Additional wheels (dimensions)	(mm)	Ø 150 x L50	Ø 230 x L90	2 x Ø 140 x L50
3.5	Wheels, number drive end/load end (x=driven wheels)		1x + 1 / 2 (1x + 1 / 4) (6)		
3.6	Tread, drive end	b_{10} (mm)	534		
3.7	Tread, load end	b_{11} (mm)	380 / 500	380 / 500	370 / 470
4.2	Height, mast lowered	h_1 (mm)	1915		
4.3	Free lift	h_2 (mm)	150		
4.4	Lift	h_3 (mm)	2844	2844	2684
4.5	Height, mast extended	h_4 (mm)	3930	3930	3850
4.6	Initial lift	h_5 (mm)	/		
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1120 / 1370		
4.15	Fork height, lowered	h_{13} (mm)	86		

			EXV-SF 14	EXV-SF 16	EXV-SF 20
4.19	Overall length	l_1 (mm)	1993 (2) (4) / 2401 (2) (4) (7)	1993 (2) (4) / 2401 (2) (4) (7)	2108 (2) / 2516 (2) (7)
4.20	Length to face of forks	l_2 (mm)	843 (2) (4) / 1251 (2) (4) (7)	843 (2) (4) / 1251 (2) (4) (7)	958 (2) / 1366 (2) (7)
4.21	Overall width	b_1 (mm)	800	800	810
4.22	Fork dimensions	s / e / l (mm)	55 (8) / 182 / 1150	55 (8) / 182 / 1150	73 (9) / 210 / 1150
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Distance between fork-arms	b_5 (mm)	560 / 680	560 / 680	580 / 680 - 570 (9)
4.26	Width between wheel arms	b_4 (mm)	255 / 375	255 / 375	230 / 330
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	30 (10)	30 (10)	20 (10)
4.34 .1	Working aisle width for pallets 1000 x 1200 crossways	A_{st} (mm)	2444 (4)/ 2833 (4) (7)	2444 (4)/ 2833 (4) (7)	2557 / 2947 (7)
4.34 .2	Working aisle width for pallets 800 x 1200 lengthways	A_{st} (mm)	2406 (4)/ 2795 (4) (7)	2406 (4)/ 2795 (4) (7)	2519 / 2909 (7)
4.35	Turning radius	W_a (mm)	1584 (4)/ 1973 (4) (7)	1584 (4)/ 1973 (4) (7)	1697 / 2087 (7)
5.1	Travel speed laden/unladen	(km / h)	4.0 / 4.0 - 6.0 / 6.0 - 8.0 / 10.0 (11) (12)		
5.2	Lift speed laden/unladen	(m / s)	0.16 / 0.30	0.15 / 0.30	0.15 / 0.30
5.3	Lowering speed laden/unladen	(m / s)	0.40 / 0.35	0.40 / 0.35	0.31 / 0.31
5.8	Max. gradeability S2 = 5 min laden/unladen	(%)	10 / 23 (13)	10 / 23 (13)	8 / 23 (15)
5.10	Service brake		Electric		
6.1	Drive motor, rating S2 = 60 min	(kW)	2.3		
6.2	Lift motor, rating at S3 15 %	(kW)	3.2		
6.3	Battery according to DIN 43531/35/36; A, B, C, no		2 PzS (tray 112)	2 PzS (tray 112)	3 PzS (tray 113)
6.4	Battery voltage / nominal capacity K5	(V / Ah)	24 / 230	24 / 230	24 / 345
6.5	Battery weight ± 5 %	(kg)	212	212	288

			EXV-SF 14	EXV-SF 16	EXV-SF 20
6.6	Energy consumption according to DIN EN 16796	(kWh / h)	0.80	0.84	0.95
6.6.2	CO_2 equivalent emissions	(kg / h)	0.4	0.5	0.5
8.1	Drive control		AC control		
8.4	Sound level at driver's ear	(dB (A))	≤ 66		

(1) In brackets: transpallet capacity on the load arms with initial lift.

(2) Value for Tele or NiHo mast (x - 26 mm; l_1 , l_2 + 26 mm with Triplex mast)

(3) Fork arms raised

(4) + 75 mm with battery 3 PzS and + 150 mm with 4 PzS

(5) Value with Tele mast h_1=1915 mm. For other values see the mast table.

(6) In brackets: truck fitted with tandem rollers (mandatory with crosswise pallet kit optional for EXV-SF 14 D, EXV-SF16 D, EXV-SF 20 D, h_{13}= 91mm)

(7) Platform lowered.

(8) Preferred while using GITTER BOX; a carriage with forks thickness s= 71 mm is also available.

(9) A carriage with forks s= 61 mm, e=201 mm and b_5=570 mm, preferred while using GITTER BOX, is also available.It is mandatory for EXV-SF 20 D.

(10) For masts 1.4 / 1.6 t and with forks thickness s=71 mm completely lowered, m_2 = 15 mm; for masts 2.0 t with forks s=73 mm completely lowered, m_2 = 13 mm; for D version trucks with crosswise pallet kit optional, m_2 = 25 mm.

(11) Speed in pedestrian mode - in standing mode without folding side guards protection - in standing mode with folding side guards in protective position.

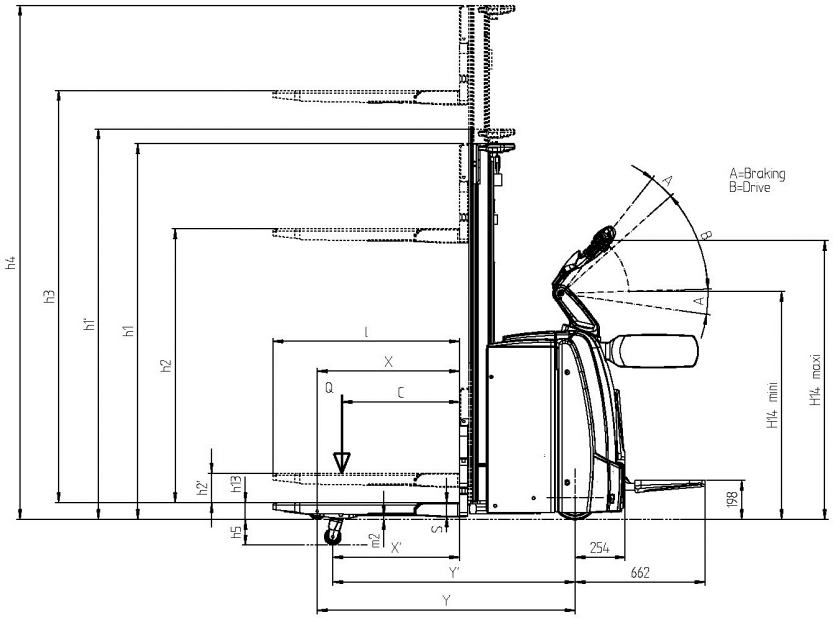
(12) ± 5%.

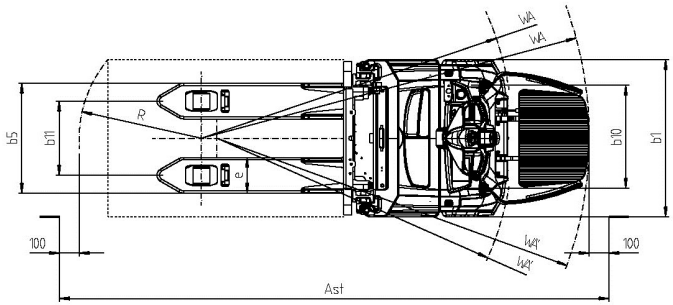
(13) On rounded edge slope with forks raised (geometric limit on unrounded edge slope = 9.2%).

(14) In brackets: max gradeability with trans-pallet capacity 2000 kg on the load arms with initial lift.

(15) On rounded edge slope with forks raised (geometric limit on unrounded corner edge = 5.6%).

EXV SF 14/16/20 I datasheet (VDI)





			EXV SF 14i	EXV SF 16i	EXV SF 20i
1.3	Drive		Electric		
1.4	Operator type		Pedestrian / standing		
1.5	Rated capacity/rated load	Q (kg)	1400 (2000) (1)	1600 (2000) (1)	2000 (2000) (1)

			EXV SF 14i	EXV SF 16i	EXV SF 20i
1.6	Load centre distance	c (mm)	600		
1.8	Load distance, centre of drive axle to fork	x (mm)	724 (2) / 646 (2) (3)		
1.9	Wheelbase	y (mm)	1311 (4) / 1233 (3) (4)	1311 (4) / 1233 (3) (4)	1425 / 1347 (3)
2.1	Service weight (incl. battery)	(kg)	1233 (5)	1233 (5)	1508 (5)
2.2	Axle loading, laden, drive end/load end	(kg)	952 / 1681	959 / 1847	1213 / 2295
2.3	Axle loading, unladen, drive end/load end	(kg)	943 / 290	943 / 290	1096 / 412
3.1	Tyres		Polyurethane		
3.2	Tyre size, drive end	(mm)	Ø 230 x L90		
3.3	Tyre size, load end	(mm)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L105 (Ø 85 x L80) (6)
3.4	Additional wheels (dimensions)	(mm)	Ø 150 x L50	Ø 150 x L50	2x Ø 140 x L50
3.5	Wheels, number drive end/load end (x=driven wheels)		1x + 1 / 2 (1x + 1 / 4) (6)		
3.6	Tread, drive end	b_{10} (mm)	534		
3.7	Tread, load end	b_{11} (mm)	380 / 500	380 / 500	370 / 470
4.2	Height, mast lowered	h_1 (mm)	1915		
4.3	Free lift	h_2 (mm)	150		
4.4	Lift	h_3 (mm)	2844	2844	2684
4.5	Height, mast extended	h_4 (mm)	3930	3930	3850
4.6	Initial lift	h_5 (mm)	110		
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1120 / 1370		
4.15	Fork height, lowered	h_{13} (mm)	86		
4.19	Overall length	l_1 (mm)	1993 (2) (4) / 2401 (2) (4) (7)	1993 (2) (4) / 2401 (2) (4) (7)	2108 (2) / 2516 (2) (7)
4.20	Length to face of forks	l_2 (mm)	843 (2) (4) / 1251 (2) (4) (7)	843 (2) (4) / 1251 (2) (4) (7)	958 (2) / 1366 (2) (7)

			EXV SF 14i	EXV SF 16i	EXV SF 20i
4.21	Overall width	b_1 (mm)	800	800	810
4.22	Fork dimensions	s / e / l (mm)	55 (8) / 182 / 1150	55 (8) / 182 / 1150	73 (9) / 210 / 1150
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Distance between fork-arms	b_5 (mm)	560 / 680	560 / 680	580 / 680 - 570 (9)
4.26	Width between wheel arms	b_4 (mm)	255 / 375	255 / 375	230 / 330
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 (10) / 130 (3)	20 (10) / 130 (3)	20 (10) / 130 (3)
4.34.1	Working aisle width for pallets 1000 x 1200 crossways	A_{st} (mm)	2404 (3) (4) / 2791 (3) (4) (7)	2404 (3) (4) / 2791 (3) (4) (7)	2517 (3) / 2906 (3) (7)
4.34.2	Working aisle width for pallets 800 x 1200 lengthways	A_{st} (mm)	2390 (3) (4) / 2777 (3) (4) (7)	2390 (3) (4) / 2777 (3) (4) (7)	2503 (3) / 2892 (3) (7)
4.35	Turning radius	Wa (mm)	1507 (3) (4) / 1894 (3) (4) (7)	1507 (3) (4) / 1894 (3) (4) (7)	1620 (3) / 2009 (3) (7)
5.1	Travel speed laden/unladen	km/h	4.0 / 4.0 - 6.0 / 6.0 - 8.0 / 10.0 (11) (12)		
5.2	Lift speed laden/unladen	m/s	0.16 / 0.30	0.15 / 0.30	0.15 / 0.30
5.3	Lowering speed laden/unladen	m/s	0.40 / 0.35	0.40 / 0.35	0.31 / 0.31
5.8	Max. gradeability S2 = 5 min laden/unladen	(%)	10 (8) (14) / 22	10 (8) (14) / 22	8 / 23
5.10	Service brake		Electric		
6.1	Drive motor, rating S2 = 60 min	(kW)	2.3		
6.2	Lift motor, rating at S3 15 %	(kW)	3.2		
6.3	Battery according to DIN 43531/35/36; A, B, C, no		2PzS (tray 112)	2 PzS (tray 112)	3 PzS (tray 113)
6.4	Battery voltage / nominal capacity K5	V/Ah	24 / 230	24 / 230	24 / 345
6.5	Battery weight ± 5 %	(kg)	212	212	288
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.80	0.84	0.95
6.6.2	CO_2 equivalent emissions	kg/h	0.4	0.5	0.5

			EXV SF 14i	EXV SF 16i	EXV SF 20i
8.1	Drive control		AC control		
8.4	Sound level at driver's ear	dB (A)	≤ 66		

(1) In brackets: transpallet capacity on the load arms with initial lift.

(2) Value for Tele or NiHo mast (x - 26 mm; l_1 , l_2 + 26 mm with Triplex mast)

(3) Fork arms raised

(4) + 75 mm with battery 3 PzS and + 150 mm with 4 PzS

(5) Value with Tele mast h_1=1915 mm. For other values see the mast table.

(6) In brackets: truck fitted with tandem rollers (mandatory with crosswise pallet kit optional for EXV-SF 14 D, EXV-SF16 D, EXV-SF 20 D, h_{13}= 91mm)

(7) Platform lowered.

(8) Preferred while using GITTER BOX; a carriage with forks thickness s= 71 mm is also available.

(9) A carriage with forks s= 61 mm, e=201 mm and b_5=570 mm, preferred while using GITTER BOX, is also available.It is mandatory for EXV-SF 20 D.

(10) For masts 1.4 / 1.6 t and with forks thickness s=71 mm completely lowered, m_2 = 15 mm; for masts 2.0 t with forks s=73 mm completely lowered, m_2 = 13 mm; for D version trucks with crosswise pallet kit optional, m_2 = 25 mm.

(11) Speed in pedestrian mode - in standing mode without folding side guards protection - in standing mode with folding side guards in protective position.

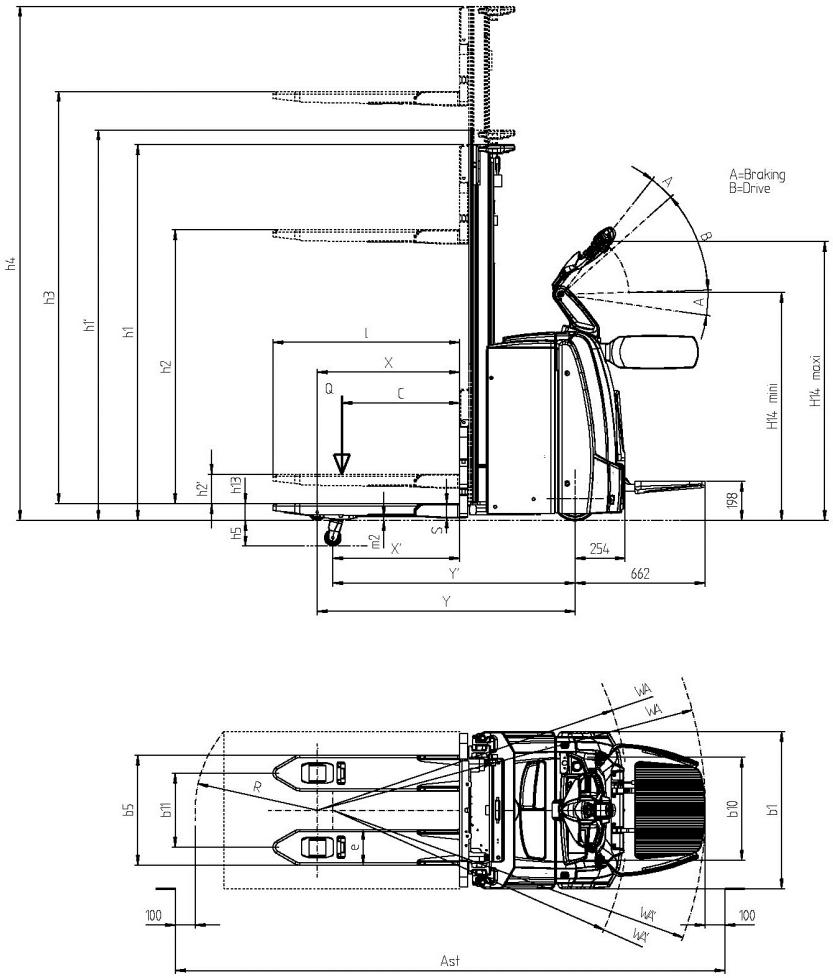
(12) ± 5%.

(13) On rounded edge slope with forks raised (geometric limit on unrounded edge slope = 9.2%).

(14) In brackets: max gradeability with transpallet capacity 2000 kg on the load arms with initial lift.

(15) On rounded edge slope with forks raised (geometric limit on unrounded corner edge = 5.6%).

EXV SF 14/16/20 D datasheet (VDI)



			EXV SF 14 D	EXV SF 16 D	EXV SF 20 D
1.3	Drive		Electric		
1.4	Operator type		Pedestrian / standing		
1.5	Rated capacity/rated load	Q (kg)	1400 / 1000+1000 (2000) (1)	1600 / 1000+1000 (2000) (1)	1200 / 1000+1000 (2000) (1)
1.6	Load centre distance	c (mm)	600		
1.8	Load distance, centre of drive axle to fork	x (mm)	924 (2) / 846 (2) (3)		
1.9	Wheelbase	y (mm)	1511 (4) / 1433 (3) (4)	1511 (4) / 1433 (3) (4)	1625 / 1547 (3)
2.1	Service weight (incl. battery)	(kg)	1262 (5)	1262 (5)	1536 (5)
2.2	Axle loading, laden, drive end/load end	(kg)	1215 / 1447	1249 / 1613	1451 / 2084
2.3	Axle loading, unladen, drive end/load end	(kg)	990 / 273	990 / 273	1153 / 383
3.1	Tyres		Polyurethane		
3.2	Tyre size, drive end	(mm)	Ø 230 x L90		
3.3	Tyre size, load end	(mm)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L85 (Ø 85 x L60) (6)	Ø 85 x L105 (Ø 85 x L80) (6)
3.4	Additional wheels (dimensions)	(mm)	Ø 150 x L50	Ø 150 x L50	2x Ø 140 x L50
3.5	Wheels, number drive end/load end (x=driven wheels)		1x + 1 / 2 (1x + 1 / 4) (6)		
3.6	Tread, drive end	b_{10} (mm)	534		
3.7	Tread, load end	b_{11} (mm)	380 / 500	380 / 500	370 / 470
4.2	Height, mast lowered	h_1 (mm)	1915		
4.3	Free lift	h_2 (mm)	150		
4.4	Lift	h_3 (mm)	2844	2844	2684
4.5	Height, mast extended	h_4 (mm)	3930	3930	3850
4.6	Initial lift	h_5 (mm)	110		
4.9	Height drawbar in driving position min./max.	h_{14} (mm)	1120 / 1370		
4.15	Fork height, lowered	h_{13} (mm)	86 (6)		

			EXV SF 14 D	EXV SF 16 D	EXV SF 20 D
4.19	Overall length	l_1 (mm)	1993 (2) (4) / 2401 (2) (4) (7)	1993 (2) (4) / 2401 (2) (4) (7)	2108 (2) / 2516 (2) (7)
4.20	Length to face of forks	l_2 (mm)	843 (2) (4) / 1251 (2) (4) (7)	843 (2) (4) / 1251 (2) (4) (7)	958 (2) / 1366 (2) (7)
4.21	Overall width	b_1 (mm)	800	800	810
4.22	Fork dimensions	s / e / l (mm)	55 / 182 / 1150	55 / 182 / 1150	61 / 201 / 1150
4.24	Fork carriage width	b_3 (mm)	780		
4.25	Distance between fork-arms	b_5 (mm)	560	560	570
4.26	Width between wheel arms	b_4 (mm)	255	255	230
4.32	Ground clearance, centre of wheelbase	m_2 (mm)	20 (10) / 130 (3)		
4.34.1	Working aisle width for pallets 1000 x 1200 crossways	A_{st} (mm)	2526 (3) (4) / 2913 (3) (4) (7)	2526 (3) (4) / 2913 (3) (4) (7)	2639 (3) / 3028 (3) (7)
4.34.2	Working aisle width for pallets 800 x 1200 lengthways	A_{st} (mm)	2441 (3) (4) / 2828 (3) (4) (7)	2441 (3) (4) / 2828 (3) (4) (7)	2554 (3) / 2943 (3) (7)
4.35	Turning radius	Wa (mm)	1707 (3) (4) / 2094 (3) (4) (7)	1707 (3) (4) / 2094 (3) (4) (7)	1820 (3) / 2209 (3) (7)
5.1	Travel speed laden/unladen	km/h	4.0 / 4.0 - 6.0 / 6.0 - 7.0 / 10.0 (11) (12)		
5.2	Lift speed laden/unladen	m/s	0.16 / 0.30	0.15 / 0.30	0.15 / 0.30
5.3	Lowering speed laden/unladen	m/s	0.40 / 0.35	0.40 / 0.35	0.31 / 0.31
5.8	Max. gradeability S2 = 5 min laden/unladen	(%)	10 (8) (14) / 22	10 (8) (14) / 22	8 / 23
5.10	Service brake		Electric		
6.1	Drive motor, rating S2 = 60 min	(kW)	2.3		
6.2	Lift motor, rating at S3 15 %	(kW)	3.2		
6.3	Battery according to DIN 43531/35/36; A, B, C, no		2PzS (tray 112)	2 PzS (tray 112)	3 PzS (tray 113)
6.4	Battery voltage / nominal capacity K5	V/Ah	24 / 230	24 / 230	24 / 345
6.5	Battery weight ± 5 %	(kg)	212	212	288

			EXV SF 14 D	EXV SF 16 D	EXV SF 20 D
6.6	Energy consumption according to DIN EN 16796	kWh/h	0.80	0.84	0.95
6.6.2	CO_2 equivalent emissions	kg/h	0.4	0.5	0.5
8.1	Drive control		AC control		
8.4	Sound level at driver's ear	dB (A)	≤ 66		

(1) In brackets: transpallet capacity on the load arms with initial lift.

(2) Value for Tele or NiHo mast (x - 26 mm; l_1 , l_2 + 26 mm with Triplex mast)

(3) Fork arms raised

(4) + 75 mm with battery 3 PzS and + 150 mm with 4 PzS

(5) Value with Tele mast h_1=1915 mm. For other values see the mast table.

(6) In brackets: truck fitted with tandem rollers (mandatory with crosswise pallet kit optional for EXV-SF 14 D, EXV-SF16 D, EXV-SF 20 D, h_{13}= 91mm)

(7) Platform lowered.

(8) Preferred while using GITTER BOX; a carriage with forks thickness s= 71 mm is also available.

(9) A carriage with forks s= 61 mm, e=201 mm and b_5=570 mm, preferred while using GITTER BOX, is also available.It is mandatory for EXV-SF 20 D.

(10) For masts 1.4 / 1.6 t and with forks thickness s=71 mm completely lowered, m_2 = 15 mm; for masts 2.0 t with forks s=73 mm completely lowered, m_2 = 13 mm; for D version trucks with crosswise pallet kit optional, m_2 = 25 mm.

(11) Speed in pedestrian mode - in standing mode without folding side guards protection - in standing mode with folding side guards in protective position.

(12) ± 5%.

(13) On rounded edge slope with forks raised (geometric limit on unrounded edge slope = 9.2%).

(14) In brackets: max gradeability with trans-pallet capacity 2000 kg on the load arms with initial lift.

(15) On rounded edge slope with forks raised (geometric limit on unrounded corner edge = 5.6%).

MAST TYPE 1.4 / 1.6 t

MAST TYPE 1.4 / 1.6 t		Telescopic						
Height of mast lowered	h_1 (mm) (a)	1415 (b)	1665 (b)	1915	2115	2365	2565	2815
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	1490	1740	1990	2190	2440	2640	2890
Free lift	h_2 (mm) (c)	150	150	150	150	150	150	150
Lift height	h_3 (mm)	1844	2344	2844	3244	3744	4144	4644
Height - mast raised	h_4 (mm) (a) (c)	2930	3430	3930	4330	4830	5230	5730

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With mandatory load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t)

MAST TYPE 1.4 / 1.6t

MAST TYPE 1.4 / 1.6 t		NiHo					
Height of mast lowered	h_1 (mm) (a)	1415 (b)	1665 (b)	1915	2115	2365	2565
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	-	-	-	-	-	-

Free lift	h_2 (mm) (c)	329	579	829	1029	1279	1479
Lift height	h_3 (mm)	1844	2344	2844	3244	3744	4144
Height - mast raised	h_4 (mm) (a) (d)	2930	3430	3930	4330	4830	5230

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With mandatory load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t)

MAST TYPE 1.4 / 1.6 t

MAST TYPE 1.4 / 1.6 t		Triplex						
Height of mast lowered	h_1 (mm) (a)	1665 (b)	1915	2065	2165	2265	2315	2365
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	-	-	-	-	-	-	-
Free lift	h_2 (mm) (c)	579	829	979	1079	1179	1229	1279
Lift height	h_3 (mm)	3516	4266	4716	5016	5316	5466	5616
Height - mast raised	h_4 (mm) (a) (c)	4602	5352	5802	6102	6402	6552	6702

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With mandatory load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t)

MAST TYPE 2.0 t

MAST TYPE 2.0 t		Telescopic		
Height of mast lowered	h_1 (mm) (a)	1915	2115	2365
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	1990	2190	2440
Free lift	h_2 (mm) (c)	150	150	150
Lift height	h_3 (mm)	2684	3084	3584
Height - mast raised	h_4 (mm) (a) (c)	3850	4250	4750

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With mandatory load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t)

MAST TYPE 2.0 t

MAST TYPE 2.0 t		NiHo		
Height of mast lowered	h_1 (mm) (a)	1915	2115	2365
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	-	-	-
Free lift	h_2 (mm) (c)	749	949	1199
Lift height	h_3 (mm)	2684	3084	3584
Height - mast raised	h_4 (mm) (a) (c)	3850	4250	4750

(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With mandatory load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t)

MAST TYPE 2.0 t

MAST TYPE 2.0 t		Triplex		
Height of mast lowered	h_1 (mm) (a)	1665 (a)	1915	2065
Mast height with used free lift h_2=150 mm	h_1 ‘ (mm)	-	-	-
Free lift	h_2 (mm) (c)	499	749	899
Lift height	h_3 mm)	3276	4026	4476
Height - mast raised	h_4 (mm) (a) (c)	4442	5192	5642

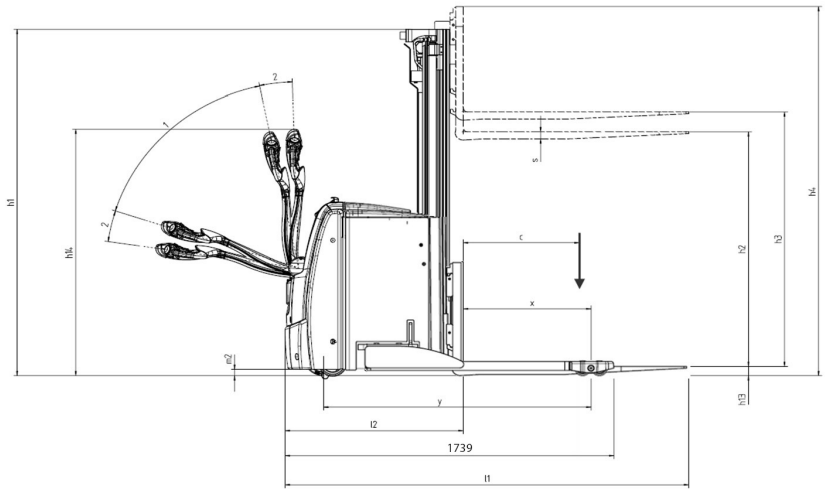
(a) With initial lift h_5: +110 mm

(b) The selection of mast higher than 1900 mm is recommended when selecting a hoistable battery

(c) With mandatory load backrest (height over forks of 1000 mm for masts 1.4/1.6 t, 1080 mm for masts 2.0 t)

Datasheet (VDI)

EXP 14 / EXP 16 / EXP 20 datasheet (VDI)



1.1	Manufacturer		STILL		
1.2	Manufacturer's type designation		EXP 14	EXP 16	EXP 20
			Triplex		
1.3	Transmission		Electric		
1.4	Operator type		Pedestrian mode		
1.5	Nominal capacity/nominal load	Q (kg)	1400	1600	2000
1.6	Distance from load centre of gravity	c (mm)	600		
1.8	Load distance, from centre of drive axle to fork	x (mm)	696 (1)	686 (1)	660 (1)
1.9	Wheelbase	y (mm)	1406.5		
2.1	Service weight (including battery)	kg	1516	1556	1605
2.2	Load on axle with load, drive side/load side	kg	1167 / 1749	1183 / 1972	1198 / 2406
2.3	Load on axle without load, drive side/load side	kg	1072 / 444	1086 / 470	1113 / 492
3.1	Tyres		PU		
3.2	Tyre size, drive side	mm	Ø 230 x L90		
3.3	Tyre size, load side	mm	Ø 85 x L85 (Ø 85 x L60) (2)		
3.4	Additional wheels (dimensions)	mm	Ø 100 x L40		
3.5	Wheels, drive side/load side number (x=driven wheels)		1x + 1/2 (1x + 1/4) (2)		
3.6	Tyre tread, drive side	b10 (mm)	534		
3.7	Tyre tread, load side	b11 (mm)	1000 / 1200 / 1400	1000 / 1200 / 1400	1000 / 1200 / 1400
4.2	Height, mast lowered	h1 (mm)	1915 (3)		1915 (3)
4.3	Free lift	h2 (mm)	1276 (3)	1286 (3)	1286 (3)
4.4	Lift height	h3 (mm)	4266 (3)		4026 (3)
4.5	Height, mast deployed	h4 (mm)	4892 (3)	4902 (3)	4652 (3)
4.6	Initial lift	h5 (mm)	/		
4.9	Tow bar height in driving position, min./max.	h14 (mm)	800/1250		
4.10	Height of the control arms	h8 (mm)	80		
4.15	Fork height, lowered	h13 (mm)	50	55	
4.19	Overall length	l1 (mm)	2071 (4)	2081 (4)	2107 (4)
4.20	Length to the fork surface	l2 (mm)	921 (4) (5)	931 (4) (5)	957 (4) (5)
4.21	Total width	b1 (mm)	1170/1370/1570		

4.22	Fork dimensions		s/e/l (mm)	35x100x1150	45x120x1150	
4.24	Fork carriage width		b3 (mm)	820/980	820/980	820/980
4.25	Distance between the fork arms		b5 (mm)	400/720 // 400/880	420/740 // 420/900	420/740 // 420/900
4.26	Width between the wheel arms		b4 (mm)	860/1060/1260	860/1060/1260	860/1060/1260
4.32	Ground clearance, centre of wheelbase		m2 (mm)	30		
4.34	Working aisle width for pallet 800 x 1200 lengthwise		Ast (mm)	2588 (5)	2592 (5)	2605 (5)
4.34.1	Working aisle width for pallet 1000 x 1200 crosswise		Ast (mm)	2559 (5)	2566 (5)	2587 (5)
4.35	Turning radius		Wa (mm)	1715 (5)		
5.1	Driving speed, laden/unladen		km/h	6/6		
5.2	Lifting speed, laden/unladen		m/s	0.16/0.30 (6)	0.15/0.30 (6)	0.15/0.30 (7)
5.3	Lowering speed, laden/unladen		m/s	0.40/0.35 (6)	0.40/0.35 (6)	0.31/0.31 (7)
5.8	Max. slope S2 = 5 min with load/without load		%	8/23 (8)		
5.10	Service brake			Electromagnetic		
6.1	Traction motor, nominal value S2 = 60 min		kW	2.3		
6.2	Lift motor, nominal value S3 15%		kW	3.2		
6.3	Battery in accordance with DIN 43531/35/36; A, B, C, no			3PZS (9)		
6.4	Voltage/nominal capacity of the battery K5		V/Ah	24/345		
6.5	Battery weight ±5%		kg	288		
6.6	Energy consumption according to DIN EN16796		kWh/h	0.78	0.82	0.94
6.6.2	Equivalent CO2 emissions		kg/h	0.4	0.4	0.5

8.1	Traction controller			AC control
8.4	Noise level at the driver's ear		dB (A)	≤ 66

(1) With Tele and NiHo masts +26 mm.

(2) In brackets: (truck with tandem rollers).

(3) Value with Triplex mast h1=1915 mm. For other values, see the mast table.

(4) With Tele and NiHo masts -26 mm.

(5) Without creep speed +12 mm.

(6) Value with Tele mast h3 = 4644 mm.

(7) Value with Tele mast h3 = 3584 mm.

(8) On a slope with rounded edges with forks raised (geometric limit for slopes with non-rounded edges = 8%).

(9) Battery replaceable using a hoist

MAST TYPE 1.4 t		Telescopic						
Height - mast lowered	h1 (mm)	1415 a	1665 a	1915	2115	2365	2565	2815
Height - mast lowered	h1' (mm)	1490	1740	1990	2190	2440	2640	2890
Free lift	h2 (mm) b	-	-	-	-	-	-	-
Free lift	h2 (mm) c	150	150	150	150	150	150	150
Lift height	h3 (mm)	1844	2344	2844	3244	3744	4144	4644
Height - mast raised	h4 (mm) d	2480	2980	3480	3880	4380	4780	5280

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 1.4 t		NiHo					
Height - mast lowered	h1 (mm)	1415 a	1665 a	1915	2115	2365	2565
Height - mast lowered	h1' (mm)	-	-	-	-	-	-
Free lift	h2 (mm) b	776	1026	1276	1476	1726	1926
Free lift	h2 (mm) c	-	-	-	-	-	-
Lift height	h3 (mm)	1844	2344	2844	3244	3744	4144
Height - mast raised	h4 (mm) d	2480	2980	3480	3880	4380	4780

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 1.4 t		Triplex				
Height - mast lowered	h1 (mm)	1665 a	1915	2065	2265	2315
Height - mast lowered	h1' (mm)	-	-	-	-	-
Free lift	h2 (mm) b	1026	1276	1426	1626	1676
Free lift	h2 (mm) c	-	-	-	-	-
Lift height	h3 (mm)	3516	4266	4716	5316	5466
Height - mast raised	h4 (mm) d	4152	4902	5352	5952	6102

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 1.6 t		Telescopic						
Height - mast lowered	h1 (mm)	1415 a	1665 a	1915	2115	2365	2565	2815
	h1' (mm)	1490	1740	1990	2190	2440	2640	2890
Free lift	h2 (mm) b	-	-	-	-	-	-	-

	h2 (mm) c	150	150	150	150	150	150	150
Lift height	h3 (mm)	1844	2344	2844	3244	3744	4144	4644
Height - mast raised	h4 (mm) d	2470	2970	3470	3870	4370	4770	5270

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 1.6 t		NiHo					
Height - mast lowered	h1 (mm)	1415 a	1665 a	1915	2115	2365	2565
	h1' (mm)	-	-	-	-	-	-
Free lift	h2 (mm) b	786	1036	1286	1486	1736	1936
	h2 (mm) c	-	-	-	-	-	-
Lift height	h3 (mm)	1844	2344	2844	3244	3744	4144
Height - mast raised	h4 (mm) d	2470	2970	3470	3870	4370	4770

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 1.6 t		Triplex				
Height - mast lowered	h1 (mm)	1665 a	1915	2065	2265	2315
	h1' (mm)	-	-	-	-	-
Free lift	h2 (mm) b	1036	1286	1436	1636	1686
	h2 (mm) c	-	-	-	-	-
Lift height	h3 (mm)	3516	4266	4716	5316	5466
Height - mast raised	h4 (mm) d	4142	4892	5342	5942	6092

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 2.0 t		Telescopic		
Height - mast lowered	h1 (mm)	1915	2115	2365
	h1' (mm)	1990	2190	2440
Free lift	h2 (mm) b	-	-	-
	h2 (mm) c	150	150	150
Lift height	h3 (mm)	2684	3084	3584
Height - mast raised	h4 (mm) d	3310	3710	4210

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 2.0 t		NiHo		
Height - mast lowered	h1 (mm)	1915	2115	2365
	h1' (mm)	-	-	-
Free lift	h2 (mm) b	1286	1486	1736
	h2 (mm) c	-	-	-
Lift height	h3 (mm)	2684	3084	3584
Height - mast raised	h4 (mm) d	3310	3710	4210

(a) Mast not recommended if the battery is replaced daily

(b) With load backrest -537 mm

(c) With mast with increased height h1'

MAST TYPE 2.0 t		Triplex		
Height - mast lowered	h1 (mm)	1665 a	1915	2065
	h1' (mm)	-	-	-
Free lift	h2 (mm) b	1036	1286	1436
	h2 (mm) c	-	-	-
Lift height	h3 (mm)	3276	4026	4476
Height - mast raised	h4 (mm) d	3902	4652	5102

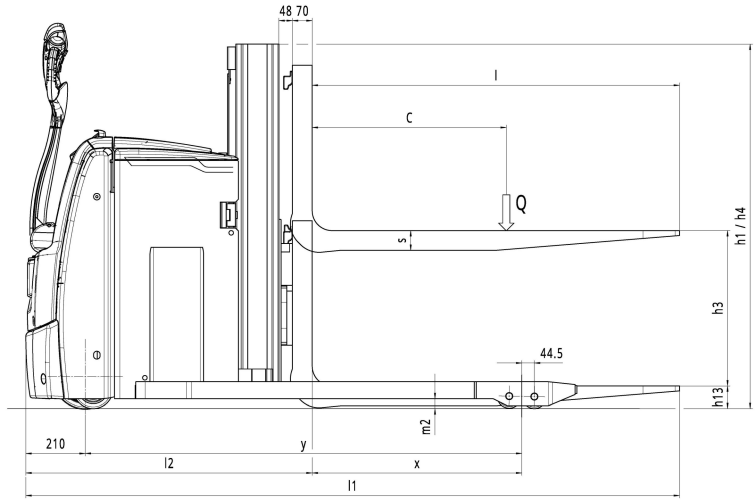
(a) Mast not recommended if the battery is replaced daily

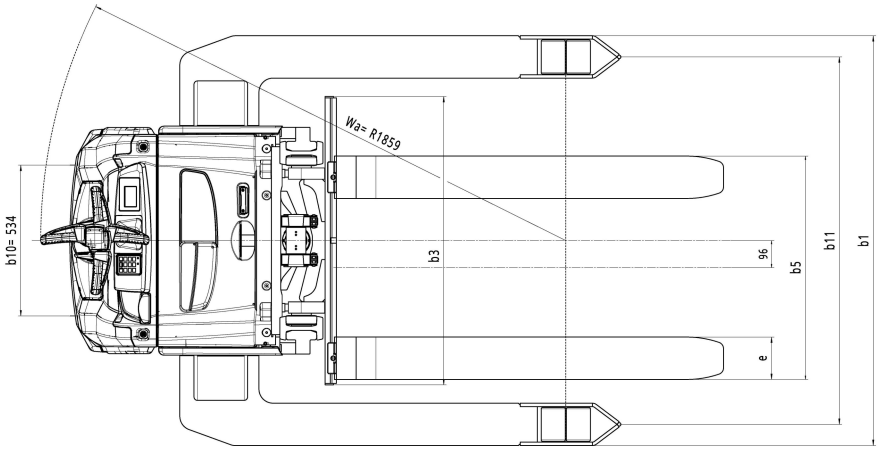
(b) With load backrest -537 mm

(c) With mast with increased height h1'

Datasheet (VDI)

EXV BC 30 datasheet (VDI)





1.1	Manufacturer		STILL
1.2	Type designation		EXV BC 30
1.3	Transmission		Electric
1.4	Operator type		Pedestrian mode
1.5	Nominal capacity/nominal load	Q (kg)	3100
1.6	Distance from load centre of gravity	c (mm)	672
1.8	Load distance, from centre of drive axle to fork	x (mm)	742
1.9	Wheelbase	y (mm)	1545
2.1	Service weight (including battery)	kg	1784
2.2	Load on axle with load, drive side/load side	kg	1256/3610
2.3	Load on axle without load, drive side/load side	kg	1170/614
3.1	Tyres		PU HQ quartz / PU
3.2	Tyre size, drive side	mm	Ø230 x 75
3.3	Tyre size, load side	mm	Ø85 x 120
3.5	Wheels, drive side/ load side number (x=driven wheels)		1x + 4
3.6	Tyre tread, drive side	b10 (mm)	534
3.7	Tyre tread, load side	b11 (mm)	1300
4.2	Height, mast lowered	h1 (mm)	1290
4.4	Lift height	h3 (mm)	550
4.5	Height, mast deployed	h4 (mm)	1290
4.6	Initial lift	h5 (mm)	-
4.9	Tow bar height in driving position, min./max.	h14 (mm)	800/1250
4.15	Fork height, lowered	h13 (mm)	80
4.19	Overall length	l1 (mm)	2314
4.20	Length to the fork surface	l2 (mm)	1014
4.21	Total width	b1 (mm)	1450
4.22	Fork dimensions	s/e/l (mm)	70/150/1300
4.24	Fork carriage width	b3 (mm)	1020
4.25	Distance between the fork arms	b5 (mm)	790

4.32	Ground clearance, centre of wheelbase	m2 (mm)	35
4.35	Turning radius	Wa (mm)	1859
5.1	Driving speed, laden/unladen	km/h	5.0/5.0
5.2	Lifting speed, laden/unladen	m/s	0.15/0.30
5.3	Lowering speed, laden/unladen	m/s	0.31/0.31
5.8	Max. slope S2 = 5 min with load/without load	%	8.0/23.0
5.10	Service brake		Electromagnetic
6.1	Traction motor, nominal value S2 = 60 min	kW	1.5
6.2	Lift motor, nominal value S3 15%	kW	3.2
6.3	Battery in accordance with DIN 43531/35/36; A, B, C, no		3 PzS
6.4	Voltage/nominal capacity of the battery K5	V/Ah	24/345
6.5	Battery weight ±5%	kg	288
6.6	Energy consumption according to DIN EN16796	kWh/h	1.44
8.1	Traction controller		AC control
8.4	Noise level at the driver's ear	dB (A)	≤66

Batteries

Battery extraction type	TROG (mm) dimension	TROG	Voltage (V)	Battery capacity (Ah)	Battery type	Element height (mm)	TROG colour
Vertical extraction	624 x 212 x 627	112	24 V	200	2 PzV (gel)	585	RAL 7021
				220	2 PzV (gel)	600	
				230	2 PzS (lead)	570–575	
				250	2 PzS (lead)	600–605	
	624 x 284 x 627	113	24 V	300	3 PzV (gel)	585	RAL 7021
				330	3 PzV (gel)	600	
				345	3 PzS (lead)	570–575	
				375	3 PzS (lead)	600–605	
Side extraction	786 x 211 x 630	63	24 V	300	3 PzV (gel)	585	Silver metallic
				330	3 PzV (gel)	600	
				345	3 PzS (lead)	570–575	
				375	3 PzS (lead)	600–605	
	786 x 310 x 630	67	24 V	400	4 PzV (gel)	585	Silver metallic
				440	4 PzV (gel)	600	
				500	4 PzS (lead)	600–605	

Battery extraction type	TROG	Battery capacity (Ah)	Battery type	Batteries per model of truck (I = STANDARD — O = OPTIONAL)				
				EXV 14–16 EXV 14i–16i	EXV 20 EXV 20i	EXV-SF 14–16 EXV-SF 14i–16i	EXV-SF 20 EXV-SF 20i	EXP 14-16-20
Vertical extraction	112	200	2 PzV (gel)	I		I		
		220	2 PzV (gel)	I		I		
		230	2 PzS (lead)	I		I		
		250	2 PzS (lead)	I		I		
	113	300	3 PzV (gel)	O	I	O	I	I
		330	3 PzV (gel)	O	I	O	I	I
		345	3 PzS (lead)	O	I	O	I	I
		375	3 PzS (lead)	O	I	O	I	I
Side extraction	63	300	3 PzV (gel)	O		O		
		330	3 PzV (gel)	O		O		
		345	3 PzS (lead)	O		O		
		375	3 PzS (lead)	O		O		
	67	400	4 PzV (gel)			O		
		440	4 PzV (gel)			O		
		500	4 PzS (lead)			O		

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 EXV / EXP trucks	1.1	CLP PG220 DIN 51517-3		MOBIL SHC 150 CIBUS
Reduction gear unit EXV-SF trucks Up to 01/2024	0.8	CLP PG220 DIN 51517-3		MOBIL SHC 150 CIBUS
Reduction gear unit EXV-SF trucks From 02/2024	0.8	FUCHS RENOLIN UNISYN XT150 DIN 51517-3		MOBIL SHC 150 CIBUS
Generic lubricant	/	TUTELA MP02	STATERMELF EP2	MOBIL FM 222
Chain lubricant	/	STRUCTOVIS EHD	STRUCTOVIS FHD	

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).

Eco-design requirements for electric motors and variable speed drives

A

Address of manufacturer. I

B

Battery
- Disposal. 13
- Installation. 167

before use. 122

C

Capacity plate. 88
Changes to the industrial truck. 10, 23
Checks before use. 122
Checks to be carried out before lifting a load. 138
Combi tiller. 74
Conformity marking. 6
Contact details. I
Copyright and trademark rights. 4

D

Danger area. 117
Datasheet (VDI). 180, 214, 221
Date of edition of this manual. 4
Declaration of conformity. 7
Definition of directions. 83
Disposal
- Battery. 13
- Components. 13

Driving
- Safety instructions. 116

During work. 104

E

EC declaration of conformity in accordance with the Machinery Directive. 7
Emergency shutdown handle. 71
Ergonomic dimensions. 124

F

Fuses. 166

I

Inserting chocks. 119
Intended use of the trucks. 116
In the event of error code L354. 105
In the event of error code T526. 105

L

Location of labels. 84
Lubricating and cleaning the lifting chains. 165

M

Managing residual capacity. 100
Managing truck performance data. 103
Markings. 84

O

Operator position. 127
Options and variants. 91
OptiSpeed. 76
Overview. . . . . 0 , 34

P

Packaging. 14
Platform. 81
Preparation. 166

R

Regulations for using the DLC 3. 104
Residual dangers. 20
Residual risks. 20
Retrofitting. 10, 23

S

Safety. 0
- Emergencies. 129

Safety devices. 27
- Misuse. 29

Safety guidelines for handling loads. . . . 136
Safety Inspection. 26
Securing with ropes. 119
Serial number. 86
Side protection. 79
Spare parts list. 5
Stability. 21
Starting the truck. 104

T

Technical description. 32
- Braking system. 32
- Driving. 32
- General characteristics. 32
- Lift. 32
- On-board equipment. 33

Transporting. 119

Transporting loads. 145
Types of lift mast. 77
NiHo. 77
Simplex. 77
Telescopic. 77
Triplex. 78

U

Update of this manual. 4

STILL GmbH

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