Original instructions

Electric pallet truck

FXH 20N
FXH 25N



1326 1327 2372 2373

first in intralogistics

11548011651 EN - 03/2025 - 11

Address of manufacturer and contact details ▷

STILL GmbH
Berzeliusstraße 10
22113 Hamburg, Germany
Telephone: +49 (0) 40 7339-0
Fax: +49 (0) 40 7339-1622
Email: info@still.de
Website: www.still.de

1 Introduction

Your industrial truck . . . 2
General . . . 2
Copyright and property rights . . . 2
Conformity marking . . . 3
Declaration that reflects the content of the declaration of conformity . . . 4
Identification label . . . 6
List of abbreviations . . . 7
Rules for the operating company of industrial trucks . . . 9
Digital operating instructions . . . 10
Spare parts list . . . 11
Permissible use . . . 12
Description of use and climatic conditions . . . 12
Unauthorised use . . . 13
Additional information on the conditions of use for pallet trucks in ride-on mode . . . 13
Explanation of symbols used . . . 13
Disposing of components and batteries . . . 14

2 Safety

Safety regulations . . . 16
Safety regulations for handling consumables . . . 17
Permissible consumables . . . 17
Oils . . . 17
Hydraulic fluid . . . 18
Battery acid . . . 18
Disposal of consumables . . . 19
Emissions . . . 20
Noise emission values . . . 20
Vibration characteristics for vibrations to which the body is exposed . . . 20
Residual dangers, residual risks . . . 21
Stability . . . 21

Definition of responsible persons . . . 22
Operating company . . . 22
Specialist . . . 22
Drivers . . . 22

Safety tests . . . 24
Regular safety inspection of the truck . . . 24

3 Overviews

Truck overview . . . 26
Overview . . . 26
General view of the technical compartment . . . 27

Operating and display devices . . . 28
Driver's compartment . . . 28
Electronic key (option) . . . 29
Display operating unit . . . 31

Markings . . . 32
Labels . . . 32
Serial number . . . 33

4 Use

Technical description . . . 36

List of checks prior to start-up . . . 37

Starting the truck . . . 38

Checks and actions prior to commissioning . . . 39
Checking the emergency off switch . . . 39
Checking the brakes . . . 39
Checking the horn . . . 40

Truck operating instructions . . . 41

Stepping on/off the truck . . . 42

Operation of operator presence detection . . . 43

Driver's compartment settings . . . 45
Adjusting the seat . . . 45
Adjusting the floor . . . 45
Seat heater option . . . 46

Using the display-operating unit 47
Selection buttons 47
Display of the drive wheel position 47
Operation of the display unit 47

Driving safety guidelines 53

Driving 54
Defining directions 54
Driving 54
Braking 55
Horn 56
Drive program 57
Joystick function (option) 58
Steering Knob option 59
Using the truck on a ramp 60

Operating the FleetManager™ option 62
Description of the FleetManager option 62
Commissioning a truck equipped with the FleetManager™ option 63
FleetManager™ option: Colour code for the LEDs 64
Disconnecting a truck equipped with the FleetManager™ option 66

Transporting loads 68
Load handling safety rules 68
Grabbing a loading unit 68
Transporting pallets or other containers 69
Lift control elements 70
Handling a single load 71

Cold store use 73
Cold store usage (optional) 73

Handling the battery 75
Battery type 75
Order picking 75
Opening and closing the battery hood 76
Charging the battery using an external charger 77
Changing the side access battery 79

Handling the truck in an emergency 85
Truck towing procedure 85

Handling the truck in specific situations 87
Slinging the truck 87
Lifting the truck 87
Transporting the truck 89

Transporting the truck in the lift . . . 89
Driving on loading bridges . . . 89

5 Maintenance

General maintenance information . . . 92
General . . . 92
Servicing and maintenance personnel training and qualification . . . 93
Battery maintenance staff . . . 93
Maintenance operations that do not require special training . . . 93
Ordering spare parts and consumables . . . 93

Safety guidelines for maintenance . . . 94
Servicing and maintenance measures . . . 94
Working on the electrical equipment . . . 94
Safety devices . . . 94

Recommended lubricants . . . 95

Technical data for inspection and maintenance . . . 96

Accessing the technical compartment . . . 97

1000-hour maintenance plan . . . 99

5000-hour maintenance plan . . . 99

10,000-hour service plan . . . 100

Chassis, bodywork and fittings . . . 101
Cleaning the truck . . . 101
General information on battery maintenance . . . 102
Checking the condition of the load arms . . . 103

Steering and wheels . . . 104
Checking the condition of the wheels . . . 104

Electrical equipment . . . 105
Cleaning and blowing out the electrical components . . . 105
Checking the battery acid level and electrolyte density . . . 105
Checking the condition of cables, terminals and the battery connector . . . 107

Hydraulic systems . . . 108
Checking the hydraulic system for leaks . . . 108
Checking the hydraulic oil level . . . 108

Storage and decommissioning . . . 110
Storage of truck . . . 110
Permanent Putting Out of Commission (Destruction) . . . 111

6 Technical specifications

FXH 20N datasheet 114
Eco-design requirements for electric motors and variable speed drives 117

1

Introduction

Your industrial truck

General

The truck described in these operating instructions corresponds to the applicable standards and safety regulations.

If the truck is to be operated on public roads, it must conform to the existing national regulations for the country in which it is being used. The driving permit must be obtained from the appropriate office.

The truck has been fitted with state-of-the-art technology. Following these operating instructions will allow the truck to be handled safely. By complying with the specifications in these operating instructions, the functionality and the approved features of the truck will be retained.

Get to know the technology, understand it and use it safely - these operating instructions provide the necessary information and help to avoid accidents and to keep the truck ready for operation beyond the warranty period.

Therefore:

– Before commissioning the truck, read the operating instructions and follow the instructions.

– Always follow all of the safety information contained in the operating instructions and on the truck.

Copyright and property rights

This manual - and any excerpts thereof - may not be reproduced, translated or transmitted in any form to third parties without the express written permission of the manufacturer.

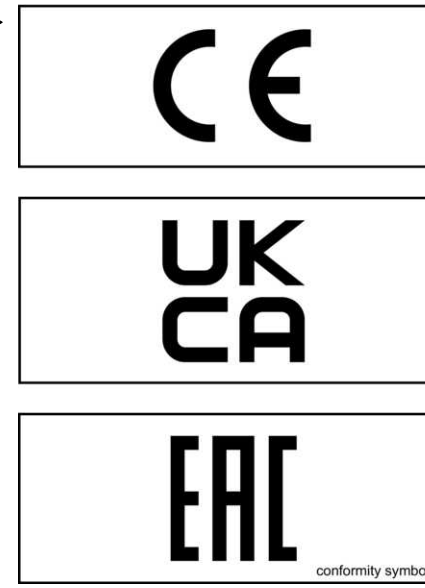
Conformity marking

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.

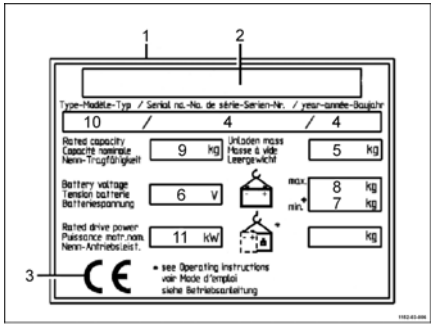
An unauthorised structural change or addition to the industrial truck can compromise safety, thus invalidating the declaration of conformity.

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.

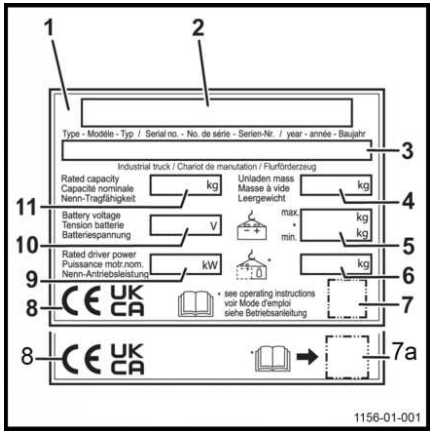
Identification label

Version 1



1 Identification label
2 Manufacturer
3 CE symbol (this symbol means that the machine complies with European regulations for industrial trucks)
4 Serial number/year
5 Unladen weight
6 Battery voltage
7 Minimum battery weight (for a lithium-ion battery, the weight of the ballast container is included)
8 Maximum battery weight
9 Nominal capacity of the truck
10 Model
11 Nominal motor power

Version 2



1 Identification label
2 Manufacturer
3 Model/Serial number/ Manufacturing year
4 Net weight
5 Battery maximum weight/ Battery minimum weight
6 Ballast weight
7 Placeholder for "data matrix code" (truck serial number)
7a Placeholder for "data matrix code" (Internet address of the customer portal with the truck serial number *)
8 Conformity marking:
CE marking for EU markets, EU candidate countries, EFTA states and Switzerland
UKCA marking for the UK market
EAC marking for the Eurasian Economic Union market
9 Nominal drive power

10 Battery voltage

11 Nominal load capacity

NOTE

- *Several conformity markings may appear on the nameplate.*
- *The EAC marking can also be located in the immediate vicinity of the nameplate.*

***)** Type the address **still-smart.com/QR/ms/XXXXXXXXXXX** into a web browser or scan the QR code to access the documents (for example the operating instructions and the spare parts catalogue).

NOTE

XXXXXXXXXXX should be replaced with the truck serial number.

List of abbreviations

This list of abbreviations applies to all types of operating instructions. Not all of the abbreviations that are listed here will necessarily appear in these operating instructions.

Abbreviation	Meaning	Explanation
ArbSchG	Arbeitsschutzgesetz	German implementation of EU occupational health and safety directives
Betr-SichV	Betriebssicherheitsverordnung	German implementation of the EU working equipment directive
BG	Berufsgenossenschaft	German insurance company for the company and employees
BGG	Berufsgenossenschaftlicher Grundsatz	German principles and test specifications for occupational health and safety
BGR	Berufsgenossenschaftliche Regel	German rules and recommendations for occupational health and safety
DGUV	Berufsgenossenschaftliche Vorschrift	German accident prevention regulations
CE	Communauté Européenne	Confirms conformity with product-specific European directives (CE labelling)

List of abbreviations

Abbreviation	Meaning	Explanation
CEE	Commission on the Rules for the Approval of the Electrical Equipment	International commission on the rules for the approval of electrical equipment
DC	Direct Current	Direct current
DFÜ	Datenfernübertragung	Remote data transfer
DIN	Deutsches Institut für Normung	German standardisation organisation
EG	European Community	
EN	European standard	
FEM	Fédération Européene de la Manutention	European Federation of Materials Handling and Storage Equipment
F_{max}	maximum Force	Maximum power
GAA	Gewerbeaufsichtsamt	German authority for monitoring/issuing regulations for worker protection, environmental protection, and consumer protection
GPRS	General Packet Radio Service	Transfer of data packets in wireless networks
ID no.	Identification number	
ISO	International Organization for Standardization	International standardisation organisation
K_{pA}	Uncertainty of measurement of sound pressure levels	
LAN	Local Area Network	Local area network
LED	Light Emitting Diode	Light emitting diode
L_p	Sound pressure level at the workplace	
L_{pAZ}	Average continuous sound pressure level in the driver's compartment	
LSP	Load centre of gravity	Distance of the centre of gravity of the load from the front face of the fork backs
MAK	Maximum workplace concentration	Maximum permissible air concentrations of a substance at the workplace
Max.	Maximum	Highest value of an amount
Min.	Minimum	Lowest value of an amount
PIN	Personal Identification Number	Personal identification number
PPE	Personal protective equipment	
SE	Super-Elastic	Superelastic tyres (solid rubber tyres)
SIT	Snap-In Tyre	Tyres for simplified assembly, without loose rim parts

Abbreviation	Meaning	Explanation
StVZO	Straßenverkehrs-Zulassungs-Ordnung	German regulations for approval of vehicles on public roads
TRGS	Technische Regel für Gefahrstoffe	Ordinance on hazardous materials applicable in the Federal Republic of Germany
UKCA	United Kingdom Conformity Assessed	Confirms conformity with the product-specific directives that apply in the United Kingdom (UKCA labelling)
VDE	Verband der Elektrotechnik Elektronik Informationstechnik e. V.	German technical/scientific association
VDI	Verein Deutscher Ingenieure	German technical/scientific association
VDMA	Verband Deutscher Maschinen- und Anlagenbau e. V.	German Mechanical Engineering Industry Association
WLAN	Wireless LAN	Wireless local area network

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.

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

The spare parts list can be downloaded by entering the address **https://sparepartlist.still.eu** into a web browser or by scanning the QR code displayed to the side.

When the web page is open, please type in the following password: **Spareparts24!**.

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



Permissible use

The truck described in these operating instructions is suitable for lifting and transporting loads.

The truck should only be used for the purposes for which it was designed, as described in these instructions.

If the truck needs to be used for purposes other than those specified in these instructions, you should first:

- Obtain permission from the manufacturer
- Obtain permission from the competent authorities, if applicable

The purpose of obtaining these permissions in advance is to limit danger as far as possible.

Description of use and climatic conditions

Normal use

– Indoor and outdoor use.

– Ambient temperature in tropical and Nordic regions ranging from -10°C to 45°C

– Start capability from -10°C to 45°C.

– Maximum start time of 20 seconds

– Use at up to 2000 metres above sea level.

Special use (partly with special measures) for trucks equipped with Gel or Lead batteries

– Use, for example, in the event of abrasive dust (such as AL203), lint, acid, leach, salt and incombustible substances.

– Ambient temperature in tropical regions up to 55 °C.

– Start capability at -25°C.

– Use at up to 3,500 metres above sea level.

Unauthorised use

Any danger caused as a result of unauthorised use becomes the responsibility of the operator or driver and not that of the manufacturer.

Use for purposes other than those described in these operating instructions is prohibited.

Transporting people is prohibited.

The forklift truck should not be used in areas where there is a risk of fire, explosion or corrosion, or in areas that are particularly dusty.

Stacking or unstacking is not permissible on inclined surfaces or ramps.

Additional information on the conditions of use for pallet trucks in ride-on mode

The truck has been designed for operators who weigh between 40 and 115 kg.

For those who weigh more or less than this, please contact the manufacturer for further guidance on using this truck.

Explanation of symbols used

⚠ DANGER

Compulsory procedure that must be followed to avoid life-threatening danger or physical harm.

⚠ WARNING

Compulsory procedure that must followed to avoid injury.

⚠ CAUTION

Compulsory procedure that must be followed to avoid damage to and/or destruction of equipment.

NOTE

For technical requirements that require special attention.

ENVIRONMENT NOTE

To prevent environmental damage.

Disposing of components and batteries

The truck is made up of different materials.

If components or batteries must be replaced and scrapped, 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 when disposing of components and batteries.

2

Safety

Safety regulations

The truck operating instructions must be communicated to all those concerned and in particular to personnel responsible for maintenance and driving. The employer must make sure that the forklift operator has properly understood everything, particularly all the safety information.

Please observe the directives and safety regulations attached, in particular:

- Information concerning the operation of industrial trucks
- Regulations concerning traffic lanes and working areas
- Appropriate behaviour, rights and responsibilities of the driver
- Use in particular areas
- Information about the weight and dimensions of pallets or any other container
- Information concerning starting, driving and braking
- Information for maintenance and repair
- Regular checks and technical inspections
- Recycling of lubricants, oils and batteries
- Residual risks.

Care is recommended both for the user and the person in charge (employer) with regard to adhering to all safety rules concerning the operation of industrial trucks.

When instructing forklift operators, we recommend the following points are emphasised:

- The features of the truck
- The special accessories
- The specific features of the working environment.

Train the user in how to drive the truck, until it is under proper control.

Then, and only then, proceed to transferring pallets.

Forklift truck stability is guaranteed when the unit is used correctly.

Safety regulations for handling consumables

Permissible consumables

⚠ WARNING

Consumables can be dangerous.

It is necessary to follow the safety regulations when handling these substances.

Refer to the maintenance data table for the permissible substances necessary for operation.

Oils



⚠ DANGER

Oils are flammable!

- Follow the statutory regulations
- Do not allow oils to come into contact with hot motor parts.
- No smoking, fires or flames!



⚠ DANGER

Oils are toxic!

- Avoid contact and consumption
- In case of inhalation of steam or fumes, breathe fresh air immediately.
- After contact with the eyes, rinse thoroughly with water (for at least 10 minutes) and then consult an eye specialist.
- If swallowed, do not induce vomiting. Seek immediate medical attention.



⚠ WARNING

Prolonged intensive contact with the skin can result in loss of skin oils and cause irritation.

- Avoid contact and consumption.
- Wear protective gloves!
- After any contact, wash the skin with soap and water and then apply a skin care product.
- Immediately change soaked clothing and shoes.

⚠ WARNING

There is a risk of slipping on spilled oil, particularly when combined with water!

- Collect spilled oil immediately using an oil-binding agent and dispose of it in accordance with regulations.

ENVIRONMENT NOTE

Oils are water pollutants!

Always store oil in containers that comply with the applicable regulations.

Avoid spilling oils.

Collect spilt oil immediately using an oil binding agent and dispose of it in accordance with regulations.

Dispose of old oils according to the applicable regulations.

Hydraulic fluid



⚠ WARNING

During operation of the forklift truck, hydraulic fluids are pressurised and are hazardous to your health.

- Do not spill these fluids!
- Follow the statutory regulations
- Do not allow the fluids to come into contact with hot motor parts.
- Do not allow to come into contact with the skin.
- Avoid inhaling the spray
- Penetration of pressurised fluids into the skin is particularly dangerous if these fluids escape at high pressure due to leaks in the hydraulic system. In case of such injury, seek medical advice immediately.
- To avoid injury, use appropriate personal protective equipment (e.g. protective gloves, industrial goggles, skin protection and skin care products).

ENVIRONMENT NOTE

Hydraulic fluid is a water-polluting substance!

Always store hydraulic fluid in containers complying with the regulations.

Avoid spilling.

Spilt hydraulic fluid should be removed with oil-binding agents at once and disposed of according to the regulations.

Dispose of old hydraulic fluid according to regulations.

Battery acid



⚠ WARNING

Battery acid contains dissolved sulphuric acid. This is toxic.

- Avoid contact and consumption.
- In case of injury, seek medical advice immediately.



⚠ WARNING

Battery acid contains dissolved sulphuric acid. This is corrosive.

- When working with battery acid, always wear protective clothing and eye protection.
- Do not allow any acid to get onto the clothing or skin or into the eyes; if this does happen, rinse immediately with plenty of clean water.
- In case of injury, seek medical advice immediately.
- Immediately rinse away spilt battery acid with plenty of water.
- Follow the statutory regulations

ENVIRONMENT NOTE

- Dispose of used battery acid in line with the applicable regulations.

Disposal of consumables



ENVIRONMENT NOTE

Materials that have to be disposed of following maintenance, repair and cleaning must be systematically collected and disposed of in accordance with regulations. Observe the national regulations for your country. Work may only be carried out in areas designated for this purpose. Take care to minimise, as far as possible, any impact on the environment.

- Any spillage of fluids such as hydraulic oil, brake fluid or gear lubricant oil must be immediately soaked up with an oil-binding agent.
- The regulations for disposal of used oil are applicable.
- Any spillage of battery acid must be neutralised immediately.

Emissions

Noise emission values

Calculated during the test cycle performed in accordance with standard EN 12053.

Acoustic pressure level in the driver's compartment			
FXH 20N	L_{PAZ}	=	68 dB (A)
FXH 25N	L_{PAZ}	=	71 dB (A)
Uncertainty	K_{PA}	±	2.5 dB (A)

NOTE

Lower or higher noise values may occur when using industrial trucks, e.g. due to the mode of operation, environmental factors and other sources of noise.

Vibration characteristics for vibrations to which the body is exposed

The values were determined according to EN 13059 using trucks with standard equipment according to the datasheet (driving over test course with humps).

Specified characteristics for upper limb vibrations	
Vibration characteristics	< 2.5 m/s^2

NOTE

The vibration characteristics for bodily vibrations cannot be used to determine the actual load level of vibrations during operation. This depends on the operating conditions (state of ground, mode of operation etc.) and should therefore be determined on site, where appropriate. It is mandatory to specify the hand-arm vibrations even where the values do not indicate any hazard, as in this case.

Residual dangers, residual risks

Despite all operational precautions and compliance with standards and rules, the possibility of additional risks when using the truck cannot be entirely excluded.

The truck and all its components comply with the regulations relating to current applicable safety rules.

Persons in the vicinity of the truck must be particularly cautious and react immediately in the event of any malfunction, incident, breakdown etc.

⚠ WARNING

Personnel in contact with the truck must be informed of the risks related to using the truck.

These operating instructions draw your attention to the safety rules.

The risks are:

- Escape of consumables due to leaks, ruptured lines and tanks etc.
- Risk of accident when driving over difficult ground such as slopes, soft or irregular surfaces or in poor visibility etc.
- Falling, tripping etc. when moving on the industrial truck, especially in the wet, with leaking consumables or icy surfaces.
- Loss of stability due to the load being unstable or the load slipping etc.
- Risk of fire and explosion due to batteries and electrical voltages.
- Human error - Disregarding safety regulations.

It is important to adjust the speed of the truck depending on the load and ground conditions.

The stability of the truck has been tested to the latest standards. These standards only take account of the static and dynamic tilting forces that can arise during operation that complies with the specifications and operating rules. Risks caused by misuse or incorrect operation that jeopardise the stability cannot be ruled out in extreme situations.

Stability

Stability is only guaranteed if the industrial truck is used according to the indicated recommendations.

It is not guaranteed in the event of:

– cornering at high speeds

– moving with a load that is protruding to the side (e.g. sideshift)

– turning and driving diagonally on descents or ascents

– driving on descents or ascents with the load on the downhill side

– loads that are too wide or too heavy

– driving with an unstable load

– ramp edges or steps.

Definition of responsible persons

Operating company

The operating company is the natural or legal person or group who operates the truck or on whose authority the truck is used.

The operating company must ensure that the truck is only used for its intended purpose and in compliance with the safety guidelines set out in these operating instructions.

The operating company must ensure that all users read and understand the safety information in these instructions.

The operating company is responsible for the scheduling and correct performance of regular safety checks.

It is recommended that these checks comply with national performance specifications.

Specialist

A specialist is deemed to be:

- A person whose experience and technical training has allowed him to develop relevant knowledge of industrial trucks
- A person who is also familiar with national health and safety regulations and generally recognised technical directives and conventions (standards, VDE regulations, technical regulations of other European Union member states or countries that are signatories to the treaty that established the European Economic Area). This expertise allows him to assess the condition of industrial trucks in terms of health and safety

Drivers

This truck may only be driven by suitable persons who are at least 18 years of age, have been trained in driving, have demonstrated their skills in driving and handling loads, and have been specifically designated to drive the truck. Specific knowledge of the truck is also necessary.

Driver rights,duties and rules of behaviour

The driver must be duly informed of his rights and duties.

The driver must be granted the required rights.

The driver must wear protective equipment (protection suit, safety helmet, industrial goggles and protective gloves) that is appropriate for the conditions, the task and the load to be lifted. The driver must also wear safety footwear to be able to drive and brake in complete safety.

The driver must be familiar with the operating instructions and have access to them at all times.

The driver must:

- Have read and understood the operating instructions
- Have familiarised himself with safe operation of the truck
- Be physically and mentally able to drive the truck safely

⚠ DANGER

The use of drugs, alcohol or medications that affect reactions impair the ability to drive the truck.

Individuals under the influence of the above-mentioned substances are not permitted to perform work of any kind on or with the truck.

Prohibition of use by unauthorised persons

The driver is responsible for the truck during working hours. He must not allow unauthorised persons to operate the truck.

When leaving the truck, the driver must secure it against unauthorised use.

Safety tests

Regular safety inspection of the truck

Safety inspection based on time and extraordinary incidents ▷

The operating company (see chapter entitled "Definition of responsible persons") must ensure that the truck is checked by a specialist at least once a year or after noteworthy incidents.

As part of this inspection:

- A full check of the technical condition of the truck in terms of accident safety must be performed
- The truck must be thoroughly checked to detect any damage that may have been caused by improper use
- A test log must be created.

The results of the inspection must be retained until at least 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.

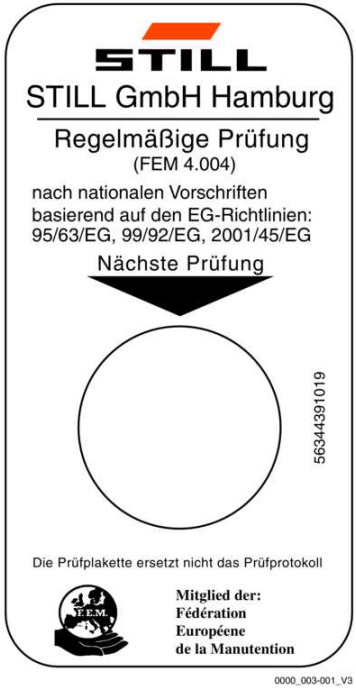
– Observe the guidelines for tests carried out on the truck in accordance with FEM 4.004.

The operator is responsible for ensuring that any defects are remedied immediately.

– Contact your service centre.

NOTE

Observe the regulations in force in your country.

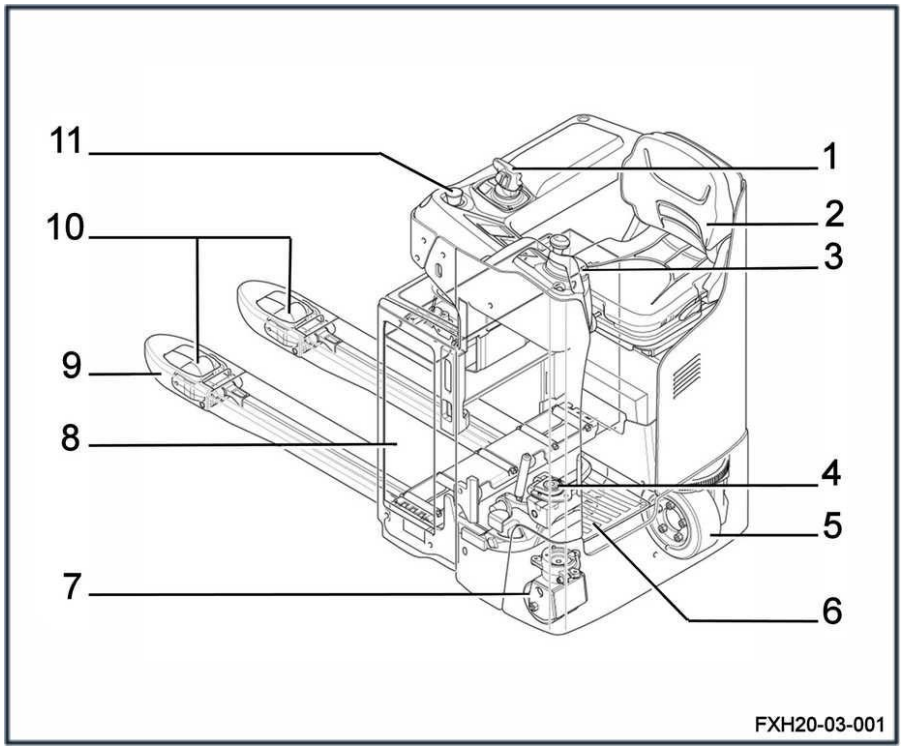


3

Overviews

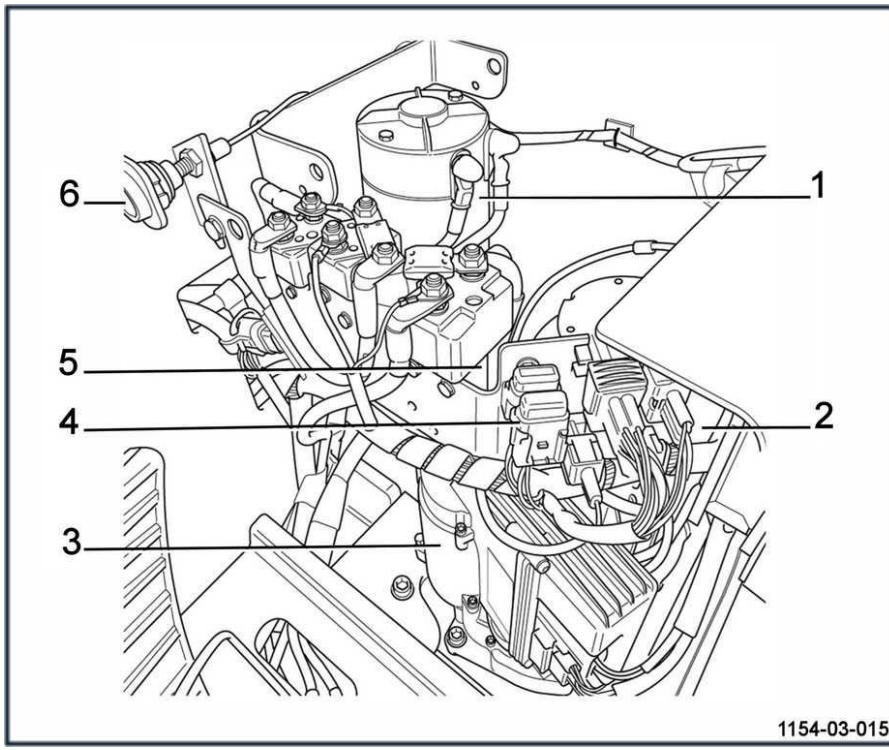
Truck overview

Overview



1	Control unit	7	Stabiliser wheels
2	Seat	8	Battery compartment
3	Steering wheel	9	Load arms
4	Operator presence pedal	10	Load wheels or bogies
5	Drive wheel	11	Emergency off switch
6	Platform		

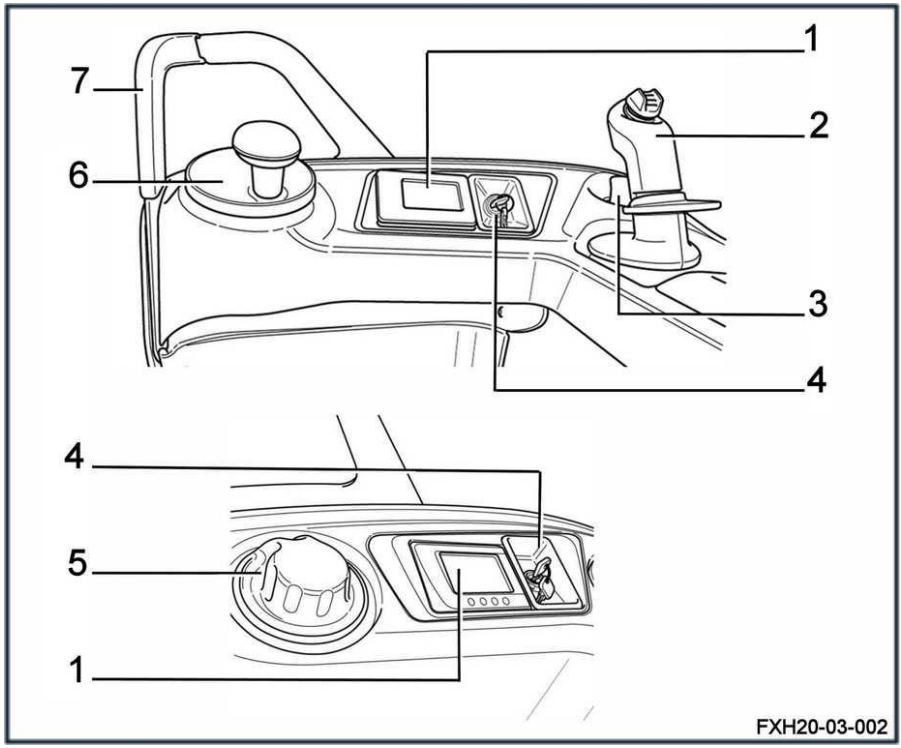
General view of the technical compartment



1	Pump-motor unit	4	Fuses
2	Traction motor	5	Tank
3	ES30-24 steering unit	6	Button to adjust the floor

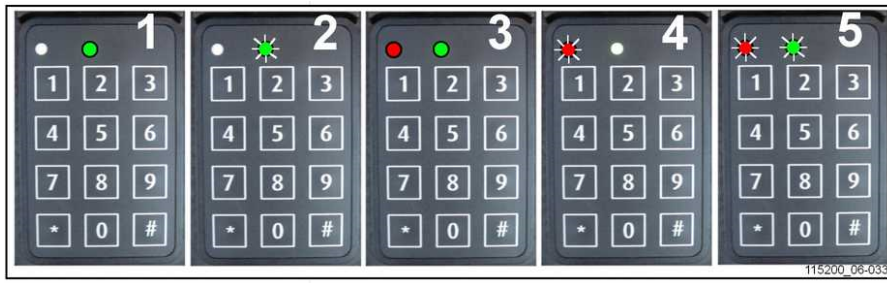
Operating and display devices

Driver's compartment



1	Display	4	Switch key (or electronic key)
2	Control unit or joystick (depending on option selected)	5	Control button (Steering Knob device)
3	Emergency off switch	6	Steering wheel
		7	Handle for stepping on and off the truck

Electronic key (option)



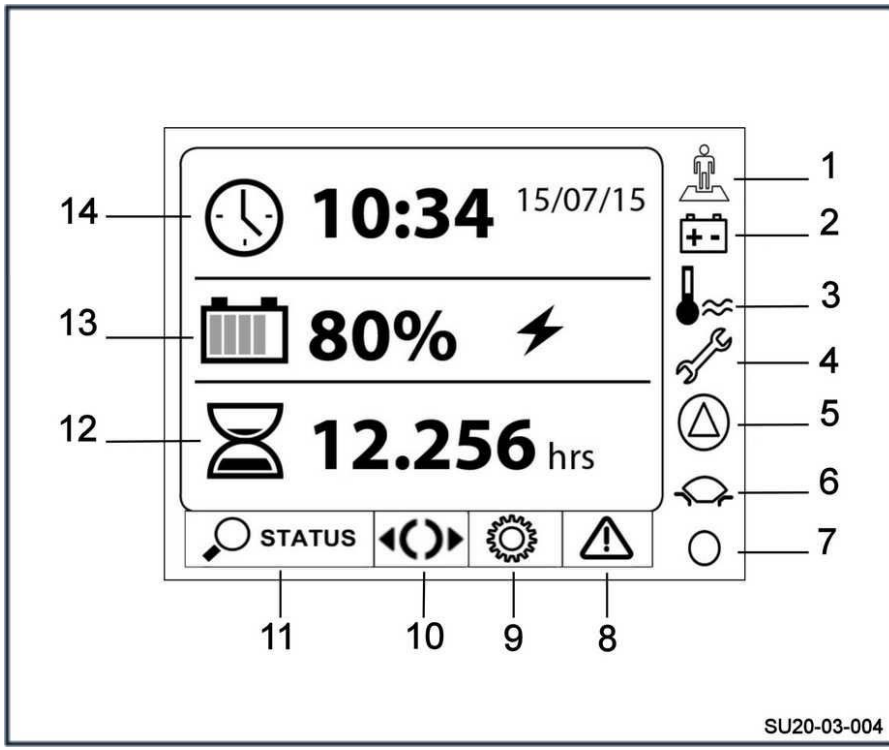
1 Switch ON (operating mode)
2 Switch OFF and awaiting code
3 Programming mode active
4 Key fault or incorrect code
5 Time delay of automatic switch-off

Operation	Enter	Status of LEDs	Comments
USE			
ON	[*][1][2][3][4][5][#] (by default)	○ red off ● continuous green (1) (correct PIN) ● red flashing ○ green off (4) (incorrect PIN)	[1][2][3][4][5] default PIN
OFF	[#] (3 seconds)	○ red off ● green flashing (2)	Truck power off

PROGRAMMING (truck switch OFF only (2))			
ADMINISTRATOR CODE ESSENTIAL FOR ALL ELECTRONIC KEY SETTINGS	[*][0][0][0][0][0][0][0][0] [#] (by default)	● continuous red ● continuous green (3)	Once the LEDs have gone out, 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 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 (truck switch OFF only (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 seconds before switch-off)	Power switches off automatically after 10 minutes (600 seconds by default) if the truck is not in use.
Setting the time delay of the automatic switch-off	[*][*][3][*][6][0][#]	○ red off ● green flashing (2) (value accepted)	Example: automatically switches off after 1 minute (60 seconds) if not in use. Minimum setting = 10 seconds/maximum = 3000 seconds
Deactivating the automatic switch-off	[*][*][2][*][0][#]	○ red off ● green flashing (2) (command accepted)	

Display operating unit

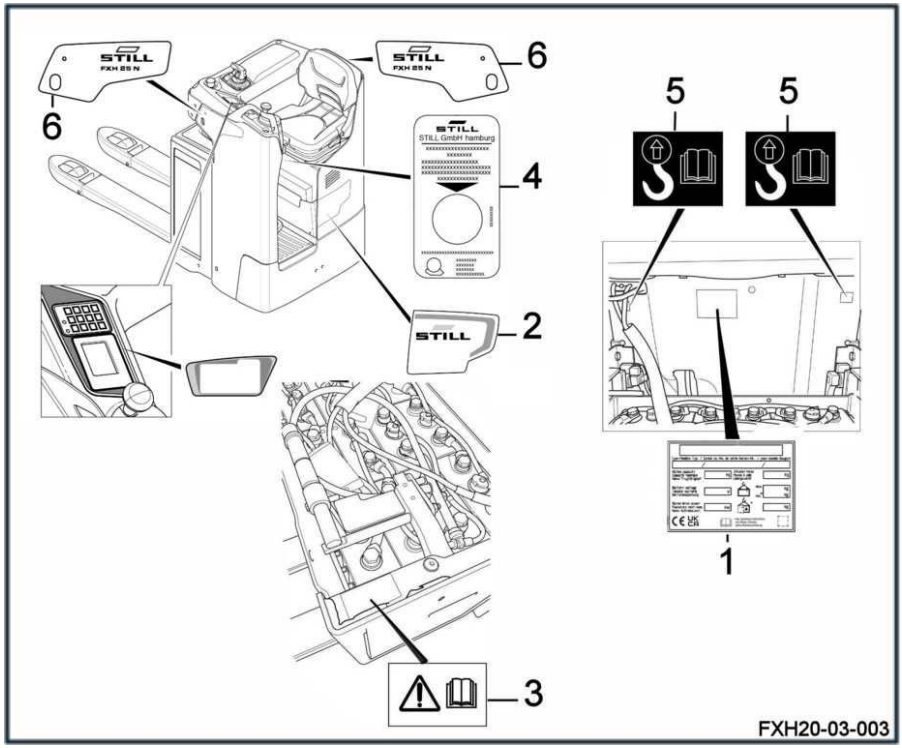


1	Operator present light	8	Error Code menu
2	Battery indicator light	9	Settings menu
3	Temperature indicator light	10	Drive wheel position menu
4	Settings indicator light	11	Truck status menu
5	Warning indicator light	12	Display of the operating time of the truck
6	Drive programme indicator light	13	Display of the battery charge
7	Activity indicator light	14	Display of the date and time

For more information, refer to Chapter 4 **Using the display operating unit**.

Markings

Labels



1	Identification label (depending on the version present on the truck)	4	Next inspection label
2	Brand label	5	Slinging label. Consult the operating instructions
3	Danger instructions label. Consult the operating instructions	6	Model label

Serial number

NOTE

Indicate the serial number for all technical enquiries.

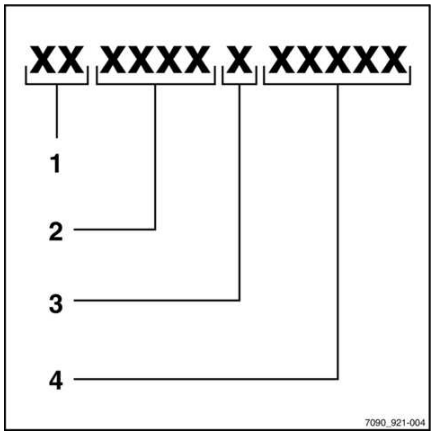
The serial number contains the following information:

1 Production location

2 Type

3 Year of production

4 Count number



4

Use

Technical description

Pallet trucks FXH 20 N and FXH 25 N are used for transporting pallets and/or containers in small spaces.

The following models are available:

- FXH 20 N: 2000 kg
- FXH 25 N: 2500 kg

Features

During ride-on driving, this pallet truck provides the operator with good visibility. The operator can cover long distances safely.

- 12 **km/h** unladen
- 10 **km/h** laden

Drive system

The truck drive system comprises:

- 3,0 kW traction motor
- LAC (Linde Asynchronous Controller) microprocessor controller to control traction and lift
- ES30–24 steering unit
- Pump unit with a power of: 1.2 kW (model FXH 20 N) and 1.5 kW (model FXH 25 N)

Batteries

Power is supplied by:

- A gel battery or a lead battery. The battery capacity varies between 300 Ah and 500 Ah.
- Or a lithium-ion battery (the truck therefore has specific characteristics)

They are side access batteries only.

Steering

The electric steering offers driving precision and easier manoeuvring.

The truck is equipped with a 0,185 kW asynchronous steering motor.

The steering is controlled with a steering wheel and a control module.

The drive unit is mounted on a turntable. Steering is provided by an electric geared motor that positions the turntable.

The steering motor is controlled by a variable speed transmission. It receives information from the steering wheel and the wheel angle position. The speed of the truck is automatically reduced when cornering.

Braking

The truck is equipped with an electromagnetic brake system and counter-current brake systems.

Driver's compartment

The driver's compartment includes:

- A steering wheel and a control module
- A key switch
- A display
- An emergency off switch
- A seat
- An operator presence pedal
- A truck raising/lowering handle

Optional equipment available:

- Electronic key
- Cold store (-35°C)
- Document holder
- Steering knob
- Joystick

NOTE

The operating instructions can be found in the document holder, located on the technical compartment door.

List of checks prior to start-up

⚠ WARNING

Damage or other defects 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 inspections, 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.

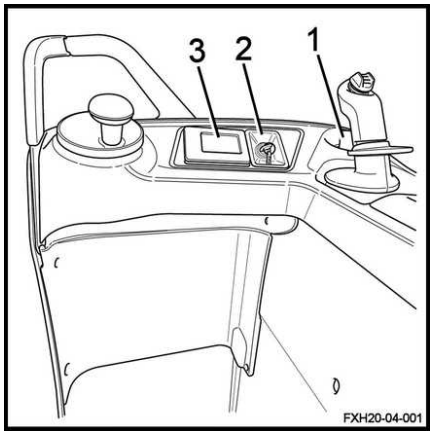
Before start-up, ensure that the truck operates correctly.

To do this, perform the following checks:

- The load arms must not show any signs of noticeable damage (for example: bending, cracks, significant wear).
- Check that there are no signs of leaking consumables under the truck.
- Do not restrict the field of vision. Ensure the visible area specified by the manufacturer is observed.
- Attachment parts (special equipment) must be properly secured and function according to their operating instructions.
- Damaged or missing stickers must be replaced in compliance with the marking position table.
- The roller channels must be coated in a visible layer of grease.
- The wheels must show no signs of defects or heavy wear. They must be mounted correctly.
- Check that there are no foreign objects that could hinder the operation of the wheels and rollers.
- The warning devices (horn etc.) must work.
- The battery hood must be closed.
- Check that the hoods are correctly positioned.
- 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 device). Do not obstruct access to the controls.

Please inform your supervisor if you notice any defects.

Starting the truck



NOTE

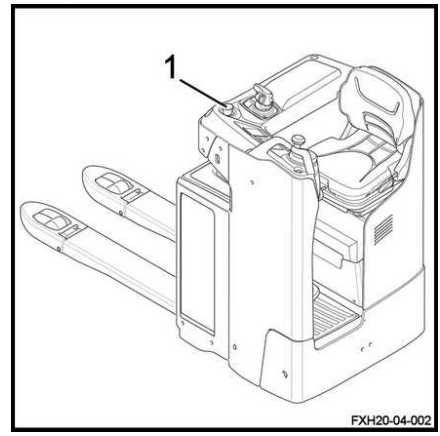
Check that no controls are activated before switching on the truck.

– Check that the battery is connected and locked and that the hood is closed correctly
– Enter the truck
– Sit on the seat and adjust it
– Adjust the floor
– Pull the emergency off switch (1)
– Turn the key (2). For models equipped with an electronic key, enter the 5-digit PIN code to start the truck
– Press the operator presence pedal

The display (3) switches on. The truck is now ready for use.

Checks and actions prior to commissioning

Checking the emergency off switch



To check the operation of the emergency off switch, proceed as follows:

– Drive the truck

– Press the emergency off switch (1)

The truck stops immediately. The truck power supply is cut. The electrical controls and motors are no longer supplied with power.

– Pull the emergency off switch (1)

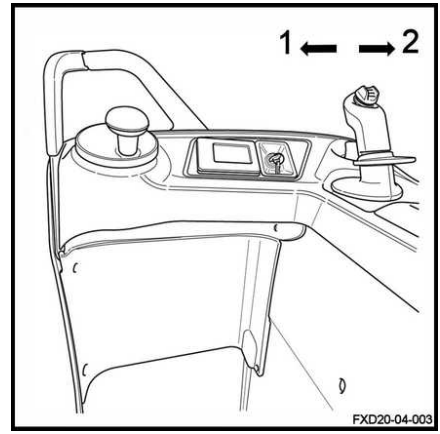
The functions are available again.

NOTE

Ensure that the stabiliser wheels operate correctly. This influences braking effectiveness.

Checking the brakes

Braking by releasing the drive switch



– Drive the truck in direction (1) or (2)

– Release the drive switch

The brake is activated until the truck stops completely.

Braking by reversing the drive direction

– Drive the truck in direction (1) or (2)

– Move the drive switch in the opposite direction

The truck slows down and then moves off in the opposite direction.

NOTE

Also ensure that the stabiliser wheels operate correctly. This influences braking effectiveness.

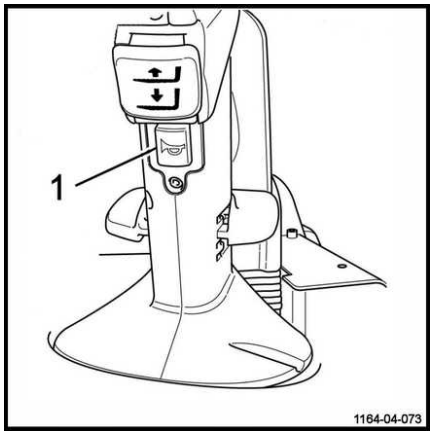
Checking the horn

The horn is located on the rear side of the control module.

To check the operation of the horn, proceed as follows:

– Press the button (1) on the control module

The horn sounds.



Truck operating instructions

The trucks are designed for indoor and outdoor use in non-hazardous atmospheres. The temperature should be between -10°C and +45°C and the relative humidity of the air less than 95%.

NOTE

A cold store option is available for lower temperatures.

The places where the truck is used must comply with the applicable regulations (condition of the ground, lighting etc.).

The trucks must be used on dry, clean and flat ground.

Before using the truck, it is essential to check the working environment. This check can take the form of visual inspection.

The work area must be clear. The truck's path must be free of obstacles and people.

The forklift operator must be alert to anything that might prevent manoeuvres being carried out safely. The following may create a potential danger:

- A person near the truck
- The forklift operator must not use an MP3 player or any other electrical equipment that could impair awareness of his/her surroundings
- There must be no signs of oil or grease on the floor

The forklift operator must take care when transporting a load. The load dimensions can interfere with manoeuvres and restrict the field of vision. The speed of the truck must also be reduced as the truck could tip over when breaking or cornering.

The loads must be consistent, with a maximum recommended height of 2 m.

For uses other than those shown above, please consult the After-Sales Service Centre.

It is important to use pallets that are in good condition.

Speed must be reduced when moving over obstacles to prevent the truck from becoming unbalanced and vibrations in the forklift operator's arms.

The trucks can drive across ramps and shallow inclines. With an initial lift, they can cross larger obstacles.

⚠ WARNING

Risk of loss of stability

– Always adapt your driving to the ground conditions (uneven surfaces etc.), particularly hazardous working areas and the load.

NOTE

- *To prevent the bottom of the load lift system from scraping the ground, always move the load arms to the raised position before setting off*
- *Always switch off the ignition before leaving the truck*

⚠ WARNING

Risk of injury

Always keep your hands on the controls. Never put your hands near moving parts and assemblies without first lowering the load arms to the ground and disconnecting the battery.

For effective protection, safety shoes must be worn.

⚠ WARNING

Driving safety guidelines:

– The driver must drive slowly around corners and when entering narrow passageways.

– The driver must always maintain a safe braking distance from vehicles or people in front of him.

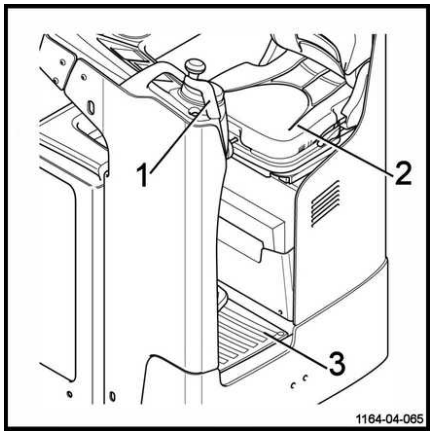
– The driver must avoid stopping suddenly, making U-turns too quickly and overtaking in dangerous areas with poor visibility.

⚠ CAUTION

Risk of injury

Before using a side access truck, check that the battery is correctly locked.

Stepping on/off the truck



⚠ WARNING

Risk of falling, tripping or slipping when stepping on/off the truck.

Use the handle (1) and the seat (2) to help when stepping on/off the truck.

– Hold the handle (1) with one hand
– Hold onto the seat (2) with the other hand
– Step onto the platform (3), paying close attention to your step

⚠ CAUTION

Risk of injury or impact from the edges of the truck.

The chassis is narrow. Be careful not to hit yourself on the truck when stepping onto it.

⚠ CAUTION

Risk of damaging the equipment

– Never pull on the steering wheel or control unit when climbing onto the truck.

Excessive force on the steering wheel or the control unit can damage it and cause a malfunction.

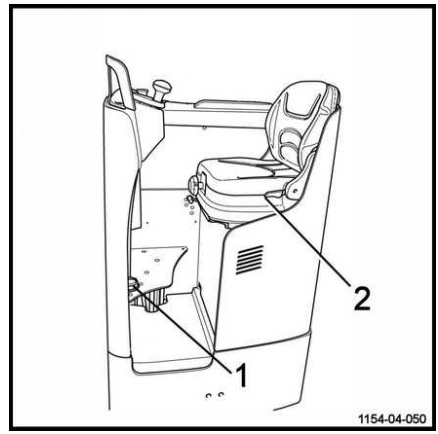
⚠ DANGER

Risk of injury

To avoid accidental start-up, do not use the control module as a handle.

Use the handle and the seat.

Operation of operator presence detection



The truck is equipped with two operator presence detectors:

- The chair (2)
- The presence pedal (1)

These two components are truck safety devices.

First, the forklift operator must sit on the chair (2). The operator detection contact is then activated.

The forklift operator presence pedal (1) must then be depressed before and while the truck is moving.

The pedal allows you to operate all the controls of the truck.

In reverse travel (load-arms direction), it is possible to rise from the chair in the event of poor visibility. The truck then travels at 2 km/h. The forklift operator presence pedal must be kept depressed.

Before rising from the chair, it is essential to slow down the truck to a very low pace and to check the working environment.

⚠ WARNING

Risk of injury

Do not rise from the chair when the truck is travelling at full speed.

NOTE

Do not rise from the chair to slow down the truck.

If the forklift operator sits down again, the truck continues to travel at a limited speed. The drive switch must be released. When the forklift operator presses the drive switch, the truck returns to its normal speed.

Operation of operator presence detection

⚠ CAUTION

Disabling of controls

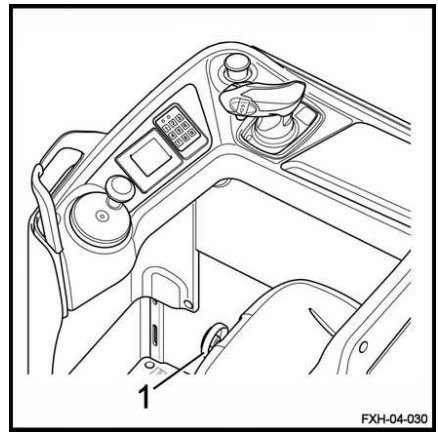
If the operator presence pedal is released when moving:

- The truck brake is automatically activated

- The controls no longer work

Driver's compartment settings

Adjusting the seat



The seat is equipped with an operator presence detector.

The operator must adjust his weight by increments of 10 kg to trigger this detection.

Proceed as follows:

– Sit on the seat

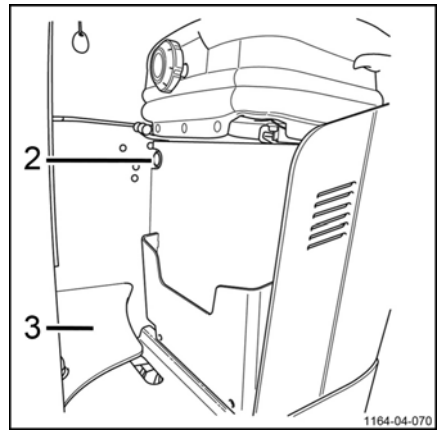
– Turn the adjustment wheel (1) until the desired weight is reached

– Put the truck into service

The seat's operator presence detector cannot be activated if the weight setting is too high or too low.

This operation also enables you to adjust the hardness of the seat.

Adjusting the floor



The floor is fitted with a pressure-based height adjustment system.

To adjust the floor height, proceed as follows:

– Sit on the seat.

– Press the floor unlocking button (2) and hold it down for the duration of the operation.

– Exert pressure on the floor (3) by pushing it with your legs to obtain a good driving position.

– Release the button.

NOTE

Adjusting the floor is not possible when the truck is in cold store. The cylinder for adjustment does not work at low temperatures.

Seat heater option

The driver's seat may be equipped with the **seat heater** option.

The heater turns on when the operator's presence on the seat is detected.

To activate the heater, proceed as follows:

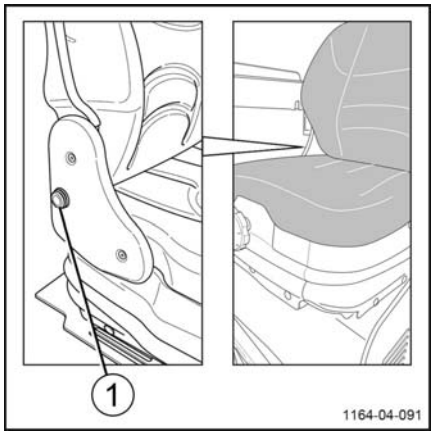
– Sit on the seat

– Adjust the weight of the operator

– Put the truck into service

– Press the LED button (1) to activate the heating

The LED button (1) illuminates to indicate that the heater is in operation.



NOTE

When the driver gets up or leaves the seat, the heating stops in order to conserve battery power.

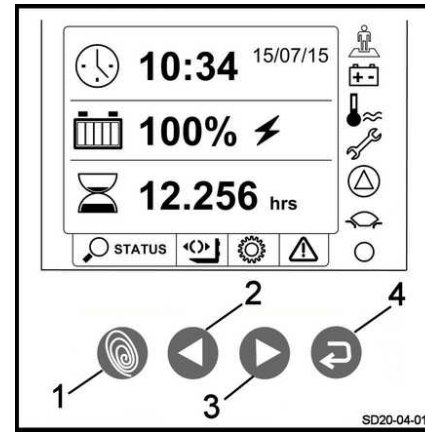
No visual information is shown on the display.

– Check whether the LED button (1) is on

– Press the LED button (1) to reactivate the heater

Using the display-operating unit

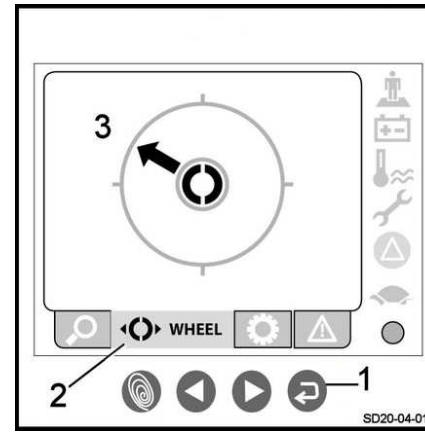
Selection buttons ▷



The operator selects the menus using the four selection buttons:

- The **Blue Q** button (1) to select Blue Q mode, hare mode or tortoise mode
- The **left arrow** button (2) to scroll left through the drop-down menu
- The **right arrow** button (3) to scroll right through the drop-down menu
- The **confirm** button (4) to confirm the highlighted choice on the screen

Display of the drive wheel position ▷



The forklift operator can find out the position of the drive wheel by referring to the display.

Proceed as follows:

– Press the **left arrow** or **right arrow** button to scroll through the menu.

– Select the Wheel menu (2).

– Press the **confirm** button (1).

The position of the drive wheel is then shown on the display (3).

Operation of the display unit

Operator presence

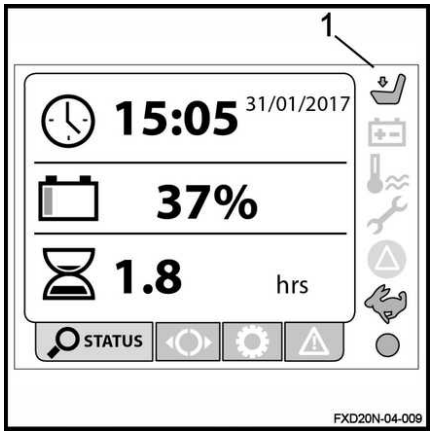
For the truck to operate, the operator must be detected on the seat and then on the pedal.

When the truck is switched on, the light indicating the **operator's presence on the seat** (1) comes on and flashes.

– Sit on the seat

The light indicating the **operator's presence on the seat** (1) is replaced by the light indicating the **operator's presence on the pedal** (2), which flashes.

▷



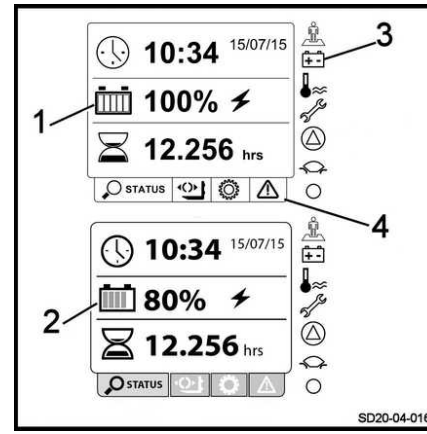
– Press the operator presence pedal with your left foot

The light indicating the **operator's presence on the pedal** (2) remains continuously illuminated for two seconds and then goes out.

▷



Managing battery charging



The operating unit shows the battery charge level.

The operator can refer to the battery icon (1) or (2).

The number of bars shown indicates the battery charge level.

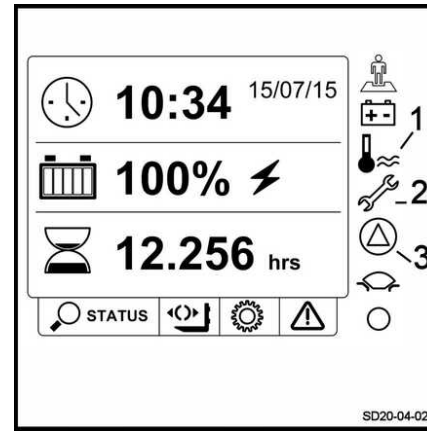
- From 0 to 20%: 1 bar
- From 21 to 40%: 2 bars
- From 41 to 60%: 3 bars
- From 61 to 80%: 4 bars
- From 81 to 100%: 5 bars

The **battery** light (3) comes on in the event of a deep discharge of the battery or in the event of a fault.

Two distinct warnings may be displayed if the battery charge is insufficient:

- 1) 25% of charge remaining: The (3) and (4) icons flash and an audible beep sounds. A warning message appears at the (4) icon and remains on until the battery is recharged.
- 2) 20% of charge remaining: Three regular beeps sound, lifting is restricted, the (3) icon flashes and the (4) icon remains on with a new warning message.

Temperature, settings and warning lights



The **temperature** light (1) comes on in the event of overheating of the traction motor or the controller.

A warning is shown on the display.

The **settings** light (2) comes on to indicate the date of the next maintenance.

A warning is shown on the display.

The **warning** light (3) comes on in the event of a fault in a truck component.

Drive program

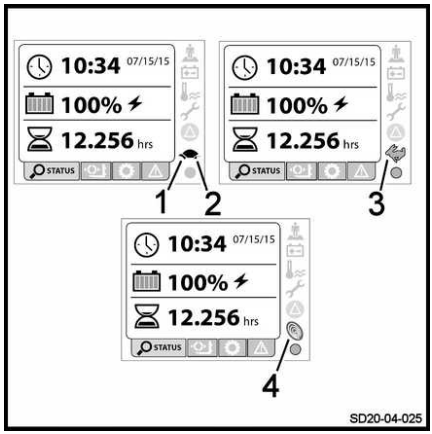
The **drive program** light (1) is permanently illuminated when a travel mode is selected.

There are three different drive modes:

- Tortoise mode (2)
- Hare mode (3)
- Blue Q mode (4)

The icon of the drive mode selected appears on the display.

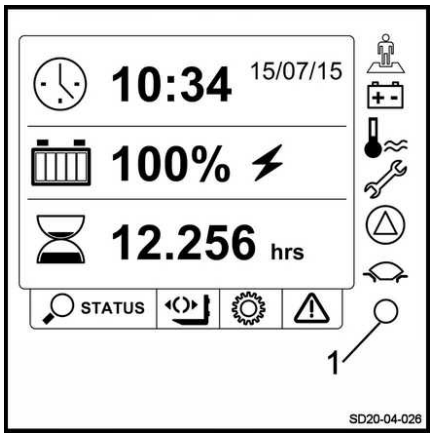
– Select the desired drive mode using the navigation keys



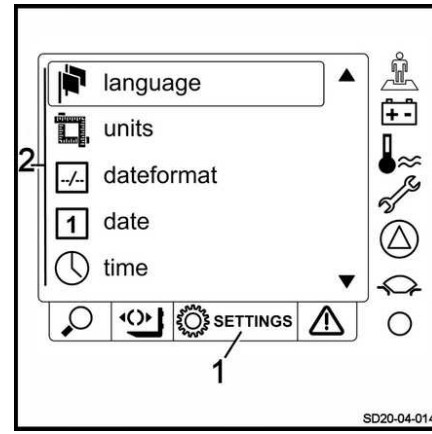
Activity indicator

The **activity indicator** light (1) flashes continuously while the truck is in operation.

When the indicator is off, the display unit is locked or frozen. A warning is shown on the display.



Settings menu



It is possible to access different settings through the Settings menu.

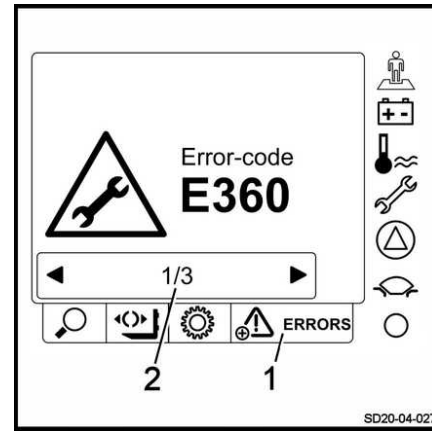
– Select the **Settings** menu (1)

This menu allows access to a drop-down menu (2) consisting of:

- Language
- Unit
- Date format
- Date
- Time
- Adjustment of the Load Management warning sounds
- Adjustment of the contrast
- Adjustment of the brightness

– Select the desired option

Error codes menu



It is possible to access error messages that are disrupting the operation of the truck.

– Select the **Error messages** menu (1)

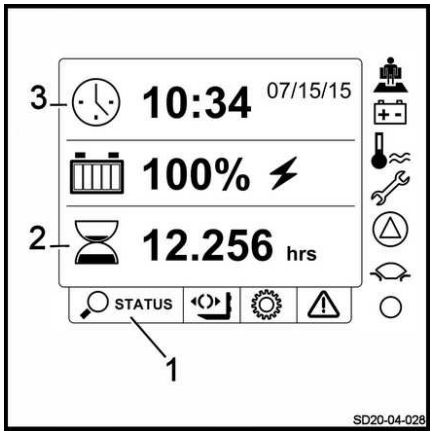
The operator can access the error codes. If several codes are affecting the truck, the operator can scroll through several successive displays.

The number of error messages is indicated at the bottom of the display (2).

Start-up screen

In addition to the various menus and lights mentioned above, additional data is available:

- The **Truck status** menu (1) displays the truck menu
- The **hourglass** icon (2) indicates the operating time of the truck
- The **clock** icon (3) indicates the time and date



Driving safety guidelines

Behaviour when driving

Operators must obey the same rules within the plant as on the road. They must drive at speeds appropriate for the driving conditions.

Therefore, they must drive slowly:

- When cornering
- Through narrow passageways
- Through swing doors
- In low-visibility areas
- When the roadway is uneven

They must also:

- Always maintain a safe braking distance from vehicles or people in front of them
- Always maintain control of the truck
- Avoid stopping suddenly
- Avoid making fast U-turns
- Avoid overtaking in potentially hazardous or low visibility areas

Driving the truck while sitting on the dashboard is prohibited. The operator must be resting against the seat.

This truck is designed to be used as a pallet truck. Therefore:

- The truck must not be used as a stepladder
- The truck is not designed to transport people
- The operator must always remain inside the driver's compartment of the truck
- Stay in the safety area (working area defined by the manufacturer)
- Ensure the stability of the truck Do not exceed its maximum capacity

Use of a telephone or radio on the truck is permitted. However, do not use these devices when driving as they may distract you.

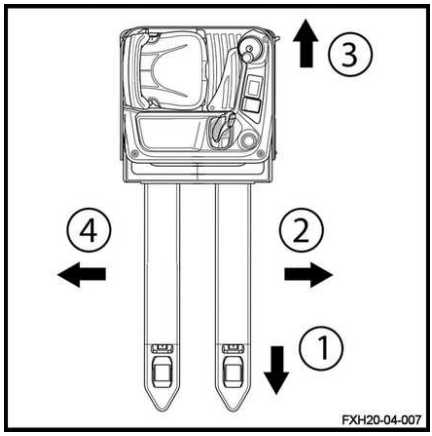
Take a test drive on an open surface.

NOTE

Safety shoes must be worn.

Driving

Defining directions



Names used in the text refer to the component installation position with respect to the driver's compartment.

- Reverse travel (1)
- Forward travel (3)
- To the right (4)
- To the left (2)

The load is positioned at the rear.

Driving

⚠ WARNING

Be aware of the position of the drive wheel

Slowly start the truck.

Check the position of the drive wheel on the display.

NOTE

Always operate the drive switch slowly, as the truck reacts immediately. Abrupt starts, braking or reversal of drive direction must be avoided at all costs.

The drive switch is located on the control unit.

NOTE

Always keep hands and feet inside the driver's compartment while the truck is moving.

– Put the truck into service

Forward travel

– Using your thumb, push the drive switch to the left (1) to travel forwards (opposite load arm direction)

– When the drive switch is released, the truck brakes electrically

Reverse travel

– Using your thumb, push the drive switch to the right (2) to travel backwards (load arm direction)

– When the drive switch is released, the truck brakes electrically

⚠ WARNING

Restricted visibility

During reverse travel, visibility may be restricted. Be very careful. Make sure that the path behind is clear before travelling in reverse.

Reversing the direction of travel

– Push the drive switch in direction (1) or (2)

– Release the drive switch

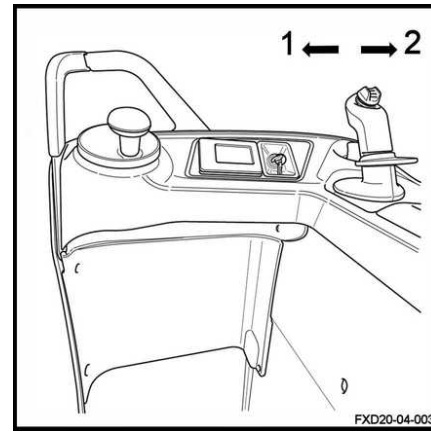
– Operate it progressively in the opposite direction until the required speed is reached

Braking

⚠ WARNING

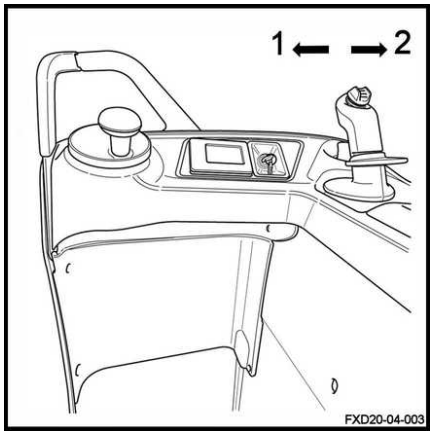
The quality of the floor surface affects the braking distance of the truck.

This should be taken into consideration when driving.



Braking by reversing the drive direction ▷

– Move the drive direction switches (1) or (2) in the opposite drive direction



Braking by releasing the drive switch

– While travelling, completely release the drive switch

The brake is automatically activated. The truck is immobilised.

Electromagnetic braking

The electromagnetic brake is activated automatically if one of the following conditions is met:

- The operator releases the operator presence pedal
- The drive switch is in the neutral position
- The power supply is cut off
- The operator presses the emergency off switch

Horn ▷

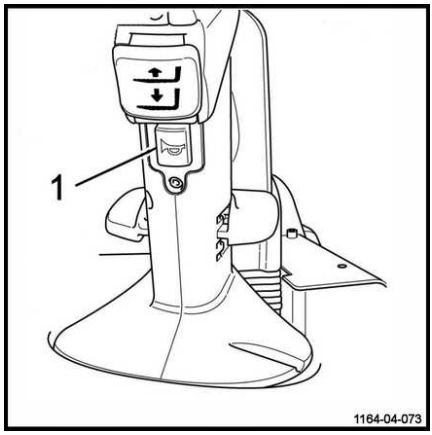
The horn is positioned on the rear side of the control module.

It is used:

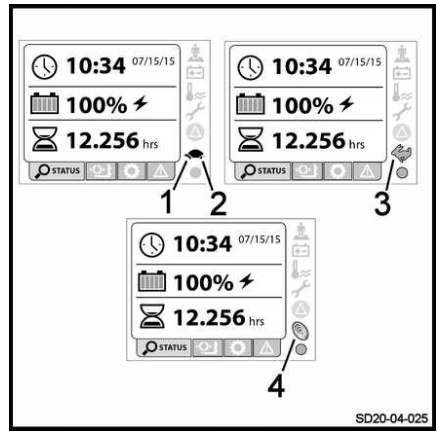
- On routes where there is poor visibility
- At junctions
- In the event of immediate danger

– Press the button (1) on the control module.

The horn sounds.



Drive program



The indicator light (1) is on during operation of the truck. The shape of the indicator light indicates the selected program.

The truck is equipped with three different drive programs:

- Hare mode (3)
- BlueQ mode (4)
- Tortoise mode (2)

NOTE

When the operator restarts the truck, the last mode selected is automatically activated.

NOTE

The drive program is instantly changed. If the operator changes mode while driving the truck, he must remain vigilant.

Hare mode

When Hare mode is selected on the screen, the truck operates at its maximum performance.

Blue Q mode

Selecting Blue Q mode allows you to slightly reduce the performance of the truck:

- The travel speed of the truck is reduced (70% of maximum speed)
- The speed of lifting and lowering the forks is reduced (90% of maximum speed)

This mode allows you to save battery.

Tortoise mode

Selecting Tortoise mode allows you to reduce the performance of the truck:

- The travel speed of the truck is reduced to 6 km/h
- The speed of lifting and lowering the forks is considerably reduced

The different speeds can be adjusted. Contact the After-Sales Service Centre to change these.

Joystick function (option)

The truck may be equipped with a joystick in place of the control unit.

The operation is therefore different.

NOTE

Always operate the joystick slowly, as the truck reacts immediately. Abrupt starts, braking or reversal of drive direction must be avoided at all costs.

Front of the joystick

The front of the joystick is used to:

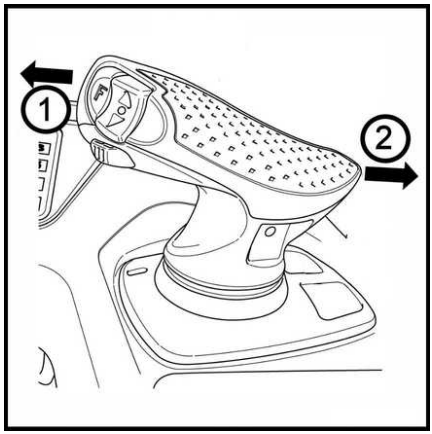
- Move the truck forwards or backwards
- Raise or lower the forks

Forward travel

– Push the joystick to the left (1) to travel forwards (opposite load arm direction)

Reverse travel

– Push the joystick to the right (2) to travel backwards (load arm direction)



Rear of the joystick

The rear of the joystick is used to:

- Sound the horn
- Raise or lower the load arms

Horn

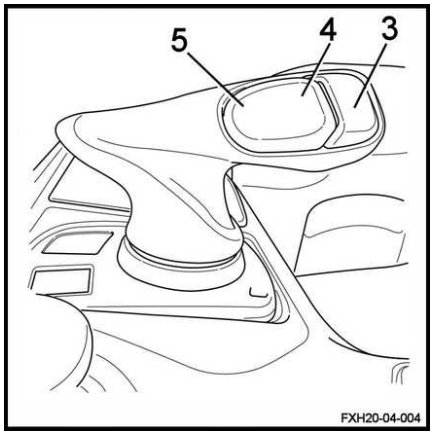
– Press the button (3) on the joystick

Raising the load arms (initial lift)

– Press the button (4) on the joystick

Lowering the load arms (initial lift)

– Press the button (5) on the joystick



Steering Knob option

The Steering Knob device can replace the steering wheel controls.

⚠ WARNING

Risk of sharp truck movement

The Steering Knob device is highly sensitive. It is important to handle the turning knob with caution.

The turning knob allows you to adjust the position of the wheel. There is no need to reposition it when driving if the trajectory is straight.

When the button is positioned in the centre at the zero point (1), the truck travels in a straight line.

Two stops, one on the left (2) and one on the right (3), delimit the axis of rotation. The operator adjusts the turning knob within this axis to drive.

In forward travel (opposite to load arm direction)

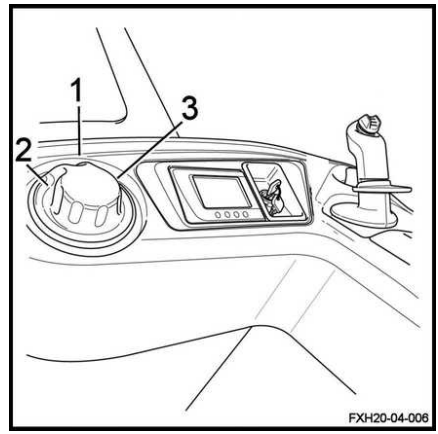
– Move the turning knob to the left (anti-clockwise) (2) to turn to the left

– Move the turning knob to the right (clockwise) (2) to turn to the right

In reverse travel (load arms direction)

– Move the turning knob to the left (anti-clockwise) (2) to turn to the right

– Move the turning knob to the right (clockwise) (2) to turn to the left



Using the truck on a ramp

NOTE

Incorrect use of the truck on a ramp is strictly prohibited. It places particular stress on the traction motor, brakes and battery.

⚠ CAUTION

Risk of tipping

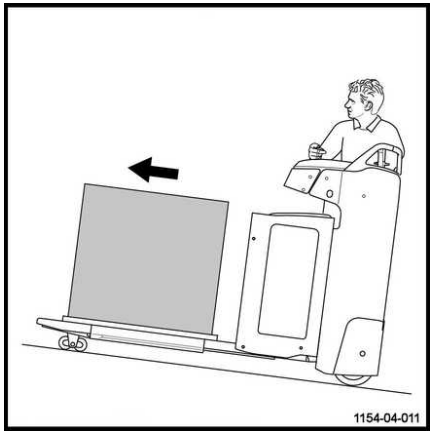
Ramps must always be approached with caution:

- Avoid ramps with a gradient greater than that specified in the datasheet for the truck.
- Make sure that the ground is clean, has a non-slip surface and that the route is clear.
- Always drive at a very low speed and brake gradually.

Travelling up slopes

Always travel up slopes in reverse. The load faces uphill.

Without a load, we recommend that you go up a slope forwards.

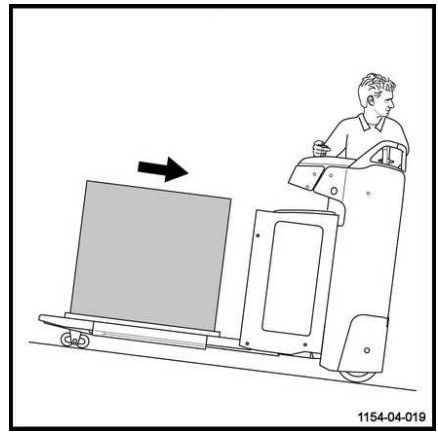


Travelling down slopes

Always travel down slopes forwards. The load faces uphill.

Avoid maximum speed when travelling downhill.

Without a load, we recommend that you go down a slope forwards.



⚠ DANGER

Danger of death and/or risk of serious damage to equipment

Never park the truck on a ramp. Never make a U-turn or take a shortcut on a slope.

On a slope, the forklift operator must drive more slowly.

⚠ WARNING

Risk of serious injury and/or serious damage to equipment

Driving on slopes steeper than 10% is prohibited due to braking capacity and stability. The load being transported could tip over.

Starting on a ramp

Proceed as follows:

– Move the drive switch in the required direction.

– Release the drive switch to apply the parking brake.

Operating the FleetManager™ option

Description of the FleetManager option

The FleetManager option allows you to control access to the truck. The option is a fleet management system.

You can access the system:

- Either by using a keypad
- Or by using a reading device for a transponder or an RFID card

The fleet manager sets the access details via the web interface. This affects the transponder cards or PIN codes for the corresponding trucks. It is possible to change the amount of time for which the access authorisation is valid.

Software is also available.

Additional options:

- Shock sensor
- Tools for wireless data management:
  ▸ GSM(2)GPRS(1) module with antenna

The options available on the truck are:

- Access control
- Access control and shock sensor
- Access control and GPRS module
- Access control, shock sensor and GPRS module

(1) GPRS: General Packet Radio Service

(2) GSM: Global System for Mobile Communication

Shock sensor

This sensor allows you to record the shocks received by the truck.

If the truck receives a shock, it is possible to configure a speed reduction.

The fleet manager is the only person who is able to change certain parameters.

NOTE

Replace the sensor if it is faulty.

GSMGPRS module

The module consists of a GSM modem and an antenna.

The module allows you to:

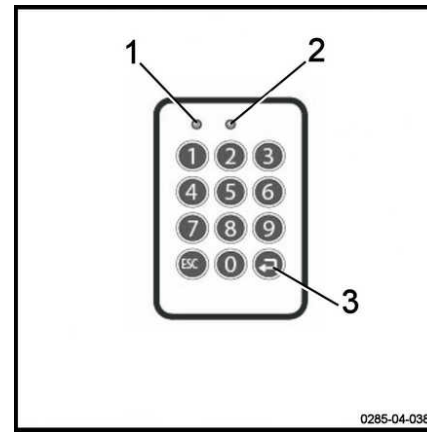
- Access truck information remotely
- Use geolocation

The data is stored on a server.

Data is transmitted by Bluetooth (default) or by GSM module (optional).

Commissioning a truck equipped with the FleetManager™ option

Commissioning a truck equipped with a keypad or an electronic key ▷



– Turn the switch key to start the truck.

– Enter the PIN code on the keypad. The PIN code consists of five to eight digits.

By default, no PIN code is given as a factory setting.

If the PIN code is correct, the LED (1) is not lit. The LED (2) flashes slowly at two-second intervals (green colour).

No acoustic signal sounds.

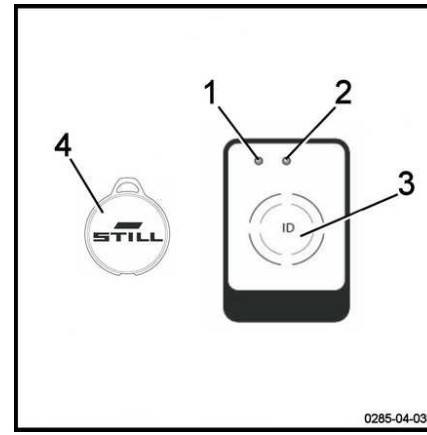
– Press the Enter key (3) to confirm.

The truck is now ready for use.

NOTE

In the configuration, the fleet manager can specify that the operator must enter a preliminary code when logging in. The operator can then assess the state of the truck.

Commissioning a truck equipped with an RFID reading device ▷



– Turn the switch key to start the truck.

– Place the RFID transponder card or the RFID transponder (4) in front of the reading device (3).

If the card is correct, the LED (1) is not lit. The LED (2) flashes slowly at two-second intervals (green colour).

Two acoustic signals sound.

The truck is now ready for use.

FleetManager™ option: Colour code for the LEDs

The LEDs can have different statuses and different colours. Below is the list of the most common messages and their meanings.

Malfunction			Cause	Solution
LED status		Signal transmitter		
LED 1	LED 2			
Lit continuously Red colour	Off	A long acoustic signal sounds	**Reading device variant:** no valid access authorisation	Generate a valid access authorisation using the interface
			Keypad variant: no valid access authorisation for the PIN code entered	
			Keypad variant: PIN code entered incorrect or not confirmed using the Enter key	Re-enter the PIN code
Lit continuously Red colour	Flashes once Green colour	A long acoustic signal sounds	The operator has been granted access authorisation. But the period of validity has expired.	Use the interface to enter a new period of validity
			The date of the truck is incorrect	Update the date of the truck
Flashes quickly Yellow colour	Lit continuously Green colour		Memory is 80% full	Clear the memory
Flashes quickly Red colour	Flashes quickly Red colour	A long acoustic signal sounds upon activation	There are several possible causes: - Reading device or keypad not accessible - GPRS module not accessible - Built-in rechargeable battery flat - Memory full	Contact the After-Sales Service Centre

Malfunction			Cause	Solution
LED status		Signal transmitter		
LED 1	LED 2			
Flashes quickly Red colour	Lit continuously Green colour		A shock has occurred	Reset the shock
Flashes quickly Blue colour	Off		The truck is connected via a Bluetooth link. The operating data is being read. The reading process can take up to five minutes.	The truck is switched on but is not moving. Wait for all of the relevant data to be read. As soon as the LEDs change to a different status, resume work.

Disconnecting a truck equipped with the FleetManager™ option

NOTE

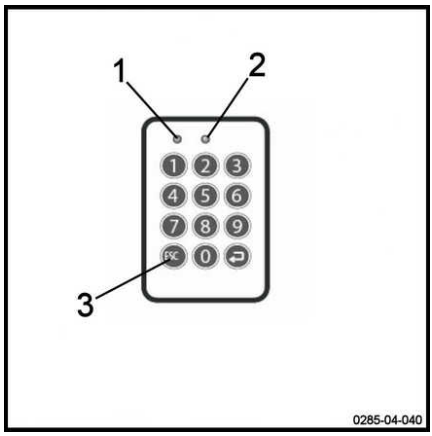
Operators must not log off intentionally while driving.

⚠ WARNING

Access to the truck must be disabled.

Unauthorised users are not allowed to use the truck.

Disconnecting a truck equipped with a keypad or electronic key ▷



– Park the truck in a safe place.

– Press the button (3) to log off. Keep the button pressed in.

No LEDs light up. A long acoustic signal sounds.

The LED (1) lights up for a second (red colour). The LED (2) is not lit. A long acoustic signal sounds.

The LED (1) is no longer lit. The LED (2) flashes slowly at two-second intervals (green colour). No acoustic signal sounds.

The truck is disabled.

– Turn the switch key to the off position to switch the truck off completely.

Disconnecting a truck equipped with an RFID reading device ▷

– Park the truck in a safe place.

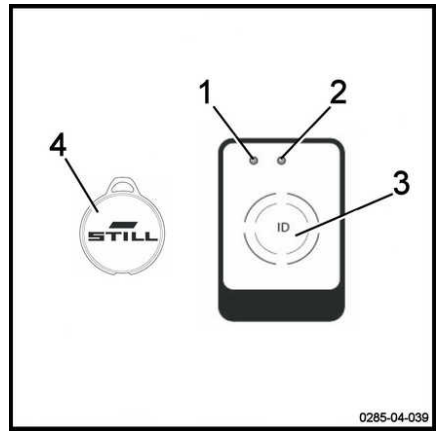
– Briefly place the RFID card or the RFID transponder (4) in front of the reading device (3).

The LED (1) lights up for a second (red colour). The LED (2) is not lit. A long acoustic signal sounds.

The LED (1) is no longer lit. The LED (2) flashes slowly at two-second intervals (green colour). No acoustic signal sounds.

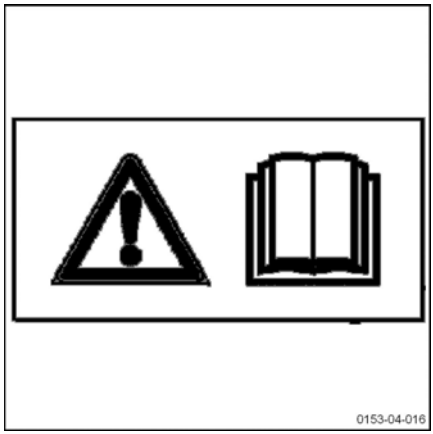
The truck is disabled.

– Turn the switch key to the off position to switch the truck off completely.



Transporting loads

Load handling safety rules



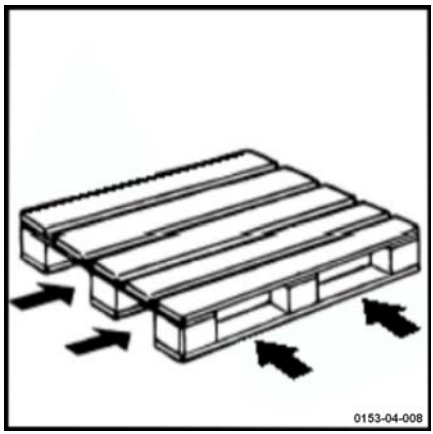
⚠ WARNING

Carefully observe the following instructions before picking up loads. Never touch or stand on moving parts of the truck (e.g. lifting device, pushing devices, work installations or devices for picking up loads).

⚠ WARNING

Take care not to trap hands or feet when operating the truck.

Grabbing a loading unit



Watch out for the following elements:

- the load must be well-balanced and centred correctly between the fork arms
- the fork arms must be sufficiently slid underneath the load to guarantee stability.

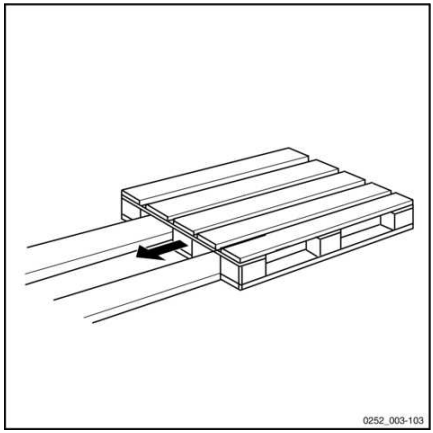
The load must not protrude too far over the fork arms, nor should the fork arms protrude too far out from the load.

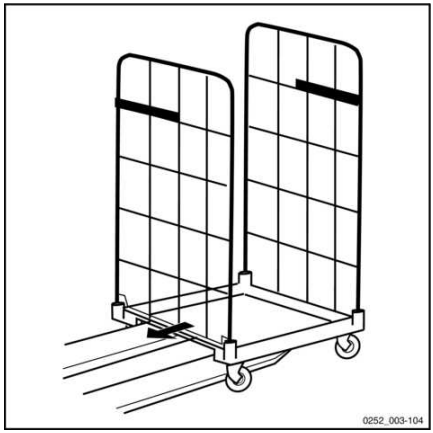
Transporting pallets or other containers ▷

As a general rule, loading units must be transported one by one (e.g. pallets). Transporting several loading units at a time is only authorised:

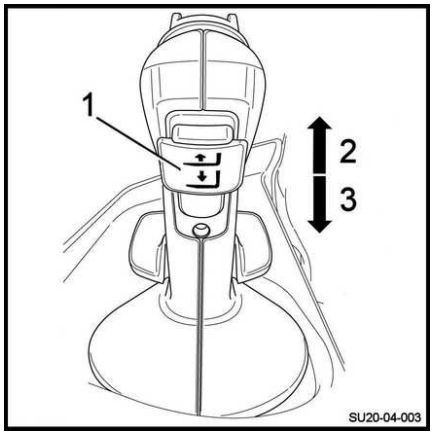
- when the safety preconditions are fulfilled.
- by order of the monitoring agent.

The forklift operator must ensure that the loading unit is properly packaged. He must only move loading units that have been carefully prepared and that meet the safety requirements.





Lift control elements



⚠ WARNING

Risk of injury

The safety instructions must be strictly adhered to.

Do not touch or stand on moving parts (e.g. lifting device, pushing devices, work installations, load lifting devices).

Lifting of load arms

– Start the truck.

– Push the control (1) upwards (2).

When the control (1) is released, the load arms stabilise at the required height.

Lowering of load arms

– Start the truck.

– Pull the control (1) downwards (3).

When the control (1) is released, the load arms stabilise at the required height.

Handling a single load

Before picking up a load

Ensure that the load weight does not exceed the capacity of the truck.

- Refer to the nominal capacity specified on the truck's capacity label
- You must also make sure that the load is stable, well-balanced, attached firmly and centred between the fork arms in order to avoid dropping any part of the load
- Check that the width of the load is compatible with the width of the fork arms
- Check that the load is not damaged

⚠ CAUTION

Risk of injury

Safety shoes must be worn.

Transporting people is strictly prohibited.

⚠ DANGER

Risk of tipping

It is essential to slow down when approaching a corner or on wet ground.

⚠ CAUTION

Arrangement of loads

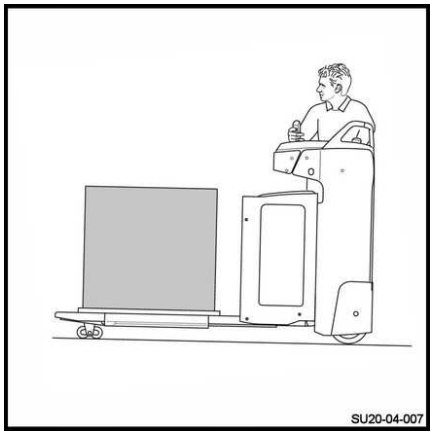
Do not touch nearby loads or loads positioned at the side or in front of the load being handled.

Arrange the loads with a small space between them to prevent them hooking onto one another.

Picking up a load from the ground

– Use the initial lift to raise a load of up to 2000 kg several centimetres from the ground.

Transporting a load



Observe the following recommendations:

- Drive forwards for optimum visibility
- Travel up or down slopes with the load uphill Do not travel across the slope or make a U-turn
- Reverse travel is used for setting down the load Adjust your speed, as the position of the forklift operator is now less comfortable
- Do not drive with an unstable load
- If visibility is poor, let someone guide you
- Raise the forks slightly in order to pass obstacles
- Be careful of low passageways, low doorways, scaffolding, pipes etc.
- Check that the width of the load is not greater than the width of the aisle

Setting a load down on the ground

Proceed as follows:

– Drive the truck to the required location.

– Carefully move the load into the unloading zone.

– Lower the load until the fork arms are freed.

– Withdraw the machine in a straight line.

– Raise the fork arms again several centimetres.

⚠ CAUTION

Risk of falling

Do not touch nearby loads or loads positioned behind the truck.

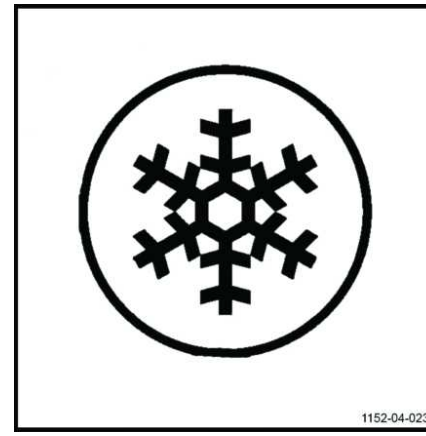
⚠ CAUTION

Risk of accident

Before you set down the load, ensure that no one is around the truck or the load.

Cold store use

Cold store usage (optional) ▷



⚠ CAUTION

Standard trucks risk being subject to significant damage if used in extreme conditions.

Only trucks with the Cold Store option may be used inside cold storage. Specific oil designed for cold stores must be used.

These trucks are identified by their Cold Store label.

Area of Use

Trucks with the Cold Store option may be used in two different areas:

- **operating range 1**: the truck can operate at a temperature of -5 °C and, for short periods, at a temperature of -10 °C. It must be parked outside of the cold store.
- **operating range 2 (Entry / Exit applications)**: the truck must be used alternately inside and outside of the cold store. It can withstand temperatures between -30 °C and +45 °C. Specific rules should be followed so as not to damage the truck and to avoid the occurrence of streaming (see the following paragraph). The truck is parked outside of the cold store.

Precautions for Use

The difference in temperature between the cold store and the room temperature zone may result in the formation of condensation water.

This water can freeze when the truck goes back into the cold store and jam the moving parts of the truck.

Streaming occurs if the truck remains outside of the cold store for more than ten minutes. Therefore, it is essential to leave the truck outside of the cold store for 30 minutes so that the condensation disappears.

⚠ DANGER

If the condensation freezes in the cold store, it is prohibited to operate the jammed parts.

This could cause permanent damage to the truck.

Parking

The truck must be parked outside of the cold store.

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

⚠ CAUTION

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

They could be permanently damaged.

Handling the battery

Battery type

Trucks can be fitted with different types of battery. Comply with the information indicated on your battery's type plate, as well as with its features.

⚠ WARNING

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

The new battery must weigh the same as the old one. Do not remove extra weight or change its position.

⚠ CAUTION

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

Order picking

Maintenance personnel

The battery must be replaced by specially trained personnel. Personnel must follow the manufacturer's instructions for the battery, the charger and the truck.

It is also necessary to follow the battery maintenance instructions.

Fire protection measures



⚠ WARNING

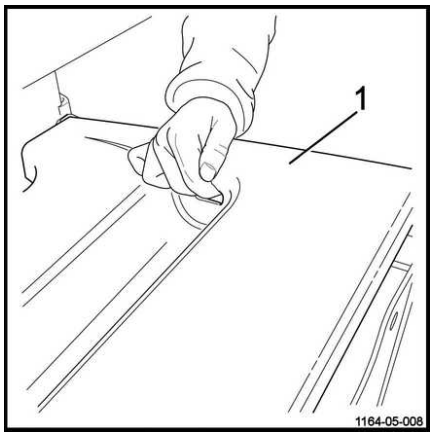
Do not smoke or create a flame when handling batteries. There must be no combustible material or tools that produce sparks within a minimum radius of 2 m around the truck and the battery charger.

The work area must be well ventilated. Fire extinguishers must be provided and located near the work area.

Parking the truck securely

When the battery is being worked on, the truck must be parked safely. The truck can only be restarted when the covers and connectors have been put back in the operating position.

Opening and closing the battery hood ▷



Opening the battery hood

To open the battery hood:

– Immobilise the truck.
– Lower the load arms.
– Switch off the ignition (key or electronic key).
– Press the emergency off switch.
– Lift the hood (1) using the handle designed for this purpose.

Closing the battery hood

To close the battery hood:

⚠ WARNING

Risk of trapping fingers

When closing the battery hood, correctly position your fingers to avoid any risk of them being trapped.

– Close the hood (1).
– Ensure that the battery hood is closed securely.

⚠ CAUTION

Risk of sparks

Never drive with the hood open or incorrectly closed.

Charging the battery using an external charger

⚠ CAUTION

Deep discharging may damage the battery.

– Charge the battery immediately

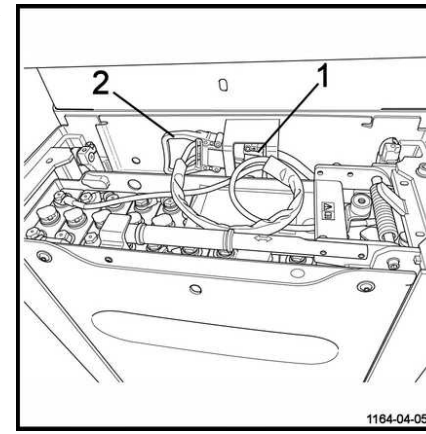
– Park the truck safely

– Before charging, check the condition of the battery cable and the charger cable. Replace them if necessary

– Open the hood and leave it open

– Remove the battery handle connector (1) from the truck plug (2) ▷

– Connect the battery connector to the wall-mounted connector



⚠ WARNING

Electrical risk

Only unplug the battery connector from the battery charger when both the battery charger and the truck are switched off.

NOTE

Follow the instructions provided by the manufacturer of the battery and the battery charger (equalising charge).

⚠ WARNING

Risk of damage, short circuit or explosion.

Do not place any metal objects or tools on the battery.

Smoking is prohibited.

⚠ WARNING

The electrolyte (diluted sulphuric acid) is toxic and very caustic.

Follow the safety regulations when handling battery acid.

⚠ WARNING

Explosive gases are generated during battery charging.

– Make sure that the area is well-ventilated
– Make sure that the battery hood remains open for the entire time the battery is charging

Changing the side access battery

⚠ DANGER

Risk of trapping fingers

It is advisable to wear gloves when changing the battery.

⚠ WARNING

Risk of injury

Safety shoes must be worn when changing the battery.

Before handling, ensure that there is nobody around the truck.

The battery compartment is equipped with four guide rollers for changing the battery. The space for the rollers on the battery lock side is left empty. If the user wishes to change the side lock, the roller opposite the side will also need to be changed.

To remove the battery, we recommend that you use a fixed roller frame or a truck with extraction rollers (fitted with rollers) for easier handling of the battery.

To change the battery, proceed as follows:

– Immobilise the truck.

– Lower the load arms.

– Switch off the ignition and remove the key.

– Press the emergency off switch.

– Open the battery hood.

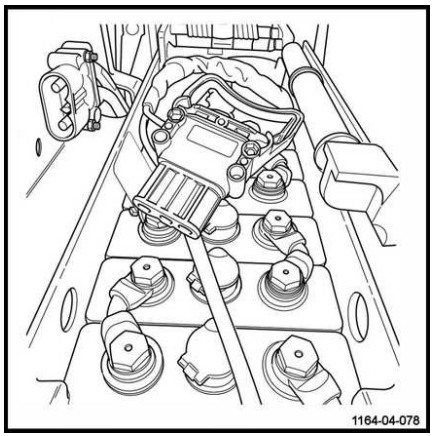
– Unclip the hood from the fixed screw (1). Place it onto the load arms
– Disconnect the battery connector located under the dashboard

▷

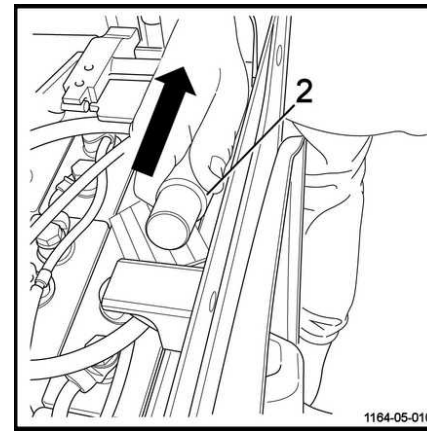


– Place the connector on the battery cells
– Position the truck with extraction rollers or the roller frame (4) in the upright position near the battery compartment on level ground.

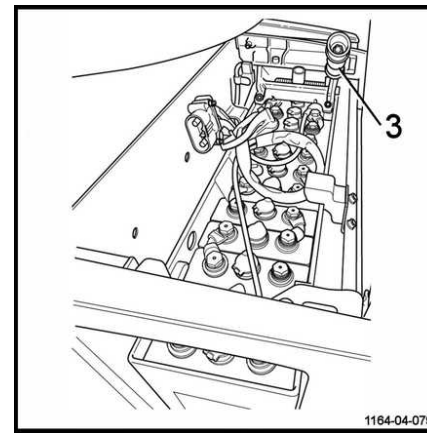
▷



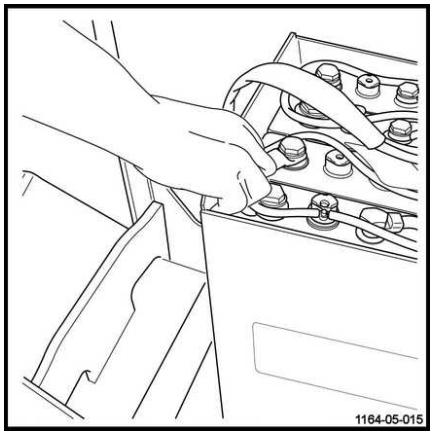
– Operate and pull the locking handle (2) in the direction indicated by the arrow. ▷



– Lift the locking bar (3) until the battery is freed. ▷



– Pull the battery onto the truck with extraction rollers or the roller frame. ▷
– Replace the battery. Remove the discharged battery and position a charged battery on the roller frame.
– Position the truck with extraction rollers or the roller frame (4) in the upright position next to the battery compartment.



– Carefully push the battery into the compartment. ▷

⚠ DANGER

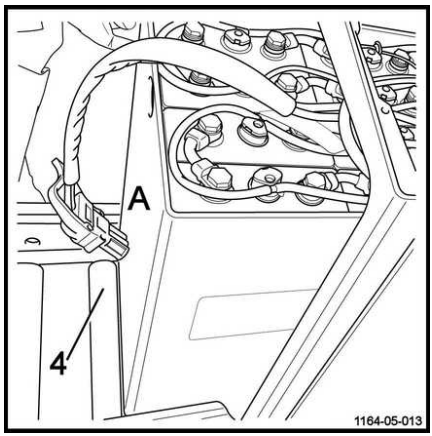
Risk of trapping fingers

Push the battery from the rear side (A) of the battery. Take care not to trap your fingers by pushing from the top or the side of the battery.

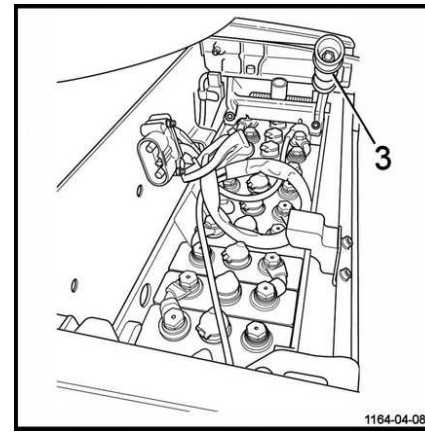
⚠ DANGER

Risk of injury

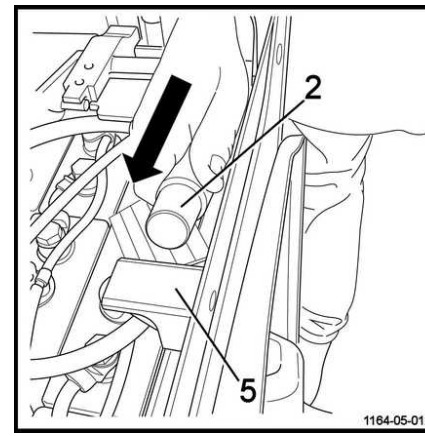
The battery is correctly positioned but is not yet locked.



– Push it all the way into the compartment ▷



– Lower and lock the handle (2) of the locking bar (3) in the direction indicated by the arrow. The locking bar must be horizontal and must be right up against the stop (5). ▷

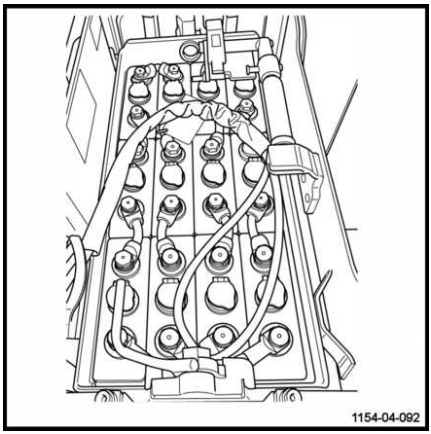


⚠ CAUTION

Risk of locking the battery incorrectly

The locking bar must not in any circumstances be positioned under or on top of the stop. It must be positioned against the stop.

– Reconnect the battery connector. ▷



– Refit the battery hood.

– Return the truck to service.

⚠ WARNING

Risk of injury

Before restarting the truck, ensure that the battery is correctly installed. Check that the battery is locked and that the battery hood is closed.

Handling the truck in an emergency

Truck towing procedure

It is not possible to tow the truck with no electrical function. The electromagnetic brake remains in the closed position.

Truck towing is authorised with a rigid connection (tow bar) if the truck to be towed can no longer be braked. Check that the towing vehicle is sufficiently powerful to pull and brake the truck being towed.

Moving with no battery

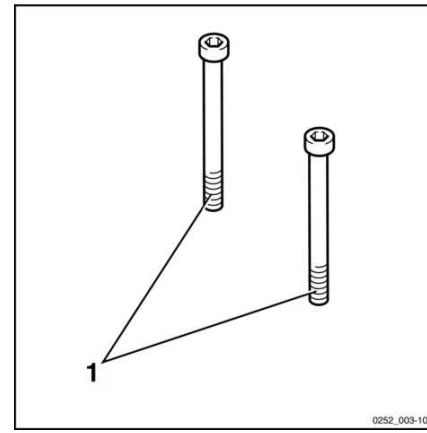
NOTE

In the event of an electrical fault or no battery, it is possible to unlock the brake manually.

⚠ CAUTION

This procedure must be carried out by authorised personnel.

– Unload the fork arms, then disconnect the battery.
– Remove the engine cover.
– Two M5 X 35 screws (1) are required.
– Screw the screws (1) to the brake (2) in the holes (3). The brake is then unlocked.



⚠ CAUTION

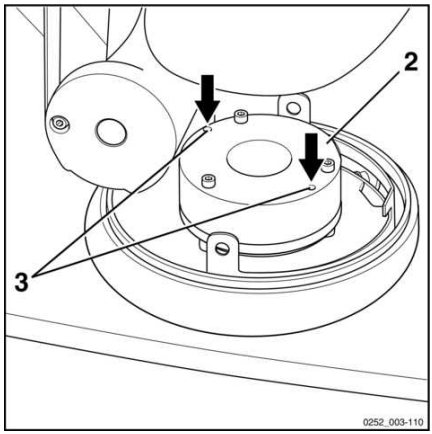
The truck must only be towed at low speeds.

– After towing, chock the truck to prevent it from moving.
– To re-establish brake operation, unscrew and remove the two screws (1).
– Refit the covers.

⚠ WARNING

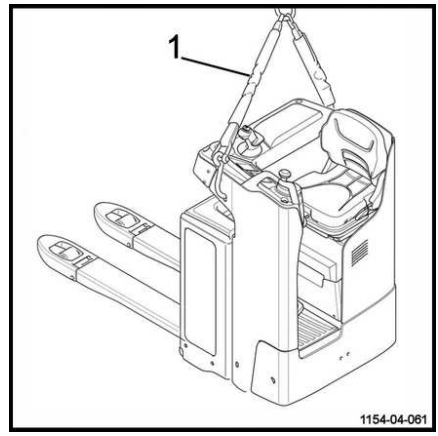
It is essential that the covers are correctly refitted before the machine is used.

▷



Handling the truck in specific situations

Slinging the truck



⚠ DANGER

Danger of truck falling

Only use slings and a hoist of sufficient quality.

Check the weight of the machine (including battery) in order to choose a suitable device.

Refer to the technical features.

Observe the following instructions:

– Switch off the truck and disconnect the battery connector.

– Remove any items that could fall.

– Protect all parts that come into contact with the lifting device.

– Attach the lifting device (1).

NOTE

Do not sling the truck by the steering wheel or the control module.

– Carefully lift the truck.

⚠ DANGER

Risk of falling

Make sure no one is under or near the truck when slinging the truck.

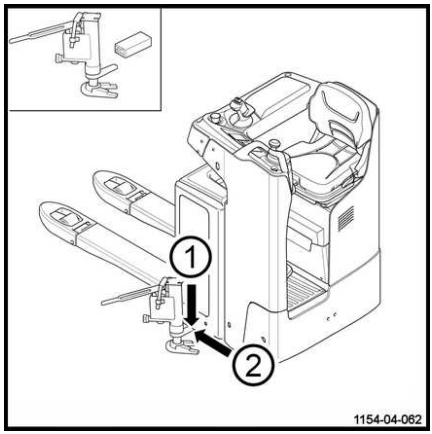
Lifting the truck

⚠ DANGER

Danger of truck tipping over

Truck lifting must be performed carefully. This operation should preferably be carried out by the After-Sales Service Centre.

Maintenance of the load wheels ▷



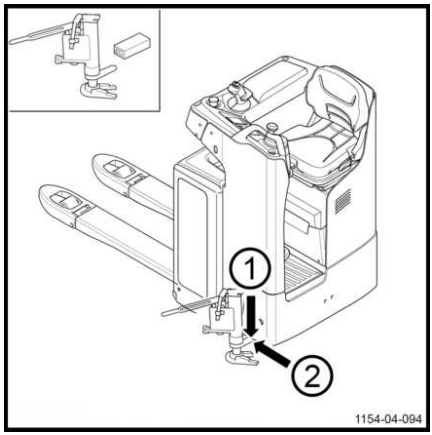
For some work on the load wheels it is necessary to lift the truck.

– Lift the load arms.
– Switch off the ignition and unplug the battery connector.
– Use a jack with adequate lifting capacity.
– Place the jack under the battery compartment in the location indicated (1).
– Place the wedge under the battery compartment in the location indicated (2).
– Raise the rollers only slightly.

NOTE

If the jack is raised higher, several wedges will need to be placed one on top of the other until the jack lift height is reached.

Maintenance of the drive wheel and the technical compartment ▷



For some work, it is necessary to lift the truck.

– Lift the load arms.
– Switch off the ignition and unplug the battery connector.
– Use a jack with adequate lifting capacity.
– Place the jack under the flank of the fixed chassis in the location indicated (1).
– Place the wedge under the flank of the fixed chassis in the location indicated (2).
– Raise the rollers only slightly.

NOTE

If the jack is raised higher, several wedges will need to be placed one on top of the other until the jack lift height is reached.

Transporting the truck

⚠ CAUTION

Always switch off the ignition and disconnect the battery.

Never tie down or sling the truck by the control unit or other points not designed for this.

⚠ CAUTION

Risk of damage to the truck.

Use a hoist and woven **NON METALLIC** slings with an adequate lifting capacity. Refer to the load weight shown on the truck's capacity plate.

The lifting operations must be performed by qualified personnel.

Trucks are generally transported by road or by rail.

The truck must be suitably protected from the effects of the weather during transport and storage.

To load or unload the truck, use an inclined plane or a mobile ramp.

If the truck is out of service or if the battery has been removed, sling the truck. See **Chapter 4 Slinging the truck**.

⚠ DANGER

Danger of death.

Do not stand within the hoist's operating radius or below the lifted truck.

Transporting the truck in the lift

The truck must only be taken in lifts with an adequate loading capacity that are designed for this purpose, and for which authorisation has been received from the operator. Inside the lift, the truck must be immobilised so that no part is in contact with the wall of the lift cage.

A minimum safety distance of 100 mm from the walls of the lift must always be observed.

Anyone transported with the truck must only enter the lift after the truck has been correctly immobilised and they must exit the lift first.

Driving on loading bridges

Before crossing a loading bridge, the operator must make sure it is properly attached and secured and its load capacity is sufficient. Cross the loading bridge slowly and carefully. The driver must be sure that the vehicle to be entered is secured sufficiently against movement and that it can support the load of the forklift truck.

The lorry driver and lift truck operator must coordinate the departure time of the lorry.

5

Maintenance

General maintenance information

General

The following instructions contain all the information required for maintenance of your truck.

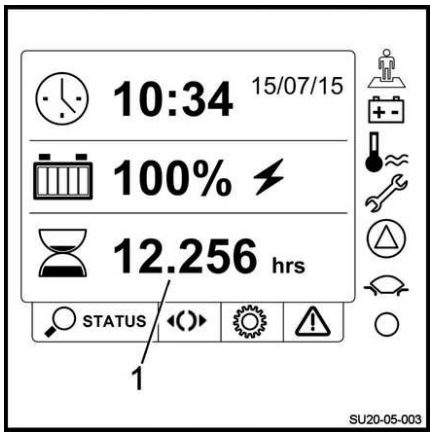
Carry out the various maintenance work in compliance with the maintenance plan. This will ensure that your truck is reliable and in good working order and that the warranty remains valid.

Maintenance plan

One of the display functions indicates the truck's hours of use. Refer to and consult the truck's maintenance plan.

The maintenance plan is followed by advice to facilitate work.

Maintenance intervals must be reduced if the truck is used under harsh conditions (extreme heat or cold, large quantities of dust).



Grade and quantity of lubricants and other consumables

Only lubricants and other consumables specified in these operating instructions are authorised for use in maintenance work.

Lubricants and other consumables required for truck maintenance are listed in the maintenance specifications table.

- Never mix different grades of grease or oil. If it is absolutely necessary to change brands, make sure to flush thoroughly beforehand.
- Before changing any filters or working on the hydraulic system, thoroughly clean the surface and the areas around the part.
- All containers used to pour oil must be clean.

Servicing and maintenance personnel training and qualification

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

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

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

Battery maintenance staff

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

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

Maintenance operations that do not require special training

Simple maintenance operations such as checking the hydraulic fluid level or checking the battery electrolyte level can be carried out by persons with no special training.

A specific qualification is not necessary.

Refer to the maintenance section of this manual for further information.

Ordering spare parts and consumables

Spare parts are provided by our spare parts service department. You will find the information required to place an order in the spare parts and fitting catalogue.

Only use spare parts recommended by the manufacturer.

Unauthorised spare parts may increase the risk of accidents due to faults relating to quality or incorrect choices. Anyone who uses non-compliant spare parts must assume full responsibility in the event of an accident.

Safety guidelines for maintenance

Servicing and maintenance measures

To avoid accidents during servicing and maintenance operations, take all necessary safety measures. For example:

– Ensure that there is no risk of the truck moving or starting up unexpectedly. For this reason, remove the battery connector.

Working on the electrical equipment

Operations on the truck's electrical system must only be carried out when there is no voltage supply.

Operating checks, testing and adjustment work on parts supplied with voltage must only be carried out by personnel:

- who have received detailed instructions
- who have been authorised to perform this work
- who have taken the necessary precautionary measures.

Rings, metal bracelets etc., must be removed before carrying out any operations on electric components.

Remove the electric equipment (which comprises electric components such as the traction controller) before carrying out any welding operations. This precaution prevents this electric equipment from being damaged.

Operations on the electric system require the consent of the manufacturer.

Safety devices

After any repair or maintenance work, it is necessary:

- to refit all safety devices
- to check these for correct operation.

Recommended lubricants

⚠ CAUTION

Damage to equipment if non-recommended lubricants are used.

Only use recommended lubricants. Only the lubricants listed below are approved by the manufacturer. Do not mix lubricants. If in doubt, please contact the After-Sales Service Centre.

Hydraulic oil

Recommended oil for standard use:

ISO-L-HM 46 as per ISO 6743-4 or ISO VG46-HLP as per DIN 51524-2

Recommended oil for heavy-duty use:

ISO-L-HM 68 as per ISO 6743-4 or ISO VG68-HLP as per DIN 51524-2

Recommended oil for the cold store version:

ISO-L-HM 32 as per ISO 6743-4 or ISO VG32-HLP as per DIN 51524-2

Transmission oil

Recommended oil:

SAE 85W 90 API GL4

Aerosol can for chains

Standard chain spray

Grease for pinion gear and steering ring

⚠ CAUTION

Follow the maintenance and safety guidelines.

Multi-purpose grease

Lithium soap grease with EP agents and MoS 2**KPF 2N - 20** complying with the standard DIN 51825.

ENVIRONMENT NOTE

Used oil must be stored safely until it is disposed of in accordance with environmental regulations. No one should have access to the used oil. Do not dispose of used oil in drains or allow it to penetrate soil.

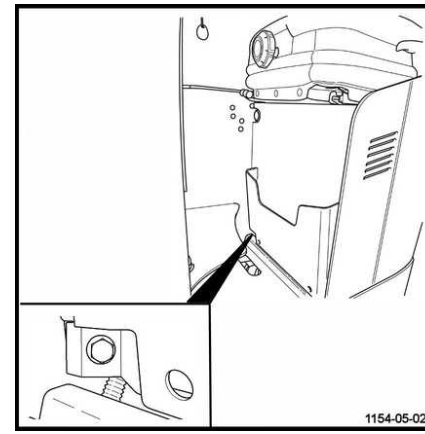
Technical data for inspection and maintenance

Assembly	Consumables/lubricants	Capacities/adjustment values	
		FXH 20N	FXH 25N
Hydraulic system	Hydraulic oil	0.6 l (working capacity)	1.1 l (working capacity)
Transmission gear	Transmission gear oil	0.98 l	0.98 l
Traction motor (3 kW)	1F1 fuse	Power: 300 A, quantity: 1	Power: 300 A, quantity: 1
Steering unit ES30–24 (0.185 kW S1)	3F1 fuse	Power: 40 A, quantity: 1	Power: 40 A, quantity: 1
Pump motor	1F1 fuse	(1.2 kW) Power: 300 A, quantity: 1	(1.5 kW) Power: 300 A, quantity: 1
Control fuse	1F3 fuse	Control: 7.5 A, quantity: 1	Control: 7.5 A, quantity: 1
Control fuse	1F4 fuse	Control: 5 A, quantity: 1	Control: 5 A, quantity: 1
Battery	Distilled water	As required	As required
Joints	Lithium soap grease	As required	As required

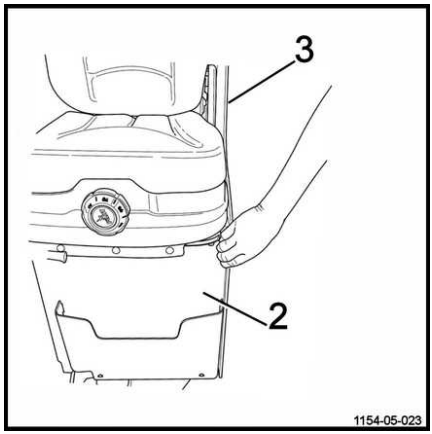
Accessing the technical compartment

In order to perform maintenance on various truck components, it is necessary to access the technical compartment.

– Immobilise the truck.
– Lower the load arms.
– Switch off the truck (key or electronic key).
– Press the emergency off switch.
– Disconnect the battery connector.
– Move the seat all the way forwards.
– Remove the mounting screw (1) at the bottom of the door. ▷



– Open the technical compartment door (2). ▷



You must close the technical compartment after the operation is finished.

– Close the door (2).

⚠ CAUTION

Risk of trapping fingers

Take care not to trap your fingers between the door and the chassis.

Be careful not to trap your fingers in the external hinges (3).

– Refit the mounting screw.

– Reconnect the battery connector.

– Return the truck to service.

1000-hour maintenance plan

Depending on the application, environmental conditions and driving style, the following procedures should be carried out every 1000, 2000, 3000, 4000, 6000, 7000, 8000 and 9000 hours
Preparation
Clean the truck
Check the error codes using the diagnostic tool
Chassis and equipment
Check the condition of the forks
Check the electromagnetic brake and ensure that it is working correctly
Check and lubricate the hinges
Check the pump motor brushes for wear
Ensure that the floor adjusts and locks correctly
Ensure that the seat adjusts and locks correctly
Check the transmission gear for noise and leaks
Lubricate the gears
Wheels
Check the condition and tightness of the wheels
Check the stabilisers
Electrical equipment
Clean the electric steering system and lifting motors
Check the condition of the cables and the battery sockets and ensure that they are positioned correctly
Check the electrical insulation between the chassis and the electric components
Check the electrical insulation between the chassis and the electronic components
Check the fuses
Check the battery acid level and the electrolyte level
Hydraulics
Check the hydraulic oil level

5000-hour maintenance plan

Depending on the application, environmental conditions and driving style, the following procedures should be carried out every 5000 and 10,000 hours
Information
Carry out all 1000-hour maintenance work
Hydraulics
Drain the hydraulic oil

10,000-hour service plan

Depending on the application, environmental conditions and driving style, the following procedures should be carried out every 10,000 hours
Information
Carry out all 1000-hour maintenance work
Carry out all 5000-hour maintenance work
Motor
Drain the transmission gear oil

Chassis, bodywork and fittings

Cleaning the truck

Cleaning instructions

– Park the truck.

– Press the emergency off switch.

⚠ CAUTION

Electrical hazards

The battery must always be disconnected during cleaning procedures.

Washing the outside of the truck

⚠ WARNING

Risk of damage to the truck.

– Do not use flammable liquids to clean the truck.

– The safety rules set out above must be followed to prevent spark formation. They could lead to a short circuit.

– All components that are sensitive to moisture (particularly electric components) must be protected when the truck is cleaned.

– Follow the manufacturer's instructions when using the cleaning product.

– Clean the truck with a non-flammable cleaning product mixed with water, a sponge and cloths.

– Specifically clean the oil filler holes and surrounding area as well as the lubricating nipples (before lubrication).

NOTE

A frequently cleaned truck must be lubricated more regularly.

Cleaning the electrical installations

⚠ WARNING

Electrical hazards

Do not expose electrical equipment (especially motors) to direct jets.

NOTE

- *Only use dry cleaning products*
- *Do not remove the cowlings*

– Clean the electrical installations with a non-metal brush and dry with lightly compressed air.

After washing

– Carefully dry the truck (e.g. with compressed air).

⚠ WARNING

Use of compressed air

It is advisable to wear protection goggles and a mask.

– Restart the truck in accordance with the instructions.

NOTE

If, despite taking precautions, traces of moisture remain in the motor, dry it using compressed air. After having eliminated any traces of moisture, the truck may be reactivated. Do not do so before then to prevent any corrosion.

General information on battery maintenance

⚠ DANGER

Risk of injury

Before carrying out any work on the electric installation, turn the truck power supply off. Disconnect the battery connector (if present).

Precautions to be taken during battery maintenance

The plugs on the battery cells must always be dry and clean.

Neutralise any spilt battery acid immediately.

The battery terminals and lugs must be clean, lightly covered with grease for terminals and securely tightened.

Charging the battery

During the charging process, the surface of the battery cells must be clear to ensure sufficient ventilation.

Do not place metal objects on the battery.

The battery cover must remain open during charging. See the chapter entitled **Battery charging using an external charger.**

Battery type

Lead or gel batteries are used. It is advisable to choose a compatible charger.

Before charging, ensure that the charger is suitable for the type of battery.

⚠ CAUTION

Gel batteries are subject to specific charging, maintenance and treatment instructions. A non-compatible charger may result in a battery failure.

Observe the manufacturer's recommendations.

NOTE

- *The discharge indicators used to check the battery must also be suitable for the type of battery*
- *Contact the relevant After-Sales Service Centre*

Charging the battery

– Park the truck in an area without condensation or pollution and with sufficient ventilation.

– Stop the truck.

– Press the emergency off switch.

– Open the battery hood.

– Follow the instructions.

⚠ CAUTION

Do not expose the charger to water, rain, oils, grease or any similar substances.

The charger becomes hot during the operation.

⚠ CAUTION

Risk of injury

Do not obstruct the ventilation. Allow the charger to cool down for 10 minutes after charging is complete before touching it. Do not use the charger out of the truck.

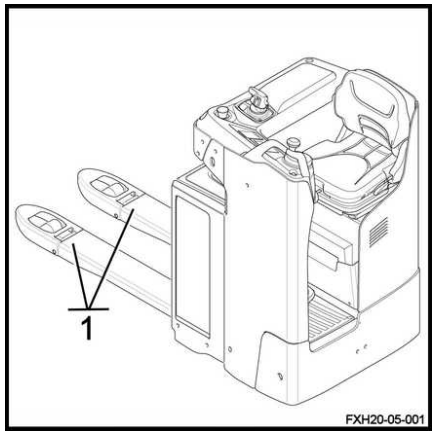
Checking the condition of the load arms ▷

– Check that the load arms (1) show no signs of deformation, splits, heavy wear or cracks

⚠ CAUTION

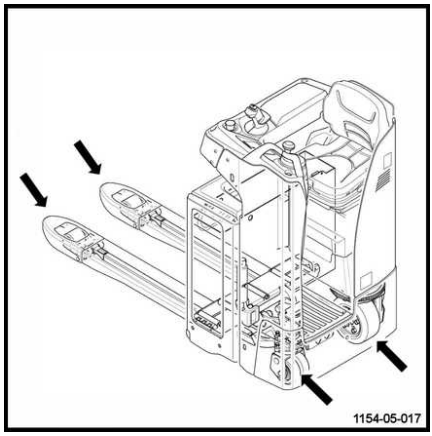
Truck damage

If the fork carriage is damaged, have it changed by the After-Sales Service Centre.



Steering and wheels

Checking the condition of the wheels ▷



– Raise the truck. The wheels must not touch the ground
– Check that the wheels rotate freely. Then remove any objects that may prevent them from turning or that may obstruct them
– Check the level of wear on the tyre treads

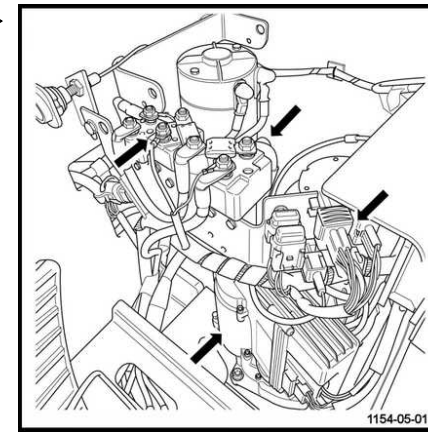
⚠ CAUTION

Equipment damage

In order to avoid any risk of damaging the bearings and tyres of the wheels, it is essential to remove any wires or plastic strips that may wind around the wheel hubs and bearings.

Electrical equipment

Cleaning and blowing out the electrical components



⚠ CAUTION

Electrical hazards

Always disconnect the battery connector before working on an electrical component.

- Press in the emergency off switch
- Disconnect the battery connector
- Move the seat all the way forwards
- Open the technical compartment door
- Blow the electrical components with compressed air

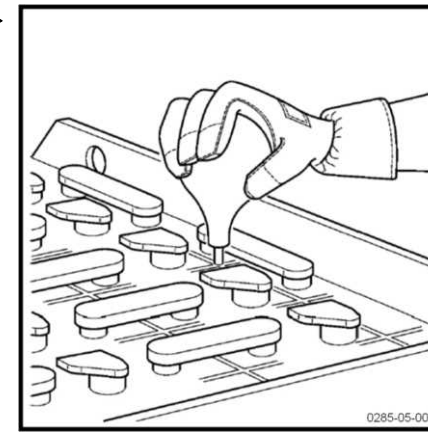
⚠ WARNING

Use of compressed air

It is advisable to wear protection goggles and a mask.

- Check the condition of the cable harness connector pins
- Close the technical compartment door
- Return the truck to service

Checking the battery acid level and electrolyte density



NOTE

Remove the battery from its compartment to check the water level.

⚠ WARNING

The electrolyte (diluted sulphuric acid) is poisonous and corrosive.

- Always wear suitable protective equipment (industrial protection goggles, safety gloves) when working on a battery.
- Never wear a watch or jewellery when handling battery acid.
- Do not allow any acid to get onto the clothing or skin or into the eyes. If this does happen, rinse immediately with plenty of clean water.
- Immediately rinse away any spilled battery acid with plenty of water.
- In case of injury, seek medical advice immediately.
- Always follow the safety information provided by the battery manufacturer.
- Comply with the regulations in force.

- Check the battery acid level and electrolyte density according to the battery manufacturer's recommendations.
- The cell covers of the battery must be kept dry and clean.
- Any spillage of battery acid must be neutralised immediately.

ENVIRONMENT NOTE

Dispose of any used battery acid in accordance with the regulations.

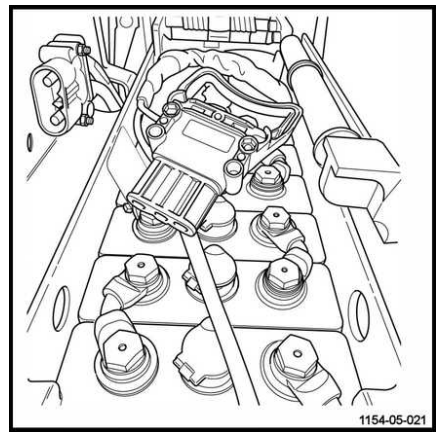
Checking the condition of cables, terminals and the battery connector

- Check that the cable insulation is undamaged
- Check that there are no signs of heat build-up in the connections
- Check that the "+" and "-" output terminals are not sulphated (presence of white salt)
- Check the condition of the battery connector contacts and the presence of the keying pin

⚠ CAUTION

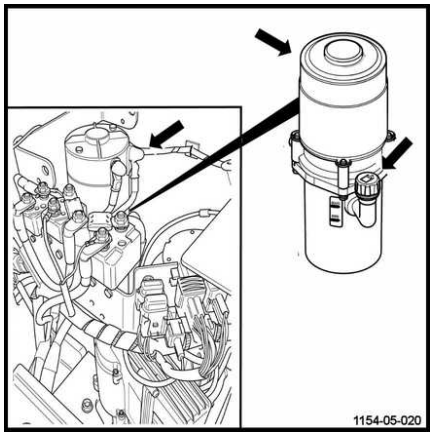
Risk of damaging the equipment.

The points mentioned above can cause serious incidents. In the event of an incident, contact our After-Sales Service Centre as quickly as possible.



Hydraulic systems

Checking the hydraulic system for leaks ▷



– Switch off the truck and disconnect the battery connector
– Move the seat all the way forwards
– Open the technical compartment door
– Inspect the hydraulic system: pipes, hoses and connections between the pump unit and the cylinders
– Check the cylinders for leaks
– Check that the hoses are attached correctly and show no signs of friction wear
– Check the external pipes and hoses on the technical compartment
– Close the technical compartment door
– Return the truck to service

⚠ CAUTION

Risk of damaging the truck

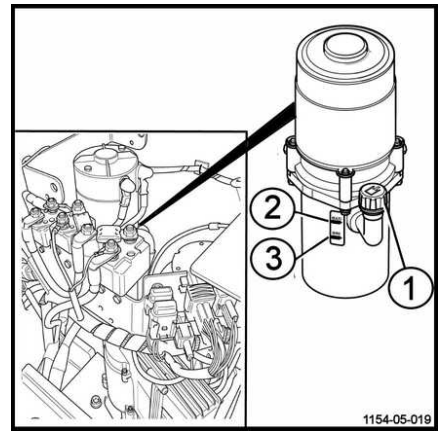
In the event of leakage, please contact the After-Sales Service Centre.

Checking the hydraulic oil level

To check the hydraulic oil level, proceed as follows:

– Immobilise the truck
– Lower the load arms
– Switch off the ignition and remove the key
– Press in the emergency off switch
– Disconnect the battery connector
– Move the seat all the way forwards

– Open the technical compartment door ▷



To ensure proper usage of the truck functions, the oil level must be between the minimum (3) and maximum (2) marks on the tank.

– Remove the plug (1). If necessary, top up via the opening

– Refit the plug (1) afterwards

⚠ CAUTION

Risk of damage to hydraulic components

Only use hydraulic oil that complies with the manufacturer's specifications (see table of recommended lubricants).

– Close the technical compartment door

– Reconnect the battery connector

– Return the truck to service

Storage and decommissioning

Storage of truck

Precautions should be taken if the truck must not be used for a reasonably long period. The operations depend on the length of time it is unused.

Long-term truck storage

The following work must be carried out on the truck to prevent corrosion if it needs to be stored for a long period of time. If the truck is to be stored for more than two months, it must be positioned in a clean and dry area. The area must be well-ventilated with no risk of freezing.

The following operations must be performed:

– Clean the truck thoroughly.

– Check the hydraulic oil level and refill if necessary.

– Lower the forks onto a suitable support (e.g. a pallet) until the chains are slack.

– Coat any unpainted metal parts with a thin layer of oil or grease.

– Grease all hinges and joints.

– Check battery condition and electrolyte density. Maintain the battery in accordance with the manufacturer's requirements. (Follow the instructions).

– Spray contacts with an aerosol product designed for contacts.

– Raise and chock the truck: the wheels must not touch the ground in order to prevent irreversible deformation of the tyres.

– Cover the truck with a cotton cover to protect it from dust.

⚠ CAUTION

We recommend that you do not use a plastic sheet as this encourages condensation to form.

Consult the service department for further measures to take if the truck must be stored for a longer period of time.

Recommissioning after storage

If the truck has been stored for more than six months, it must be checked carefully before being recommissioned. This check is similar to the workplace accident prevention inspection. It is therefore necessary to check all points and systems that are important for truck safety.

Carry out the following operations:

– Clean the truck thoroughly.

– Grease all hinges and joints.

– Check the condition and density of electrolyte, and, if necessary, recharge the battery.

– Check that there are no traces of condensation water in the hydraulic oil. Drain if necessary.

– Carry out the same maintenance work as for the first time it was commissioned.

– Commission the truck.

– In particular, check the following during start-up:

- traction, control and steering.
- brakes (service brake and parking brake).
- lifting device.

Permanent Putting Out of Commission (Destruction)

When scrapping the truck, it is necessary to:

- Remove the various parts of the truck (covers, battery, chains, motors etc.)
- Sort out the components depending on their type: pipes, rubber components, lubricants, aluminium, iron etc.
- Before scrapping the truck, notify the competent authorities of your country in writing.
- After receiving the authorisation from the competent authorities, remove any components according to national standards.

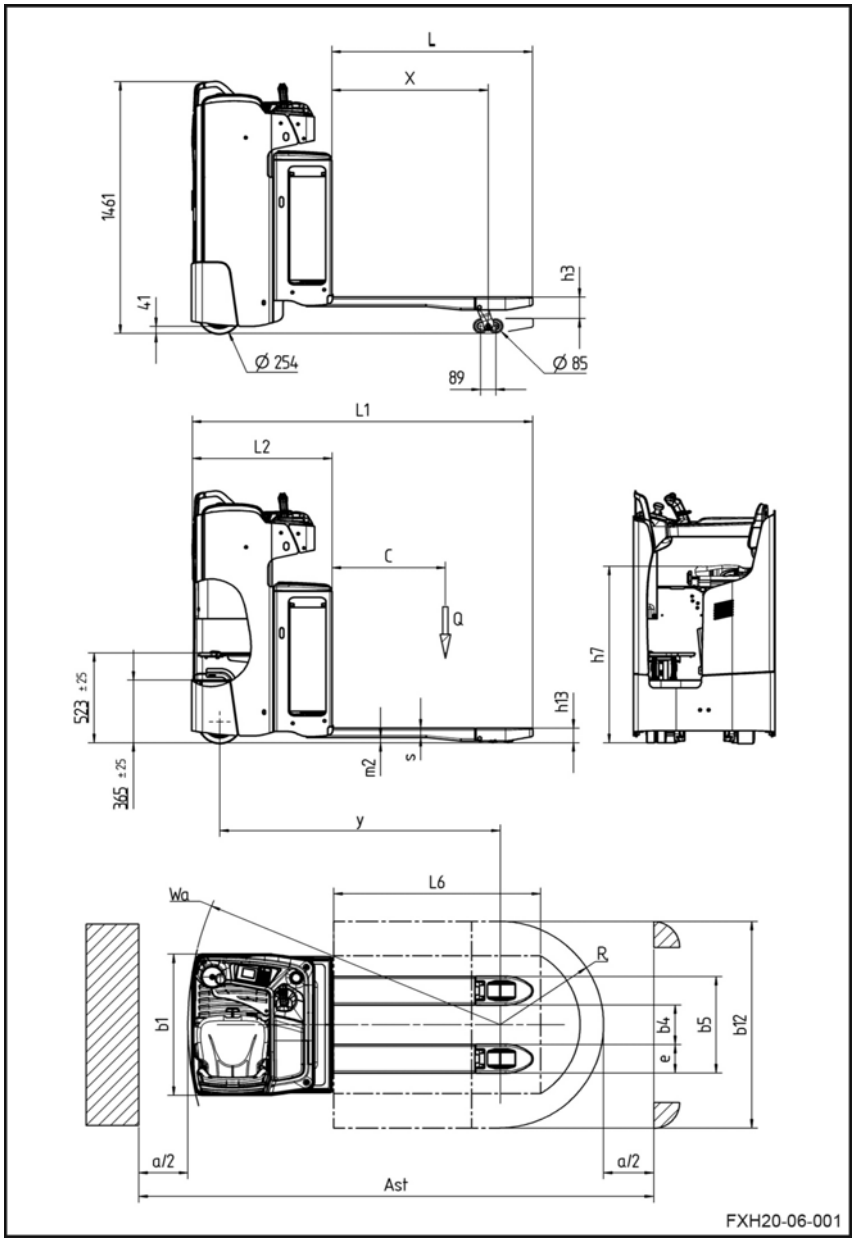
NOTE

The client is solely responsible for any irregularities he has committed during or after the scrapping of the truck's components and the removal of components.

6

Technical specifications

FXH 20N datasheet



DESCRIPTION				
1.1	Manufacturer		STILL	
1.2	Model type		FXH 20N	FXH 25N
1.3	Method of propulsion: battery, diesel, petrol, LPG, mains power		Battery	Battery
1.4	Driving: manual, pedestrian, standing, seated, order picking		Seated	Seated
1.5	Nominal capacity	Q (kg)	2000	2500
1.6	Centre of gravity	C (mm)	600	800
1.8	Distance from load wheel axle to load mating face (±5 mm)	X	965(5)	1415(5)
1.9	Wheelbase (±5 mm)	Y	1622(5)	2072(5)

WEIGHT			FXH 20N	FXH 25N
2.1	Kerb weight (±10%)	kg	889(4)	968(4)
2.2	Load per laden axle, drive side/load side (±10%)	kg	1073/1816(3)	1474/1994(3)
2.3	Load per unladen axle, drive side/load side (±10%)	kg	669/220(3)	748/220(3)

WHEELS			FXH 20N	FXH 25N
3.1	Tyre: polyurethane, rubber, drive side/ load side		P+P/P	P+P/P
3.2	Drive wheel dimensions (width at the ground)	Ø x L (mm)	Ø254 x L102	Ø254 x L102
3.3	Wheel dimensions, load side	Ø x L (mm)	Ø85 x L105 (2 x Ø85 x L80)	Ø85 x L105 (2 x Ø85 x L80)
3.4	Additional wheels (dimensions)	Ø x L (mm)	2 x Ø140 x L50	2 x Ø140 x L50
3.5	Number of wheels at drive side/load side (X = drive wheel)		1X + 1/2 (1X + 1/4)	1X + 1/2 (1X + 1/4)
3.6	Drive side track width (±5 mm)	mm	541	541
3.7	Load side track width (±5 mm)	mm	395	395

DIMENSIONS			FXH 20N	FXH 25N
4.4	Lift (±5 mm)	h3 (mm)	125	125
4.8	Seat height relative to the SIP/height of support (±5 mm)	h4 (mm)	1024	1024

4.15	Height at the ends of the fork and on load mating face (±5 mm)	h13 (mm)	88[5]	88[5]
4.19	Total length (0/+5 mm)	l1 (mm)	1970[6]	2420[6]
4.20	Length to front of forks (±5 mm)	l2 (mm)	820[6]	820[6]
4.21	Total width (±5 mm)	b1/b2 (mm)	820	820
4.22	Fork dimensions	s/e/l (mm)	55/165/1150	55/165/1600
4.25	Outside fork spread, minimum/maximum (±5 mm)	b5 (mm)	520/540/560/680	520/540/560/680
4.32	Ground clearance at centre of wheelbase (±2 mm)	m2 (mm)	30	30
4.33	Dimension of the b12 x L6 load	mm	800 x 1200	2 x 800 x 1200
4.34	Aisle width with predetermined load	Ast (mm)	2248[2] [7]	-
4.34.2	Aisle width with an 800 x 1200 pallet crosswise	Ast (mm)	2613[2] [8]	3089[2] [8]
4.35	Turning radius (minimum) (±20 mm), initial lift raised/lowered	Wa (mm)	1745/1815 [1]	2190/2260[1]

PERFORMANCE DATA			FXH 20N	FXH 25N
5.1	Travel speed, laden/unladen (±5%)	km/h	10/12	10/12
5.2	Lifting speed, laden/unladen (±10%)	m/s	0.039/0.048	0.024/0.033
5.3	Lowering speed, laden/unladen (±10%)	m/s	0.077/0.078	0.074/0.053
5.8	Maximum gradient, laden/unladen	%	15/20	12/20
5.9	Acceleration time (10 m)	s	5.9/4.5	6.2/4.5
5.10	Service brake		electromagnetic	electromagnetic

DRIVE SYSTEM			FXH 20N	FXH 25N
6.1	Traction motor, 60 minutes	kW	3.0	3.0
6.2	Lift motor at 15% utilisation	kW	1.2	1.5
6.3	Battery type in accordance with DIN 46 531/35/36 A, B, C; not type DIN 43 535 B		3 PzS SL	3 PzS SL
6.4	Battery voltage and capacity (discharge in 5 hours)	V/Ah	24/375	24/375
			4PzS SL Li-ion 205 Ah: 23/205	
			4PzS SL Li-ion 410 Ah: 23/410	
6.5	Battery weight (±10%)	(kg)	290	290
	Battery weight with tray (±10%)		4PzS SL Li-ion 205 Ah: 312	

	Battery weight with tray (±10%)		4PzS SL Li-ion 410 Ah: 351	
6.6	Energy consumption according to standardised VDI cycle	kWh	0.50	0.57
6.7	Turnover output according to VDI cycle		1.44	1.62
6.8	Energy consumption at turnover output		1.57	1.59

MISCELLANEOUS			FXH 20N	FXH 25N
8.1	Speed control (AC controller)		LAC	LAC
10.7	Noise level at operator's ears (±2.5)	dB (A)	68	71
	Vibrations transmitted to the operator (EN 13059)	m/s²	0.5	0.5

1) Forks raised/lowered

2) Calculation with Wa, forks lowered

3) Weight according to line 2.1

4) With battery line 6.5

5) In lowered position

6) Add 100 mm for 4 PzS

7) Ast = Wa + L6 - X + a

8) Ast = Wa + R + a

Safety distance a = 200 mm

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).

A

Accessing the technical compartment. . . . 97
Address of manufacturer. I
Adjusting the floor. 45
Adjusting the seat. 45
Aerosol can for chains. 95

B

Batteries. 36
Battery
- Closing the battery hood. 76
- Opening the battery hood. 76
- Type. 75

Battery acid. 18
Before picking up a load. 71
Behaviour when driving. 53
Braking. 36, 55
Braking by releasing the drive switch. 39, 56
Braking by reversing the drive direction. 39, 56

C

Changing the side access battery. 79
Charging the battery. 102
Charging the battery using an external charger. 77
Checking the battery acid level and electrolyte density. 105
Checking the brakes. 39
Checking the cables, terminals and the battery connector. 107
Checking the condition of the load arms. 103
Checking the condition of the wheels. . . 104
Checking the emergency off switch. 39
Checking the horn. 40
Checks prior to start-up. 37
Cleaning the truck. 101
Climatic conditions. 12
cold store. 73
Cold store usage. 73
Conformity marking. 3
Consumables. 17
- Battery acid safety instructions. 18
- Disposal. 19
- Oil Safety Information. 17
- Safety information for handling hydraulic fluid. 18

Contact details. I
Copyright and property rights. 2

D

Declaration of conformity. 4
Defining directions. 54
Description of use. 12
Destruction. 111
Display of the drive wheel position. 47
Display operating unit. 31
Display unit
- Activity indicator. 50
- Drive program. 50
- Error codes menu. 51
- Operator presence. 47
- Settings. 49
- Start-up screen. 52
- Temperature. 49
- Warnings. 49

Disposing of components and batteries. . . 14
Drive program
- Blue Q mode. 57
- Hare mode. 57
- Tortoise mode. 57

Driver rights,duties and rules of behaviour. 22
Drivers. 22
Driver's compartment. 28, 36
Drive system. 36
Driving. 54
Driving on loading bridges. 89
Driving safety guidelines. 53

E

EC declaration of conformity in accordance with the Machinery Directive. 4
Electrical equipment
- Cleaning and blowing out the components. 105

Electromagnetic braking. 56
Electronic key (option). 29

F

Features. 36
FleetManager™
- Colour code for the LEDs. 64
- Commissioning a truck equipped with a keypad or an electronic key. 63
- Commissioning a truck equipped with an RFID reading device. 63

Description. 62
Disconnecting a truck equipped with a keypad or electronic key. 66
Disconnecting a truck equipped with an RFID reading device. 67
Disconnecting the truck. 66
Start-up. 63
FXH 20N datasheet. 114

G

General. 2, 92
General information on battery maintenance. 102
General view of the technical compartment. 27
Grade and quantity of lubricants and other consumables. 92
Grease for pinion gear and steering ring. . 95

H

Handling a single load. 71
Horn. 56
Hydraulic fluid. 18
Hydraulic oil. 95
Hydraulic system
Checking the hydraulic oil level. 108
Checking the hydraulic system for leaks. 108

I

Identification label. 6

J

Joystick function
Front of the joystick. 58
Rear of the joystick. 58

L

Labels. 32
Lift control elements. 70
Lifting the truck. 87
List of abbreviations. 7
Load handling safety rules. 68

M

Maintenance plan. 92
1000 hours. 99
5000 hours. 99
Managing battery charging. 49
Multi-purpose grease. 95

N

Noise emission values. 20

O

Oils. 17
Operating company. 22
Operator presence detection. 43
Ordering spare parts and consumables. . . 93
Order picking. 75
Overview. 26

P

Permanent Putting Out of Commission. . 111
Permissible use. 12
Picking up a load from the ground. 71
Precautions to be taken during battery maintenance. 102
Prohibition of use by unauthorised persons. 23

R

Recommended lubricants. 95
Residual dangers, residual risks. 21

S

Safety devices. 94
Safety Inspection. 24
Seat heater
Optional. 46
Selection buttons. 47
Serial number. 33
Service plan
10,000 hours. 100
Servicing and maintenance measures. . . . 94
Setting a load down on the ground. 72
Settings menu. 51
Slinging the truck. 87
Spare parts list. 11
Specialist. 22
Stability. 21
Starting on a ramp. 61
Starting the truck. 38
Steering. 36
Steering knob option. 59
Stepping on/off the truck. 42
Symbols used. 13

T

Technical data for inspection and maintenance. 96
Technical description. 36
Transmission oil. 95
Transporting a load. 72
Transporting the truck. 89
Transporting the truck in the lift. 89
Travelling down slopes. 61
Travelling up slopes. 60
Truck operating instructions. 41

U

Unauthorised use. 13
Using the truck on a ramp. 60

V

Vibrations
Vibration characteristics for vibrations to which the body is exposed. 20

W

Working on the electrical equipment. 94