

EJC 212/214/216/220 /z /b

03.18

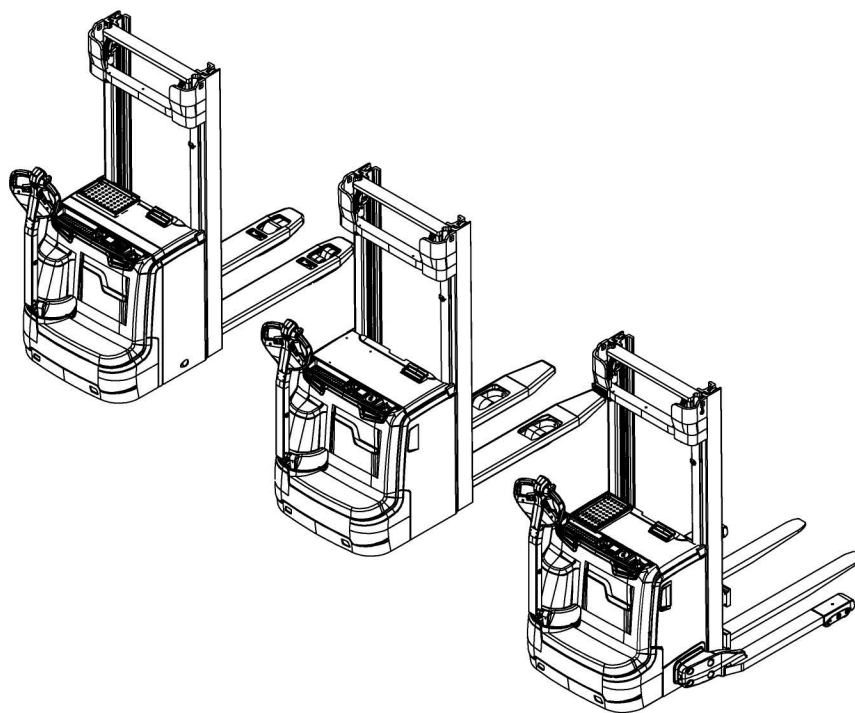
Operating instructions

en-GB

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EJC 212
EJC 214
EJC 216
EJC 220
EJC 212z
EJC 214z
EJC 216z
EJC 220z
EJC 212b
EJC 214b
EJC 216b
EJC 220b



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A Correct Use and Application

1 General

The truck must be used, operated and serviced in accordance with the present instructions. All other types of use are beyond its scope of application and may result in damage to personnel, the industrial truck or property.

2 Correct application

NOTICE

The maximum load and load distance are indicated on the capacity plate and must not be exceeded.

The load must rest on the load handler or be lifted by an attachment approved by the manufacturer.

The load must be fully raised, see page 142.

Permissible activities

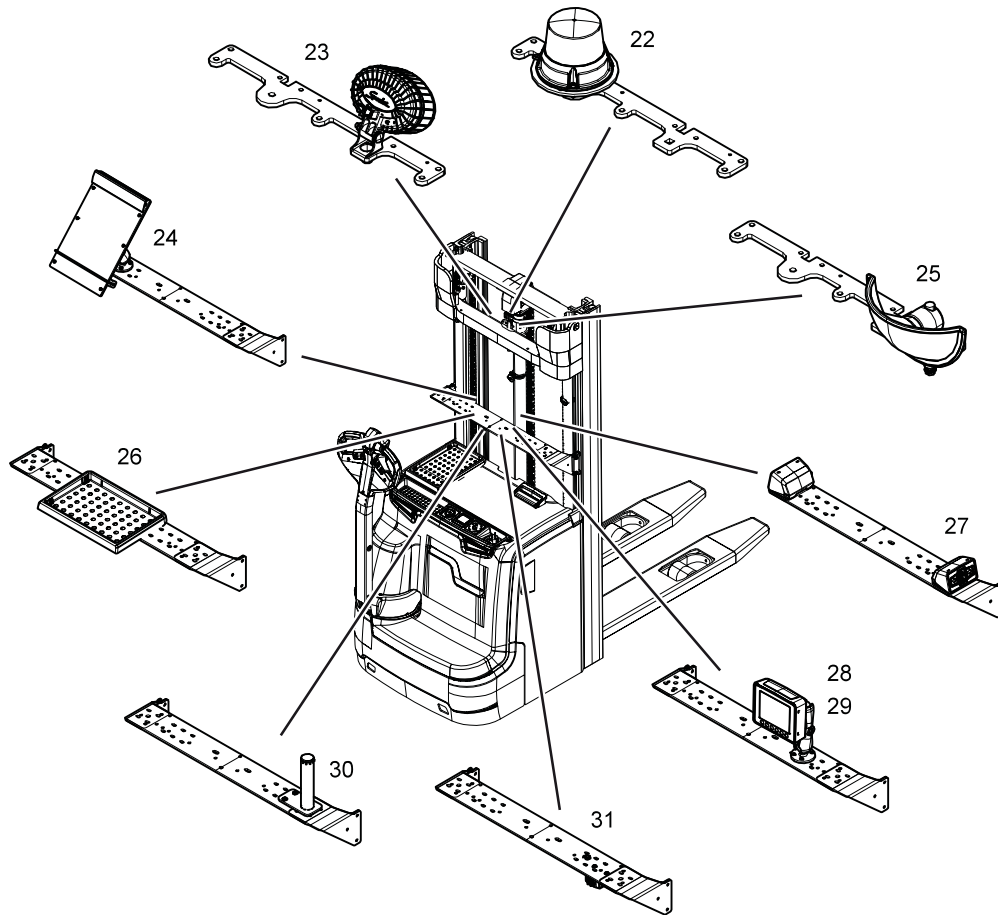
- Lifting and lowering loads.
- Stacking and retrieving loads.
- Transporting lowered loads.

Prohibited activities

- Travelling with a raised load (>500 mm).
In double-deck operation, the load handler must not be raised higher than 1800 mm. The bottom load must be heavier than the top load.
- Carrying and lifting passengers (see "Lifting Passengers" on page 12).
- Pushing or pulling loads.

4.1.1 Overview of optional components

Options bracket

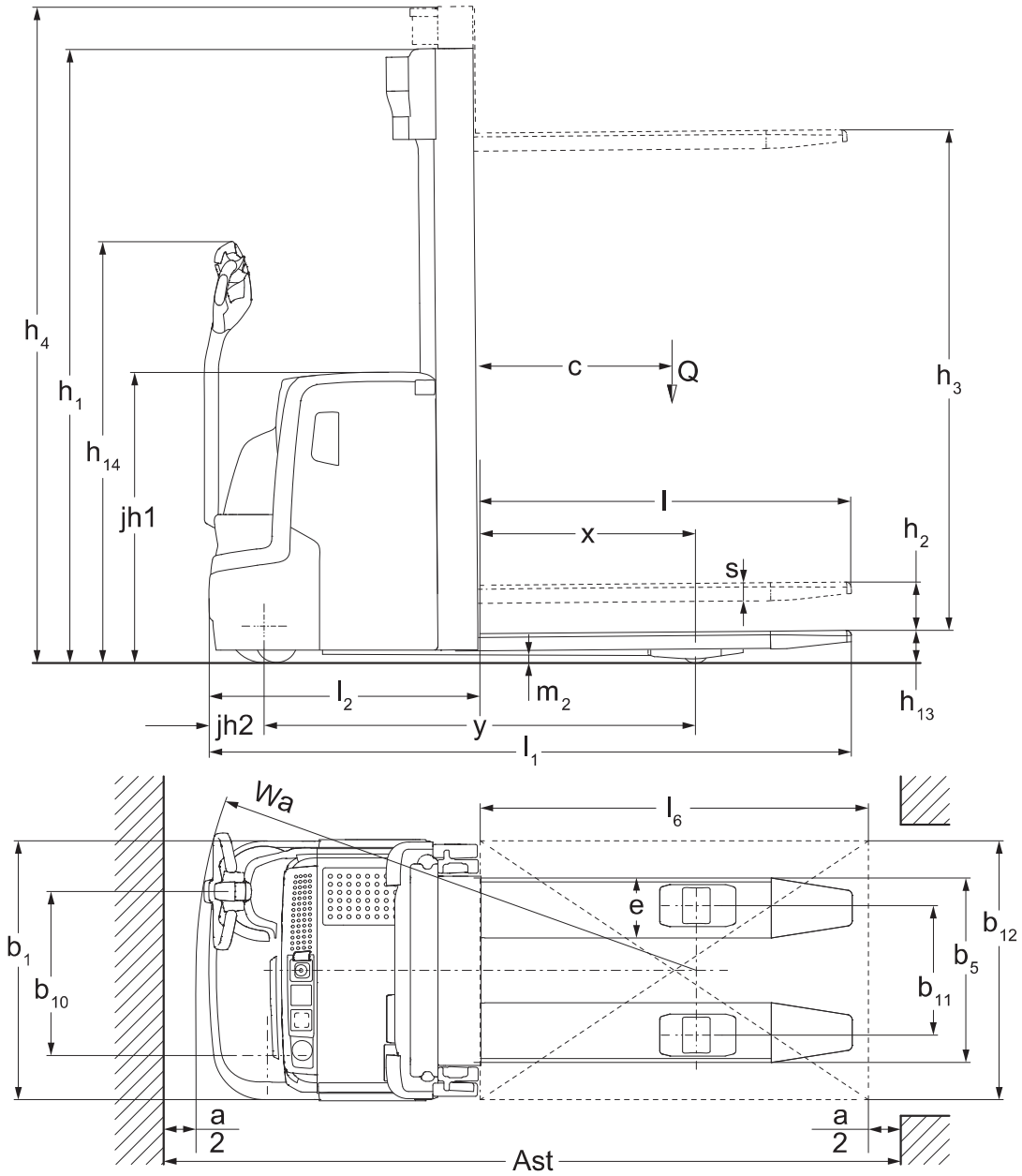


Item	Description
22	Beacon
23	Floor Spot
24	Document holder
25	Reversing mirror
26	Storage facility
27	Inching units
28	RAM mount
29	6" display
30	Film holder
31	USB socket

5.1 Dimensions

EJC 212/214/216/220

- Values for battery compartment S-VBE (EJC 212); M-VBE (EJC 214/216); ZT2800/2900 mast



		EJC 216z	EJC 220z	
Q	Rated capacity	1600	2000	kg
	Capacity for support arm lift	2000		kg
c	Load centre distance with standard fork length	600		mm
	Travel speed with/without load	6.0/6.0		km/h
	Lift speed with/without load	0.15/0.3	0.11/0.34	m/s
	Lowering speed with/without load	0.45/0.35	0.5/0.35	m/s
	Lift motor, output	3.0		kW

EJC 212b/214b/216b/220b

		EJC 212b	EJC 214b	
Q	Rated capacity	1200	1400	kg
c	Load centre distance with standard fork length	600		mm
	Travel speed with/without load	6.0/6.0		km/h
	Lift speed with/without load	0.2/0.4	0.16/0.3	m/s
	Lowering speed with/without load	0.45/0.35		m/s
	Lift motor, output	3.0		kW

		EJC 216b	EJC 220b	
Q	Rated capacity	1600	2000	kg
c	Load centre distance with standard fork length	600		mm
	Travel speed with/without load	6.0/6.0		km/h
	Lift speed with/without load	0.15/0.3	0.11/0.34	m/s
	Lowering speed with/without load	0.45/0.35	0.5/0.35	m/s
	Lift motor, output	3.0		kW

Item	Model
44	Cold store version plate (○)
45	Battery data plate
46	Punched serial number
47	Data plate

C Transport and Commissioning

1 Lifting by crane

WARNING!

All persons involved in loading by crane must be trained

Incorrect crane loading procedures due to untrained personnel can cause the truck to fall. There is a risk of injury to personnel and a risk of material damage to the truck.

- ▶ Loading must only be performed by specialist personnel trained for this purpose. The specialist personnel must be instructed in securing loads on road vehicles and handling load securing devices. In each case correct measurements must be taken and appropriate safety measures applied.

WARNING!

Improper loading by crane can result in accidents

Improper use or use of unsuitable lifting gear can cause the truck to crash when being loaded by crane.

Prevent the truck from hitting other objects during lifting, and avoid uncontrolled movements. If necessary, secure the truck with guide ropes.

- ▶ The truck may be loaded only by people who are trained in using lifting accessories and lifting gear.
- ▶ Wear personal protective equipment (e.g. safety shoes, safety helmet, hi-vis jacket, protective gloves) when loading by crane.
- ▶ Do not stand under suspended loads.
- ▶ Do not walk into or stand in a hazardous area.
- ▶ Always use lifting gear with sufficient capacity (for truck weight, see truck data plate).
- ▶ Always attach the crane lifting gear to the prescribed attachment points and prevent them from slipping.
- ▶ Use the lifting accessories only in the prescribed load direction.
- ▶ Crane lifting gear must be fastened in such a way that it does not come into contact with any attachments when lifting.

CAUTION!

Lowering of the drive frame when lifting the truck

When lifting the truck, the drive frame can lower in the area of the support arm lift. This can cause the truck to move inadvertently.

- ▶ Raise and set down the truck slowly and carefully.
- ▶ Keep the area around the truck clear.

CAUTION!

Danger of injury from swinging truck

Different battery versions and battery weights can lead to the truck oscillating in a suspended position after being raised.

- ▶ Raise the truck carefully and allow to swing.
- ▶ Keep the hazardous area around the truck clear.

4.2 Battery types

Depending on the version, the truck is equipped with different battery types. The following tables show which combinations are intended as standard, indicating the capacity.

The battery weights can be taken from the battery data plate. Batteries with non insulated terminals must be covered with a non slip insulating mat.

EJC 212/214/216/220 & EJC 212b/214b/216b/220b - battery tray S1

Battery type	Capacity (Ah)	Min. weight	Max. dimensions
24 V battery 2PzB	130	133 kg	652 x 148.5 x 560 mm
24 V battery 2PzVB	142	133 kg	652 x 148.5 x 560 mm

EJC 212/214/216/220 & EJC 212b/214b/216b/220b - battery tray S2

Battery type	Capacity (Ah)	Min. weight	Max. dimensions
24 V battery 2PzVB	134	144 kg	662 x 148.5 x 592 mm
24 V battery 2PzMB	140	144 kg	662 x 148.5 x 592 mm
24 V battery 2PzB	150	144 kg	662 x 148.5 x 592 mm
24 V battery 2PzB Lib. Silver	150	144 kg	662 x 148.5 x 592 mm
24 V battery 2PzB FRM spec.	150	144 kg	662 x 148.5 x 592 mm
24 V battery NXS	166	144 kg	662 x 148.5 x 592 mm

EJC 212/214/216/220 & EJC 212b/214b/216b/220b - battery tray S3

Battery type	Capacity (Ah)	Min. weight	Max. dimensions
24 V battery 2PzVB	170	176 kg	657 x 148.5 x 686 mm
24 V battery 2PzB Lib. Silver	200	176 kg	657 x 148.5 x 686 mm

4.4.2 Removing the battery from the side

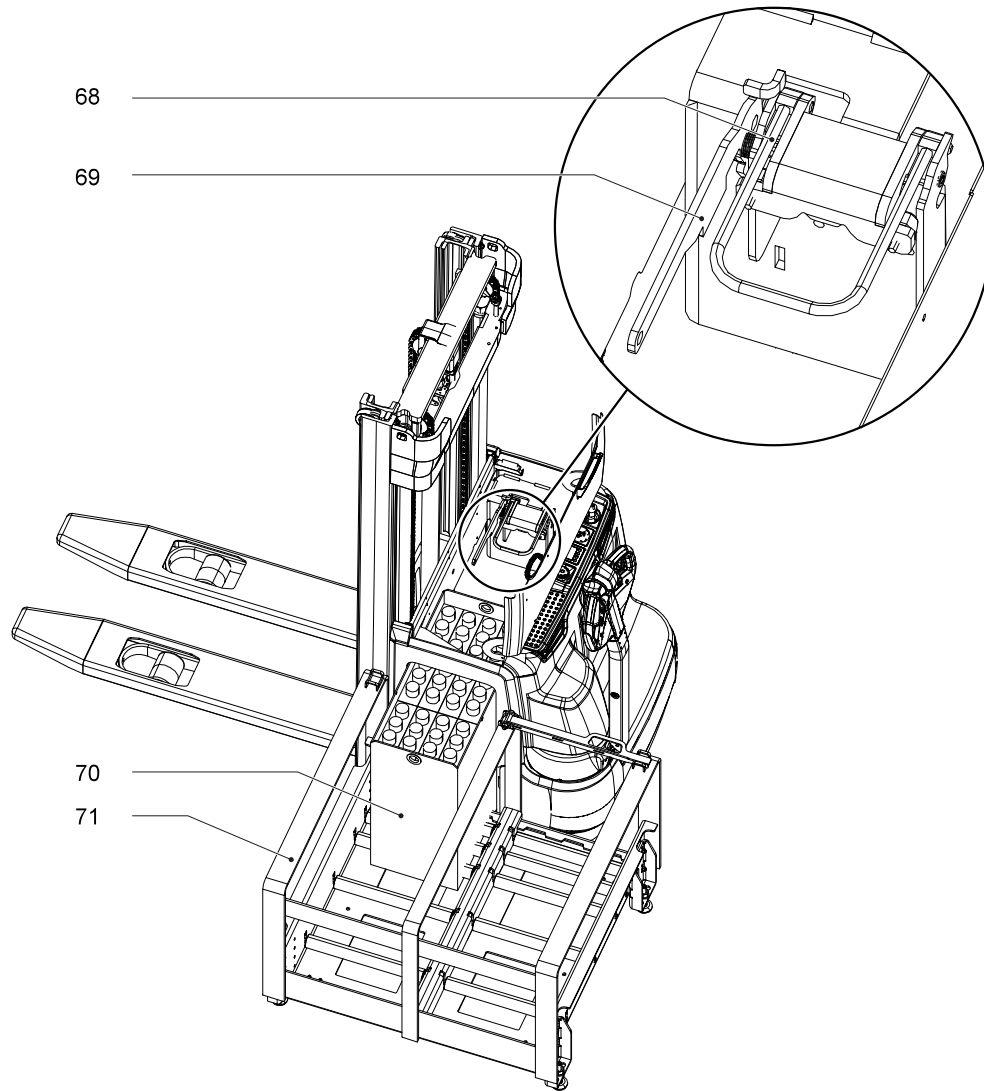
→ Lateral battery removal is an option only.

⚠ CAUTION!

Trapping hazard

Trapping hazard when removing and installing the battery.

▶ When removing and installing the battery do not put your hands between the battery and the chassis.



Removing the battery

Requirements

- Park the truck securely, see page 118.
- Expose the battery, see page 77.

Tools and Material Required

- Battery replacement station (71)/trolley

5.2.3 Instructions for disposal

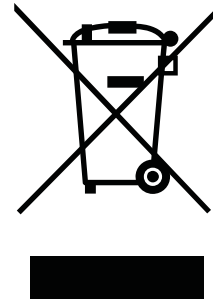
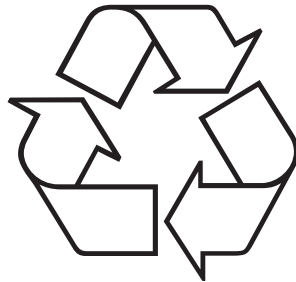
NOTICE

Lithium-ion batteries must be disposed of in accordance with the relevant national environmental protection regulations.

► For lithium-ion battery disposal, contact the manufacturer's customer service department.

Used cells and lithium-ion batteries are recyclable economic goods. In accordance with the marking showing a crossed-out waste bin, these lithium-ion batteries may not be disposed of as domestic waste.

Return or recycling of batteries must be ensured in accordance with the Battery Directive 2006/66/EG, for example.



Used lithium-ion batteries must be treated as hazardous waste.

Lithium-ion batteries marked with the recycling symbol and the sign showing a crossed-out waste bin must not be disposed of with ordinary household waste.

Buy-back terms and type of recycling are to be agreed with the manufacturer.

5.2.4 Opening the Battery

⚠ WARNING!

Do not open the battery!

5.2.5 Shipping information

The Jungheinrich lithium-ion battery is a hazardous material. The applicable ADR regulations must be observed during transport.

- ➔ ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
- ➔ If in doubt, contact the manufacturer's customer service department.

A modular lithium-ion battery fixed in the truck can be transported without special precautions.

5.8 Battery removal and installation

The lithium-ion battery is not intended to be removed by the owner.

- In the case of questions, contact the manufacturer's customer service department.

2.1 Available display elements and controls

The truck may be equipped with the following control and display elements depending on the equipment:

Access systems with key

- Charge status indicator and key switch (●)
- 2-inch display and key switch (○)

Keyless access systems

- 2-inch display with softkey (○)
- 2-inch display and number field (○)
- 2-inch display and transponder reader (○)

Additional display elements

- 6-inch display: Trucks with 2-inch display can be additionally equipped with the 6-inch display (○)

→ The charge status indicator and key switch are part of the standard equipment of the truck. Additional controls and display elements are outlined in the section “Optional equipment”, see page 165.

→ Trucks that are equipped with the optional fleet management system are released with a transponder. Further information on the transponders and on how to operate the fleet management system can be found in the relevant operating instructions.

Travel visibility

The operator must look in the direction of travel and must always have a clear view of the route ahead. If the truck is carrying loads that affect visibility, the truck must travel against the load direction. If this is not possible, a second person must walk alongside the truck as a lookout to observe the travel route while maintaining eye contact with the operator. Proceed only at walking pace and with particular care. Stop the truck as soon as you lose eye contact.

Negotiating lifts, loading ramps and docks

Lifts may only be negotiated if they have sufficient capacity, are suitable for driving on and authorised for truck traffic by the owner. The driver must satisfy himself of the above before entering these areas. The truck must enter lifts with the load in front and must take up a position which does not allow it to come into contact with the walls of the lift shaft. Persons riding in the lift with the forklift truck must only enter the lift after the truck has come to a rest and must leave the lift before the truck. The driver must ensure that the loading ramp / dock cannot move or come loose during loading / unloading.

Type of loads to be carried

WARNING!

Risk of injury from falling loads

Low or small item loads moved above the mast protection pane or grille (○) and protruding over the load backrest can fall, endangering the operator and truck.

- ▶ Secure low or small item loads protruding over the load backrest, e.g. by wrapping them in film.

The operator must make sure that the load is in a satisfactory condition. Loads must always be positioned safely and carefully. Use suitable precautions to prevent parts of the load from tipping or falling down. Prevent liquid loads from sloshing out.

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4.4.2 Changing direction during travel

⚠ CAUTION!

Danger when changing direction during travel

Changing direction during travel causes the truck to decelerate sharply. When the truck changes direction, it can start travelling at high speed in the opposite direction unless the travel switch is released in time.

- ▶ After setting off in the opposite direction, apply the travel switch gently or not at all.
- ▶ Do not perform any sudden steering operations.
- ▶ Always face in the direction of travel.
- ▶ Maintain an adequate overview of the route you are travelling.

Changing direction during travel

Procedure

- Set the travel switch (98) to the opposite direction while travelling.

The truck decelerates until it starts to travel in the opposite direction.

4.7.2.1 Raising the support arms with the “Double-click raise” function (○)

⚠ WARNING!

Risk of accidents while lifting with the automatic lifting function

Damage can occur from the use of the automatic lifting function in the hazardous area of the truck, since this function cannot be cancelled by releasing a control.

- ▶ Be particularly careful when activating automatic lifting.
 - ▶ Avoid activating automatic lifting accidentally. Do not press the operating buttons multiple times in quick succession if you do not wish automatic lifting to be activated.
 - ▶ Press the emergency disconnect switch in an emergency.
-

The “Double-click lift” function enables the continuous lifting of the support arms to the maximum lift height after being triggered by the operator.

Requirements

- Truck operational, see page 116.

Procedure

- Press the “Raise support arms” button (95) twice in quick succession.

The support arms are raised continuously up to the maximum lift height.

- When the emergency disconnect switch is actuated or the platform is vacated, the automatic raise function is interrupted.
- The status and usage of automatic lifting are shown in the display unit, see page 173.

4.8.7 Depositing a load

⚠ CAUTION!

Loads must not be deposited on travel or escape routes, in front of safety mechanisms or plant equipment that must be accessible at all times.

NOTICE

Avoid depositing the load suddenly to avoid damaging the load, load handler and the rack.

Requirements

- Storage location suitable for storing the load.

Procedure

- Drive carefully up to the storage location.
- Lowers the load handler.
- Lower the load handler so that the load handler is clear of the load (see page 135).
- Carefully remove the load handler from the pallet.

The load is deposited.

Soft landing (○)

The "soft landing" feature reduces the lowering speed of the load just before it reaches the ground (approx. 100 - 300 mm).

6.2 Emergency feature of the electric steering (○)

WARNING!


Report any defects immediately to your supervisor.

Tag out the defective truck and take it out of service.



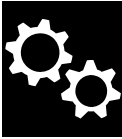



Return the truck to service only when you have identified and rectified the fault.

The drive motor contains mechanical stops that allow the truck to be steered should the electric steering fail.





Procedure

-  In the event that the electric steering does fail, only a limited steer angle will be available and operation of the steering will be much harder than usual.

The truck should be steered as normal, bearing in mind the limited steer angle and difficult operation.

Symbol	Meaning	Function
	Storage Support	Activates or deactivates the storage support.
	ECO mode	Activates or deactivates ECO mode.
	Settings	Opens the truck settings.
	Load centre	Switches through the various load centre presets.
	Transmitter	Mutes the transmitter or restores sound.
	Rack type preselection	Switches through the preset rack types.

Settings menu

Symbol	Meaning	Function
	Back	Cancels the current procedure and returns to the previous menu.
	Edit access code/ transponder	To add or delete access codes or transponders.
	Changing the Set-up Code	To change the set-up code and to activate the keypad or the transponder reader.
	Log-in History	Shows the log-in history in chronological order.

1.7.6 Displaying the Log-in Process

The use of the last different access codes is displayed during the log-in process. The last log-in is displayed first.

- If multiple access codes are logged as being displayable simultaneously, the display area can be moved by scrolling forward or back.

Requirements

- The truck is switched on, see page 177.

Procedure

- Press the key below the "Settings" symbol (135).
- Press the key below the "Log-in process" symbol (143).
- Enter the set-up code using the keys below the display unit (101).

The set-up code entered is shown as filled-in circles.

- To scroll forward, press the button under the "Down selection" symbol (142) as many times as necessary.

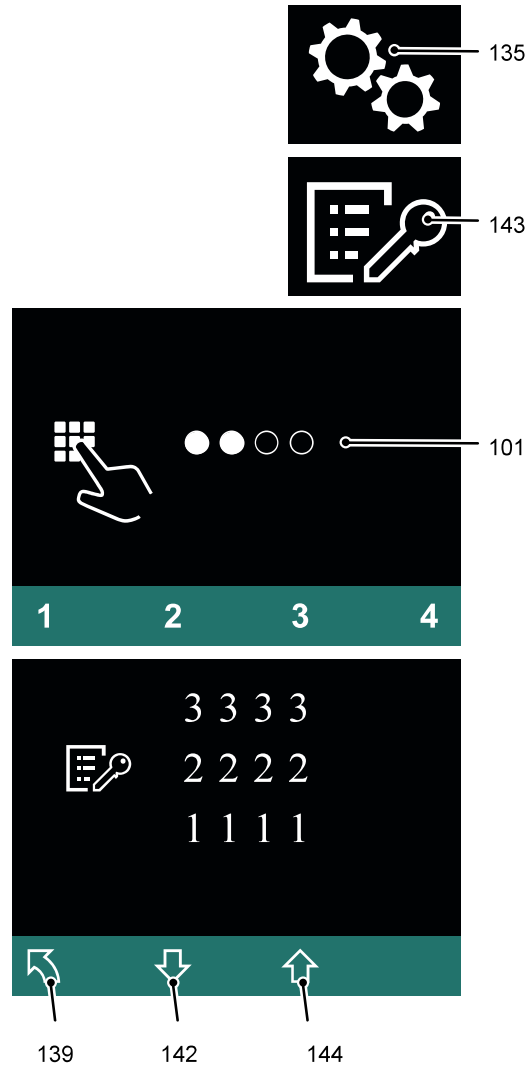
The display area moves: Additional earlier log-ins are displayed.

- To scroll back, press the button under the "Up selection" symbol (144) as many times as necessary.

The display area moves: More recent log-ins are displayed.

- To return to the main menu, press the key below the "Back" symbol (139).

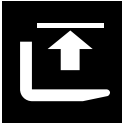
The log-in process is displayed.



2.4 Lift Limit (○)

On trucks with lift limit, the load fork stops automatically when the lift height selected by the operating company is reached during a lifting operation.

Display symbols

Symbol	Meaning	Colour	Function
	Lift height limit reached	Yellow	The mast-lift lift limit has been reached. The lift limit cannot be circumvented.
	Lift height limit reached	Flashing green	The mast-lift lift limit has been reached. The lift limit can be circumvented.

Circumventing the lift limit

On trucks with the corresponding specification, the automatic lift limit can be bypassed. To do so, proceed as follows:

- Raise the load fork to the point where the lift limit results in automatic cut-off and release the "raise load fork" button.
- Press the "raise load fork" button twice in quick succession and hold (double click).

The load fork is raised beyond the lift limit.

→ In this case, it is possible to select various lift heights.

3.3.6 Displaying the Log-in Process

The use of the last different access codes is displayed during the log-in process. The last log-in is displayed first.

- If multiple access codes are logged as being displayable simultaneously, the display area can be moved by scrolling forward or back.

Requirements

- The truck is switched on, see page 197.

Procedure

- Press the key below the "Settings" symbol (135).
- Press the key below the "Log-in process" symbol (143).
- Enter the set-up code using the keypad (99).

The set-up code entered is shown in the display unit (101) as filled-in circles.

- To scroll forward, press the button under the "Down selection" symbol (142) as many times as necessary.

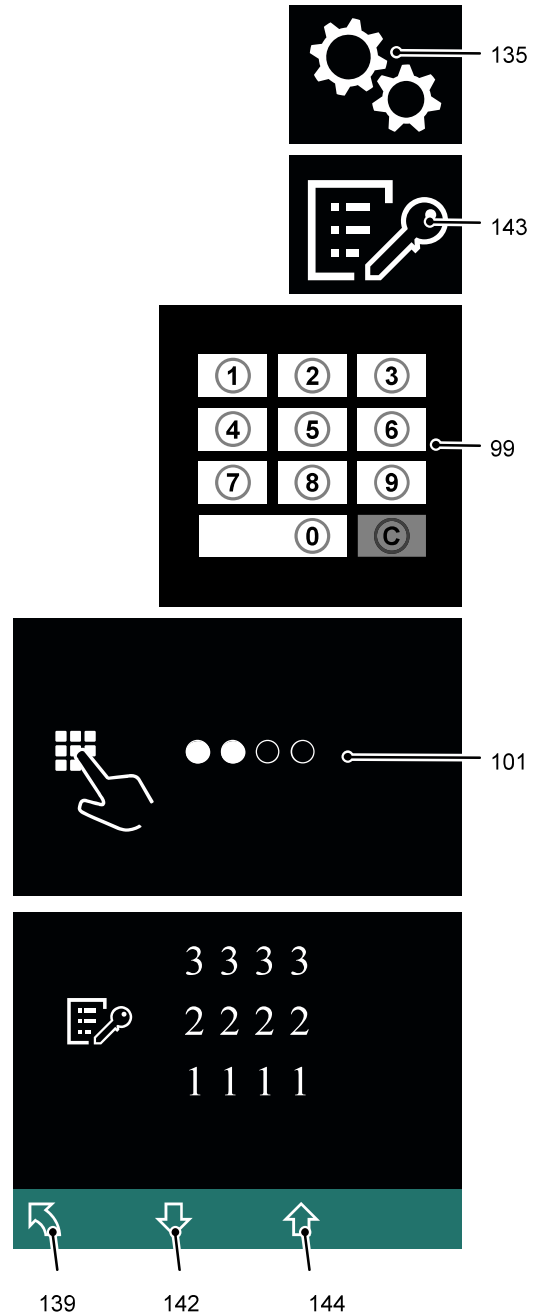
The display area moves: Additional earlier log-ins are displayed.

- To scroll back, press the button under the "Up selection" symbol (144) as many times as necessary.

The display area moves: More recent log-ins are displayed.

- To return to the main menu, press the key below the "Back" symbol (139).

The log-in process is displayed.



3 Maintenance Safety Regulations

Maintenance and repair personnel

- The manufacturer has a customer service department specially trained for these tasks. A maintenance contract with the manufacturer will support trouble-free operation.

Truck maintenance, repair work and changing of parts requiring replacement must only be carried out by specialist personnel. The activities to be carried out are divided into the following target groups.

Customer Services

Customer Services are specially trained in the use of the truck and are able to carry out maintenance and repairs independently. Customer Services are aware of the relevant standards, guidelines and safety regulations as well as potential risks.

Operating company

The maintenance personal of the operating company has the technical expertise and experience to perform the activities in the maintenance check list for the operating company. The maintenance and repair work to be performed by the operating company are also written down, see page 221.

Settings

When repairing or replacing hydraulic, electric or electronic components or assemblies, always note the truck-specific settings.

3.1 Welding

WARNING!

Fire hazard

Welding operations on the truck can damage or ignite components.

- ▶ Do not performing welding operations on the truck.
-


5 Maintenance and repairs

5.1 Preparing the truck for maintenance and repairs

WARNING!

Risk of accidents when working under the load handler and lift truck

- ▶ When working under a raised load handler or a raised truck, secure them to prevent the truck from lowering, tipping or sliding away.
 - ▶ When raising the truck, follow the instructions, see page 61. When working on the parking brake, prevent the truck from accidentally rolling away (e.g. with wedges).
-

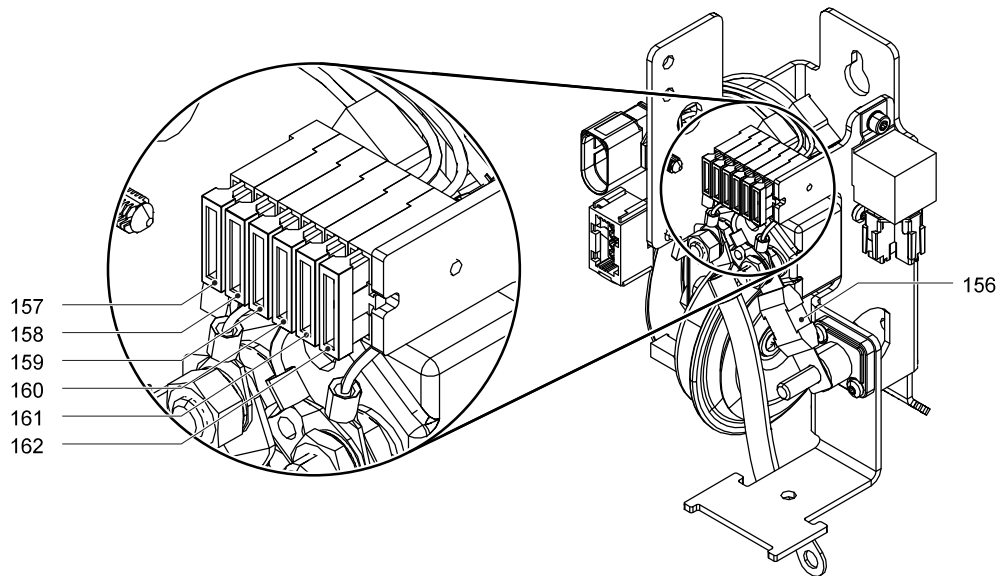
 Before carrying out work, note the safety regulations, see page 211.

All necessary safety measures must be taken to avoid accidents when carrying out maintenance and repairs. The following preparations must be made:

Procedure

- Park the truck securely, see page 118.
- Disconnect the battery to prevent the truck from being switched on accidentally.

5.8 Checking electrical fuses



Item	Description	Protection	Rating (A)
156	F50	Main fuse	300
157	4F9	Radio data option	4
158	9F17	Not used	4
159	9F22	Overall control circuit fuse	4
160	6F1	Electromechanical components	2
161	F17	Overall control circuit fuse	4
162	F18	Control fuse for the battery discharge indicator	4

Checking fuses

Requirements

- Truck prepared for maintenance and repair work, see page 221.
- Front panel removed, see page 222.

Procedure

- Check the fuse ratings against the table and their condition, and replace if necessary.

The fuses have been checked.

1.1.2.2 Optional equipment

The following points must be checked:

Standard on-board charger

Battery charger

The mains plug and mains cable for damage

Optional equipment

Chassis/structure

The function of optional equipment such as mirrors, storage compartments, grips, windscreen wipers and washing systems, etc. and for damage

Strobe light / beacon

Electrical system

Strobe light/warning beacon for function and damage

On-board charger 35A

Battery charger

The mains plug and mains cable for damage

Daytime travel light / lighting

Electrical system

The function of the lighting and for damage

Lead-acid battery, international

Power supply

Battery and battery components for damage

Battery cable connections are secure

Warning zone lights, red/blue

Electrical system

The function of the lighting and for damage

Lead-acid battery

Power supply

Battery cable connections are secure

2.1.1.2 Optional equipment

Lead-acid battery, international

Power supply
Correct the battery acid level using demineralised water.

Lead-acid battery

Power supply
Correct the battery acid level using demineralised water.

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