EJE 220/225/230/235/220r/225r

05.07

Operating instructions

en-GB

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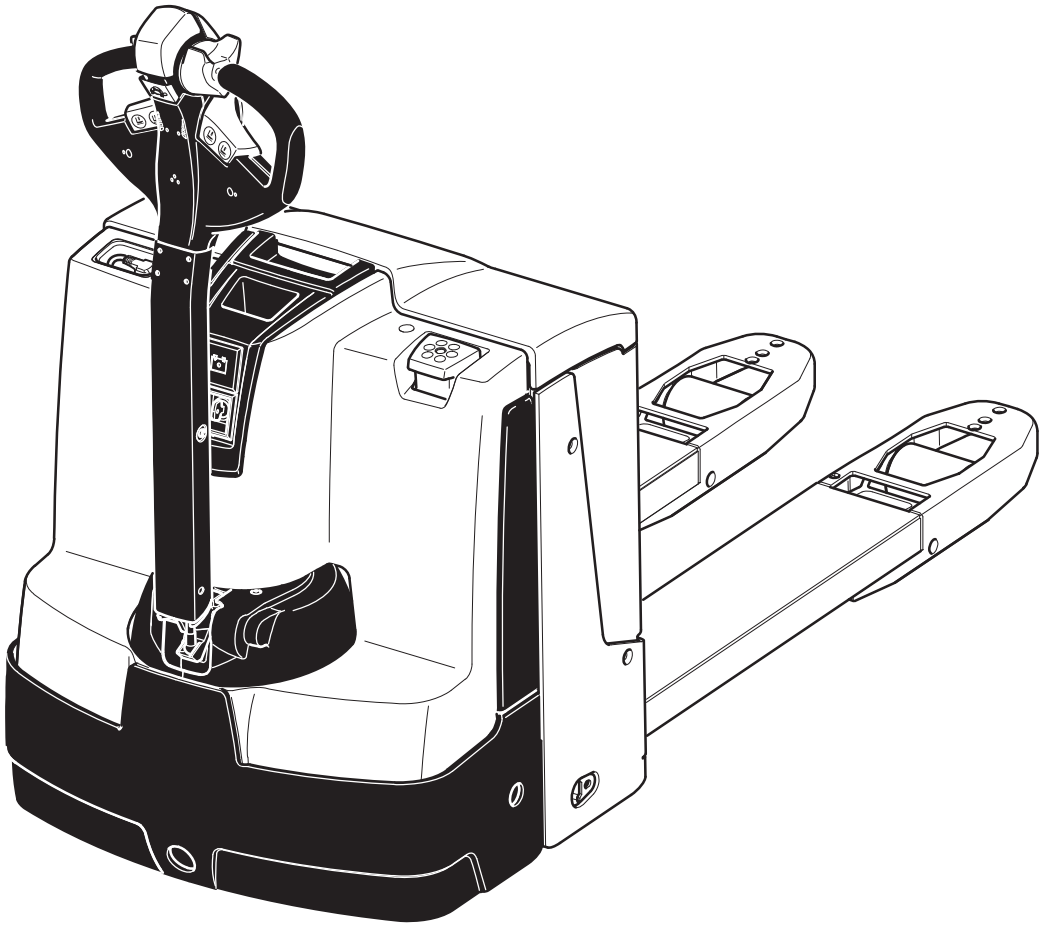
EJE 220
EJE 225
EJE 230
EJE 235
EJE 220r
EJE 225r



JUNGHEINRICH

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 88.

The following operations are in accordance with regulations and are permitted:
- Lifting and lowering of loads.
- Stacking and retrieving loads.
- Transporting lowered loads.

The following operations are prohibited:
- Carrying and lifting passengers.
- Pushing or pulling loads.
- Transverse lifting of long loads.

4 Technical Specifications

The technical specifications comply with the German "Industrial Truck Data Sheet" Guidelines.
Technical modifications and additions reserved.

4.1 Performance data

	Model	EJE 220	EJE 225	EJE 230	EJE 235	
Q	Rated capacity	2000	2500	3000	3500	kg
D	Load centre distance for standard load handler length *)	600	600	600	600	mm
	Travel speed with / without rated load	6.0 / 6.0	6.0 / 6.0	6.0 / 6.0	6.0 / 6.0	km/h
	Lift speed with / without rated load	0.04/0.06	0.03/0.06	0.02/0.06	0.02/0.06	m/s
	Lowering speed with / without rated load	0.05/0.05	0.05/0.05	0.05/0.05	0.05/0.05	m/s
	Max. gradeability (5 min rating) with / without rated load	10 / 20	8 / 20	6 / 20	6 / 20	%

*) For longer load handler lengths the load centre of gravity is at the centre of the load handler

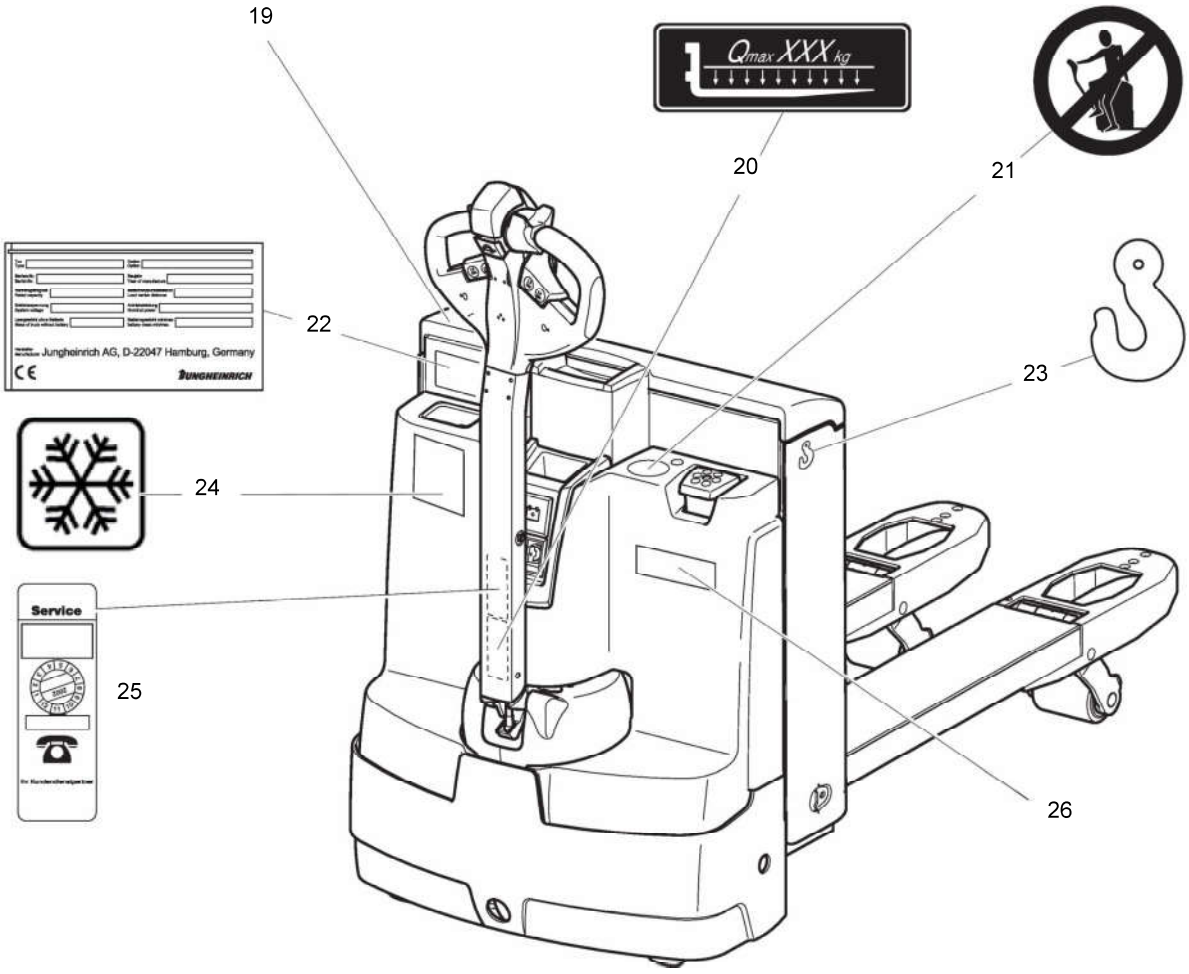
	Model	EJE 220r	EJE 225r	
Q	Rated capacity	2,000	2500	kg
c	Load centre distance for standard load handler length *)	600	600	mm
	Travel speed with / without rated load	6.0 / 6.0	6.0 / 6.0	km/h
	Lift speed with / without rated load	0.04/0.06	0.03/0.06	m/s
	Lowering speed with / without rated load	0.05/0.05	0.05/0.05	m/s
	Max. gradeability (5 min rating) with / without rated load	10 / 20	8 / 20	%

*) For longer load handler lengths the load centre of gravity is at the centre of the load handler

5 Identification Points and Data Plates

Warnings and notices such as capacity charts, strap points and data plates must be legible at all times. Replace if necessary.

5.1 Indication Points



Item	Component
19	Serial number
20	Capacity Qmax
21	Prohibition plate: “No passengers”
22	Truck data plate
23	Strap point for crane lifting
24	Cold store (○)
25	Inspection plaque (○)
26	Model description

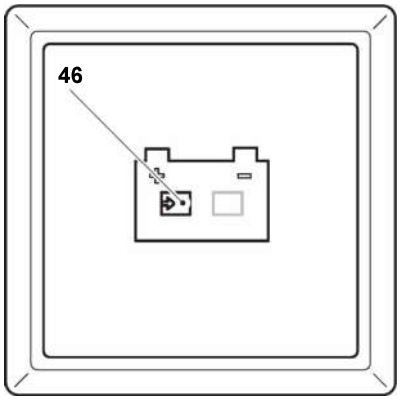
2 Battery types

Depending on the model, the truck will be supplied with different battery types. The following table shows which combinations are included as standard:

EJE 220 / 225

Battery tray	Battery type	Weight (kg)	Dimensions (mm)
M	24 V - XFC 158 Ah	220	623X211X627
	24 V - XFC 158 Ah	180	623X211X627
	24 V - 2PzV 160 Ah wf Exide	180	624X212X537
	24 V - 2PzW 160 Ah	180	624X212X537
	24 V - 2PzV 174 Ah wf Hawker	183	623X211X537
	24 V - 2PzS 180 Ah	180	624X212X537
	24 V - 2PzM 180 Ah	180	621X209X537
	24 V - 2PzV 200 Ah wf Exide	215	621X209X627
	24 V - 2PzV 220 Ah wf Hawker	218	623X211X627
	24 V - 2PzW 220 Ah	220	624X212X627
	24 V - 2PzS 250 Ah	220	624X212X627
	24 V - 2PzS 250 Ah	220	621X209X627
	24 V - 2PzM 250 Ah	222	621X209X625
	24 V - LIB 110 Ah	210	624X207X627
L	24 V - 3PzV 300 Ah wf Exide	290	621X281X627
	24 V - XFC 316 Ah	288	624X284X627
	24 V - 3PzV 330 Ah wf Hawker	300	623X283X627
	24 V - 3PzW 330 Ah	288	624X284X627
	24 V - 3PzS 345 Ah Lib. Silver	282	621X284X627
	24 V - 3PzS 375 Ah	288	624X284X627
	24 V - 3PzS 375 Ah Lib. Silver	288	621X281X627
	24 V - 3PzM 375 Ah	299	621X281X627
	24 V - LIB 240 Ah SBE	288	624X284X683
	24 V - LIB 360 Ah SBE	288	624X284X683

Optionally, the truck can be fitted with a lithium-ion battery, see "Li-Ion battery 24V - 240Ah / 360Ah" operating instructions.

LED display 

(46)

Green LED (charge status)	
Lit	Charging complete, battery full. (Charge interval, float or compensation charge).
Flashes slowly	Charging.
Rapid flash	Display at beginning of charge or after setting a new characteristic curve. Number of flash pulses corresponds to the characteristic curve set.

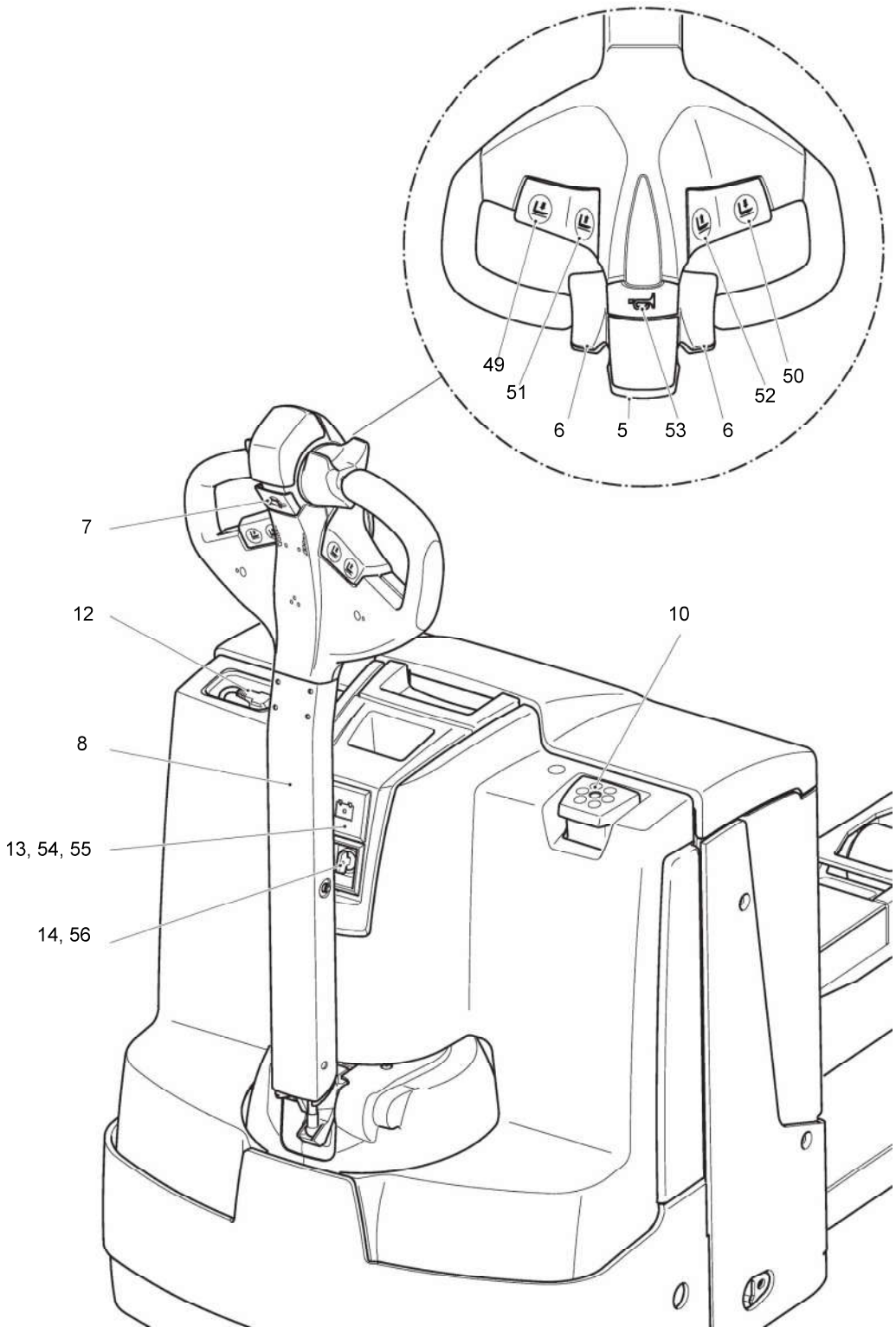
Red LED (fault)	
Lit	Overtemperature. Charging is interrupted.
Flashes slowly	Safety charging time exceeded. Charging is cancelled. Mains must be disconnected for charging to restart.
Rapid flash	Invalid characteristic curve setting.

Compensation charge

The compensation charge starts automatically when charging is complete.

Partial charging

The charger is designed to automatically adapt to partially charged batteries. This keeps battery wear to a minimum.


49
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14, 56

3.5 Parking the truck securely

⚠ WARNING!

An unsecured truck can cause accidents

Parking the truck on an incline, without the brakes applied or with a raised load or load handler is dangerous and is strictly prohibited.

▶ Park the truck on a level surface. In special cases the truck may need to be secured with wedges.

▶ Fully lower the load handler.

▶ Select a place to park where no other people are at risk of injury from the lowered load handler.

▶ If the brakes are not working, place wedges underneath the wheels of the truck to prevent it from moving.

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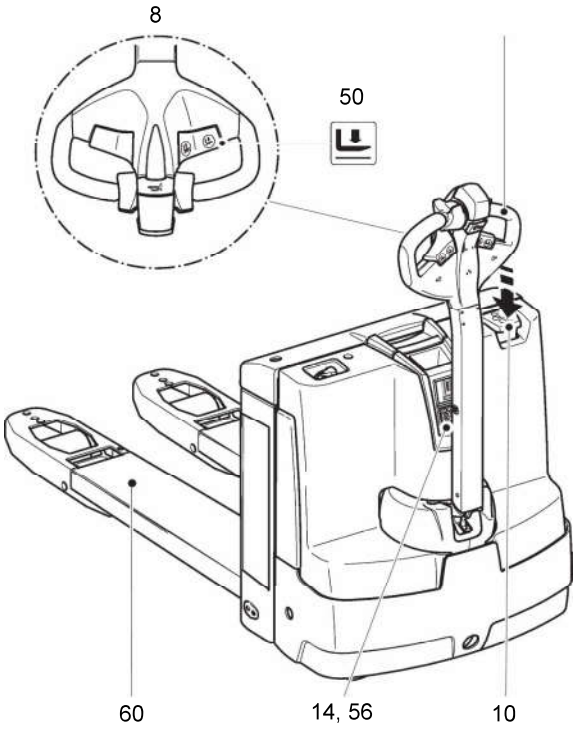
Park the truck securely

Procedure

- Park the truck on a level surface.
- Fully lower the load handler (60):
  - Press the lower button (50).
- Using the tiller (8) set the drive wheel to the straight ahead position.
- Switch off the truck, to do this:
  - Turn the key in the key switch (14) anti-clockwise as far as it will go. Remove the key from the key switch (14).
  - For CanCode (56) press the O key (○).
  - Press the red button on the ISM access module (○).
- Press the Emergency Disconnect (10).



The truck is parked.

4.6 Steering

Procedure

- Move the tiller (8) to the left or right.

The truck is steered in the required direction.

4.7 Brakes

⚠ WARNING!

Accident risk while braking

The truck's braking response depends largely on the floor condition and the type of surface. The truck's braking distance increases when the ground is wet or dirty.

▶The operator must be aware of floor conditions and take them into account when braking.

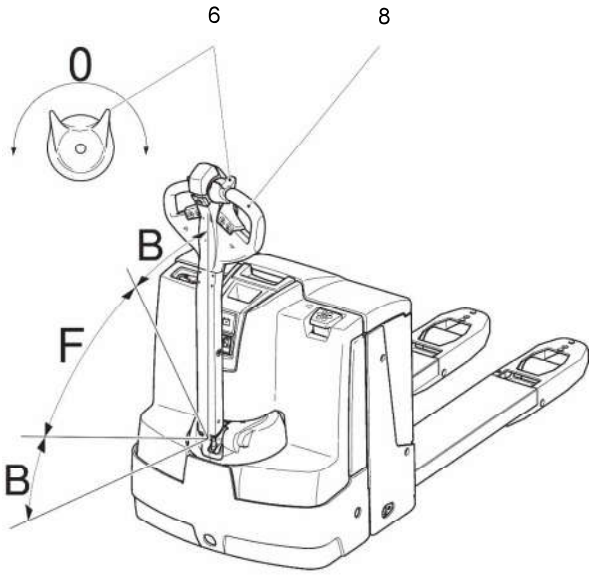
▶Brake with care to prevent the load from slipping.

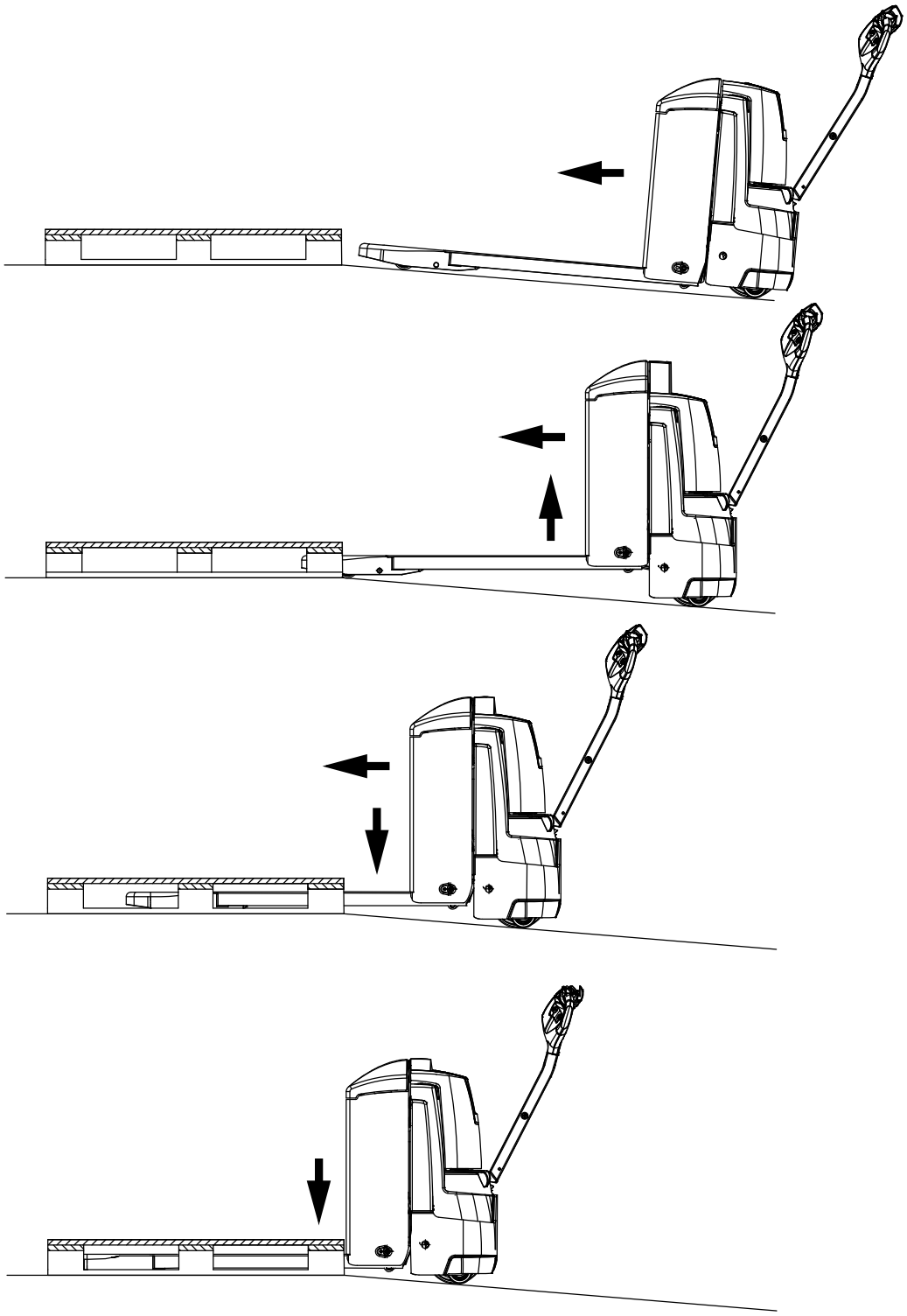
⚠ CAUTION!

▶In hazardous situations, move the tiller to the brake position or press the emergency disconnect switch.

The truck can brake in two ways:

– With the service brake (brake zone B).
– By regenerative braking (coasting brake).





Release the brake

Tools and Material Required

– Two M5x45 screws
– Spanner

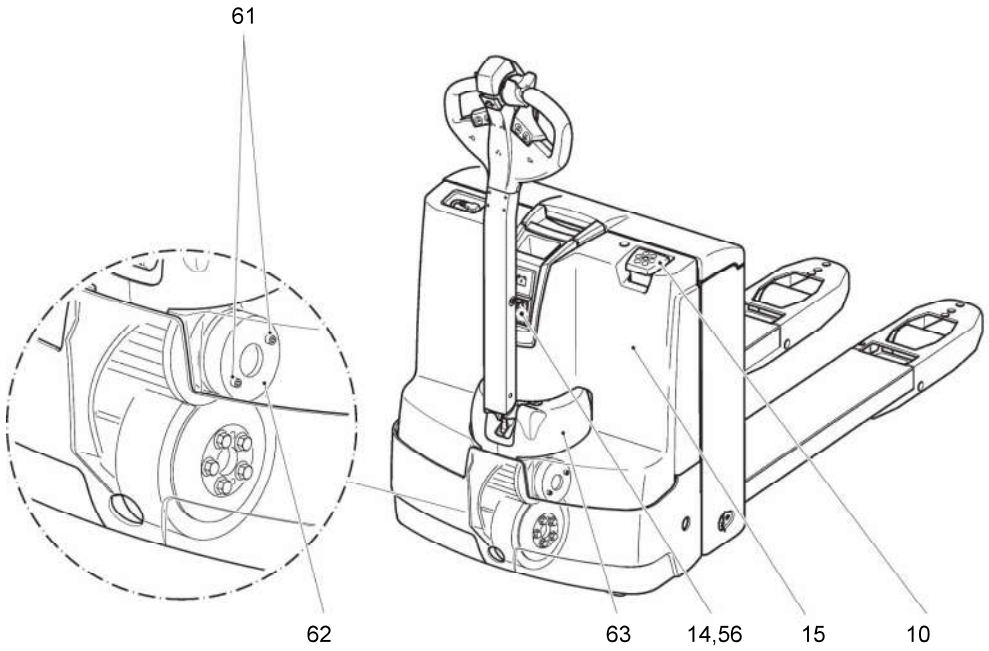
Procedure

- Switch off the truck, to do this:
  - Turn the key in the key switch (14) anti-clockwise as far as it will go. Remove the key from the key switch (14).
  - Press button O on CanCode (56).
  - Press the red button on the ISM access module(○).
- Press the emergency disconnect switch (10).
- Remove the front panel (15), see page 159.
- Remove the right-hand drive panel (63), see page 160.
- Use wedges to prevent the truck from moving.
- Insert two M5x45 screws (61) as far as they will go in the brake (62) and lift up the anchor plate.

➔ The two M5x45 screws (61) are used to tension (unlock) the compression springs which activate the parking brake, so that the truck does not brake when de-energised.

- Remove the wedges.

The brake is now released. The truck can be moved.

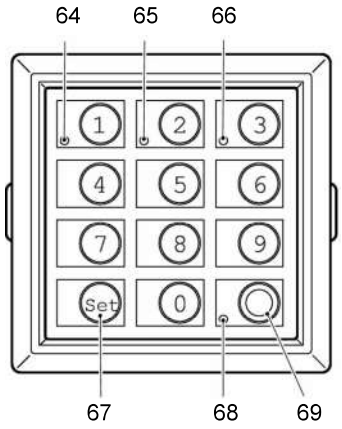


Activating the brake

Procedure

- Use wedges to prevent the truck from moving.
- Remove the two M5x45 screws (61) from the brake (62).

7.3.5 Add operator code



Requirements

– To prepare the truck for operation, see page 108.

Procedure

- Press the O key (69).
- Enter the valid master code with the digit keys.
  When you enter the valid master code the LED (68) flashes green.
- Enter the parameters 0-0-1 with the digit keys.
- Confirm with the SET key (67).
  The LEDs (65,68) flash green.
- Enter the new user code with the digit keys.

➔ The length (4-6 digit) of the new user code must be the same as that of the previously entered master code. The new user code must also be different from the existing master code.

- Confirm with the SET key (67).
  The LEDs (66,68) flash green.
- Enter the new user code again with the digit keys.
- Confirm with the SET key (67).
  Wait until the LED (68) flashes green. The setting is saved.
- Press the O key (69).
  The truck is switched off and the LED (68) is lit red.
- Check the new user code:
  - Switch on the truck with the new user code, see page 108
    After entering the valid user code the LED (68) lights up green, the travel program setting is shown by the illumination of the corresponding LEDs (64,65,66) and the truck is switched on.
  - Press the O key (69).

  The truck is switched off and the LED (68) is lit red.

7.3.11 Assigning the travel program

The travel programs are fixed to the user code and can be released or blocked with a configuration code. The configuration code can also be used to assign a starting travel program to each user code.

The starting travel program is the travel program that is activated when the truck is switched on and is displayed by the (64,65,66) LEDs.
LED (64) lit = travel program 1 activated
LED (65) lit = travel program 2 activated
LED (66) lit = travel program 3 activated

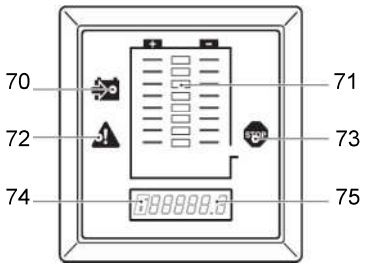
The configuration code is four-digit and is comprised as follows:
- 1st digit: Specifies the authorisation for travel program 1:
- 2nd digit: Specifies the authorisation for travel program 2:
- 3rd digit: Specifies the authorisation for travel program 3:
- 4. digit: Specifying the starting travel program

When you add or change a user code all travel programs are enabled, the starting travel program is travel program 2.

7.7 CanDis Display Instrument (○)

The instrument indicates:

70	Battery charge display (on board charger only)
71	LED bars for battery charge status
72	"Warning" symbol (yellow), Battery charge recommended
73	"Stop" symbol (red); lift cut-off, Battery charge essential
74	No symbol when battery type set to normal or enhanced performance wet cell battery "T" symbol appears permanently during operation when battery type set to maintenance-free "T" symbol flashes during operation when battery type set to special, such as XFC
75	6 digit LCD: – Service hours – Parameter entry and changes – Event messages



Charge status display

The charge status is shown through eight LED bars.

Eight lit LED bars correspond to a fully charged battery. One lit LED bar corresponds to an almost discharged battery.

When the "Attention" symbol (72) starts to flash, it is advisable to charge the battery.

If the "Attention" symbol (72) is lit steadily, the battery must be charged.

If the "Stop" symbol (73) is lit steadily, the battery must be **charged** immediately. If activated, the discharge monitor function is applied in this case, see page 132.

The point at which the "Attention" (72) and "Stop" (73) symbols start to light up differs depending on the battery type.

7.10.4 Adding a new access code

Requirements

– The truck is switched on, see page 139.

Procedure

- Press the key below the "Settings" symbol (85).
- Press the key below the "Edit access code" symbol (90).

  The set-up code is requested.

- Enter the set-up code using the keys below the display unit (55).

  All the access codes are displayed.

- Press the key below the "Add" symbol (91).
- Enter the new access code using the keys below the display unit (55).

➔ The new access code must be different from existing access codes.

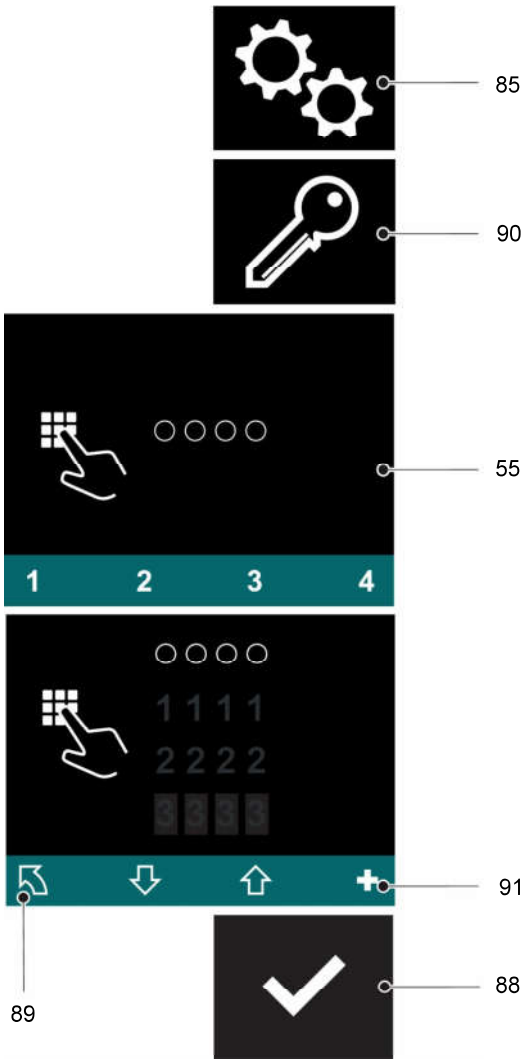
- Press the key below the "Confirm" symbol (88).

  The new access code is displayed.

➔ If the new access code has been entered incorrectly, delete it, see page 142, and add an access code again.

To return to the main menu, press the key below the "Back" symbol (89).

A new access code has been added.



⚠ WARNING!

Improper handling of oils can be hazardous

Oils (chain spray / hydraulic oil) are flammable and poisonous.

- ▶ Dispose of used oils in accordance with regulations. Store used oil safely until it can be disposed of in accordance with regulations.
- ▶ Do not spill oil.
- ▶ Spilled oils must be removed immediately with an appropriate bonding agent.
- ▶ The mixture consisting of the bonding agent and oil must be disposed of in accordance with regulations.
- ▶ Observe national regulations when handling oils.
- ▶ Wear safety gloves when handling oils.
- ▶ Prevent oil from coming into contact with hot motor parts.
- ▶ Do not smoke when handling oil.
- ▶ Avoid contact and digestion. If you swallow oil do not induce vomiting but seek medical assistance immediately.
- ▶ Seek fresh air after breathing in oil fumes or vapours.
- ▶ If oil has come into contact with your skin, rinse your skin with water.
- ▶ If oil has come into contact with your eyes, rinse them with water and seek medical assistance immediately.
- ▶ Replace oil-soaked clothing and shoes immediately.

⚠ CAUTION!

Consumables and used parts are an environmental hazard

Used parts and consumables must be disposed of in accordance with the applicable environmental-protection regulations. Oil changes should be carried out by the manufacturer's customer service department, whose staff are specially trained for this task.

- ▶ Note the safety regulations when handling these materials.

4.6 Tightening the wheel nuts

The wheel nuts on the drive wheel must be retightened in accordance with the maintenance intervals indicated in the maintenance checklist, see page 171.

Tightening the wheel nuts

Requirements

– Prepare the truck for maintenance and repairs, see page 154.

Tools and Material Required

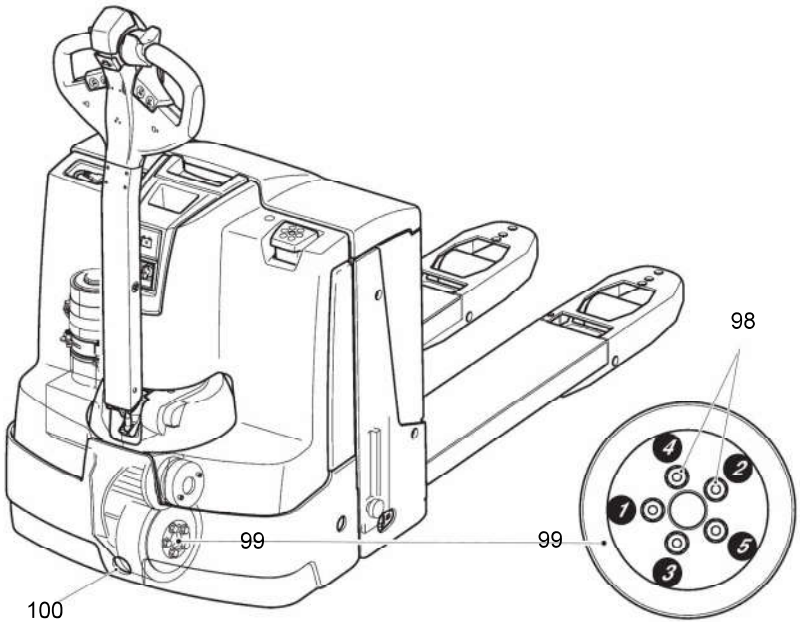
– Torque wrench

Procedure

- Position the drive wheel (99) so that the wheel nuts (98) can be pulled through the hole (100).
- Tighten all the wheel nuts (98) through the hole (100) in the impact buffer with the socket wrench.

  To do this, tighten the wheel nuts in the prescribed order.
  - First of all tighten to 10 Nm.
  - and then to 150 Nm.

The wheel nuts have now been tightened.



G Maintenance, Inspection and Changing of Maintenance Parts Requiring Replacement

⚠ WARNING!

Lack of maintenance can result in accidents

Failure to perform regular maintenance and inspections can lead to truck failure and poses a potential hazard to personnel and equipment.

▶Thorough and expert maintenance and inspections are among the most important requirements for the safe operation of the industrial truck.

NOTICE

The application conditions of an industrial truck have a considerable impact on component wear. The following service, inspection and replacement intervals are based on single-shift operation under normal operating conditions. The intervals must be reduced accordingly if more stringent requirements are placed on the equipment, e.g., use in conditions of extreme dust, temperature fluctuations or multiple shifts.

▶To prevent damage due to wear, the manufacturer recommends an on-site application analysis to agree on appropriate intervals.

The following chapter defines the tasks to be performed, the respective intervals to be observed and the maintenance parts for which replacement is recommended.

1.2.3 Maintenance parts

The manufacturer recommends the replacement of the following maintenance parts at the specified intervals.

1.2.3.1 Standard equipment

maintenance part	service hours	months
Hydraulic oil	2000	12
Hydraulic system - breather filter	2000	12
Transmission oil	10000	

1.2.3.2 Optional equipment

Cold-store application

maintenance part	service hours	months
Hydraulic oil	1000	12
Hydraulic oil additive	1000	12

2.2.3 Maintenance parts

The manufacturer recommends the replacement of the following maintenance parts at the specified intervals.

2.2.3.1 Standard equipment

maintenance part	service hours	months
Hydraulic oil	2000	12
Hydraulic system - breather filter	2000	12
Transmission oil	10000	

2.2.3.2 Optional equipment

Cold-store application

maintenance part	service hours	months
Hydraulic oil	1000	12
Hydraulic oil additive	1000	12

4 Maintenance Contents EJE 220/225

Issued on: 2019-04-24 12:00

4.1 Owner

To be performed every 50 service hours, but at least once a week.

4.1.1 Maintenance contents

4.1.1.1 Standard equipment

Hydraulic operations
Correct the hydraulic oil level.

Steering
Test the tiller return function.

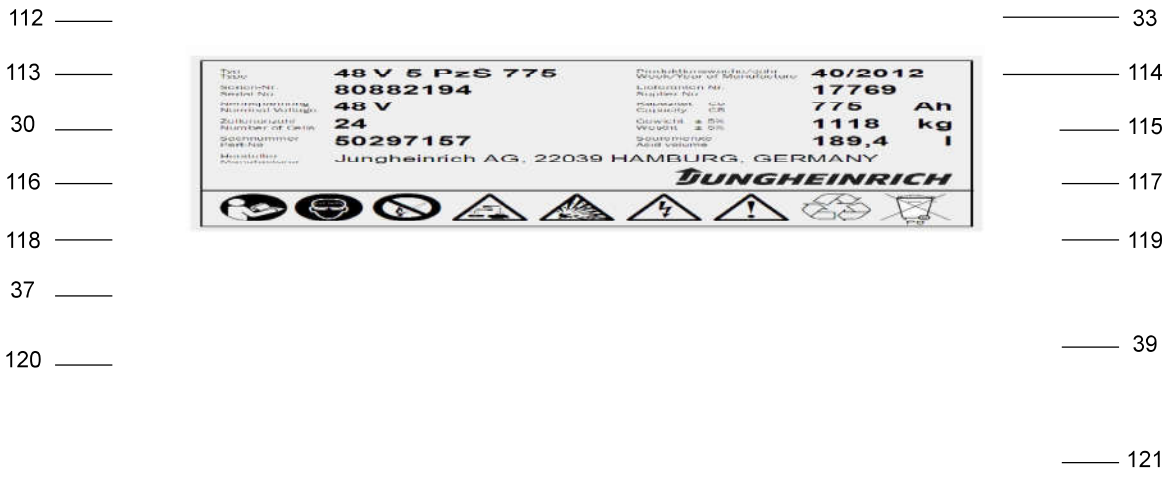
H Traction battery

1 Correct Use and Application

Failure to observe the operating instructions, carrying out repairs with non-original spare parts, tampering with the battery or using electrolyte additives will invalidate the warranty.

Observe the instructions for maintaining the safety rating during operation for batteries in accordance with Ex I and Ex II (see relevant certification).

2 Data plate



112	Model (battery name)
33	Production week / production year
113	Serial number
114	Supplier number
30	Rated voltage
115	Capacity
116	Number of cells
117	Weight
118	Part no.
119	Acid quantity
37	Manufacturer
39	Manufacturer's logo
120	CE mark (for batteries above 75 V only)
121	Safety instructions and warning information

5.2 Operation

5.2.1 Commissioning

Checks and operations to be performed before starting daily work

Procedure

- Make sure the battery is in physically good condition.
- Make sure the terminals are correct (positive to positive and negative to negative) and check that contacts on the battery terminal conducting system are secure.
- Check the M10 terminal screws of the conductors and connectors are secure and if necessary torque to 23 ±1 Nm.
- Charge the battery, see page 221.

The test is now complete.

5.2.2 Discharging the battery

To achieve an optimum useful life avoid operational discharges of more than 60% of nominal capacity.

If the battery is discharged during operation by more than 80% of rated capacity the useful life of the battery will reduce significantly. Fully or partially discharged batteries must be re-charged immediately and not left unattended.

5.2.3 Charging the battery

⚠ WARNING!

The gases produced during charging can cause explosions

The battery gives off a mixture of oxygen and hydrogen (electrolytic gas) during charging. Gassing is a chemical process. This gas mixture is highly explosive and must not be ignited.

- ▶Always disconnect the charger and truck before connecting or disconnecting the charger and battery.
- ▶The charger must be adapted to the battery in terms of voltage, charge capacity and battery technology.
- ▶Before charging, check all cables and plug connections for visible signs of damage.
- ▶Ventilate the room in which the truck is being charged.
- ▶Battery cell surfaces must remain exposed during charging in order to ensure sufficient ventilation, see truck operating instructions, chapter D, Charging the Battery.
- ▶Do not smoke and avoid naked flames when handling batteries.
- ▶Wherever an industrial truck is parked for charging there must be no inflammable material or consumables capable of creating sparks within a minimum distance of 2 m from the truck.
- ▶Fire protection equipment must be available.
- ▶Do not place any metallic objects on the battery.
- ▶Always follow the safety regulations of the battery and charger station manufacturers.