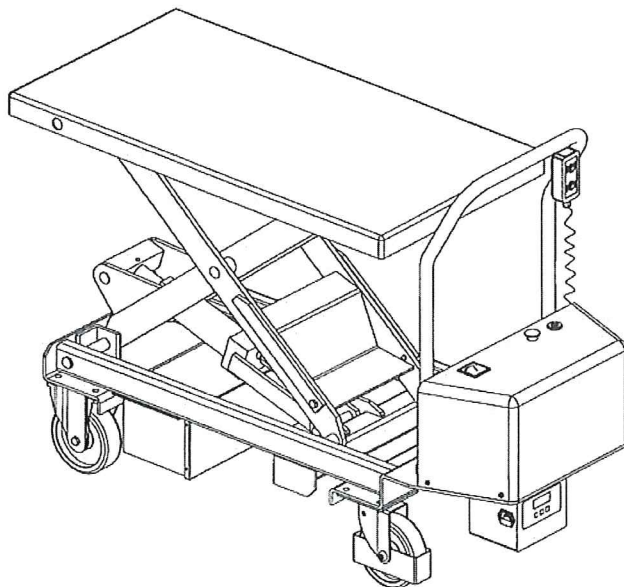


# ETF

## Operating Instructions

GB



# Foreword

The present operating instructions are designed to provide sufficient instruction for the safe operation of the material handling equipment. The information is presented in a precise and clear manner. The chapters are arranged by letter. Each chapter starts with page 1. The page reference consists of a chapter letter and a page number.

Example: Page B2 is the second page of chapter B.

The operating instructions contain information about different vehicle models. When operating and servicing the equipment, make sure that the text applies to your vehicle model.

Safety instructions and important explanations are indicated by the following icons:



Used before safety instructions which must be observed to avoid danger to personnel.



Used before notices which must be observed to avoid material damage.



Used before notices and explanations.



Used to indicate standard equipment.



Used to indicate optional equipment.

In the interest of ongoing development, the manufacturer reserves the right to incorporate modifications (without changing the basic characteristics of the equipment model) without necessarily updating the present operating instructions at the same time.

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# A Correct Use and Application

The lifting table described in the present operating instructions is designed to lift load units. Do not negotiate inclines.

It must be used, operated and serviced in accordance with the present instructions. All other types of use lie beyond the scope of application and can result in damage to personnel, the vehicle or property. In particular, avoid overloading with items that are too heavy or placed on one side. Make sure the maximum weight is not exceeded (the safety valve can only prevent overload during a lift cycle, it does not work if an excessive weight is placed on the table. The lifting table could become damaged and fail to work correctly). The maximum permissible load is stated on the data plate. The lifting table vehicle must not be used in areas at risk of fire or explosion, or which are threatened by corrosion or excessive dust.

The proprietor must ensure that the lifting table is used only for the purpose for which it is intended and that danger to life and limb of the user and third parties are excluded. The proprietor must ensure that all users have read and understood these operating instructions.

Failure to comply with the operating instructions shall invalidate the warranty. The same applies if improper work is carried out on the equipment by the customer or third parties without the permission of the manufacturer.

The attachment or installation of additional equipment affecting the lifting table's functionality requires the written approval of the manufacturer.

The lifting table may only be used by suitably trained personnel, who have demonstrated to the proprietor or his representative their competence in handling loads. Installation and operation shall take place only on level, secure surfaces.

The operator is responsible for the lifting table during the time it is in use. Do not use it to lift other people. The supervisor must be immediately informed of any damage or faults to the lifting table.

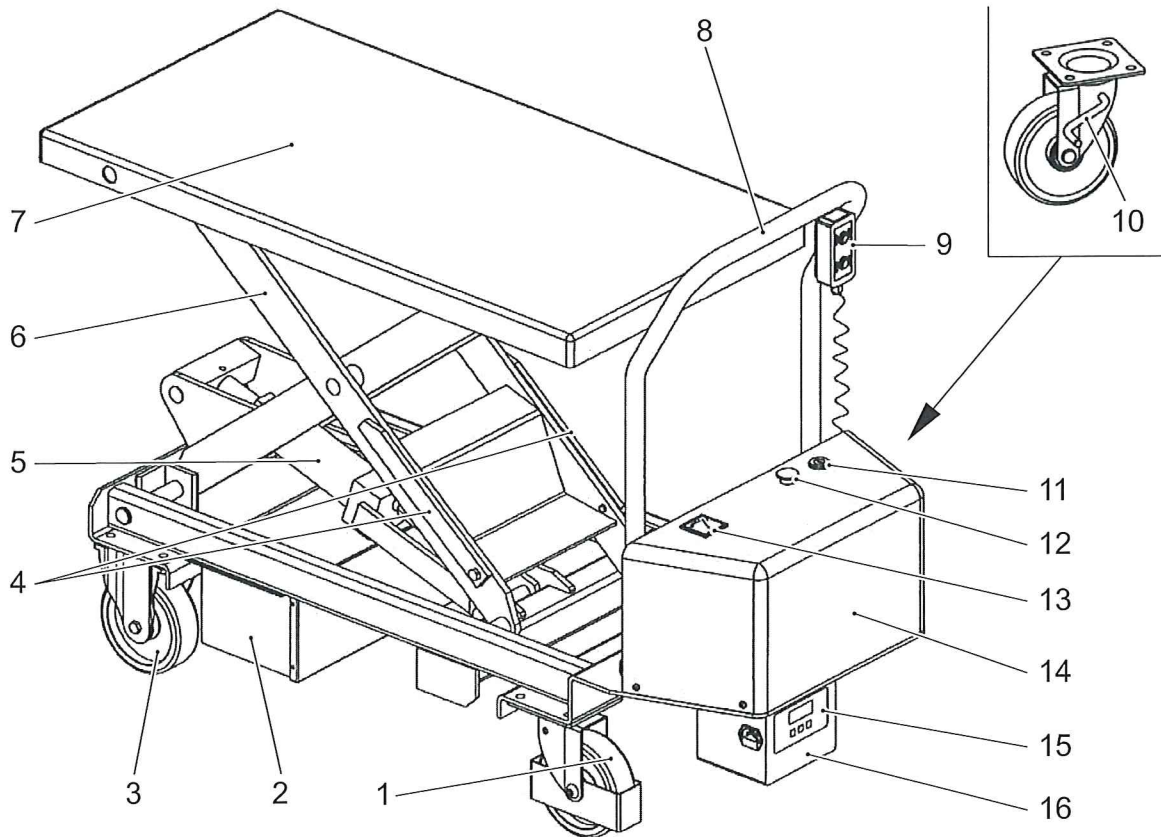
The operator must ensure that the load is in a satisfactory condition. Loads must always be raised safely and carefully. Use suitable protection measure to prevent parts of the load from tipping or falling down.

# B Lifting Table

## 1 Application

The lifting table is designed to lift goods on level surfaces. The capacity is shown on the data plate and on the data capacity plate at the side.

## 2 Assemblies

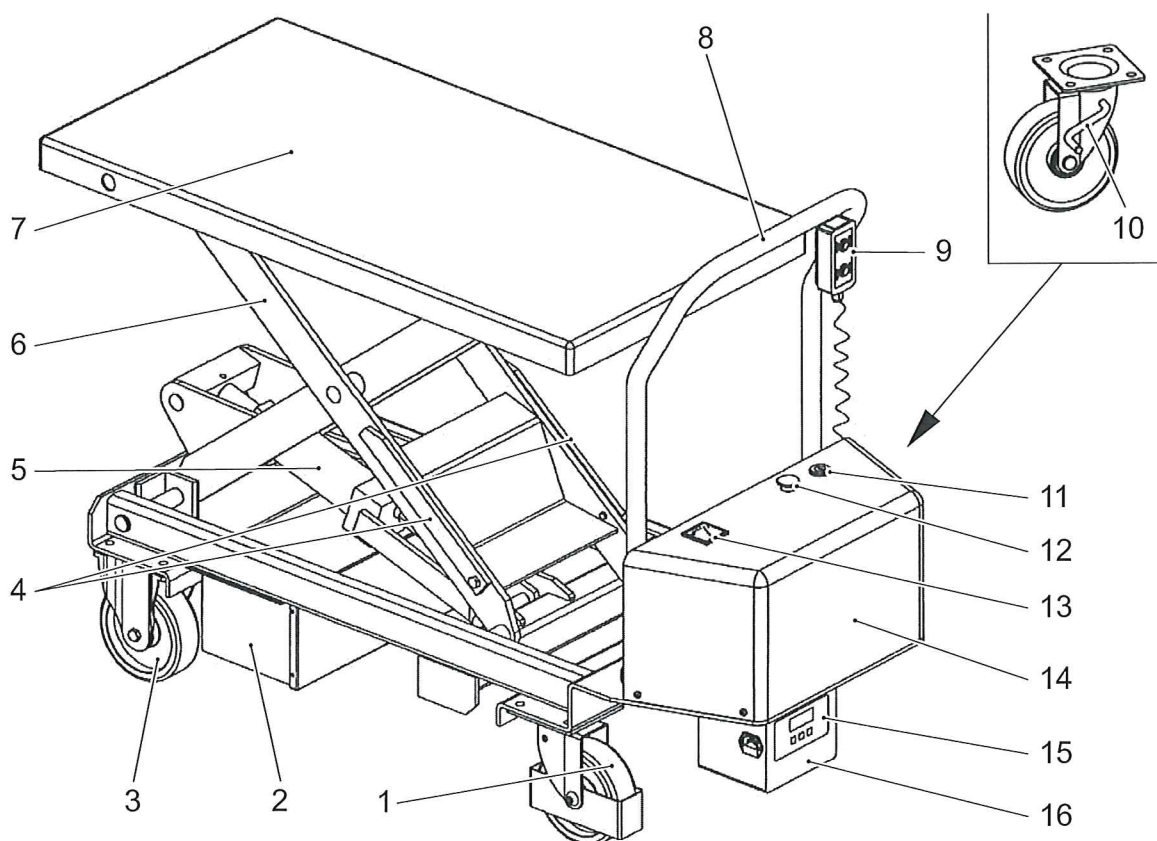


Item		Component
1	●	Steer wheels
2	●	Battery box
3	●	Castors
4	●	Protection against accidental lowering of the lifting table
5	●	Hydraulic cylinder
6	●	Lift mechanism
7	●	Load retaining plate
8	●	Travel bar
9	●	Control unit
10	●	Parking brake on right castor

● = Standard equipment

○ = Optional equipment





Item		Component
11	●	Key switch
12	●	Emergency Disconnect
13	●	Voltage display
14	●	Hydraulic unit
15	●	Charge indicator
16	●	Charger

● = Standard equipment

○ = Optional equipment

### 3 Application Condition

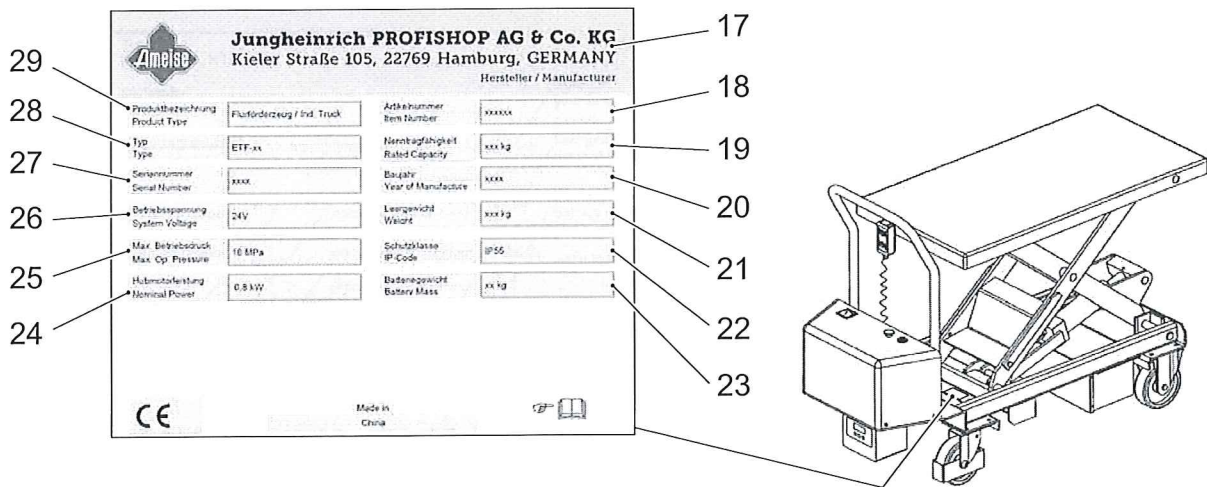
Operating temperature: from 5°C to +40°C

Ambient lighting: min. 50 Lux

### 4 Data Plate/Identification



The data plate contains information specific to the device and is located at the position indicated.



Item	Component
23	Min/max. battery weight
21	Net weight excl. battery
20	Year of manufacture
25	Max. permissible operating pressure
24	Lift motor output
17	Manufacturer
22	Protection class
26	Operating voltage
19	Rated capacity
27	Serial no.
28	Model

### 5 Technical Specifications



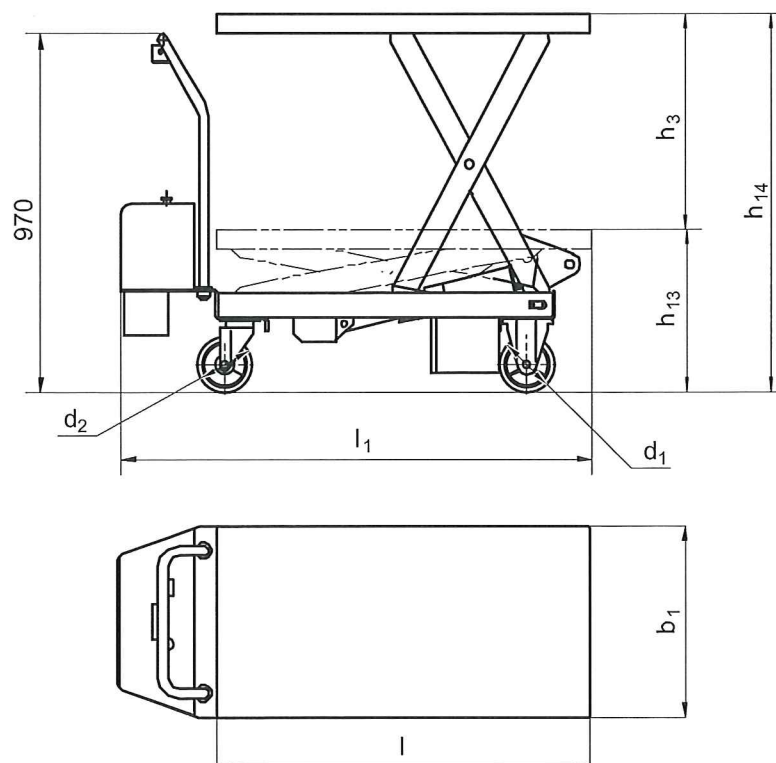
Technical data specified in accordance with VDI 2198.  
Technical modifications and additions reserved.

## 5.1 Performance Data

	Component	ETF D35	ETF 50	
Q	Rated capacity	350	500	kg
	Lift speed with / without load	90/110	65/94	mm/s
	Lower speed with / without load	100/90	98/74	mm/s
	Operating voltage	24	24	V
	Battery	4 x 12 (15 Ah)	2 x 12 (24 Ah)	V
	Lift motor output	0,8	0,8	kW

## 5.2 Dimensions

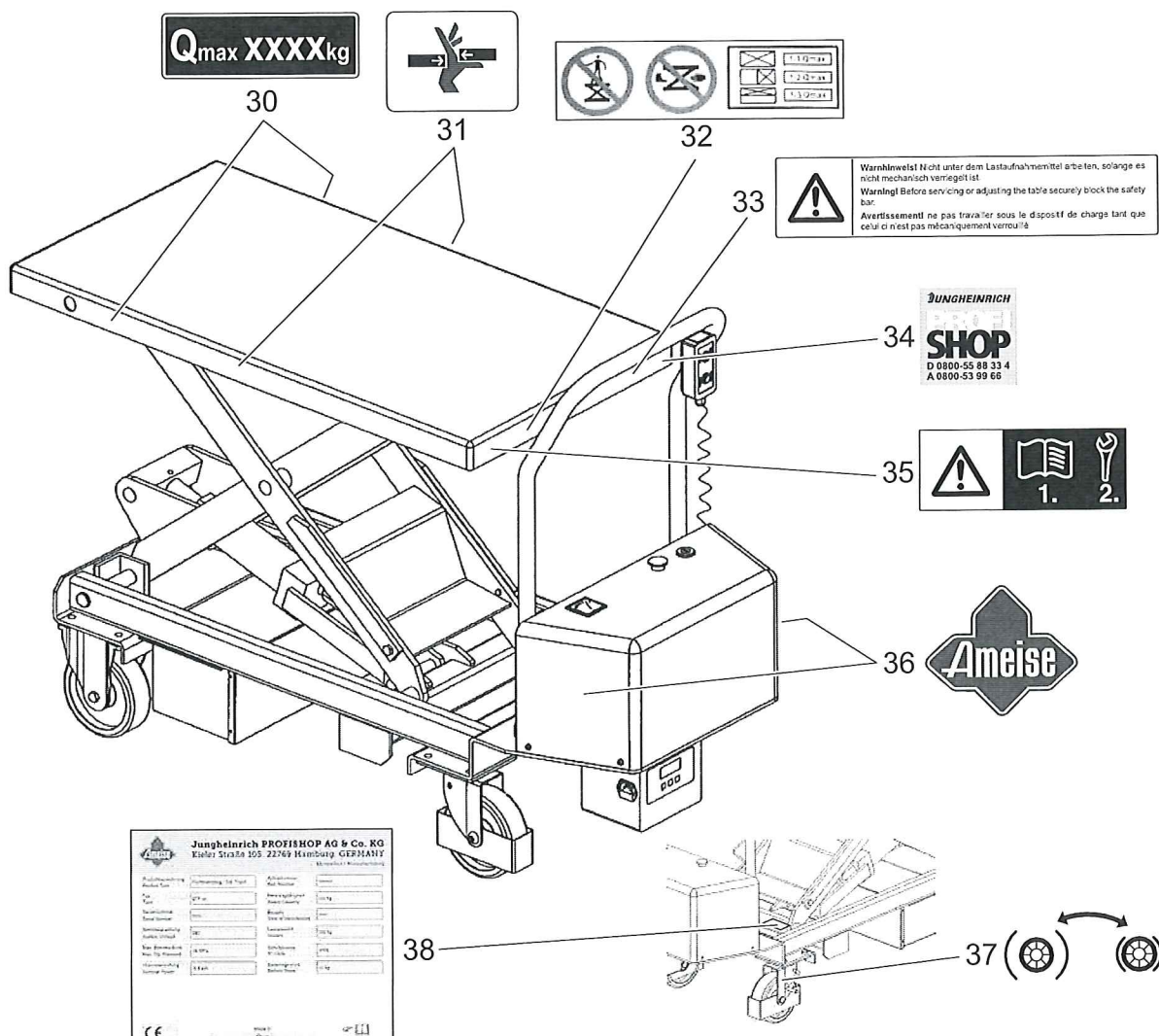
	Component	ETF D35	ETF 50	
$h_3$	Lift height	930	585	mm
$h_{13}$	Lowered height	370	440	mm
$h_{14}$	Overall height	1300	1025	mm
$l$	Load retaining plate length	910	1010	mm
$l_1$	Overall length	1210	1305	mm
$b_1$	Overall width	500	520	mm
$d_1$	Castor diameter	125	150	mm
$d_2$	Steer wheel diameter	125	150	mm
	Net weight (excl. battery)	142	157	kg
	Battery weight	18 +/- 1,5	17 +/- 1,5	kg





## 6 Indication Points

→ The following indication points are located on the lifting table:



Item	Component
32	Warning: "Do not sit on the load handler" Notice: "Secure load handler when raised" Warning: "Do not place feet/hands under the load handler" Notice: "Load chart"
30	Capacity $Q_{max}$
31	"Trapping hazard" warning
33	Warning
35	Read operating instructions
34	Jungheinrich PROFISHOP
37	Brake function notice
38	Data plate

# C Operation

## 1 Safety Regulations for the Operation of the Lifting Table

**Operator's rights, obligations and responsibilities:** The operator must be informed of his duties and responsibilities and be instructed in the operation of the device and shall be familiar with the operating instructions. The lifting table vehicle may only be used by suitably trained personnel, who have demonstrated to the proprietor or his representative that they can handle loads and have been authorised to operate the equipment by the proprietor or his representative. The driver shall be afforded all due rights.

**Unauthorised use of equipment:** The operator is responsible for the vehicle during the time it is in use. The operator must prevent unauthorised persons from using the lifting table. Do not carry passengers or lift other people.

**Damage and Faults:** The supervisor must be immediately informed of any damage or faults to the lifting table or attachment. Lifting tables which are unsafe for operation (e.g. bent components are faulty electrical / hydraulic systems) must not be used until they have been repaired.

**Repairs:** The operator must not carry out any repairs or alterations to the device without the necessary training and authorisation to do so. The driver must never disable or adjust safety mechanisms or switches.

**Hazardous area:** The hazardous area is defined as the area in which people are at risk from the lifting table rising or from the load itself. This also includes areas which can be reached by falling loads or lowering operating equipment.



Unauthorised persons must be kept away from the hazardous area. Where there is danger to personnel, a warning must be sounded with sufficient notice. If unauthorised personnel are still within the hazardous area the lifting table must be brought to a halt immediately.

**Safety devices and warning signs:** Safety devices, warning signs and warning instructions shall be strictly observed.

## 2 Using the Equipment for the First Time



To prepare the lifting table after delivery or transport the following tasks must be carried out:

- Make sure the equipment is complete and in a satisfactory condition.
- Install/charge battery as required. Check the battery cables and contacts for damage. Clean the battery contacts as required.
- Start up the equipment as indicated

Check the entire lifting table (in particular load handler, hydraulic cylinder and lift mechanism) for damage before using it for the first time.



When the vehicle is parked the surface of the tyres will flatten. The flattening will disappear after a short period of operation.

## 3 Starting up the Lifting Table



Before commissioning or operating the lifting table, and before raising a load unit, the operator must ensure that the lifting table is in good working order and is complete. The operator must also ensure that there is nobody in the hazardous area and that people are kept away from the lifting/lowering lifting table vehicle.

### Checks and operations to be performed before starting daily operation

- Visually inspect the whole of the vehicle (in particular wheels, load handler, brake lock) for obvious signs of damage.
- Visually inspect the battery attachment, battery charge status and cable connections.

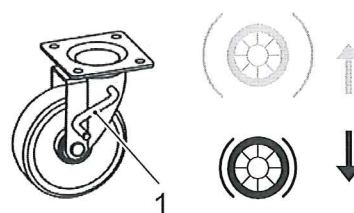
## 4 Operation



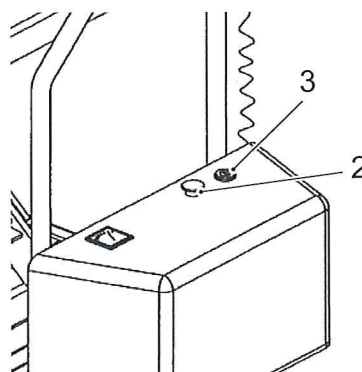
The vehicle must only be operated on level, secure surfaces in a stationary condition. The load must be stored in a straight line, distributed evenly across the entire table. The lifting table must not be moved with the table raised. Place the loads carefully on the raised lifting table and avoid exceeding the maximum weight.

When lowering, control the bleed valve so that lowering is performed slowly. If you lower the load suddenly, even just a few centimetres, the impact is several times more than the actual load, which could result in damage and malfunctions. Failure to comply with this notice could result in injury and damage to the lifting table.

- Set the lifting table to the desired position.
- Apply the parking brakes (1) on the right steer wheel.



- If necessary turn the Emergency Disconnect (2) clockwise until it springs out slightly.
- Put the key in the key switch (3) and turn it clockwise.

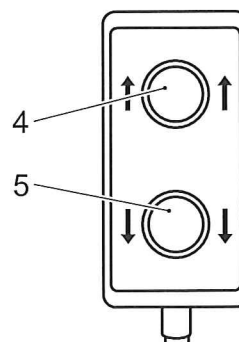


## Lifting

- Press the lift button (4) on the control unit to raise the table to the desired height.

## Lowering

- Press the lower button (5) on the control unit to lower the table to the desired height.



## Emergency Disconnect

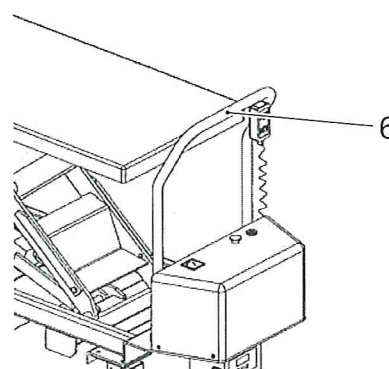
- Pressing the Emergency Disconnect (2) interrupts the power supply.
- Turn the Emergency Disconnect (2) clockwise to restore the power supply.

## Travelling

- Fully lower the lifting table.
- Release the parking brake (1).
- The lifting table can be pushed or pulled using the travel bar (6).



If the load restricts visibility, the lifting table will have to be pulled. If the table cannot be moved by pulling, push it while obtaining the help of a second person to act as a guide and lookout.



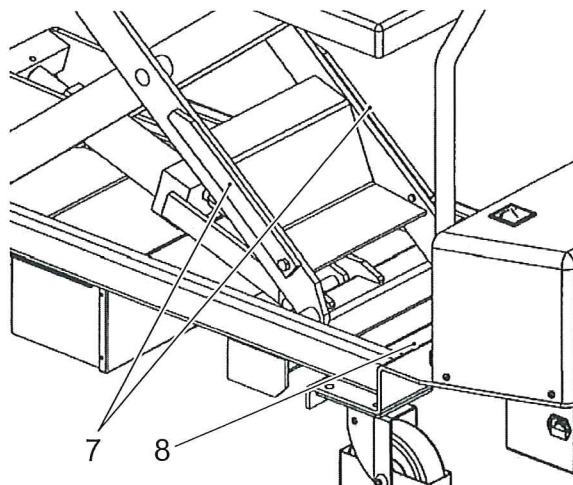


## 5 Protection against Accidental Lowering



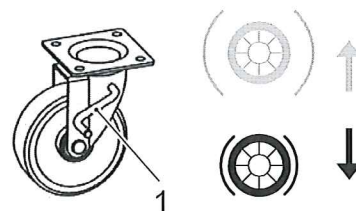
The protection against accidental lowering must be activated for service / repair work. It prevents the lifting table vehicle from lowering as a result of an operating error. It must be deactivated again before the table can lower.

- Raise the lifting table.
- Move the mechanical lowering lock (7) down.
- Lower the lifting table until the mechanical lowering locks (on both sides) are propped up against the frame (8).



## 6 Parking the Lifting Table Securely

- Fully lower the lifting table.
- Apply the parking brake (1) on the right steer wheel.
- Turn the key anti-clockwise and pull it out of the key switch (3).



## 7 Transport



Always lower the lifting table fully.

The lifting table must be loaded and clamped correctly when being transported on a lorry or a trailer.



Always use lifting gear with sufficient capacity when loading by crane.

Attach the crane lifting gear to the frame (8) so that it cannot slip when being raised.



## 8 Battery - Servicing, Recharging, Replacement

### 8.1 Safety Regulations for Handling Acid Batteries

Park the vehicle securely before carrying out any work on the batteries.

**Maintenance personnel:** Batteries may only be charged, serviced or replaced by trained personnel. These operating instructions and the manufacturer's instructions concerning batteries and charging stations must be observed when carrying out the work.

**Fire protection:** Do not smoke or use naked flames when working with batteries. Wherever a vehicle is parked for charging there shall be no inflammable material or consumables capable of creating sparks within a 2-meter area of the vehicle. The room must be ventilated. Fire protection equipment must be available.

**Battery maintenance:** The battery cell covers must be kept dry and clean. The terminals and cable shoes must be clean, secure and have a light coating of dielectric grease. Batteries with non insulated terminals must be covered with a non slip insulating mat.

**Battery disposal:** Batteries may only be disposed of in accordance with national environmental protection regulations or disposal laws. The manufacturer's disposal instructions must be followed.



When assembling the panel make sure that the battery cable cannot be damaged. Always use batteries with the specified rating.



Batteries contain an acid solution which is poisonous and corrosive. For this reason protective clothing and goggles must be worn whenever work is undertaken on batteries. Avoid contact with battery acid at all times. Nevertheless, should clothing, skin or eyes come in contact with acid the affected parts should be rinsed with plenty of clean water - if the skin or eyes are affected call for a doctor immediately. Neutralise any spilled battery acid immediately.



The weight and dimensions of the battery have considerable affect on the operational safety of the vehicle. Battery equipment may only be replaced with the agreement of the manufacturer.



Batteries must always be used in the battery tray.

### 8.2 Battery Types

The vehicle is equipped with a maintenance-free sealed battery: No distilled water can be added to this battery type. The cell covers are sealed tight. Opening the covers will damage the battery. When replacing the battery make sure it is located securely in the battery box of the lifting table.



The battery weights can be taken from the battery data plate.

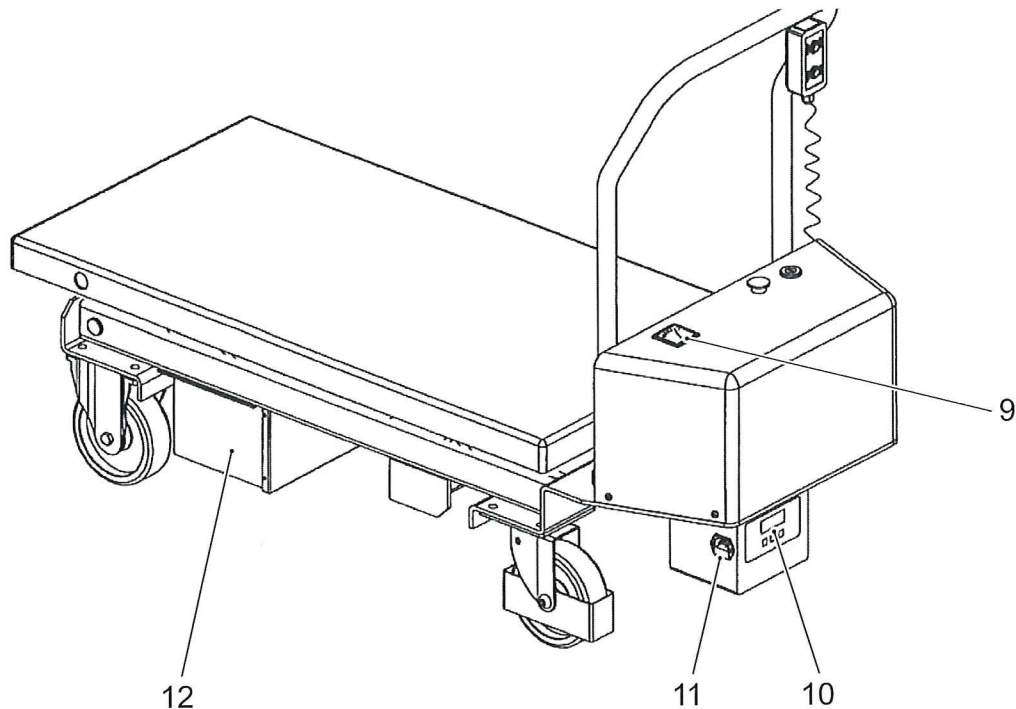
### 8.3 Charging the Battery with an On-Board Charger



To charge the battery, the vehicle must be dry and parked in closed and properly ventilated rooms.

The voltmeter (9) displays the current battery voltage. If the supply is below 9.6 volts, the battery must be recharged. The charge cable and operating instructions are located by the travel strap.

It is advisable to charge the batteries whenever possible (e.g. when the vehicle is not being used). This spares the batteries and the charger as they are subjected to less depletion. This increases the useful life.



- Park the lifting table securely near to a suitable mains socket.
- Switch off the vehicle.
- Connect the charge cable with the suitable connector to the charger socket (11).
- Connect the other end of the charge cable to a suitable main socket.



The integrated automatic charger can operate under the reference mains supply of 110 volts or 220 volts. It switches charging automatically off when the battery is 80% charged or if the charge cycle has lasted over 12 hours.

- Check the charge status on the charger indicator (10). The charge indicator shows: charging operation, the charge voltage, the charge process via the flashing battery symbol and the end of the charge via the full battery symbol.



Charging switches off automatically when the battery has reached its 80% capacity or if the charge cycle has lasted over 12 hours.

- Check the battery cable, terminals or for the presence of AC supply if the charge indicator (10) is lit red.

## 9 Troubleshooting

This chapter allows the user to identify and rectify basic faults or the effects of incorrect operation. When trying to locate a fault, proceed in the order shown in the table.

Fault	Possible Cause	Remedy
Motor not working and lifting table cannot be raised	<ul style="list-style-type: none"> <li>– Faulty wiring</li> <li>– Faulty fuse</li> <li>– Battery cable disconnected.</li> <li>– Battery charge too low</li> </ul>	<ul style="list-style-type: none"> <li>– Check the wiring</li> <li>– Check fuses <sup>1)</sup> and replace if necessary</li> <li>– Connect the battery cable</li> <li>– Check battery charge, charge battery if necessary</li> </ul>
Motor working but lifting table cannot be raised	<ul style="list-style-type: none"> <li>– Bleed valve incorrectly set</li> <li>– Hydraulic pump faulty</li> <li>– Hydraulic oil level too low</li> </ul>	<ul style="list-style-type: none"> <li>– Set bleed valve</li> <li>– Replace hydraulic pump</li> <li>– Add hydraulic oil up to the correct level</li> </ul>
Oil escaping from hydraulic cylinder	<ul style="list-style-type: none"> <li>– Faulty seal</li> </ul>	<ul style="list-style-type: none"> <li>– Replace seals</li> </ul>
Oil escaping from line or connections	<ul style="list-style-type: none"> <li>– Leaky ports</li> </ul>	<ul style="list-style-type: none"> <li>– Re-tighten and seal connecting pieces</li> </ul>
Oil escaping from breather	<ul style="list-style-type: none"> <li>– Too much oil in reservoir</li> </ul>	<ul style="list-style-type: none"> <li>– Reduce the oil level</li> </ul>
Battery cannot be charged	<ul style="list-style-type: none"> <li>– Faulty battery</li> </ul>	<ul style="list-style-type: none"> <li>– Replace battery</li> </ul>
Charger display lit red	<ul style="list-style-type: none"> <li>– +/- swapped on battery terminals</li> </ul>	<ul style="list-style-type: none"> <li>– Connect battery terminals correctly</li> </ul>
Slow automatic lifting table lowering	<ul style="list-style-type: none"> <li>– Oil escaping from lowering valve</li> <li>– Oil escaping from hydraulic system</li> </ul>	<ul style="list-style-type: none"> <li>– Replace lowering valve</li> <li>– Check hydraulic system and rectify fault if necessary</li> </ul>

<sup>1)</sup> Fuses FU1 (60 A) and FU2 (3 A) are located underneath the hydraulic unit cover.

- Remove the screws from the cover and carefully take off the cover. Take care of the display and control wiring in the process.



If the fault cannot be rectified after carrying out the remedial procedure, notify the manufacturer's service organisation, as any further troubleshooting can only be performed by specially trained and qualified service personnel.



# D Repairs and Maintenance

## 1 Operational Safety and Environmental Protection



All modifications to the lifting table, in particular the safety mechanisms, are prohibited. The operational speeds of the device must not be changed under any circumstances.



Only original spare parts have been certified by our quality assurance department. To ensure safe and reliable operation, use only the manufacturer's spare parts. Used parts, oils and fuels must be disposed of in accordance with the relevant environmental protection regulations. For oil changes, contact the manufacturer's specialist department.

## 2 Repair and Maintenance Work



Repair and maintenance work must be carried out and are essential for a long useful life and the safety of the lifting table. Engage specialist personnel if necessary.

The following checks must always be performed before starting work:

- Test the brakes and check the wheels for wear.
- Lubricate the pivot points as necessary.
- The lifting table components must not be damaged or distorted.
- Check the hydraulic system for leaks.
- Rectify any defects found before continuing to use the lifting table.
- Replace any faulty or missing decals.

### Consumables

Consumables must always be handled correctly. Follow the manufacturer's instructions.



Improper handling is hazardous to health, life and the environment. Consumables must only be stored in appropriate containers. They may be flammable and must therefore not come into contact with hot components or naked flames.

Only use clean containers when filling up with consumables. Do not mix consumables of different grades. The only exception to this is when mixing is expressly stipulated in the Operating Instructions.

- Avoid spillage. Spilled liquids must be removed immediately with suitable bonding agents and the bonding agent / consumable mixture must be disposed of in accordance with regulations.

The hydraulic oil must be replaced every 12 months. Add hydraulic oil with a viscosity to match the ambient temperature.

– ISO VG 32 (GB11118-89), viscosity: 32cSt at 40°C

	<b>ETF</b>
Capacity:	2.5 l

The lubricants for grease lubricating points are designed for ambient temperatures of 5°C to +40°C.

– DIN 51825 T1 -K 2 K

The grease lubricating points must be checked monthly and lubricated as required.

Upon completion of checks and servicing, the instructions contained in the “Restoring the Equipment to Service” section must be followed.

### 3 Maintenance Safety Regulations

**Maintenance personnel:** The lifting table must only be serviced and maintained by the manufacturer's trained personnel. The manufacturer's service department has field technicians specially trained for these tasks.

**Lifting and jacking up:** When the lifting table is to be lifted, the lifting gear must only be secured to the points specially provided for this purpose. When jacking up the equipment, take appropriate measures to prevent it from slipping or tipping over (e.g. wedges, wooden blocks). You may only work underneath a raised load handler if it is supported by the mechanical lowering lock.

### 4 Servicing and Inspection

Thorough and expert servicing is one of the most important requirements for the safe operation of the lifting table. Failure to perform regular servicing can lead to failure of the lifting table and poses a potential hazard to personnel and equipment.

### 5 Cleaning

Do not use flammable liquids to clean the lifting table. When using a power cleaner or degreasing agents always proceed with caution as the grease is diluted on permanently lubricated bearings and can damage them. Subsequent lubrication is not possible.



## **5.1 Restoring the Equipment to Service**

The equipment must only be restored to service after cleaning or repair work, once the following operations have been performed:

- Lubricate the contact surfaces.

## **6 Safety Tests to be Performed at Intervals and after Unusual Events**



Perform a safety check in accordance with national regulations. Jungheinrich recommends the equipment be checked to FEM guideline 4.004. Jungheinrich has a safety department with trained personnel, able to carry out inspections.

The lifting table must be inspected at least annually (note the national regulations) or after any unusual event by a qualified inspector (be sure to comply with national regulations). The inspector shall assess the condition of the system from purely a safety viewpoint, without regard to operational or economic circumstances. The inspector shall be sufficiently instructed and experienced to be able to assess the condition of the lifting table and the effectiveness of the safety mechanisms based on the technical regulations and principles governing the inspection of lifting tables.

A thorough test of the lifting table must be undertaken with regard to its technical condition from a safety aspect. The lifting table must also be examined for damage caused by possible improper use. A test report shall be provided. The test results must be kept for at least the next 2 inspections.

The proprietor is responsible for ensuring that faults are immediately rectified.



A test plate is attached to the lifting table as proof that it has passed the safety inspection. This plate indicates the due date for the next inspection.

## **7 Final De-Commissioning, Disposal**



Final, proper de-commissioning or disposal of the lifting table must be performed in accordance with the regulations of the country of use. In particular, regulations governing the disposal of consumables and electronic and electrical systems must be observed.