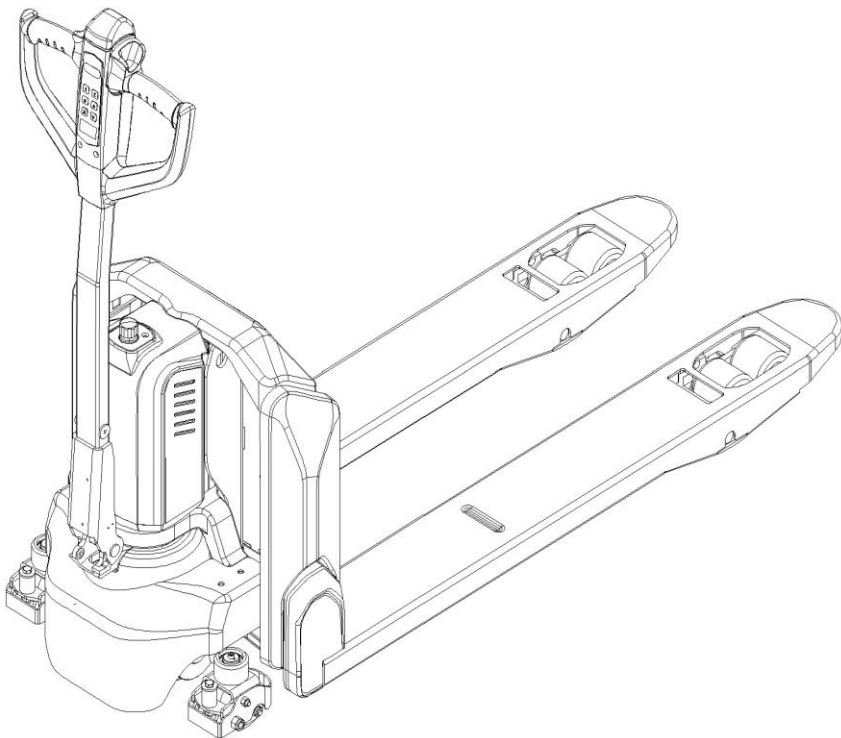


# INSTRUCTION HANDBOOK

## Electric Pallet Truck

### PTE15N/PTE33N and PTE20N/PTE45N



#### **WARNING**

**Do not use the pallet truck before reading and understanding these operating instructions.**

#### **NOTE:**

- Please check the designation of your present type at the last page of this document as well as on the ID-plate.
- Keep for future reference.

Version 11/2024

PTE15N-PTE20N-SMS-011-EN



## FOREWORD

Before operating the truck, read this ORIGINAL INSTRUCTION HANDBOOK carefully and understand the usage of the truck completely. Improper operation could create danger.

This handbook describes the usage of different electric pallet trucks. When operating and servicing the truck, make sure, that it applies to your type.

Keep this handbook for future reference. If this or the warning/ caution labels are damaged or get lost, please contact your local dealer for replacement.

Note: Each of the following model names in the group refer to same model of trucks. Different model names are used for different markets, the numbers in name reflect the capacity of truck in KG or LBS:

- PTE15N / PTE20N
- PTE33N / PTE45N (US-Market)

### ATTENTION:

- Environmentally hazardous waste, such as batteries, oil and electronics, will have a negative effect on the environment, or health, if handled incorrectly.
- The waste packages should be sorted and put into solid dustbins according to the materials and be collected disposal by local special environment protection bureau. To avoid pollution, it's forbidden to throw away the wastes randomly.
- To avoid leaking during the use of the products, the user should prepare some absorbable materials (scraps of wooden or dry duster cloth) to absorb the leaking oil in time. To avoid second pollution to the environment, the used absorbable materials should be handed in to special departments in terms of local authorities.
- Our products are subject to ongoing developments. Because this handbook is only for the purpose of operating /servicing the pallet truck, therefore please have understanding, that there is no guarantee out of particular features out of this handbook.



NOTE: On this manual, the left sign means warning and danger, which can lead to death or serious injury if not followed.

### Copyright

The copyright remains with the company, mentioned on the CE- certificate at the end of this document or, if sold within the USA, with the company, mentioned on the company sticker.

# TABLE OF CONTENTS

1. CORRECT APPLICATION .....	1
2. DESCRIPTION OF THE PALLET TRUCK .....	2
a. Overview of the main components .....	2
b. Main technical data .....	3
c. Description of the safety devices and warning labels (Europe and other, excepting USA) .....	5
d. Identification plate .....	6
3. WARNINGS, RESIDUAL RISK AND SAFETY INSTRUCTIONS .....	6
4. COMMISSIONING, TRANSPORTING, DECOMMISSIONING .....	7
a. Commissioning .....	7
b. Lifting/ transportation .....	8
c. Decommissioning .....	8
5. DAILY INSPECTION .....	9
6. OPERATING INSTRUCTIONS .....	9
a. Parking .....	10
b. Lifting .....	10
c. Lowering .....	10
d. Travelling .....	10
e. Steering .....	11
f. Braking .....	11
g. Malfunctions .....	12
h. Emergency .....	12
7. PIN-CODE PANEL .....	13
a. Introduction .....	13
b. Main functions .....	13
8. BATTERY SAFETY, CHARGING AND REPLACEMENT .....	14
a. Description of the lithium-ion battery .....	14
b. Battery Decals .....	15
c. Safety Instructions, Warning Indications and other Notes .....	17
d. Charging the battery .....	23
e. Battery removal and installation .....	27
9. REGULAR MAINTENANCE .....	29
a. Maintenance checklist .....	29
b. Lubricating points .....	31
c. Check and refill hydraulic oil .....	32
d. Checking electrical fuses .....	32
10. TROUBLE SHOOTING .....	33
11. WIRING/ CIRCUIT DIAGRAM .....	34
a. Electrical circuit diagram .....	34
b. Hydraulic circuit .....	50
12. SPECIALIZED STIPULATIONS FOR THE US- AMERICAN MARKET .....	51

a. Foreword/ Compliance .....	51
b. Identification plate .....	52
c. Description warning labels (only US- market) .....	53
d. Technical data for US market.....	55
Original CE Declaration of conformity.....	58

# 1. CORRECT APPLICATION

It is only allowed to use this electric pallet truck according to this instruction handbook.

The trucks described in this handbook are self-propelled electric power pallet trucks. The trucks are designed to lift, lower and transport palletized loads.

A wrong usage can cause human injuries or can damage equipment.

The operator/ the operating company has to ensure the correct usage and has to ensure, that this pallet truck is used only by staff, which is trained and authorized to use this truck.

The pallet truck has to be used on substantially firm, smooth, prepared, level and adequate surfaces. The truck is intended to be used for indoor applications with ambient temperatures between +5°C and + 40°C and for various transportation applications without crossing permanent obstacles or potholes. The work on ramps is allowed if ramp is not exceeding the allowed angle. While operating, the load must be placed approximately on the longitudinal center plane of the truck.

Lifting or transporting people is forbidden.

If used on tail lifts or loading ramps, please ensure that these are used correctly according to the operating instructions.

The capacity is marked on capacity sticker as well on the Identification plate. The operator has to consider the warnings and safety instructions.

Operating lighting must be minimum 50 Lux.

## Modification

No modifications or alterations to this pallet truck which may affect, for example, capacity, stability or safety requirements of the truck, shall be made without the prior written approval of the original truck manufacturer, its authorized representative, or a successor thereof. This includes changes affecting, for example braking, steering, visibility and the addition of removable attachments. When the manufacturer or its successor approve a modification or alteration, they shall also make and approve appropriate changes to capacity plate, decals, tags and operation and maintenance handbooks.

Only in the event that the truck manufacturer is no longer in business and there is no successor in the interest to the business, may the user arrange for a modification or alteration to a powered industrial truck, provided, however, that the user:

- a) arranges for the modification or alteration to be designed, tested and implemented by an engineer(s) expert in industrial trucks and their safety,
- b) maintains a permanent record of the design, test(s) and implementation of the modification or alteration,
- c) approves and makes appropriate changes to the capacity plate(s), decals, tags and instruction handbook, and
- d) affixes a permanent and readily visible label to the truck stating the manner in which the truck has been modified or altered, together with the date of the modification or alteration and the name and address of the organization that accomplished those tasks.

By not observing these instructions, the warranty becomes void.

## 2. DESCRIPTION OF THE PALLET TRUCK

### a. Overview of the main components

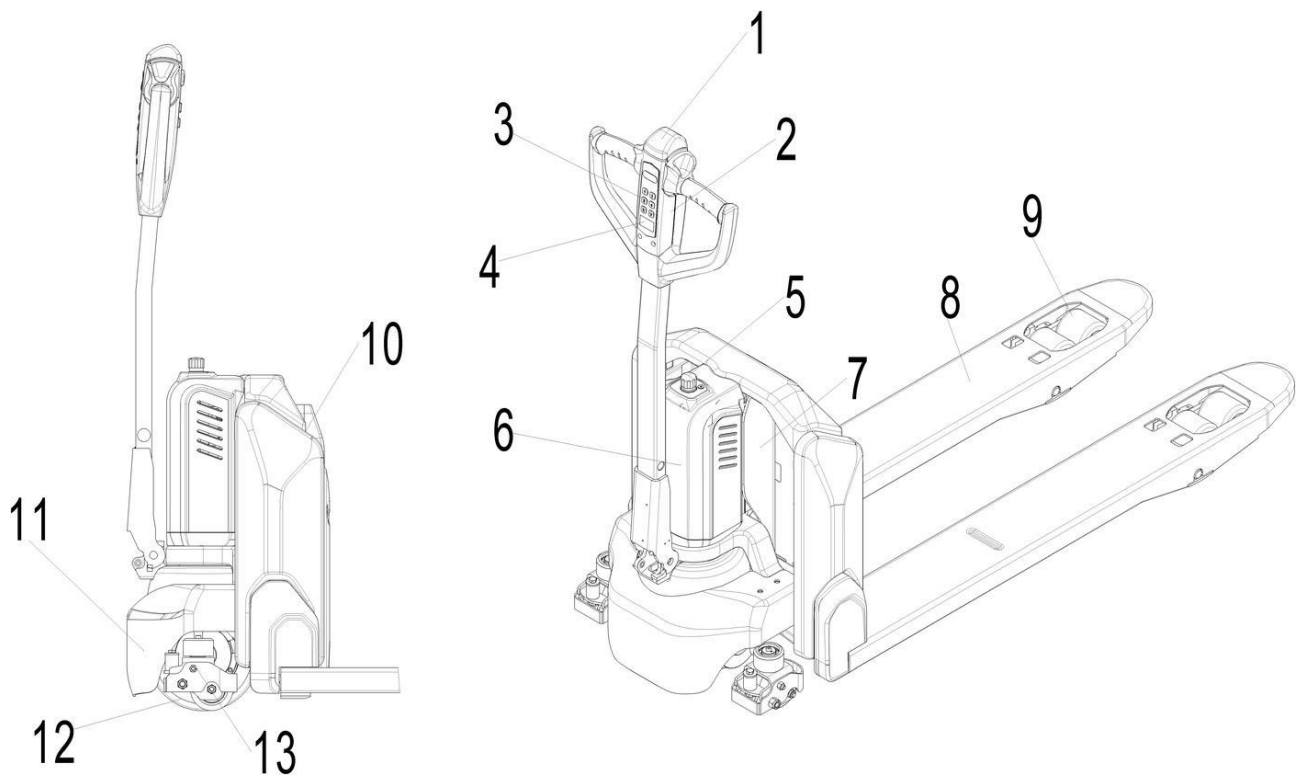


Fig. 1: Overview main components

- |  |                                     |
|--|-------------------------------------|
| 1. Safety (belly) button                           | 8. Fork                             |
| 2. Tiller  | 9. Load roller                      |
| 3. Pin-code panel (PTE20N/45N with card)           | 10. Battery                         |
| 4. Discharge indicator and charging indicating LED | 11. Apron                           |
| 5. Emergency switch                                | 12. Driving unit                    |
| 6. Hydraulic unit cover                            | 13. Side roller (option for PTE15N) |
| 7. Chassis   |                                     |

**b. Main technical data**

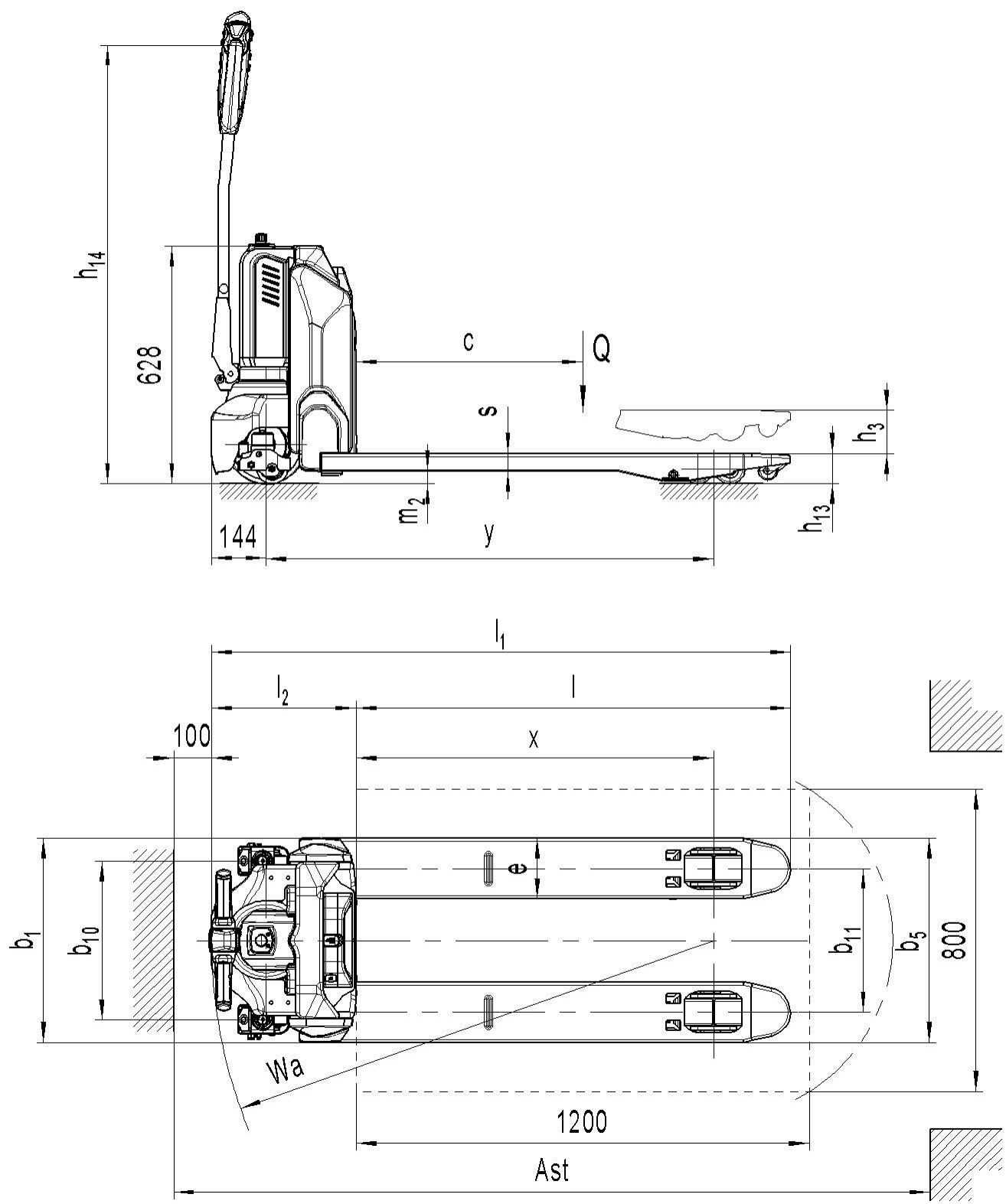


Fig. 2: Technical data



Table 1: Main technical data for standard version

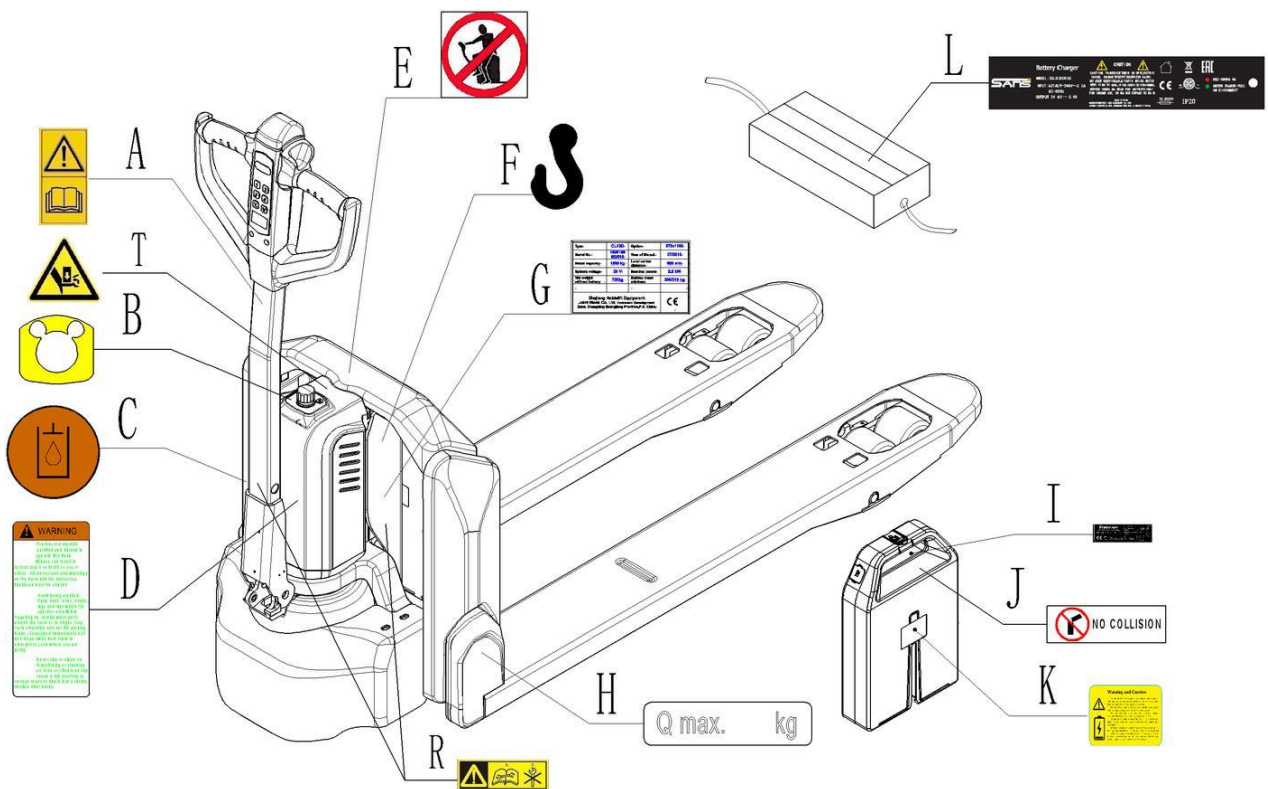
Type sheet for industrial truck acc. to (VDI2198)							
Distinguishing mark	1.2	Manufacturer's type designation		PTE15N		PTE20N	
	1.3	Power(battery,diesel,petrolgas>manual)		Battery			
	1.4	Operator type		Pedestrian/Stand			
	1.5	Load Capacity / rated load	Q (t)	1.5		2.0	
	1.6	Load centre distance	c (mm)	600			
	1.8	Load distance, centre of drive axle to fork	x(mm)	947		951	
	1.9	Wheelbase	y (mm)	1185		1189	
Weight	2.1	Service weight	kg	136	139	149	153
	2.2	Axle loading, laden front/rear	kg	636 / 1000	635/ 1004	621 / 1528	625 / 1528
	2.3	Axle loading, unladen front/ rear	kg	107 / 29	108/ 31	115 / 34	119 / 34
Tires, chassis	3.1	Tires		Polyurethane (PU)			
	3.2	Tire size, front	Ø x w (mm)	Ø 210x75			
	3.3	Tire size, rear	Ø x w (mm)	Ø 80x93(Ø 80x70)			
	3.4	Additional wheels (dimensions)	Ø x w (mm)	-/Ø 80x30			
	3.5	Wheels, number front/ rear(x=driven wheels)		1x/ 2(1x/ 4) or 1x +2/ 2(1x +2/ 4)			
	3.6	Tread, front	b <sub>10</sub> (mm)	-/430			
	3.7	Tread, rear	b <sub>11</sub> (mm)	380	525	380	525
Dimensions	4.4	Lift height	h <sub>3</sub> (mm)	115			
	4.9	Height of tiller in drive position min. / max.	h <sub>14</sub> (mm)	700 / 1160			
	4.15	Height, lowered	h <sub>13</sub> (mm)	80			
	4.19	Overall length	l <sub>1</sub> (mm)	1530		1536	
	4.20	Length to face of forks	l <sub>2</sub> (mm)	380		386	
	4.21	Overall width	b <sub>1</sub> (mm)	540	685	540	685
	4.22	Fork dimensions	s/e/l (mm)	47 / 160 / 1150			
	4.25	Width across forks	b <sub>5</sub> (mm)	540	685	540	685
	4.32	Ground clearance, centre of wheelbase	m <sub>2</sub> (mm)	33			
	4.34	Aisle width for pallets 800X1200 lengthways	Ast(mm)	2000		2006	
	4.35	Turning radius	Wa (mm)	1330		1336	
Performance	5.1	Travel speed, laden/ unladen	km/h	4.6/ 4.8		4.8/ 5.2	
	5.2	Lift speed, laden/ unladen	m/s	0.020 / 0.025		0.017 / 0.022	
	5.3	Lowering speed, laden / unladen	m/s	0.040 / 0.026		0.040 / 0.026	
	5.8	Gradeability, laden/ unladen	%	6 / 16		7 / 16	
	5.10	Service brake		Electromagnetic			
Motors	6.1	Drive motor rating S2 60min	kW	0.65		1.0	
	6.2	Lift motor rating at S3 10%	kW	0.50		0.8	
	6.3	Battery acc. to DIN 43531 /35 / 36 A, B, C, no		/			
	6.4	Battery voltage, nominal capacity K5	V/Ah	24 / 20 (24 / 36)		48/ 20	

6.5	Battery weight (minimum)	kg	5.8	7.7
6.6	Energy consumption acc. to EN16796-2	KWh	0.18	0.23
8.1	Type of drive control		DC -Speed Control	
8.4	Sound level at driver`s ear acc. to EN 12053	dB(A)	<70	<70

### c. Description of the safety devices and warning labels (Europe and other, excepting USA)



For the USA –market, the description of the safety and warning labels is mentioned in chapter 12.



**Fig. 3:** Safety and warning labels

- |   |   |   |   |
|---|---|---|---|
| A | Sticker to read and follow this instruction | H | Capacity sticker                          |
| B | Emergency button sticker                    | I | Battery ID plate                          |
| C | Sign oil filling point                      | J | No collision sticker                      |
| D | Warning sticker (on request/not mandatory)  | K | Battery warning sticker                   |
| E | "No passengers" decal                       | L | Charger ID plate                          |
| F | Crane hook label                            | R | Sticker to read and follow service manual |
| G | Identification plate (ID-plate)             | T | Warning sticker                           |

The truck is equipped with an emergency switch (5) which stops all lifting-, lowering-, driving- functions and engages the failsafe electromagnetic brake when it is pressed. By turning this button clockwise, the truck can be operated after the controller checked the functions. Before operating, type the password on pin-code panel and press the ✓ button. For PTE20N/45N, truck can also be activated with RFID access card. To prevent unauthorized access, press emergency switch (5) or press the X button of pin-code panel.

The truck is equipped with a safety (belly) button (1) which switches the driving function away from the operator, if the truck travels towards the operator and the tiller is activated in the tillers operating zone. Follow also the instructions given on the decals. Replace the decals if they are damaged or missing.

## d. Identification plate

- |   |  |    |                                   |
|---|--|----|-----------------------------------|
| 1 | Designation, type                            | 6  | Name and address of manufacturer) |
| 2 | Serial number                                | 7  | Battery weight minimum/ maximum   |
| 3 | Rated capacity in kg                         | 8  | Nominal power in kW               |
| 4 | Supply voltage in V                          | 9  | Load center distance              |
| 5 | Own mass (self-weight) in kg without battery | 10 | Manufacturing date                |
|   |  | 11 | Option                            |

1	Type	xxx xx	Option	xx X xxxx	11
2	Serial No.	xxxxx	Year of Manuf.	MM/YYYY	10
3	Rated capacity	xxxx kg	Load center distance	xxx mm	9
4	System voltage	xx V	Nominal power	xx kW	8
5	Net weight without battery	xxx kg	Battery mass min/max	xxx / xxx kg	7
6	XXXX XXXX XXXXXXXX xx XXXXX / XXXXXX			CE	

If sold to the EU, here the place of the CE marking **CE**

Fig. 4: Identification plate

## 3. WARNINGS, RESIDUAL RISK AND SAFETY INSTRUCTIONS



### **DO NOT**

- Put foot or hand under or into the lifting mechanism.
- Allow other person than the operator to stand in front of or behind the truck when it is moving or lifting/lowering.
- Overload the truck.
- Put foot in front of the wheels, injury could result.
- Lift people. People could fall down and suffer severe injury.

- Push or pull loads
- Locate loads on sides or fork end. Load must be distributed evenly on the forks.
- Use the truck with unstable or unbalanced load.
- Use truck without manufacturer's written consent.
- Lifted loads could become unstable at wind forces. In the case of wind forces do not lift the load if there is any influence to the stability

Watch difference in floor levels when driving. Load could fall down or the truck could get uncontrollable.

Keep watching the condition of load. Stop operating the truck if load becomes unstable.

Brake the truck and activate the emergency switch (5) by pushing when sliding load on or off the truck. If the truck has any malfunctions, follow chapter 10.

Practice maintenance work according to regular inspection. This truck is not designed to be water resistant. Use the truck under dry condition. Prolonged continuous operation might cause damage of the power pack. Stop operation if temperature of hydraulic oil is too high.



- When operating the electric pallet truck, the operator has to wear safety shoes.
- The truck is intended to be used for indoor applications with ambient temperatures between +5°C and + 40°C.
- The operating lighting must be minimum 50 Lux.
- To prevent unintended sudden movements when not operating the truck (i.e. from another person, etc.), press emergency switch (5) or press the X button of pin-code panel.

## 4. COMMISSIONING, TRANSPORTING, DECOMMISSIONING

### a. Commissioning

Table 2: Commissioning data

Type	PTE15N (540X1150)	PTE15N (685X1150)	PTE20N (540X1150)	PTE20N (685X1150)
Commissioning weight [kg]	136kg	139kg	149kg	153kg
Dimensions [mm]	1530x540x1250	1530x685x1250	1530x540x1250	1530x685x1250

After receiving our new pallet truck or for re-commissioning you have to do the following before (firstly) operating the truck:

- Check if are all parts included and not damaged
- Make sure the tiller is assembled correctly (electrical socket is connected and fixed with two plastic clamps, circlip of the axle is installed)
- Check that battery is charged (follow chapter 8)
- Do the work according to the daily inspections as well as functional checks.

## b. Lifting/ transportation

For transporting, remove the load, lower the forks to the lowest position and fix the truck safe with dedicated lifting gear according to the following figures.

### Lifting

USE DEDICATED CRANE AND LIFTING EQUIPMENT

DO NOT STAND UNDER THE SWAYING LOAD

DO NOT WALK INTO THE HAZARDOUS AREA DURING LIFTING

Park the truck securely and lash the truck according to the points identified in Fig. 5. Lift the truck to its destination and place the truck securely before removing the lifting gear. The lashing points are according to the Fig. 5.

### Transportation



DURING TRANSPORTATION ON A LORRY OR TRUCK ALWAYS FASTEN THE TRUCK SECURELY

Lower the forks and park the truck securely.

Fasten the truck according to Fig. 6 by fixing dedicated lashing belts to each side of the trucks crane hook holes and fasten the other side at the transporting truck.

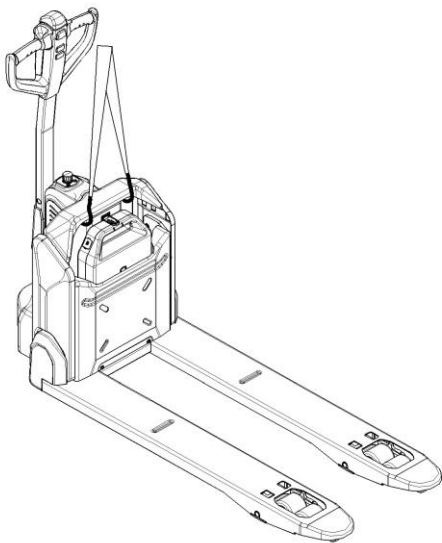


Fig. 5: Lifting with a crane

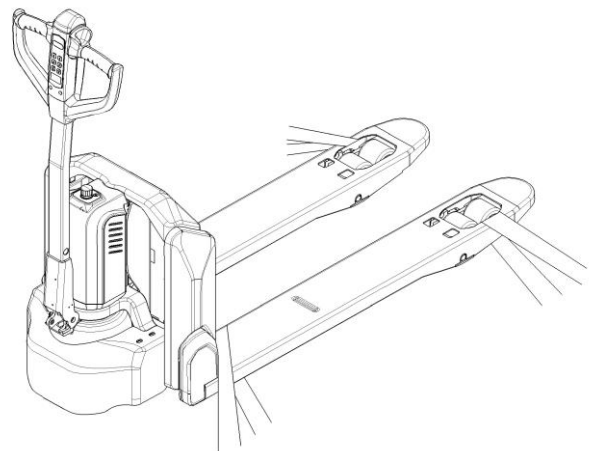


Fig. 6: Fixing points

## c. Decommissioning

For storage, remove the load, lower the truck to the lowest position, grease all in this handbook mentioned greasing points (regular inspection), and eventually protect the truck against corrosion and dust. Remove the batteries and jack the truck safely, so that there will be no flattening after storage.

For final decommissioning hand the truck to a designated recycling company. Oil, batteries and electric components must be recycled due to legal regulations.

## 5. DAILY INSPECTION

This chapter describes pre-shift checks before putting the truck into operation.

Daily inspection is effective to find the malfunction or fault on this truck. Check the truck on the following points before operation.

Remove load from truck and lower the forks.



**DO NOT USE THE TRUCK IF ANY MALFUNCTION IS FOUND.**

- Check for scratches, deformation or cracks.
- Check if there is any oil leakage from the cylinder.
- Check the smooth movement of the wheels.
- Check the function of driving in both directions (section 6d).
- Check the functions of braking by activation of tiller arm sensor, reversing of driving buttons, release of driving buttons and of the safety (belly) button (section 6f).
- Check the function of driving with tiller in its vertical position (section 6d).
- Check the function of the emergency brake by activating the emergency switch.
- Check the lifting and lowering functions by operating the buttons (section 6b and 6c).
- Check the function of steering by turning the tiller from one end position to the other one. The steering should be smooth, without jerks or abnormal sound.
- Check if all bolts and nuts are tightened firmly.
- Visual check if there are any broken electric wires.
- If supplied with a backrest extension, check it for damages and correct assembling.
- Check the presence of warning stickers and signs (section 2c and section 12)

## 6. OPERATING INSTRUCTIONS



**BEFORE OPERATING THIS TRUCK, PLEASE FOLLOW THE WARNINGS AND SAFETY INSTRUCTIONS (CHAPTER 3).**

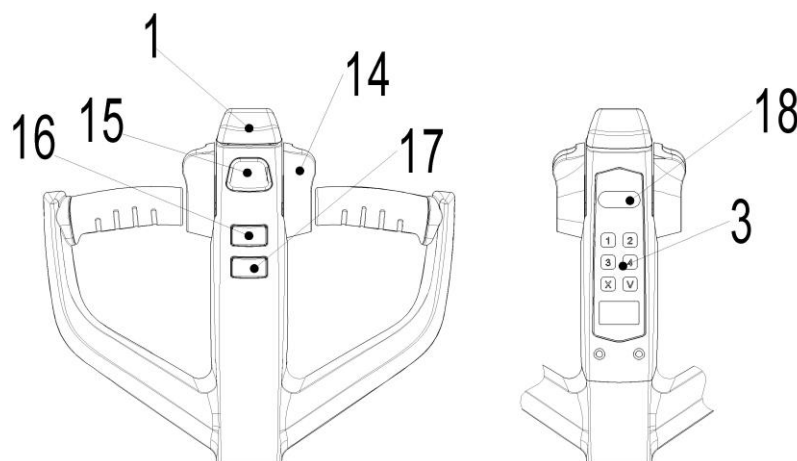


Fig. 7: Tiller operating controls

Make sure, that the load is palletized and stable and that the daily inspection is carried out.  
Type the password on pin-code panel and press ✓ button to start the truck. For PTE20N, truck can also be activated with RFID access card.  
Press the horn button (15) to activate the audible warning signal.

## a. Parking



**DO NOT PARK THE TRUCK ON INCLINED SURFACES**

The truck is equipped with an electromagnetic failsafe stopping and parking brake.  
Always lower the forks fully. Press the emergency switch (Fig.1,5).

## b. Lifting

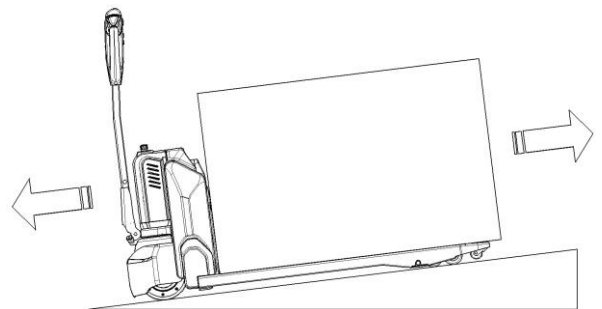


**DO NOT OVERLOAD THE TRUCK!**  
WHEN THE LOAD CENTER IS 600MM/23.6IN  
THE MAXIMUM CAPACITY OF PTE15N/PTE33N IS 1500KG/3300LBS.  
THE MAXIMUM CAPACITY OF PTE20N/PTE45N IS 2000KG/4500LBS.

Travel with the lowered forks fully underneath the pallet and press the lifting button (Fig. 7, 16) until you reached the desired lifting height.

## c. Lowering

Press the lowering button (Fig.7,17) carefully.  
Lower the load until the forks are clear of the pallet, then  
drive the truck carefully out of the load unit.



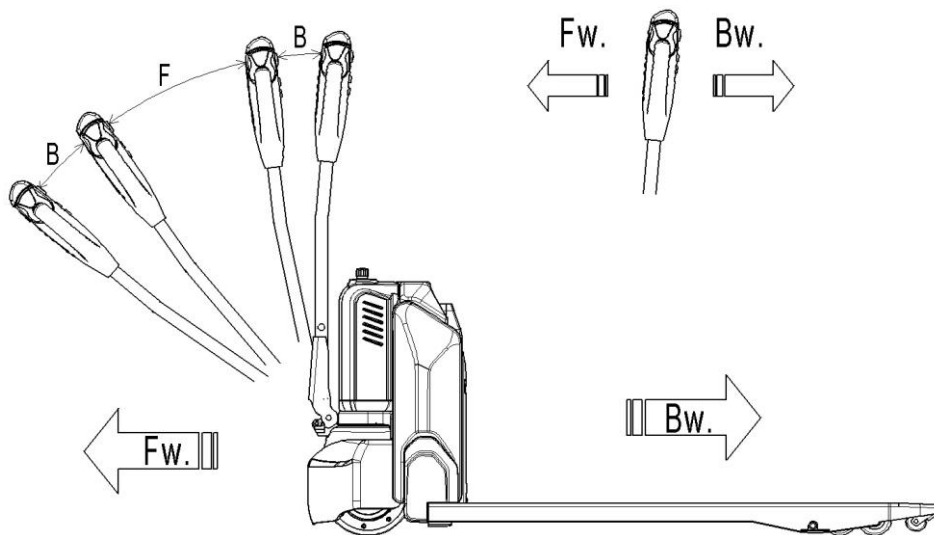
**Fig. 8:** Load facing uphill

## d. Travelling



**TRAVEL ON INCLINES ONLY WITH THE LOAD FACING UPHILL.**  
**DO NOT TRAVEL ON INCLINES MORE THAN SPECIFIED WITH THE TECHNICAL DATA.**

After starting the truck by activation from Pin-code panel, move the tiller to the operating zone ('F', Fig.9).  
Turn the accelerator button to the desired direction forward 'Fw.' or backwards 'Bw.'(Fig. 9).



**Fig. 9:** Operating direction

Control the travelling speed by moving the accelerator button (Fig.7,13) carefully until you reached the desired speed. If you move the accelerator button back to the neutral position, the controller decelerates the truck until the truck stops. If the truck stopped, the parking brake will be engaged. Drive carefully the truck to the destination. Watch the route conditions and adjust the travelling speed with the accelerator-button.

Press turtle button (Fig.7,18) to enter into slow speed mode, travel slowly by moving the accelerator button (Fig.7,14), press turtle button again to return back to regular speed mode.

Press turtle button and hold for 2 seconds to activate driving function with tiller in its vertical position when operating in confined areas. The driving function is active only when turtle button is pressed (the speed is reduced); the release of turtle button will cause immediate stop. The activation of accelerator button in time gap shorter than two seconds after the turtle button is pressed will not activate the driving function, the activation cycle has to be repeated from the beginning. Accelerator button should remain in neutral position till two seconds passed.

## e. Steering

Steer the truck by moving the tiller to the left or right side.

## f. Braking



**PLEASE CHECK THE BRAKING DISTANCE WITH TRUCK BEFORE OPERATION  
THE BRAKING PERFORMANCE DEPENDS ON THE TRACK CONDITIONS AND THE  
LOAD CONDITIONS OF THE TRUCK**

The braking function can be activated on several ways:

- By moving the accelerator button (14) back to the initial '0' position or by releasing the button, the regenerative braking is activated. The truck brakes until it stops.
- By moving the accelerator button (14) from one driving direction directly to the opposite direction,



the truck brakes regenerative until it starts traveling into the opposite direction.

- The truck brakes, if the tiller is moved up or down to the braking zones ('B'). If the tiller is released, the tiller moves automatically up to the upper braking zone ('B'). The truck brakes until it stops.
- The safety (belly) button (1) prevents the operator from being crushed. If this button is activated, the truck decelerates and/ or starts traveling into the backwards direction ('Bw.') for a short distance and stops. Please consider, that this button also operates, if the truck is not traveling and the tiller is in the operating zone.

## **g. Malfunctions**

If there are any malfunctions or the truck is inoperative, please stop using the truck and activate the emergency switch (5) by pushing it. If possible, park the truck on a safe area and press the X button of pin-code panel. Inform immediately the manager and, or call your service. If necessary, tow the truck out of the operating area by using dedicated towing/ lifting equipment.

## **h. Emergency**

In emergencies or in the event of tip over (or fall off a dock), keep safe distance immediately. If possible push the emergency button (5). All electrical functions will be stopped.

## 7. PIN-CODE PANEL

PTE15N/PTE33N is equipped with a pin-code panel (3).

PTE20N/PTE45N is equipped with a pin-code panel (3) and RFID cards.

### a. Introduction

Pin-code panel is an electronic system which is similar with an electronic alarm system. Truck will not able to operate before typing a correct password, the main function is to prevent unauthorized operation.

### b. Main functions

For PTE15N/PTE33N, it can be operated only when correct password is typed.

For PTE20N/PTE45N, it can be operated only when correct password is typed or valid ID card is used.

There are two passwords of pin-code panel, one is the default user password 1234, and you can use it immediately. The other one is the administrator password 3232; with this you can set a new user password according to the following steps:

- Type "3232", click "√".
- Type previous user password, click "√".
- Type new password, and click "√", previous password will be replaced.

In case you need to reset the password, please follow the procedure under:

- Type "123", click "√".
- Type "123" again, click "√". Password will be "1234".

In case you need to add additional ID card (only for PTE20N/45N), please follow the procedure under:

- Type "3434", click "√".
- Swipe the new ID card within 5 seconds.
- This pin-code panel supports Max. five cards.

## **8. BATTERY SAFETY, CHARGING AND REPLACEMENT**

### **a. Description of the lithium-ion battery**

The lithium-ion battery is a battery with rechargeable cells, the battery is designed for industrial trucks and can withstand related vibrations during operation. The battery is equipped with special connections for charging and discharging operations. Do not try to install or connect improper connectors to the battery.

The battery is equipped with BMS – battery management system, which performs the control of battery condition and implements related safety protocols to protect the battery and cells from damages caused by operation or environmental conditions. The BMS controls the following safety functions and conditions: voltage, temperature, undervoltage, overvoltage, overtemperature, overcurrent, short circuit, etc. The internal resistance of lithium battery is generally low, which minimizes heat generation and maximizes the available power of the truck.

Temperature range for using the battery is from +5°C to +40°C. Low temperatures reduce the effective battery capacity, high temperatures reduce the battery's life time. The temperature difference between the two sides of the battery shall not exceed 5°C.

Only approved battery chargers must be used to charge the lithium battery.

## b. Battery Decals

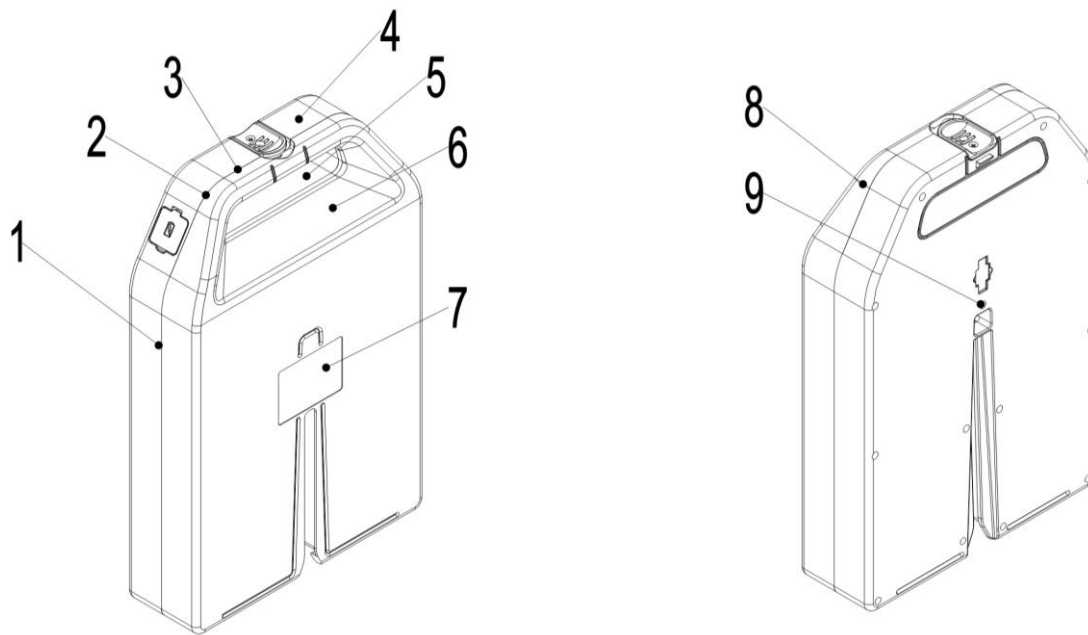


Fig. 10: Battery Decals

Table 3: Battery Decals

Item	Description	Item	Description
1	Disposal mark	6	Warning notice: "Avoid collision"
2	Charging indication	7	Safety information
3	Serial number	8	No random disposal
4	Fuse location	9	Fuse label
5	Identification plate		

## Battery identification plate

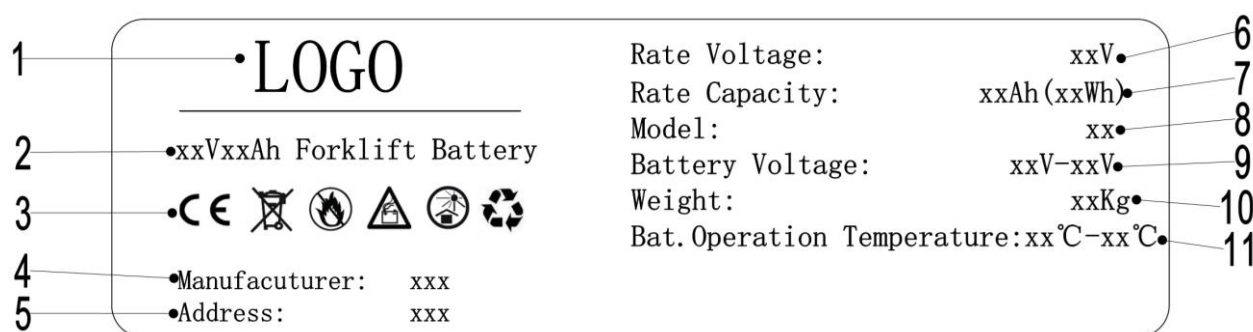


Fig. 11: Battery identification plate

Table 4: Battery data plate

Item	Description	Item	Description
1	Manufacturer trademark	7	Battery capacity
2	Battery information	8	Model designation
3	CE mark and other safety labels	9	Voltage range
4	Battery manufacturer	10	Battery weight
5	Manufacturer address	11	Operating temperature range
6	Rated voltage		

Service mass is indicated on the battery data plate, the center of gravity is located approximately at middle of the battery case

## c. Safety Instructions, Warning Indications and other Notes

### Safety regulations for handling lithium-ion batteries

Do not try to make any repairs or servicing of lithium batteries. Replacement of parts is not assumed.



#### **Risk of electric shock and burning**

The battery's charging and discharging connectors have open terminals, avoid any body contacts, contamination or direct contacts with objects which can cause short circuit connection of terminals. Use necessary pre-cautions and protective caps to secure the open terminals. The connectors should be maintained in clean and dry conditions.



#### **Use only batteries designed and approved by the manufacturer for the truck.**

**Do not try to modify or alter the battery.**



#### **Any damage or defects to the charger can result in accidents. Use only charger approved by the manufacturer of the truck, which is suitable for used battery.**

In case charger has any damages or defects, exclude the charger from operation and contact your service provider. Do not modify or try to repair the charger.



Improper use of charger or use of wrong charger can cause damages to a battery or charger. Follow the required charger specifications; If the operation voltage of the charger is out of the applicable voltage range, the charger or battery may be damaged causing serious safety risks. The charger in use must be approved by the battery (truck) manufacturer.

Reversed connection of charging plug is prohibited. Follow the instruction for correct connection. For disconnection of charging plug use dedicated grip and never pull out the plug by means of cable.

Stop charging immediately if any abnormalities are detected, e.g. severe temperature increase, deformation of battery case, smoke, noise etc.



#### **Intermediate charging**

Lithium batteries support so called opportunity charging. The lithium battery, which is not fully discharged can be charged in any time. However, frequent opportunity charging not to the full charging state and stop of charging process before the appearance of corresponding indication of charger may result in dis-balance voltage of cells which increases the battery BMS calculation error. In order to effectively deal with this phenomenon, charge the battery in full allowing the automotive balancing process to be completed at least once a week.



#### **Do not charge a fully charged battery**

Note that in order to prevent the battery from continuing restart of charging under fully charged

condition causing reduction of battery lifetime, the BMS has a protection function that prohibits recharging of fully charged battery. The charger will not work while battery is fully charged.

## **Potential hazards**

If equipment is used according to its design purpose, following the correct operations procedures, there are no hazards anticipated.

The following hazards can arise in the event of improper use:

- Physical damage to the battery in case a battery falls or is deformed through impacts. Mechanical damages can cause leakages of harmful materials, fire or battery explosion.
- Short circuits may be caused by short connection of battery terminals, for instance, by water or other intentional/unintentional short connections.
- Temperature damages caused by placing of batteries in overheated environment conditions or being exposed to impact of fire, open sunlight etc. can cause leakages of harmful materials, fire or battery explosion.

In order to avoid fire, explosion and/or leakage of harmful materials, a safe place for storing non-functional or damaged batteries until the service arrives on site must satisfy the following criteria:






- Do not store in places where personnel is located.
- Do not store in places with valuable objects and close to valuable objects.
- A Class D fire extinguisher must be available on demand.
- There should not be any fire or smoke detectors in the storage area in order to ensure that an automatic fire detection system is only activated in the event of actual danger (e.g. flames).
- No ventilation intake pipes should be in the facility to exclude spreading of discharged content within a building.

Examples of where to store a non-functional battery:

- Roofed outdoor position.
- Ventilated container.
- Covered fire resistant box with pressure and smoke discharge option.

## Symbols - Safety and Warnings

Table 5: Symbols - Safety and Warnings

	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.
	Avoid fire and short circuits causing overheating. Do not ignite or locate batteries close to open flame, heat sources or sparks. Keep lithium-ion batteries away from heat sources.
	Caution! Battery short-circuit is prohibited.
	Protect the lithium-ion battery from solar radiation or other forms of heat radiation. Do not expose the lithium-ion battery to heat sources.
	The battery can be recharged cyclically

### Explosion and fire hazard



Physical damage, thermal impacts or incorrect storage in the event of a defect can result in explosions or fire. The battery materials can be flammable.

### Particular hazard from combustion products

The lithium batteries may be damaged by a fire. When extinguishing a lithium battery fire, the following information must be taken into consideration.



#### Contact with combustion products can be hazardous

Fire produces combustion products, which can occur in the form of smoke, through leaking fluids, escaping gases, debris as well decomposition products of certain chemicals. These combustion products are substances that enter the body through the respiratory tract and/or the skin, can produce and adverse effects such as choking.



#### Avoid contact with combustion products.

Use protective equipment.

### Special firefighting protective equipment

Use self-contained breathing apparatus.

Wear protective equipment.



## **Additional firefighting instructions**

To prevent secondary fires, the lithium-ion battery must be cooled from the outside.

Suitable extinguishing agents

- Carbon dioxide extinguisher (CO<sub>2</sub>)
- Water (not on mechanically opened or damaged batteries)

Unsuitable extinguishing agents

- Foam
- Grease fire extinguishing agents
- Powder extinguishers
- Metal fire extinguishers (PM 12i extinguishers)
- Metal fire powder PL-9/78 (DIN EN 3SP-44/95)
- Dry sand

## **Instructions for cooling an overheated, non-physically damaged battery**

This type of damage may be caused by a short circuit inside the battery, which may result in leakage of harmful materials, fire or battery explosion.

## **Material discharge**

### **Battery electrolyte fluid can be hazardous**



Electrolyte fluid can be discharged if the battery is physically damaged. Avoid its contact with skin or eyes. If the contact happened:

- Rinse the affected parts with big amount of water and request for medical assistance immediately.
- In case of skin irritation or if any substances are breathed in request the medical assistance immediately.

## **Precautionary measures for personnel**

- Keep personnel away, avoid any contact with smoke or discharged materials.
- Block off the affected area and ensure its reasonable ventilation.
- Wear personal protective equipment. If vapors, dust or aerosols are presented use self-contained breathing apparatus.

## **Precautionary measures for the environment**

Do not allow spilled fluids to enter the water system, drainage system or the underground water.

## **Cleaning measures**

The leaked fluid must be removed professionally following the related protocols.

## **Battery lifetime, maintenance and storage**

The lithium-ion batteries are maintenance-free.

### **Deep discharge can damage the battery**

Self-discharge without periodical recharge can lead the battery to fully discharged state. Full discharge shortens the service life of the battery and can cause deep discharge and activation of related safety protocols when battery will not be able to be charged anymore.

Before a long period of inactivity, the battery must be charged to 40%~60%.

Control the level of battery charge at least every 12 weeks and re-charge if necessary.

The temperature range for storing of the battery should be within the range of 0°C to 30°C.

If the battery is deeply discharged or if the battery temperature is below the permissible level, the battery cannot be charged. Deeply discharged batteries can never be charged. Due to the risk of condensate formation, batteries that have been stored at 0°C or below must only be charged after natural warming up to at least +5°C, forced heating is forbidden.

### **Instructions for safe handling of batteries**

- Do not modify the battery.
- Do not open, damage, drop, penetrate or deform the battery.
- Do not throw the battery into a fire.
- Protect the battery from overheating.
- Protect the battery from direct sun light.
- Follow storage and charging procedures
- Protect the battery from water damages and other impacts

Failure to comply with these safety instructions can result in fire and explosion or the leakage of harmful materials.

### **Pre-shift checks before the system is put into operation**

Check that the battery is in its normal condition, has no evidence of damages, leakages, abnormal findings, e.g. high temperature, smell, smoke etc. The surface of the battery should be clean and dry, without evidence of water damages, marks of rust on terminals and housing (if applicable). Connecting cables and plugs are in good condition.

## **Faults**



If any damage is found to the battery or battery charger contact the service provider immediately.  
Do not open the battery or attempt to repair it.

## **Disposal and transport of a lithium-ion battery**

### **Instructions for disposal**

Lithium-ion batteries must be disposed in accordance with the relevant national environmental protection regulations. Batteries must be treated as hazardous waste. Batteries must not be disposed with ordinary waste.

### **Shipping information**

The lithium-ion battery is a hazardous material. The applicable regulations must be fulfilled during transportation.

### **Shipping functional batteries**

Functioning batteries can be shipped in accordance with the related regulations

### **Shipping faulty batteries**

To transport faulty lithium-ion batteries, contact the service provider. Faulty lithium batteries require following of special transporting procedures.

## d. Charging the battery

### Charge Status Indicator

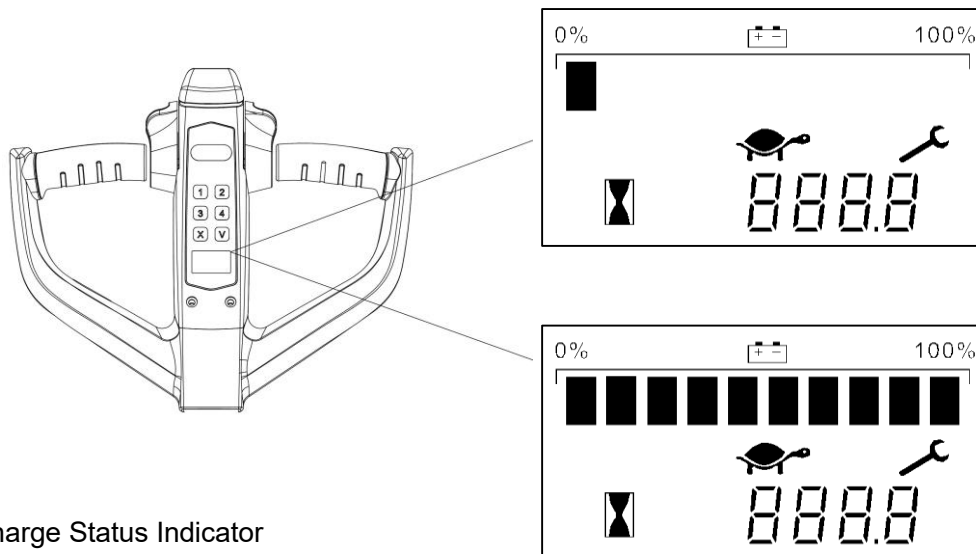


Fig. 12: Charge Status Indicator

The charge status indicator of the battery is integrated in the control handle.



The charge status is displayed in ten increments. Each is represented by a rectangle that corresponds to 10% of the battery charge.

The rectangles gradually disappear as the battery discharges. Special statuses appear in the display unit as error codes.

Table 6: Error codes

Code	The error code appears if ...	Effect
0	Low battery power.	Lift function is deactivated and travel speed is reduced.
91	Battery over discharged.	Lift function is deactivated and travel speed is reduced.

Table 7: Main symbol specification

	<b>Turtle Symbol:</b> It is normally off, when it appears (fixed) it shows activation of the “soft” mode of the truck, in which maximum speed and acceleration are reduced.
	<b>Monkey Wrench Symbol:</b> It is normally off, when it appears (fixed) it shows the request of programmed maintenance or the alarm state. In this case the relative code will be displayed. The information supplied by the MDI-CAN can be extremely useful. Failures can be quickly identified by the operator or service technician thereby finding the fastest solution to the problem.

**Hourglass Symbol:**

It blinks when the hour meter is working.

## Charging the Battery with External Charger

### Maintenance personnel

Batteries may only be charged, serviced or replaced by trained personnel. These operating instructions and the battery manufacturer's instructions must be observed when performing these operations.

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

### General information

- The charge status of the battery is indicated by LEDs on the battery charger.
- The charging time depends on the battery charge status. The time it takes to charge an almost fully depleted battery depends both on the battery capacity and the charge current. The approximate duration can be calculated as follows:  
Charging time = capacity of battery / charge current of battery charger.
- The lithium-ion battery can also be used when not fully charged. In this case, the remaining operating time is reduced.
- Charging continues automatically after a mains failure is restored.

The battery temperature rises by approx. 13°C during charging. Battery charging should only start when the battery temperature is below 40°C. The battery temperature before charging should be at least 5°C.

### Status of the LEDs on the battery charger

When the battery charger is connected to the battery and to the power supply, the LEDs on the charger indicate the following:

Table 8: LEDs

LED lit	Status
Green	The battery is fully charged
Red	Battery is charging

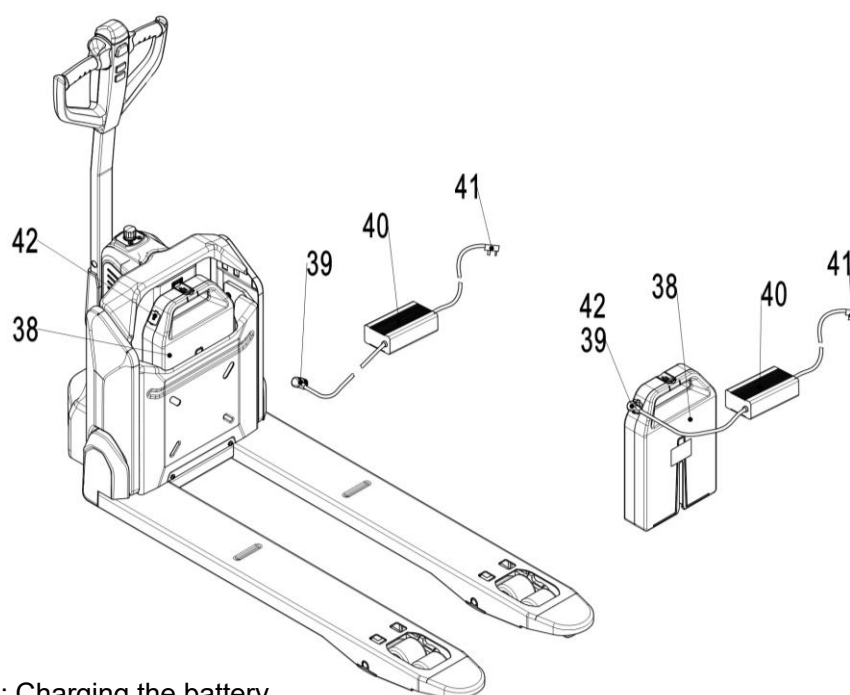
If the green LED does not light up or if the red LED lights up permanently or not at all, this indicates a fault.

The trucks are equipped with the following batteries:

**Table 9:** Available batteries

Model	Battery options	Weight
PTE15N/PTE33N	24V20Ah lithium battery	5.8kg
	24V36Ah lithium battery	7.7kg
PTE20N/PTE45N	48V20Ah lithium battery	7.7kg

### ***Charging the battery***



**Fig. 13:** Charging the battery

### ***Requirements***

- The truck is parked securely.
- The battery charger is approved for the battery type in use.

### ***Tools and Material Required***

- Battery charger

### ***Procedure***

- Open the charging socket (42) of the battery and connect the charge connector (39) of the battery charger (40).
- Then connect the mains plug (41) of the battery charger (40) to the power supply.
- The status of charging process is indicated by the illumination of the red LED.
- Check the charging status; also refer to the instructions of the battery charger (40).

- The charging process is completed when the green LED lights up.
- Once the battery (38) is charged, disconnect the battery charger (40) from the power supply before unplugging it from the battery.
- Close the charging socket (42) with the cap.

***Battery is charged.***

Alternatively, the battery can also be charged outside the truck. The process for charging the battery remains the same.

The trucks are equipped with the following chargers:

**Table 10:** Available chargers PTE15N/PTE33N

Specification	Input	Output
24V5A(Chinese label)	180Vac -240Vac~2.0A MAX	29.4V 5.0A
24V5A( English label)	100Vac -240Vac~2.0A MAX	29.4V 5.0A
24V8A(Chinese label)	180Vac -240Vac~3.0A MAX	29.4V 8.0A
24V8A( English label)	180Vac -240Vac~3.0A MAX	29.4V 8.0A
24V8A(EU)	180Vac -240Vac~3.0A MAX	29.4V 8.0A
24V8A(US)	108Vac -132Vac~5.0A MAX	29.4V 8.0A
24V12A	100Vac -240Vac~6.0A MAX	29.4V 12.0A

**Table 11:** Available chargers PTE20N/PTE45N

Specification	Input	Output
48V9A	180Vac -240Vac ~2.0A MAX	54.6V 9.0A
48V9A(US)	100Vac -132Vac ~5.0A MAX	54.6V 9.0A
48V9A(EU)	180Vac -240Vac ~2.0A MAX	54.6V 9.0A

## e. Battery removal and installation

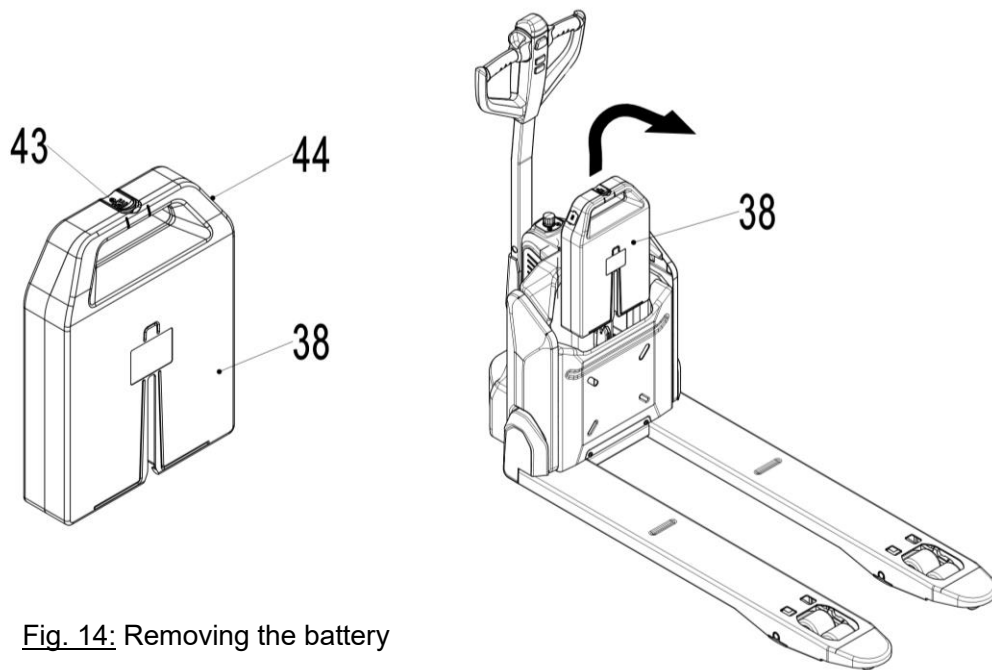


Fig. 14: Removing the battery

### ***Removing the battery***

#### ***Requirements***

- The truck is parked securely.
- The emergency disconnect switch is actuated.

#### ***Procedure***

- Unlock the battery latch (43).
- Lift the battery (38) up by the battery handle (44).

***The battery has been removed.***



## Battery installation

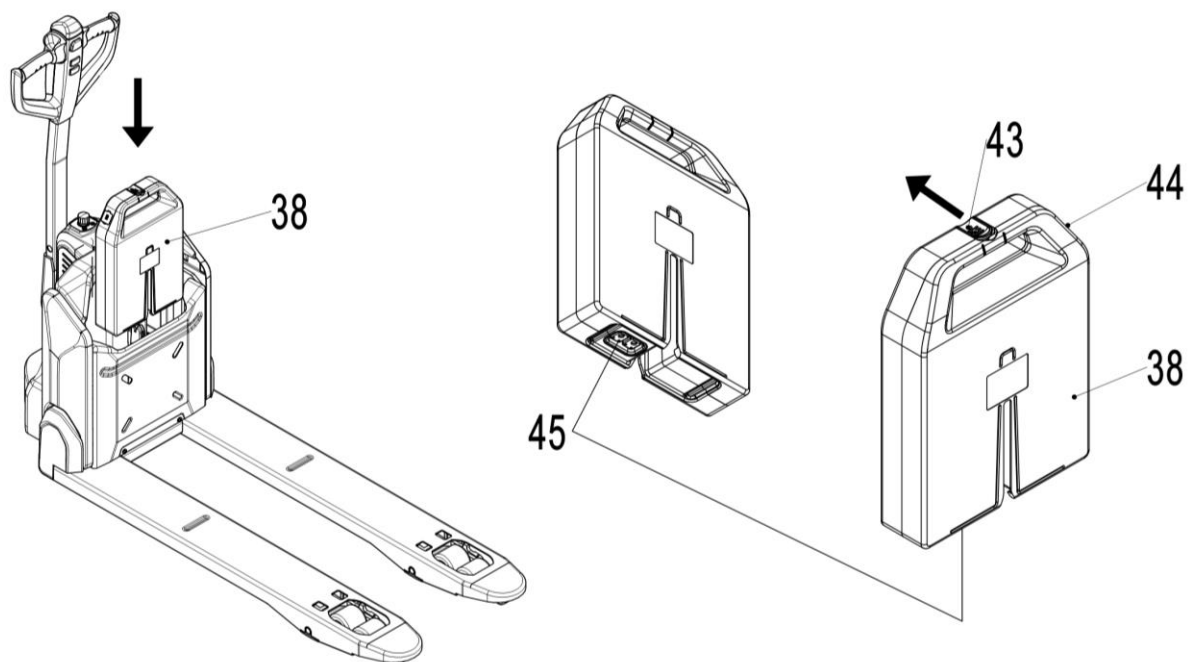


Fig. 15: Battery installation

### ***Installing the battery***

#### ***Requirements***

- The truck is parked securely.
- The emergency disconnect switch is actuated.

#### ***Procedure***

- Insert the battery (38) into the battery compartment.
- The plug connection (45) between the battery and truck must be fully connected.
- Lock the battery latch (43).
- Release the emergency disconnect switch.

*The battery is now installed.*

## 9. REGULAR MAINTENANCE



- Inspection and maintenance of the equipment according to the specified maintenance schedule.
- Before maintaining, remove the load from the forks and lower the forks to the lowest position.
- If you need to lift the truck, follow chapter 4b by using designated lashing or jacking equipment. Before working, put safety devices (for instance designated lift jacks, wedges or wooden blocks) under the truck to protect against accidental lowering, movement or slipping.
- Please pay attention by maintain the tiller arm. The gas pressure spring is pre-loaded by compression, carelessness can cause injury.
- Use approved and from your dealer released original spare parts.
- Please consider that oil leakage of hydraulic fluid can cause failures and accidents.
- It is allowed to adjust the pressure valve only from trained service technicians.

If you need to replace the wheels, please follow the instructions above. The casters must be round and free of abnormal wear.

Check the items emphasized in maintenance checklist.

### a. Maintenance checklist

#### 1 Owner

Can be performed by end-user. It is recommended to perform the maintenance every 50 service hours, but at least once a week.

Hydraulic	
1	Check the hydraulic-oil level
Mechanical system	
2	Check the wheels for deformation and damages
Electrical system	
3	Check the Emergency switch function
4	Check the display
Braking system	
5	Check the work of electromagnetic brake
Battery	
7	Check the battery and battery components for damage
8	Check battery connector for secure fit, functionality and damage
Function	
9	Check the horn function
10	Check the emergency braking
11	Check the reverse and regenerative braking
12	Check the safety (belly) button function
13	Check the steering function

14	Check the lifting and lowering function
15	Check the tiller arm switch function
General	
16	Check if all decals are legible and complete

## 2 Customer Service

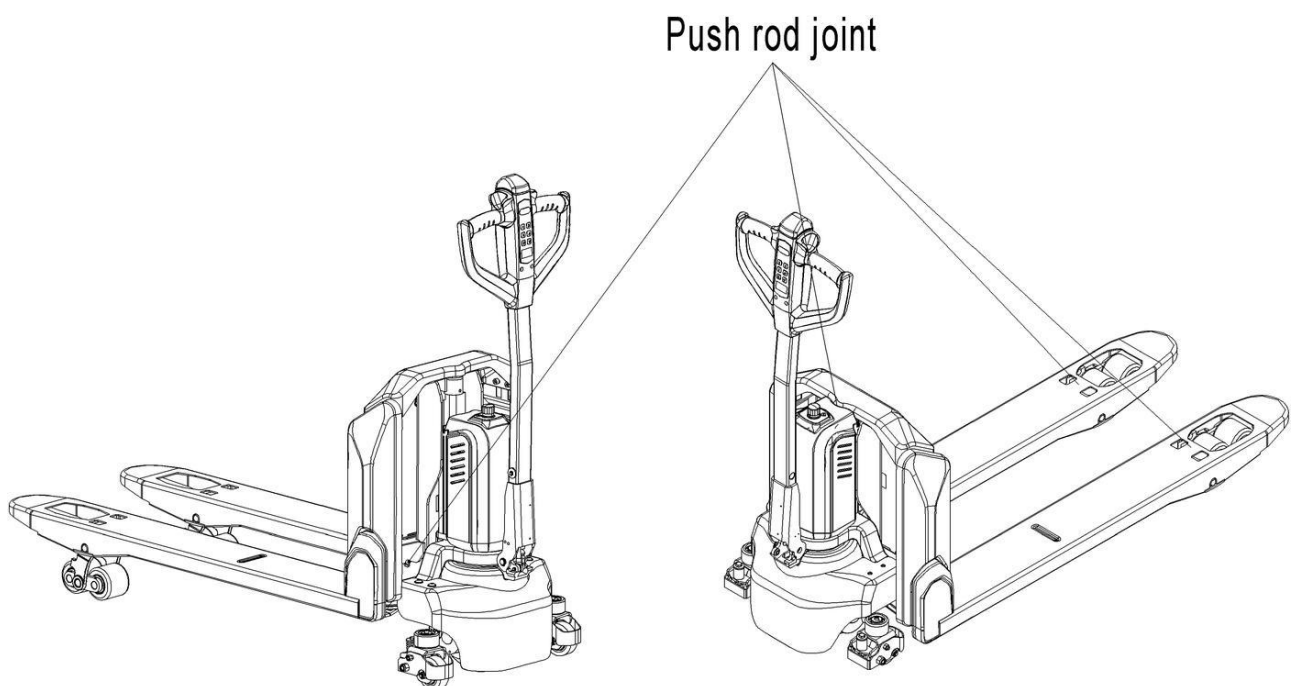
Be performed by professional service technician. It is recommended to perform the maintenance every 1000 service hours, but at least once a year.

Hydraulic	
1	Check the hydraulic cylinder for damage noise and leakage
2	Check the hydraulic joints for damage and leakage
3	Replace the hydraulic oil ( 12 month or 1500 working hours )
4	Check and adjust the pressure valve (1500kg/3300lbs (PTE15N/PTE33N)+0/+10% or 2000kg/4500lbs (PTE20N/45N)+0/+10%)
Mechanical system	
5	Check the forks and chassis for deformation and cracks
6	Check if all screws are fixed
7	Check the push rods for deformation and damages
8	Check the gearbox for abnormal sound and noise
9	Check the steering bearing
10	Check and lubricate the pivot points if necessary
11	Lubricate the grease nipples
Electrical system	
12	Check the Emergency switch function
13	Check the display
14	Check the electric wiring for damage
15	Check the electric connections and terminals
16	Check the electric drive motor for noise and damages
17	Check if correct fuses are used
18	Check the contactor
19	Check the frame leakage (insulation test)
20	Check function and mechanical wear of the accelerator
21	Check the electrical system of the drive motor
Braking system	
22	Check brake performance
23	Measure the air gap of the electromagnetic brake, replace brake if needed
Battery	
24	Check the battery and battery components for damage
25	Check battery connector for secure fit, functionality and damage
26	Check the battery voltage
27	Check the terminals for corrosion and damages
Charger	
28	Check the main power cable for damages
29	Check the start-up protection during charging

Function	
30	Check the horn function
31	Check the emergency braking
32	Check the reverse and regenerative braking
33	Check the safety (belly) button function
34	Check the steering function
35	Check the lifting and lowering function
36	Check the tiller arm switch function
General	
37	Check if all decals are legible and complete
38	Check wheels for wear, damage and secure mounting
39	Carry out a test run

## b. Lubricating points

Lubricate the marked points according to the maintenance checklist. The required grease specification is: DIN 51825, standard grease.



**Fig. 16:** Lubricating points

## c. Check and refill hydraulic oil

It is recommended to use hydraulic oil in connection with average temperature:

Table 12: Recommended hydraulic oil

Environment temperature	5°C~25°C	>25°C
Type	HVLP 32, DIN 51524	HLP 46, DIN 51524
Viscosity	28.8-35.2	41.4 - 47
Amount	0.4L	

Waste material like oil, used batteries or other must be properly disposed and recycled according to the national regulations and, if necessary, brought to a recycling company.

The oil level in the oil tank should be between min and max marks with fully lowered forks.

If necessary, add oil at the filling point.

## d. Checking electrical fuses

Remove the main cover. The fuses are located according to Fig. 17; the size is according to table 13.

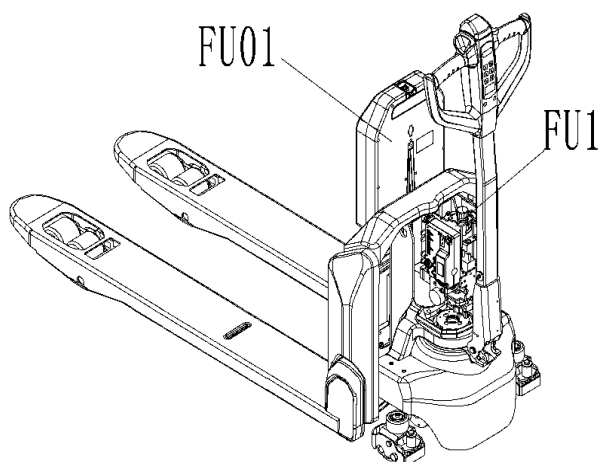


Fig. 17: Location of fuses for PTE20N/45N

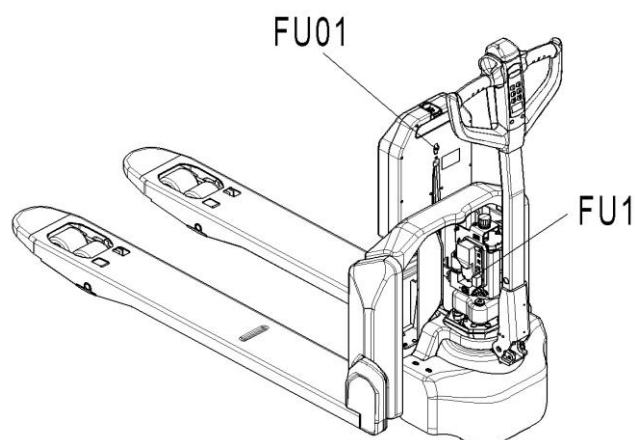


Fig. 18 Location of fuses for PTE15N/33N

Table 13: Rate of the fuses

	Rate
FU 1	10A
FU 01	70A

## 10. TROUBLE SHOOTING



- If the truck has malfunctions follow the instructions, mentioned in chapter 6.

Table 14: Trouble shooting

TROUBLE	CAUSE	REPAIR
Load can't be lifted	Load weight too high	Lift only the max. capacity, mentioned on the ID-plate
	Battery low power	Charge the battery
	Lifting contactor failure	Check and contact with service support for replacement if necessary
	Hydraulic oil level too low	Check and eventually refill hydraulic oil
	Oil leakage	Repair the sealing of the cylinder
Oil leakage from air breathing	Excessive quantity of oil.	Reduce oil quantity.
Truck not starts operating	Battery is charging	Charge the battery completely and then remove the main power plug from the electrical socket.
	Battery not connected	Connect the battery correctly
	Fuse faulty	Check and eventually replace fuses
	Low battery	Charge the battery
	Emergency switch is activated	Turn the emergency switch clockwise
	Tiller in the operating	Move the tiller firstly to the braking zone.

If the truck has malfunctions and can't be operated out of the working zone, jack the truck up and go with a load handler under the truck and safe the truck securely. Then move truck out of the aisle.

## 11. WIRING/ CIRCUIT DIAGRAM

### a. Electrical circuit diagram

PTE15N/ PTE33N without speed reduction on curves

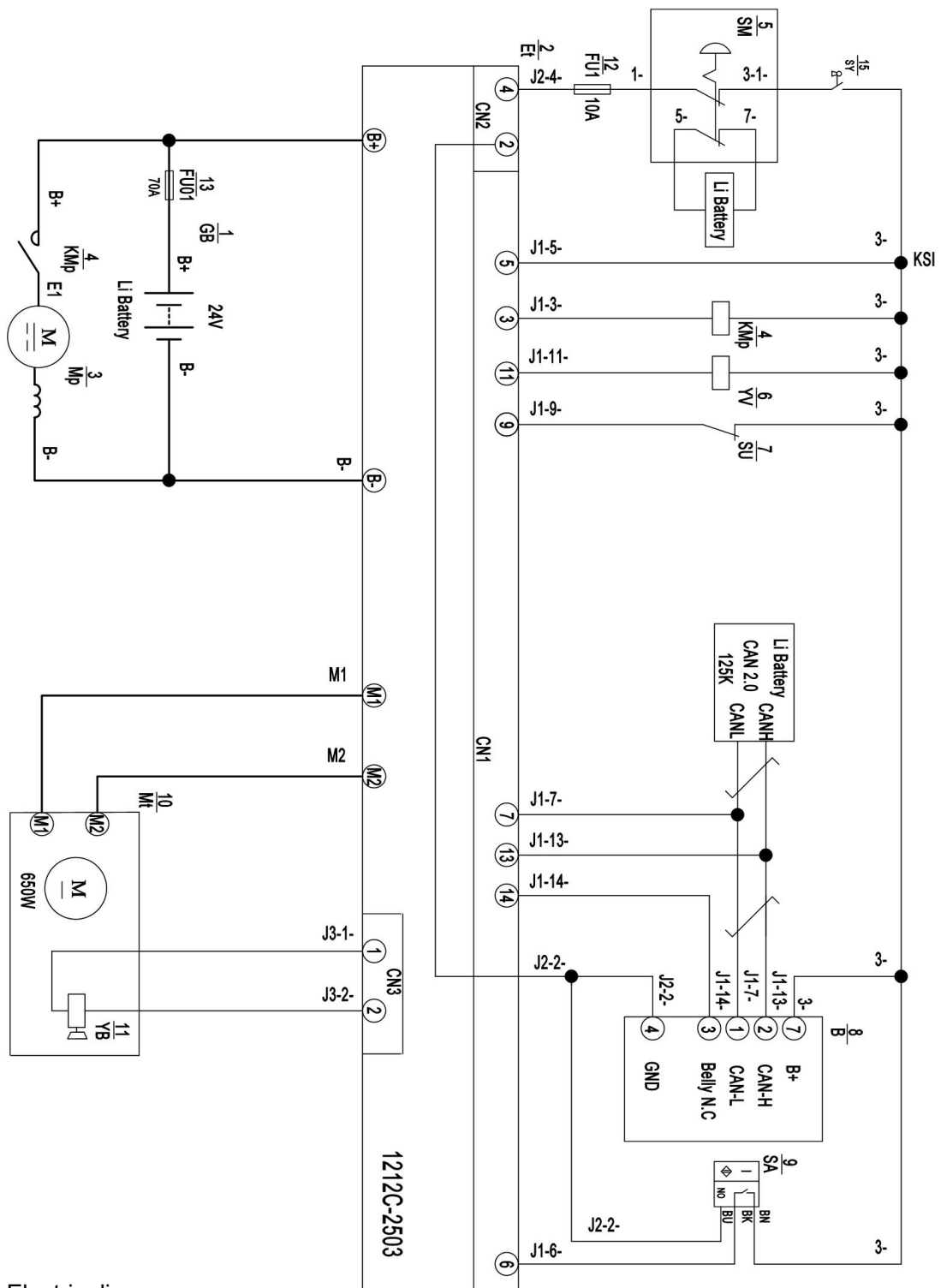


Fig.19: Electric diagram

**Table 15:** Description of electrical diagram

Code	Item	Code	Item
GB	Battery	B	CAN tiller
Et	Controller	SA	Proximity switch
Mp	Pump motor	Mt	Traction motor
KMp	Pump contactor	YB	Electromagnetic brake
SM	Emergency switch	FU1	10A fuse
YV	Electromagnetic valve	FU01	70A fuse
SU	Micro switch		



### PTE15N/PTE33N with speed reduction on curves

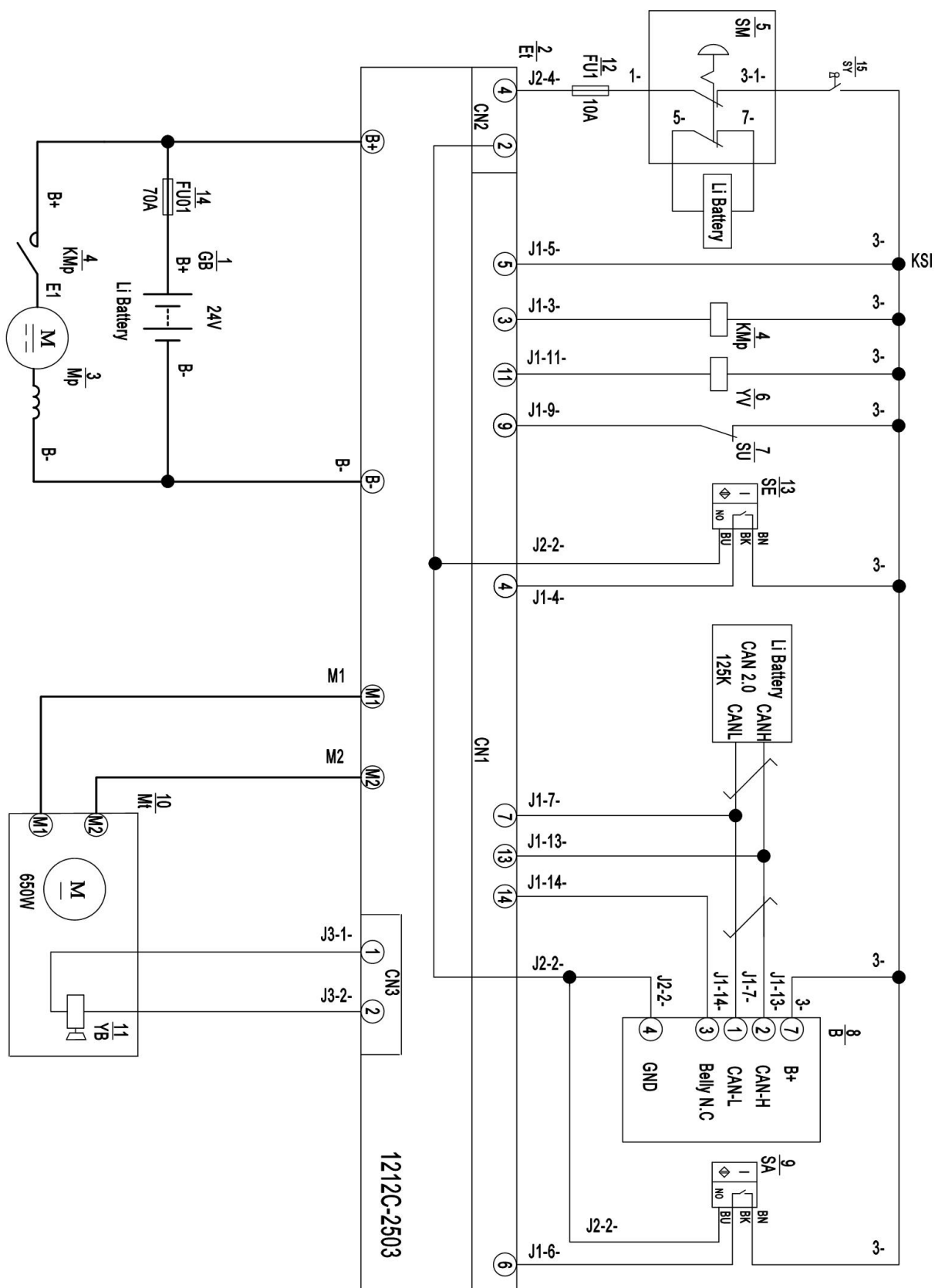


Fig. 20: Electric diagram

**Table 16:** Description of electrical diagram

Code	Item	Code	Item
GB	Battery	B	CAN tiller
Et	Controller	SA	Proximity switch
Mp	Pump motor	Mt	Traction motor
KMp	Pump contactor	YB	Electromagnetic brake
SM	Emergency switch	FU1	10A fuse
YV	Electromagnetic valve	SE	Proximity switch
SU	Micro switch	FU01	70A fuse

PTE15N/PTE33N without speed reduction on curves(EN1175-2020)

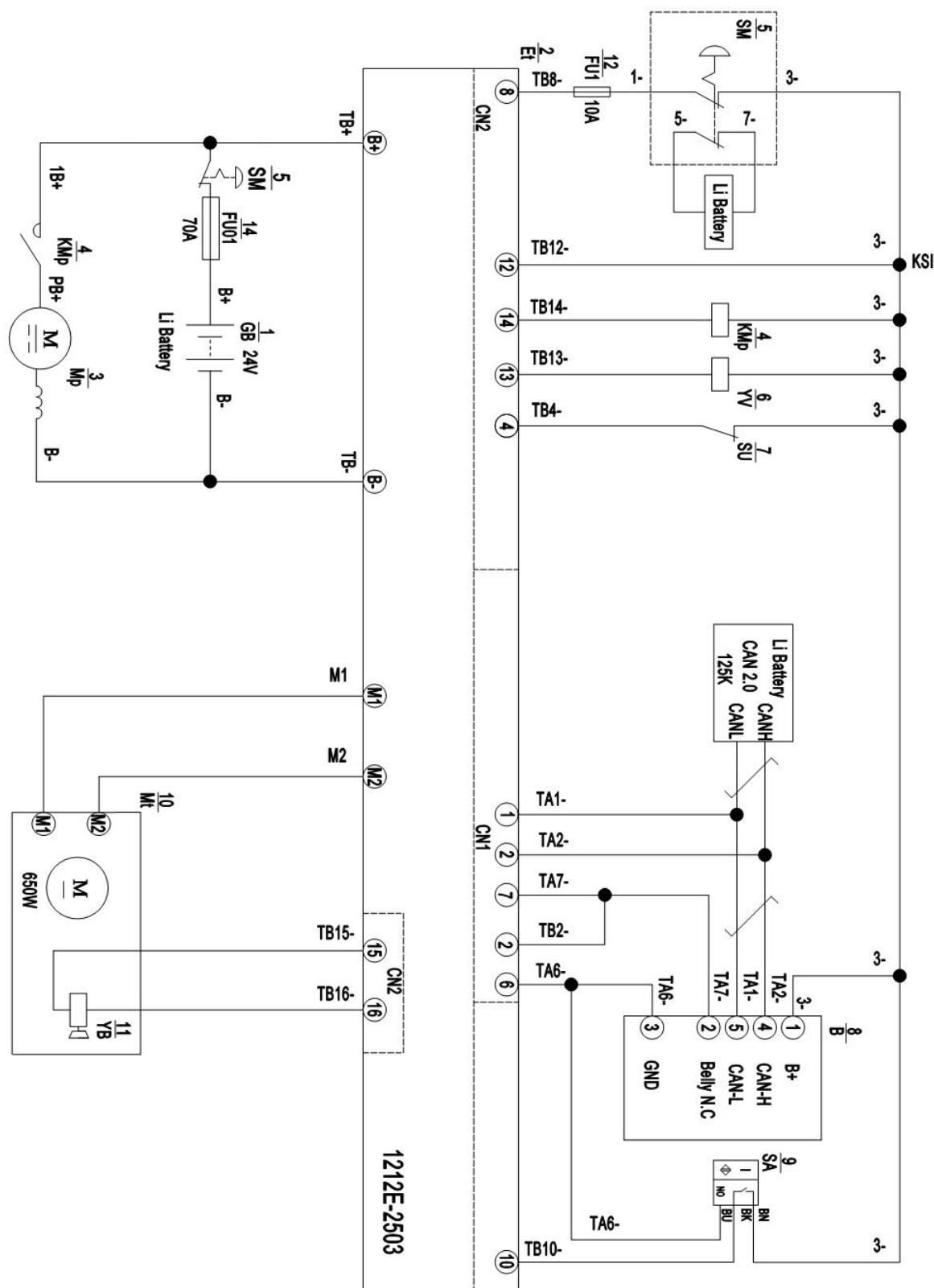


Fig. 21: Electric diagram

Table 17: Description of electrical diagram

Code	Item	Code	Item
GB	Battery	B	CAN tiller
Et	Controller	SA	Proximity switch
Mp	Pump motor	Mt	Traction motor
KMp	Pump contactor	YB	Electromagnetic brake
SM	Emergency switch	FU1	10A fuse
YV	Electromagnetic valve	FU01	70A fuse
SU	Micro switch		

PTE15N/PTE33N speed reduction on curves(EN1175-2020)

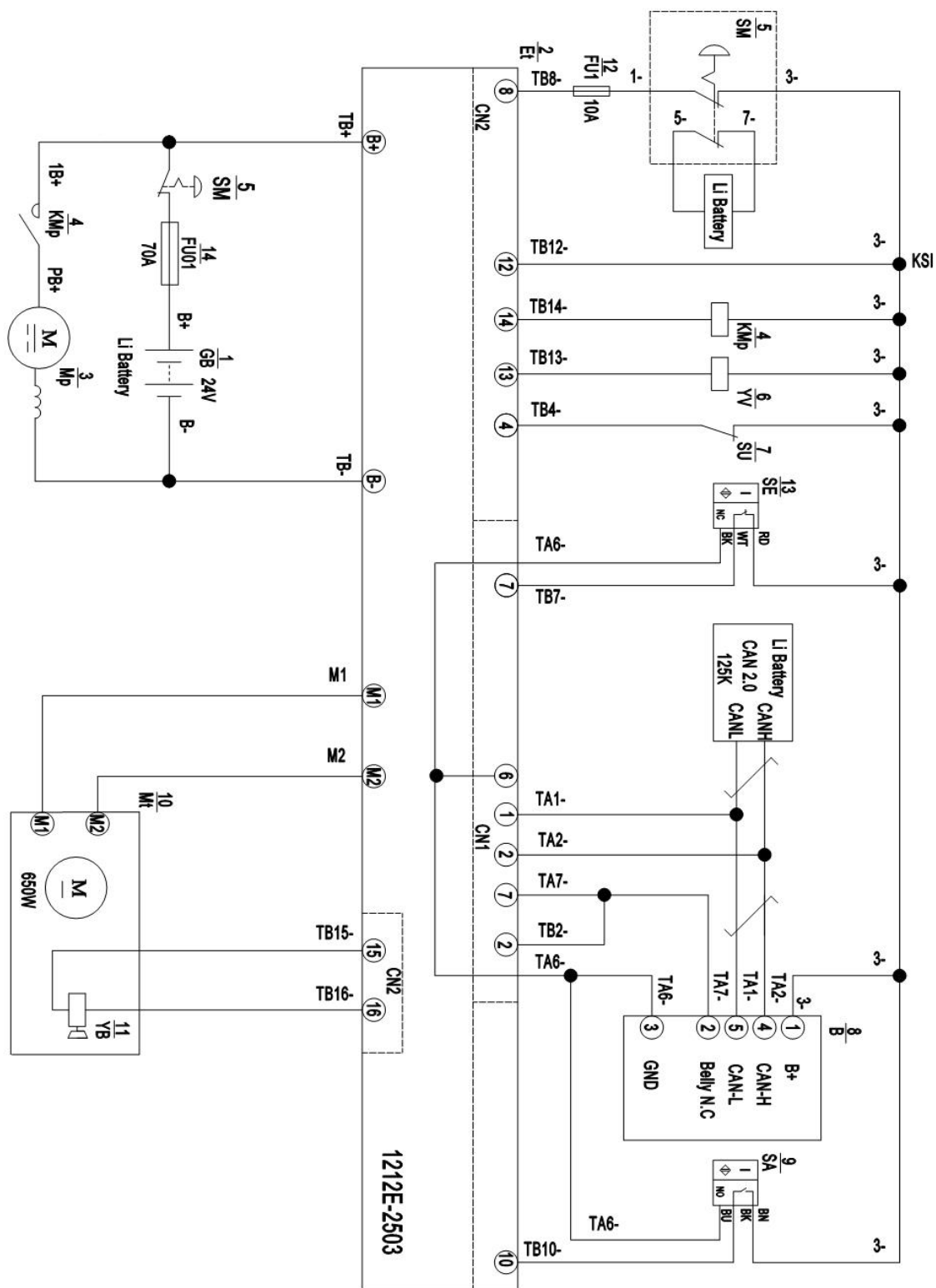


Fig. 22: Electric diagram

**Table 18:** Description of electrical diagram

Code	Item	Code	Item
GB	Battery	B	CAN tiller
Et	Controller	SA	Proximity switch
Mp	Pump motor	Mt	Traction motor
KMp	Pump contactor	YB	Electromagnetic brake
SM	Emergency switch	SE	Proximity switch
YV	Electromagnetic valve	FU1	10A fuse
SU	Micro switch	FU01	70A fuse

## PTE20N/PTE45N without speed reduction on curves

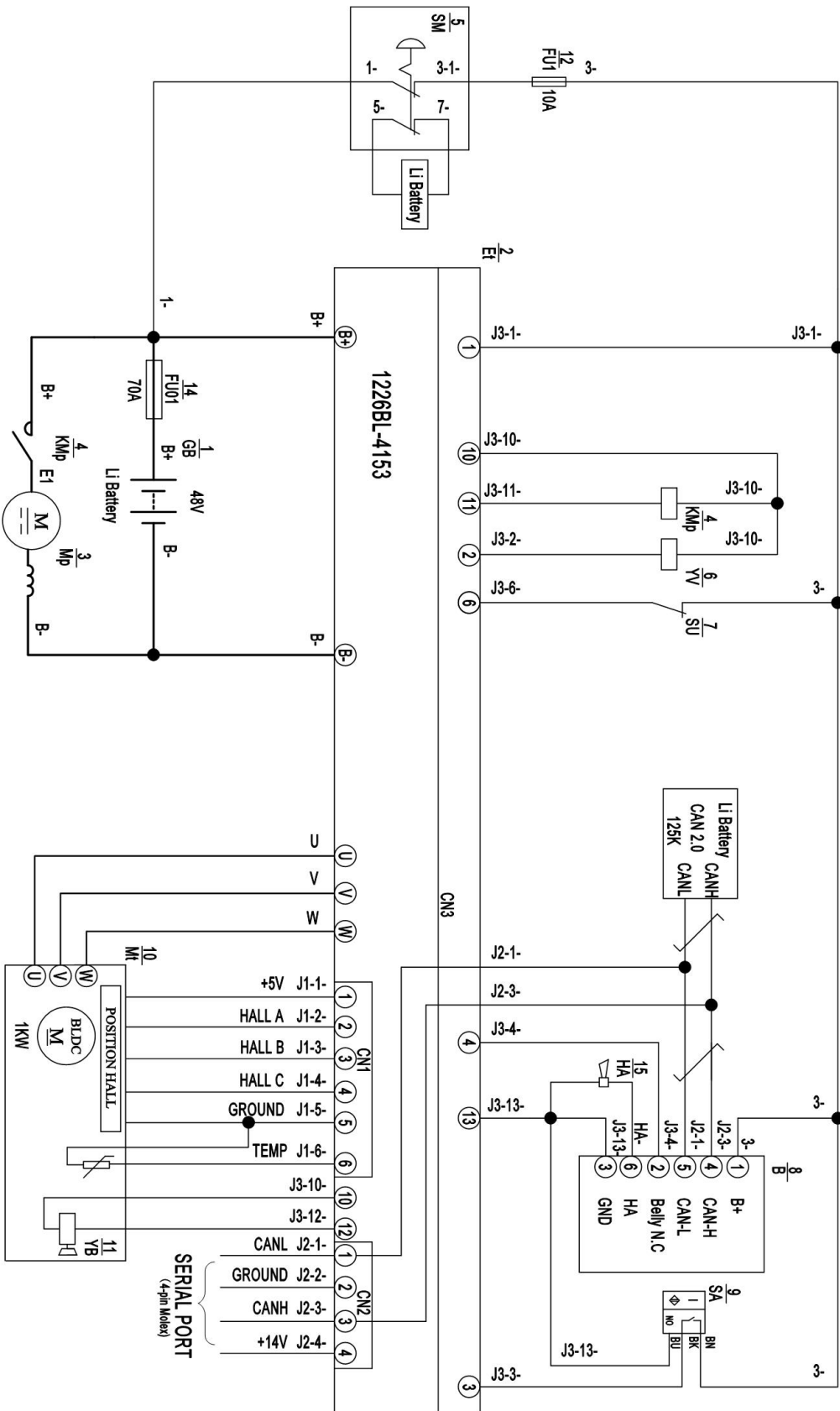


Fig. 23: Electric diagram

**Table 19:** Description of electrical diagram

Code	Item	Code	Item
GB	Battery	B	CAN tiller
Et	Controller	SA	Proximity switch
Mp	Pump motor	Mt	Traction motor
KMp	Pump contactor	YB	Electromagnetic brake
SM	Emergency button	FU1	10A fuse
YV	Electromagnetic valve	FU01	70A fuse
SU	Micro switch	HA	Buzzer



# PTE20N/PTE45N with speed reduction on curves(1226BL)

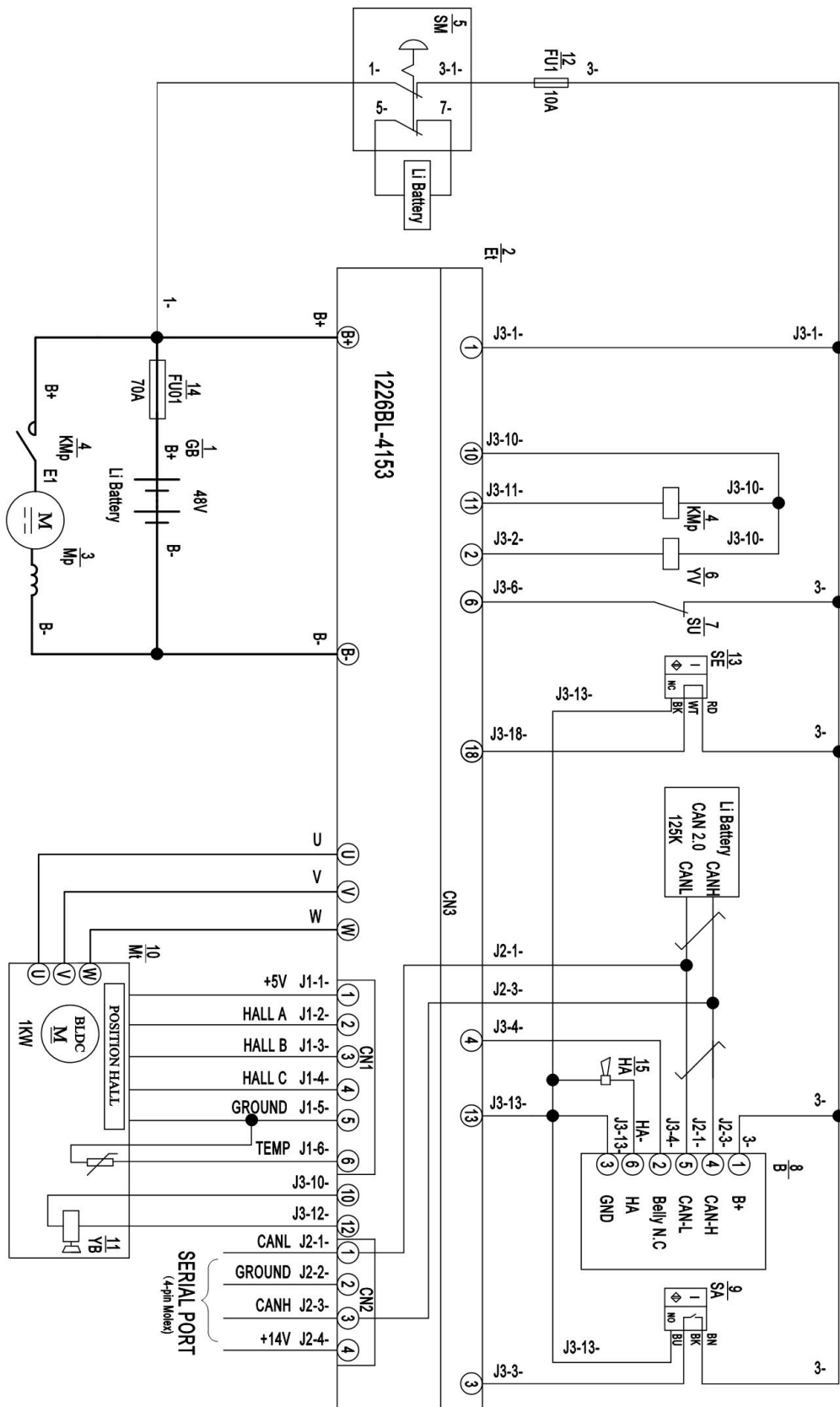


Fig. 24: Electric diagram

**Table 20:** Description of electrical diagram

Code	Item	Code	Item
GB	Battery	B	CAN tiller
Et	Controller	SA	Proximity switch
Mp	Pump motor	Mt	Traction motor
KMp	Pump contactor	YB	Electromagnetic brake
SM	Emergency button	FU1	10A fuse
YV	Electromagnetic valve	FU01	70A fuse
SU	Micro switch	HA	Buzzer
SE	Proximity switch		

### PTE20N/PTE45N with speed reduction on curves(GY48V100A)

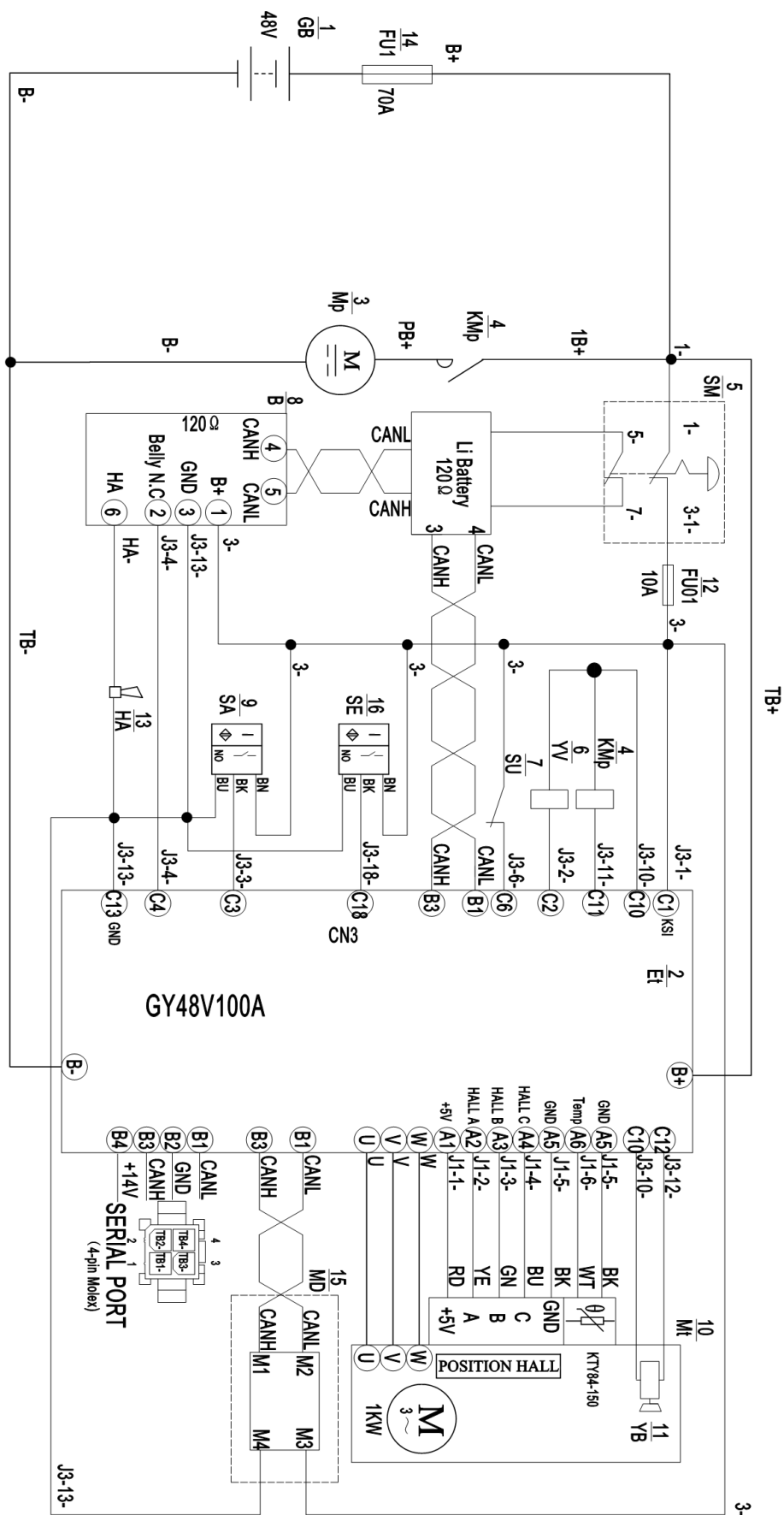


Fig.25: Electric diagram

Table 21: Description of electrical diagram

Code	Item	Code	Item
GB	Battery	SA	Proximity switch
Et	Controller	Mt	Traction motor
Mp	Pump motor	YB	Electromagnetic brake
KMp	Pump contactor	FU01	10A fuse
SM	Emergency button	HA	Buzzer
YV	Electromagnetic valve	FU1	70A fuse
SU	Micro switch	MD	Bluetooth module
B	CAN tiller	SE	Proximity switch

### PTE20N/PTE45N with speed reduction on curves(EN1175-2020)

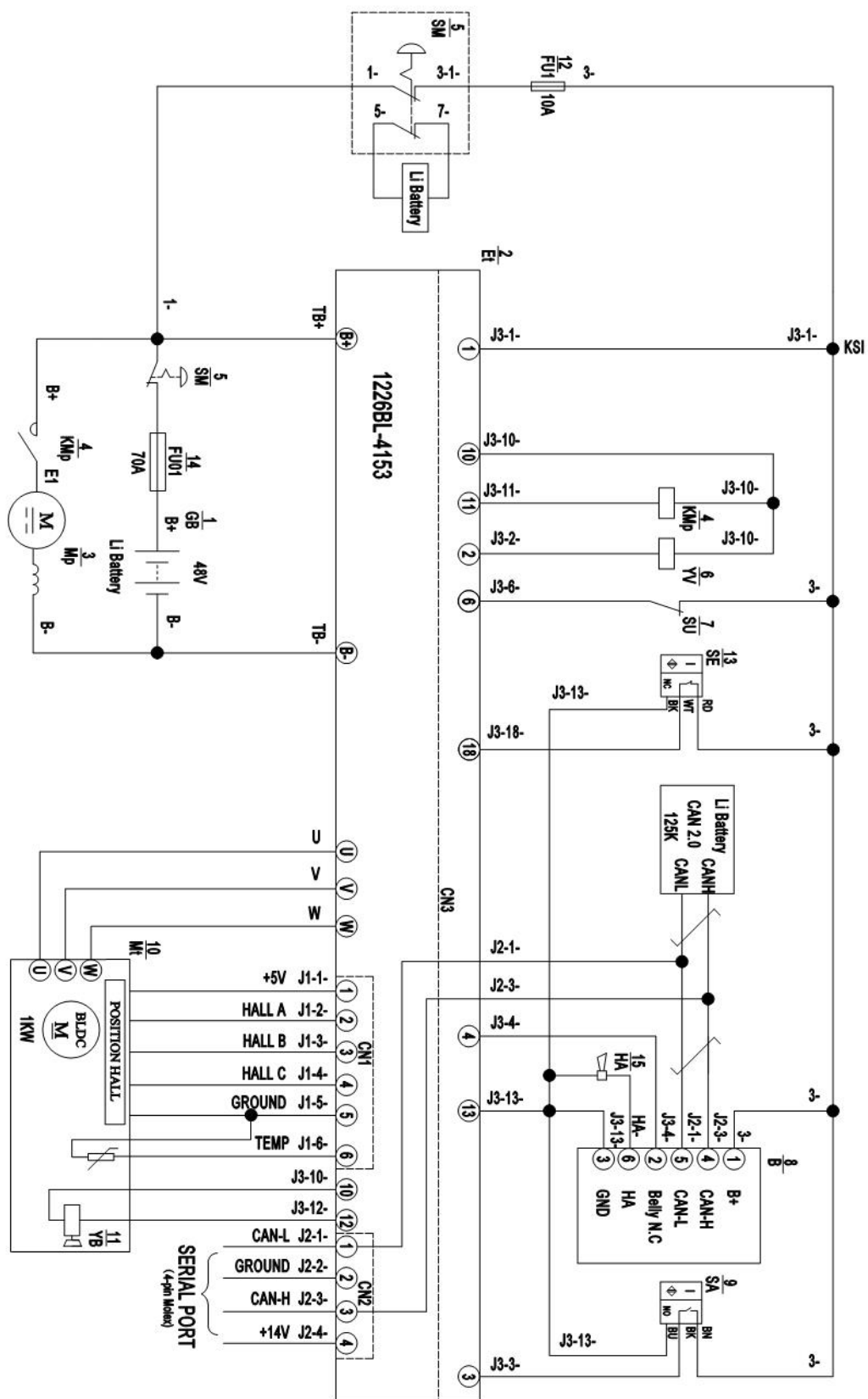


Fig.26: Electric diagram

**Table 22:** Description of electrical diagram

Code	Item	Code	Item
GB	Battery	B	CAN tiller
Et	Controller	SA	Proximity switch
Mp	Pump motor	Mt	Traction motor
KMp	Pump contactor	YB	Electromagnetic brake
SM	Emergency button	FU01	10A fuse
YV	Electromagnetic valve	FU1	70A fuse
SU	Micro switch	HA	Buzzer
SE	Proximity switch		

## b. Hydraulic circuit

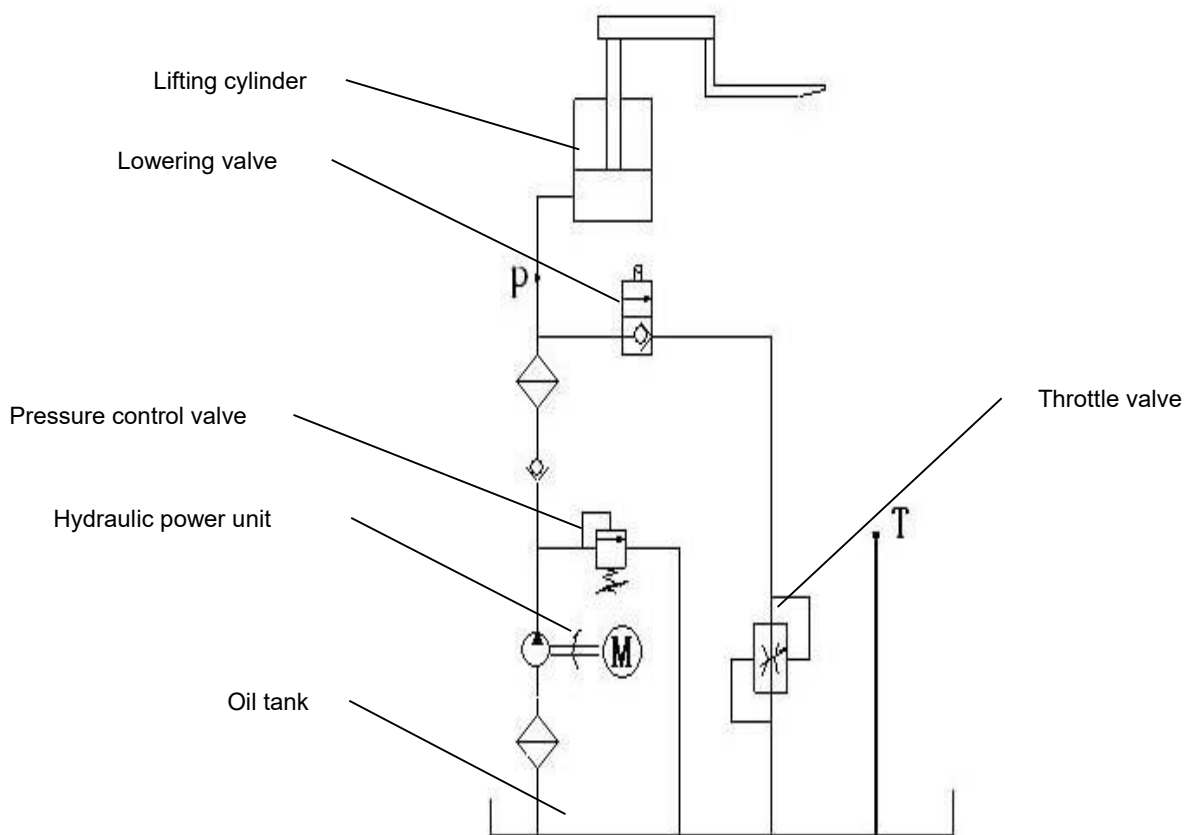


Fig. 27: Hydraulic circuit

## 12. SPECIALIZED STIPULATIONS FOR THE US- AMERICAN MARKET

The content in this chapter is specialized for the US-American market.


### a. Foreword/ Compliance


Operating this truck requires knowledge which can be acquired from this instruction handbook. This handbook must be kept available throughout the entire period of use of the industrial truck.


**IT IS LAW; YOU MUST BE TRAINED AND CERTIFIED TO OPERATE THIS TRUCK! READ AND OBEY ALL WARNINGS AND INSTRUCTIONS IN THIS MANUAL AND ON THE TRUCK!**

Only properly trained operators are allowed to operate a powered industrial truck. Your employer must train you and certify, that you are qualified to operate this truck (required by OSHA § 1910.178). The training must satisfy OSHA requirements and as minimum the topics mentioned in this handbook. Depending on the context in this operating manual, the user can refer to several people, including the owner of the truck, anyone who leases or borrows this truck, and the operator as defined in ASME B56.1. Please pay attention to the section in ANSI/ITSDF B56.1 concerning the operator. In this standard, it is defined that the safe operation is the responsibility of the operator (ANSI/ITSDF B56.1, Part II, section 5.1.1). You and others can be seriously injured or even killed if you don't use this truck correctly. Before operating your truck, inspect your truck and ensure that it is in correct working order. This truck was designed and built to current industry and government standards. For more information see following:

- ANSI/ITSDF B56.1
- OSHA §1910.178 (Occupational Safety and Health Act)

 **DANGER** This sign indicates hazard situations, if not avoided, will result in serious injury or death. The instructions or precautions to this message must be observed to avoid the potential risk of injury or death.

 **WARNING** If not followed, warning indicates hazard situations which may lead to moderate injury. The instructions or precautions to this message must be observed to avoid the potential risk of injury or death.

 **CAUTION** If not followed, caution indicated situations which may lead to minor injury. Instructions or precautions must be observed to avoid minor injury.



## b. Identification plate

- |   |  |    |   |
|---|--|----|---|
| 1 | Truck Model                              | 9  | Option  |
| 2 | Serial Number                            | 10 | Maximum Battery Capacity (Ah)                 |
| 3 | Supply Voltage (Volts)                   | 11 | Battery Weight Min/Max lbs. (kg)              |
| 4 | Truck Weight with Max. Battery, lbs (Kg) | 12 | Battery Manufacturer Information              |
| 5 | Truck Weight without Battery, lbs. (Kg)  | 13 | Battery Model Number                          |
| 6 | Manufacturing Date (MM/YYYY)             | 14 | Battery Amp Hour Rate                         |
| 7 | Load Center Distance (mm)                | 15 | Maximum Capacity (Uniformly Distributed load) |
| 8 | B56.1 Standard Statement                 | 16 | Truck Manufacturer Information                |

1	MODEL		OPTION	9
2	SERIAL NO.		MAX. BATTERY CAPACITY	10
3	SYSTEM VOLTAGE		BATTERY WEIGHT MIN/MAX LBS (KG)	11
4	TRUCK WEIGHT +/- 5% WITH MAX. BATTERY, LBS (KG)		BATTERY MANUFACTURER	12
5	TRUCK WEIGHT +/- 5% WITHOUT BATTERY, LBS (KG)		BATTERY MODEL NUMBER	13
6	YEAR OF MANUF.		BATTERY HOUR RATE	14
7	LOAD CENTER DISTANCE			15
8	THIS FORKLIFT MEETS OR EXCEEDS DESIGN SPECIFICATIONS OF ANSI/ITSDF B56.1 IN EFFECT ON THE DATE OF MANUFACTURE FOR TYPE <b>E</b> INDUSTRIAL TRUCKS WHEN EQUIPPED WITH <b>E</b> BATTERY.		MAX. CAPACITY (UNIFORMLY DISTRIBUTED LOAD) XXX LBS XXXX KGS	16
			XXXXX XXXXXXXXX XXXXXXXXX	

Fig. 28: Identification plate (US)

As an example, the actual identification plate shall prevail.

### c. Description warning labels (only US- market)

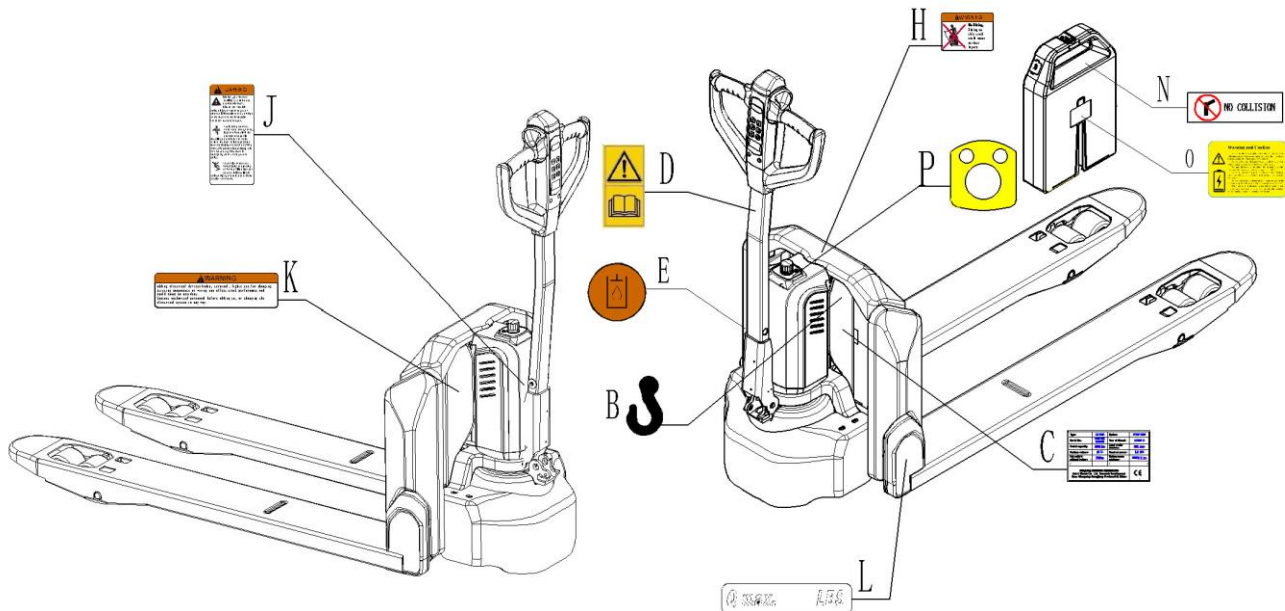


Fig. 29: Warning labels and safety devices (only USA)

- |   |   |   |                                |
|---|---|---|--------------------------------|
| C | CE sticker                                    | K | Sign warning electrical device |
| D | Sticker to read and follow these instructions | L | Capacity sticker               |
| E | Filling sticker                               | N | Charge sticker                 |
| G | Tiller sticker                                | O | Warning sticker                |
| H | No passenger                                  | P | Emergency switch               |
| J | Sign warning stay clear stop truck            |   |                                |

The truck is equipped with an emergency switch (5) which stops all lifting-, lowering-, driving- functions and engages the failsafe electromagnetic brake when it is pushed. The function is described in chapter 2c. Follow the instructions given on the decals. Replace the decals if they are damaged or missing.

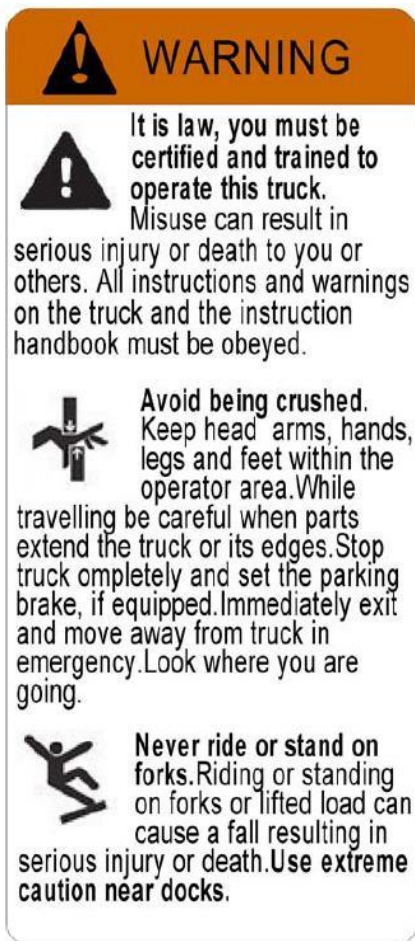
Sign read and follow this instruction (D)



Sign oil filling point (E)



Sign warning stay clear stop truck (J)



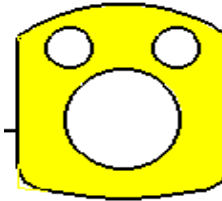
Sign warning electrical devices (K)



Sign no collision(N)



Sign emergency switch(P)



Warning sticker



## d. Technical data for US market

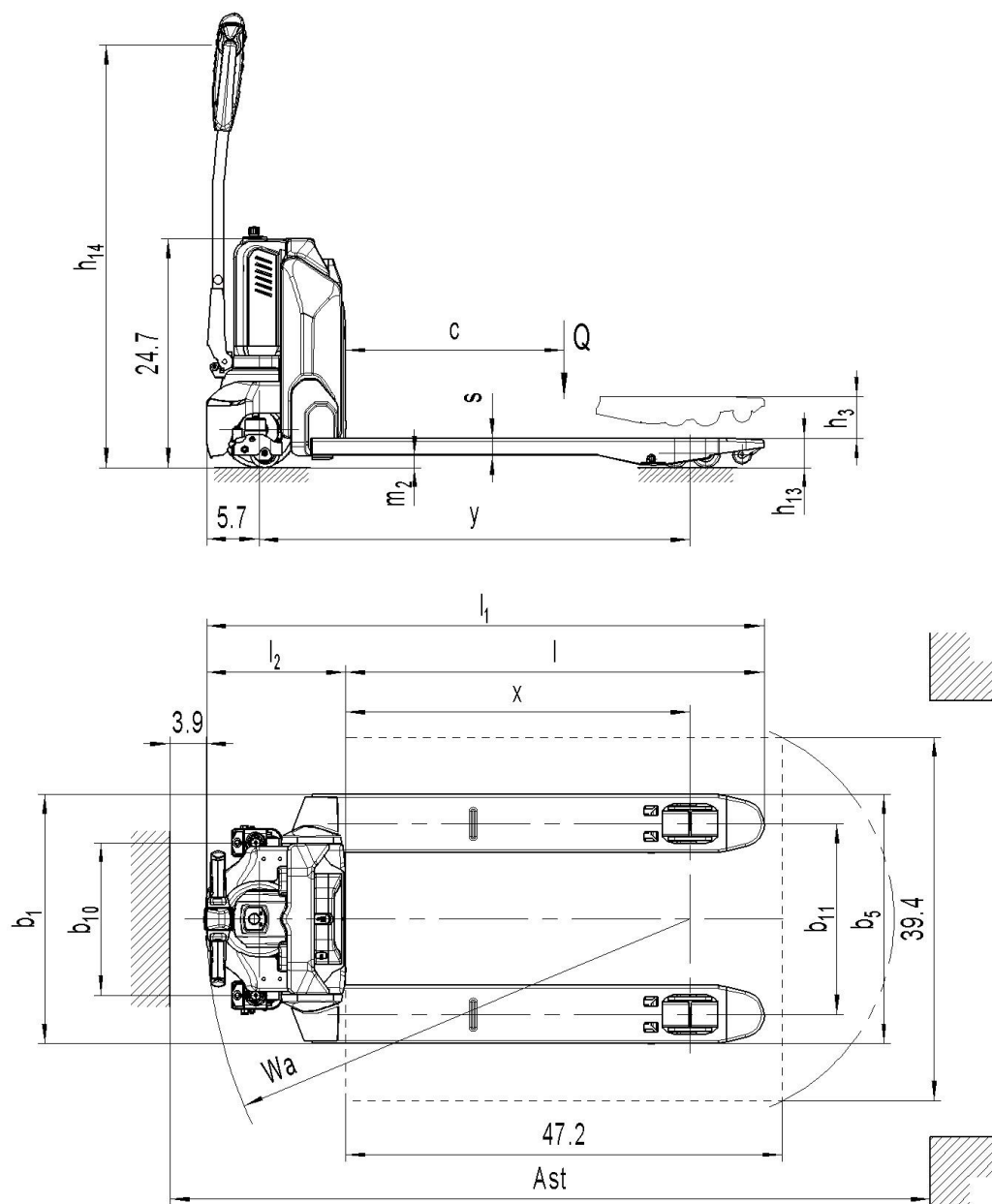


Fig. 30: Technical data US

Table 23: Main technical data for standard version (US market)

Type sheet for industrial truck acc. to (VDI 2198)					
Distinguishing mark	1.2	Manufacturer's type designation		PTE33N	PTE45N
	1.3	Drive		Battery	
	1.4	Operator type		Pedestrian	
	1.5	Load Capacity / rated load	Q (lbs)	3300	4500
	1.6	Load centre distance	c (in)	23.6	
	1.8	Load distance ,centre of drive axle to fork	x (in)	37.3	

	1.9	Wheelbase	y (in)	46.6		46.8	
Weight	2.1	Service weight	lbs	299	306	328	337
	2.2	Axle loading, laden front/rear	lbs	1399/2200	1397/ 2209	1366/3362	1375/3362
	2.3	Axle loading, unladen front/rear	lbs	235 / 64	238 / 68	253/75	262/75
Tyres, chassis	3.1	Tires		Polyurethane (PU)			
	3.2	Tire size,front	Ø x w (in)	Ø 8.27x2.95			
	3.3	Tire size,rear	Ø x w (in)	Ø 3.15x3.66(Ø 3.15x2.76)			
	3.4	Additional wheels(dimensions)	Ø x w (in)	-/Ø 3.15x1.18			
	3.5	Wheels,number front/rear(x=driven wheels)		1x/ 2(1x/ 4) or 1x +2/ 2(1x +2/ 4)			
	3.6	Tread, front	b <sub>10</sub> (in)	-/16.9			
	3.7	Tread, rear	b <sub>11</sub> (in)	15	20.7	15	20.7
Dimensions	4.4	Lift	h <sub>3</sub> (in)	4.53			
	4.9	Height of tiller in drive position min./ max.	h <sub>14</sub> (in)	27.5 / 45.7			
	4.15	Height, lowered	h <sub>13</sub> (in)	3.15			
	4.19	Overall length	l <sub>1</sub> (in)	60		60.5	
	4.20	Length to face of forks	l <sub>2</sub> (in)	14.9		15.2	
	4.21	Overall width	b <sub>1</sub> (in)	21.3	27	21.3	27
	4.22	Fork dimensions	s/e/l (in)	1.85 / 6.3 /45.3			
	4.25	Width across forks	b <sub>5</sub> (in)	21.3	27	21.3	27
	4.32	Ground clearance, centre of wheelbase	m <sub>2</sub> (in)	1.3			
	4.34	Aisle width for pallets 39.4X47.2 lengthways (7.9in safe distance)	Ast (in)	78.7		79	
	4.35	Turning radius	Wa (in)	52.3		52.6	
Performance data	5.1	Travel speed, laden/ unladen	mph	2.85 / 2.98		2.98 / 3.23	
	5.2	Lift speed, laden/ unladen	fpm	3.93 / 4.92		3.34 / 4.33	
	5.3	Lowering speed, laden/ unladen	fpm	9.84 / 7.87		9.84 / 5.90	
	5.8	Max. gradeability, laden/ unladen	%	6 / 16		7 / 16	
	5.10	Service brake		Electromagnetic			
Electric- engine	6.1	Drive motor rating S2 60min	HP	0.87		1.02	
	6.2	Lift motor rating at S3 10%	HP	0.67		1.08	
	6.3	Battery acc. to DIN 43531/ 35/ 36 A, B, C, no		No			
	6.4	Battery voltage, nominal capacity K5	V / Ah	24 / 20 (24 / 36)		48/ 20	
	6.5	Battery weight	lbs	12.1		16.9	
	6.6	Energy consumption acc. to 16796-2	kWh	0.18		0.23	
Addition data	8.1	Type of drive control		DC speed Control			
	8.4	Sound level at driver's ear acc. to EN 12053	dB(A)	<70			



## Original CE Declaration of conformity

### **[GB] Original CE Declaration of conformity**

The signatory hereby declares that the specified machine conforms to the EC Directive 2006/42/EC (Machine Directive), and 2014/30/EU (Electro-Magnetic Compatibility, EMC) including their amendments as translated into national legislation of the member countries. The signatory is individually authorized to compile the technical documents and declares that the following standards, including the normative procedures contained therein, have been applied:

### **[D] Original EG- Konformitätserklärung**

Der Unterzeichner erklärt hiermit, dass die angegebene Maschine den EG-Richtlinien 2006/42/EG (Maschinenrichtlinie) und 2014/30/EU (Elektromagnetische Verträglichkeit, EMV) einschließlich ihrer Änderungen in der Umsetzung in die nationale Gesetzgebung der Mitgliedsländer entspricht. Der Unterzeichner ist zur Zusammenstellung der technischen Unterlagen einzeln befugt und erklärt, dass folgende Normen, einschließlich der darin enthaltenen normativen Verfahren, angewendet wurden:

### **[E] Original DECLARACIÓN DE CONFORMIDAD CE**

El signatario declara por la presente que la máquina especificada cumple con la Directiva CE 2006/42/EC (Directiva de Máquinas) y 2014/30/EU (Compatibilidad Electromagnética, EMC) incluidas sus enmiendas traducidas a la legislación nacional de los países miembros. El firmante está autorizado individualmente para compilar los documentos técnicos y declara que se han aplicado los siguientes estándares, incluidos los procedimientos normativos contenidos en ellos:

### **[F] Originale DECLARATION DE CONFORMITE CE**

Le signataire déclare par la présente que la machine spécifiée est conforme à la directive CE 2006/42/CE (directive machine) et 2014/30/UE (compatibilité électromagnétique, CEM), y compris leurs modifications telles que traduites dans la législation nationale des pays membres. Le signataire est individuellement autorisé à compiler les documents techniques et déclare que les normes suivantes, y compris les procédures normatives qu'elles contiennent, ont été appliquées:

### **[NL] Origineel EG-CONFORMITEITSVERKLARING**

De ondertekenaar verklaart hierbij dat de gespecificeerde machine voldoet aan de EG-richtlijnen 2006/42/EG (machinerichtlijn) en 2014/30/EU (elektromagnetische compatibiliteit, EMC) inclusief hun amendementen zoals vertaald in de nationale wetgeving van de aangesloten landen. De ondertekenaar is individueel gemachtigd om de technische documenten samen te stellen en verklaart dat de volgende normen, inclusief de normatieve procedures die daarin zijn opgenomen, zijn toegepast:

### **[P] Original DECLARAÇÃO DE CONFORMIDADE CE**

O signatário declara que a máquina especificada está em conformidade com a Diretiva EC 2006/42/EC (Diretiva de Máquinas) e 2014/30/EU (Compatibilidade Eletromagnética, EMC), incluindo suas emendas traduzidas para a legislação nacional dos países membros. O signatário está individualmente autorizado a compilar os documentos técnicos e declara que as seguintes normas, incluindo os procedimentos normativos neles contidos, foram aplicadas:

### **[I] Originale DICHIARAZIONE DI CONFORMITÀ CE**

Il firmatario dichiara che la macchina specificata è conforme alla Direttiva CE 2006/42/CE (Direttiva macchine) e 2014/30/UE (Compatibilità elettromagnetica, EMC) compresi i relativi emendamenti tradotti nella legislazione nazionale dei paesi membri. Il firmatario è autorizzato individualmente alla compilazione dei documenti tecnici e dichiara che sono state applicate le seguenti norme, comprese le procedure normative ivi contenute:

### **[BG] ОригиналЕН ЕВРОПЕЙСКА ОБЩНОСТ - ДЕКЛАРАЦИЯ ЗА СЪОТВЕТСТВИЕ**

С настоящото подписаното лице декларира, че посочената машина отговаря на Директива на ЕО 2006/42/ЕС (Директива за машини) и 2014/30/EU (Електромагнитна съвместимост, EMC), включително техните изменения, преведени в националното законодателство на страните-членки. Подписаното лице е лично упълномощено да съставя техническите документи и декларира, че са приложени следните стандарти, включително съдържащите се в тях нормативни процедури:

### **[CZ] Originál EG - PROHLÁŠENÍ OSHODĚ**

Signatář tímto prohlašuje, že uvedený stroj je ve shodě se směrnicí ES 2006/42/ES (Směrnice o strojích) a 2014/30/EU (Elektromagnetická kompatibilita, EMC) včetně jejich změn ve znění přeložené do národní legislativy členských zemí. Podepisující osoba je samostatně oprávněna sestavit technické dokumenty a prohlašuje, že byly použity následující normy, včetně normativních postupů v nich obsažených:

### **[DK] Original EF-OVERENSSTEMMELSE SERKLÆRING**

Underskrivener erklærer hermed, at den specificerede maskine er i overensstemmelse med EF-direktivet 2006/42/EC (maskindirektivet) og 2014/30/EU (elektromagnetisk kompatibilitet, EMC) inklusive deres ændringer som oversat til national lovgivning i medlemslandene. Underskrivener er individuelt bemyndiget til at udarbejde de tekniske dokumenter og erklærer, at følgende standarder, inklusive de normative procedurer indeholdt deri, er blevet anvendt:

### **[EST] Originaal EL vastavusavaldus**

Allakirjutanu kinnitab käesolevaga, et nimetatud masin vastab EÜ direktiivile 2006/42/EÜ (masinadirektiiv) ja 2014/30/EL (elektromagnetiline ühilduvus, EMC), sealhulgas nende muudatustele, nagu on kehtiv liikmesriikide siseriiklikesse õigusaktidesse. Allakirjutatul on individuaalselt õigus koostada tehnilisi dokumente ja ta kinnitab, et on kohaldatud järgmisi standardeid, sealhulgas neis sisalduvaid normatiivprotseduure:

### **[FIN] Alkuperäinen EU-YHDENMUKAISUUSSELOSTUS**

Allekirjoittaja vakuuttaa täten, että määritetty kone on EY-direktiivin 2006/42/EY (konedirektiivi) ja 2014/30/EU (sähkömagneettinen yhteensopivuus, EMC) mukainen, mukaan lukien niiden muutokset, sellaisina kuin ne on käännetty jäsenmaiden kansalliseen lainsäädäntöön. Allekirjoittaja on henkilökohtaisesti valtuutettu kokoamaan tekniset asiakirjat ja vakuuttaa, että seuraavia standardeja, mukaan lukien niihin sisältyvät normatiiviset menettelyt, on sovellettu:

### **[GR] Πρωτότυπο ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΕΚ**

Ο υπογράφοντας δηλώνει με το παρόν ότι το συγκεκριμένο μηχανήμα συμμορφώνεται με την Οδηγία 2006/42/ΕΚ (Οδηγία Μηχανών) και 2014/30/ΕΕ (Ηλεκτρομαγνητική Συμβατότητα, EMC) συμπεριλαμβανομένων των τροποποιήσεων τους όπως έχουν μεταφραστεί στην εθνική νομοθεσία των χωρών μελών. Ο υπογράφοντας είναι ατομικά εξουσιοδοτημένος να συντάξει τα τεχνικά έγγραφα και δηλώνει ότι έχουν εφαρμοστεί τα ακόλουθα πρότυπα, συμπεριλαμβανομένων των κανονιστικών διαδικασιών που περιέχονται σε αυτά:

### **[H] Eredeti EU KONFORMITÁSI NYILATKOZAT**

Az aláíró ezennek kijelenti, hogy a megadott gép megfelel a 2006/42/EC (gépirányelv) és a 2014/30/EU (elektromágneses összeférhetőség, EMC) irányelveknek, beleértve azok módosításait a tagországok nemzeti jogszabályaiba lefordítva. Az aláíró egyénileg jogosult a műszaki dokumentumok összeállítására, és kijelenti, hogy a következő szabványokat, beleértve az abban foglalt normatív eljárásokat, alkalmazták:

### **[LT] Originalus ES atitikimø deklaracija**

Pasirašęs asmuo pareiškia, kad nurodyta mašina atitinka EB direktyvą 2006/42/EB (mašinų direktyvą) ir 2014/30/ES (elektromagnetinį suderinamumą, EMC), įskaitant jų pakeitimus, išverstus į šalių narių nacionalinius teisės aktus. Pasirašęs asmuo yra individualiai įgaliotas rengti techninius dokumentus ir pareiškia, kad buvo taikomi šie standartai, įskaitant juose nurodytas normines procedūras:

### **[LV] Oriģināls ES atbilstības deklarācija**

Parakstītājs ar šo apliecina, ka norādītā iekārta atbilst EK Direktīvai 2006/42/EK (Mašīnu direktīva) un 2014/30/ES (Elektromagnētiskā saderība, EMC), ieskaitot to grozījumus, kas ir iekļauti dalībvalstu nacionālajos tiesību aktos. Parakstītājs ir individuāli pilnvarots sastādīt tehniskos dokumentus un apliecina, ka ir piemēroti šādi standarti, tostarp tajos ietvertās normatīvās procedūras:

### **[N] Opprinnelig EU-KONFORMITETSERKLÆRING**

Underskrivener erklærer herved at den spesifiserede maskinen er i samsvar med EC-direktivet 2006/42/EC (maskindirektivet), og 2014/30/EU (elektromagnetisk kompatibilitet, EMC) inkludert deres endringer som oversatt til nasjonal lovgivning i medlemslandene. Underskrivener er individuelt autorisert til å sammenstille de tekniske dokumentene og erklærer at følgende standarder, inkludert de normative prosedyrene som finnes deri, er brukt:

### **[PL] Oryginalny DEKLARACJA ZGODNOŚCI WE**

