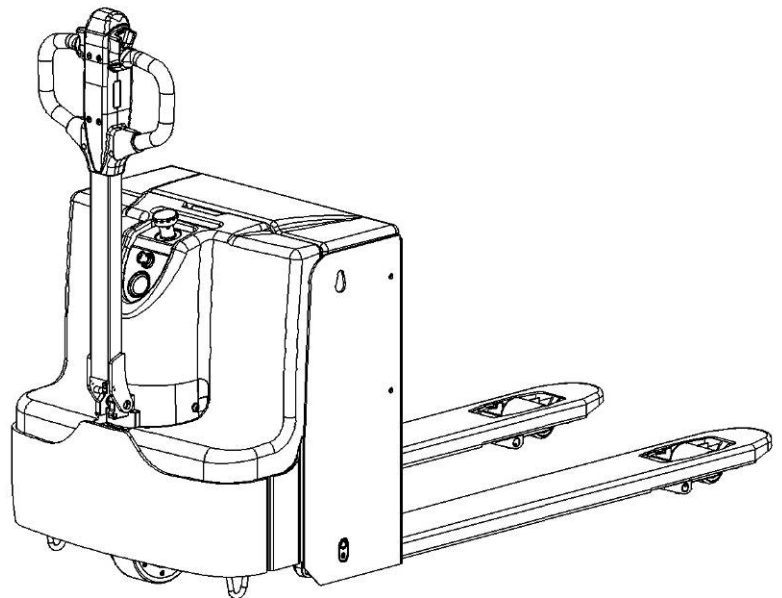


INSTRUCTION HANDBOOK

Electric Pallet Truck PTE40L



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 03/2017

PTE 40L-SMS-001-US

FOREWORD


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


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 ASME B56.1 concerning the operator. In this standard, it is defined that the safe operation is the responsibility of the operator (ASME B56.1-2003, 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:

- ASME B56.1 (American Society of Mechanical Engineers)
- OSHA §1910.178 (Occupational Safety and Health Act)
- UL 583 (Underwriters Laboratory)
- ANSI Z535.4 (American National Standards Institute)

 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.

 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.


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

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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, with electrically powered low height lifting function. 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. Operating on ramps is not allowed. While operating, the load must be placed approximately on the longitudinal centre 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.

By not observing these instructions, the warranty becomes void.

2. DESCRIPTION OF THE PALLET TRUCK

a. Overview of the main components

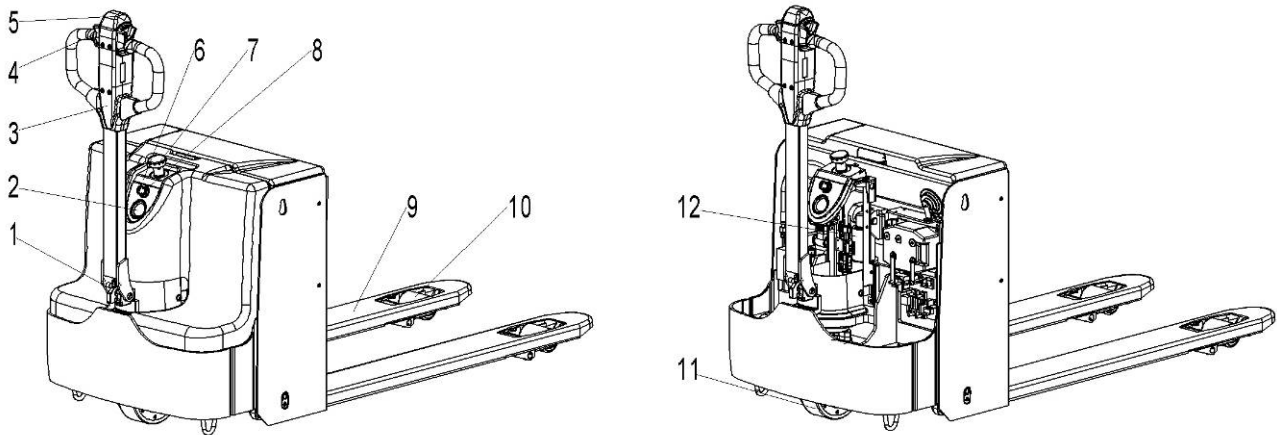


Fig. 1: Overview main components

- | | |
|--------------------------------|------------------------|
| 1. Electrical box cover | 7. Emergency button |
| 2. Battery discharge Indicator | 8. Key switch |
| 3. Tiller | 9. Fork chassis |
| 4. Accelerator | 10. Load wheels |
| 5. Safety (belly) button | 11. Drive wheel |
| 6. Instrument board cover | 12. Hydraulic cylinder |

b. Main technical data

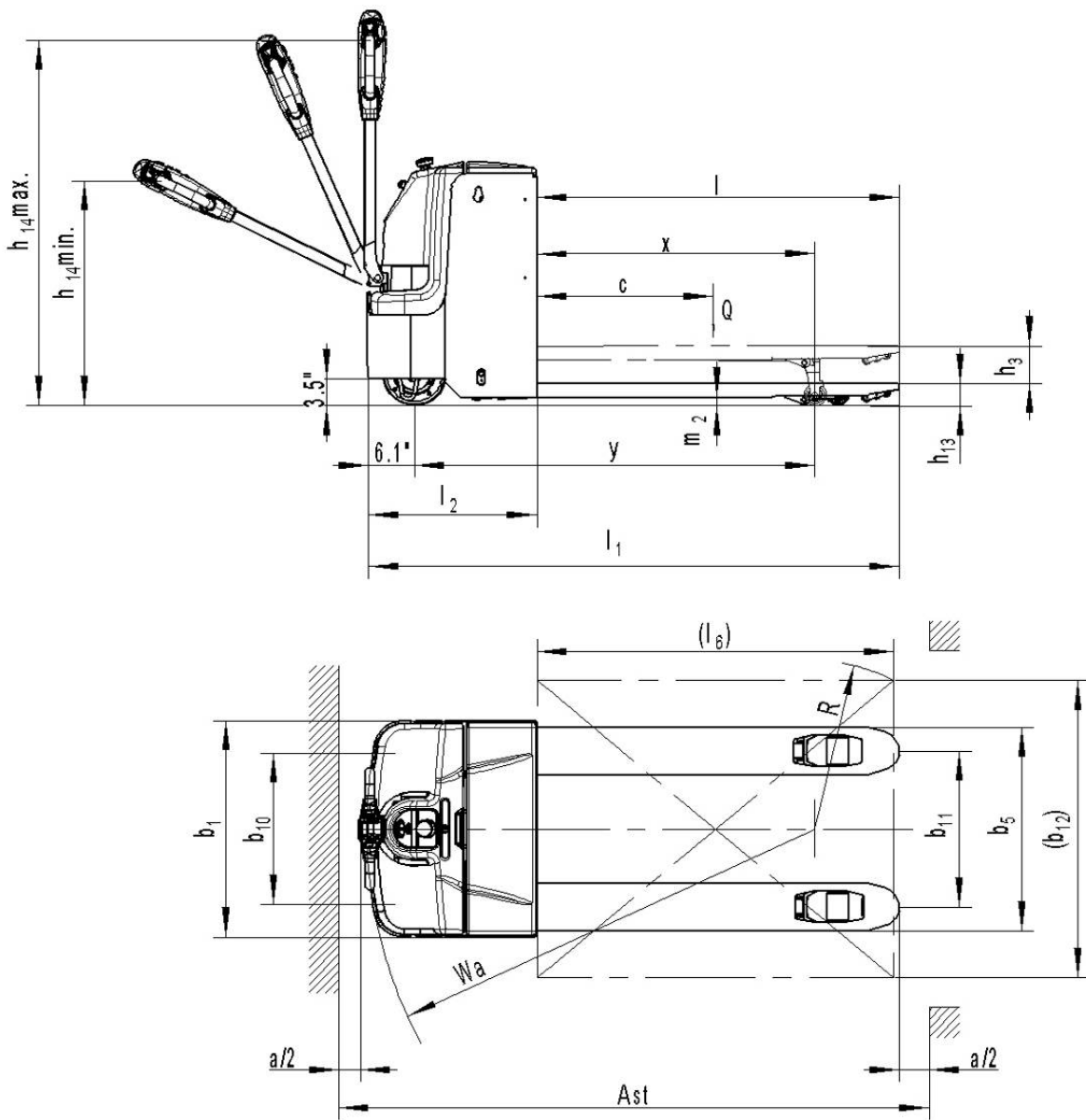


Fig. 2: Technical data PTE 40L

Table 1: Main technical data for standard version

Type sheet for industrial truck acc. to VDI 2198					
Distinguishing mark	1.2	Manufacturer`s type designation		PTE 40L(EN)	PTE 40L(US)
	1.3	Power(battery,diesel,petrol gas>manual)		Battery	
	1.4	Operator type		pedestrian	
	1.5	Load Capacity / rated load	Q (lbs)	4000	
	1.6	Load centre distance	c (in)	24	
	1.8	Load distance, centre of drive axle to fork	x(in)	35.1 ¹⁾	37.3 ¹⁾
	1.9	Wheelbase	y (in)	49.4 ¹⁾	53.5 ¹⁾
Weight	2.1	Service weight	lbs	979	913
	2.2	Axle loading, laden front/rear	lbs	1573/2926	1727/3146
	2.3	Axle loading, unladen front/ rear	lbs	759/220	735/176
Tires, chassis	3.1	Tires		Polyurethane (PU)	
	3.2	Tire size, front	∅ x w (in)	8.3X2.8	
	3.3	Tire size, rear	∅ x w (in)	3.3x3.3	2.9x3.9
	3.4	Additional wheels (dimensions)	∅ x w (in)	3.9x1.6	/
	3.5	Wheels, number front/ rear(x=driven wheels)		1x+2/4	1x+2
	3.6	Tread, front	b ₁₀ (in)	14.4/20.2	22
	3.7	Tread, rear	b ₁₁ (in)	20.7	
Dimensions	4.4	Lift height	h ₃ (in)	4.7	
	4.9	Height of tiller in drive position min. / max.	h ₁₄ (in)	30.3/48.4	
	4.15	Height, lowered	h ₁₃ (in)	3.3	3.0
	4.19	Overall length	l ₁ (in)	65.7	68.3
	4.20	Length to face of forks	l ₂ (in)	23.4	
	4.21	Overall width	b ₁ (in)	28.7	
	4.22	Fork dimensions	s/e/l (in)	2.4/6.8/45.2	2 /6.3/48(45.2)
	4.25	Distance between fork-arms	b ₅ (in)	21/27	27
	4.32	Ground clearance, centre of wheelbase	m ₂ (in)	1.0	
	4.34	Aisle width for pallets 1000X1200 lengthways	Ast (in)	84.3	89.4
	4.35	Turning radius	Wa (in)	56.7 ¹⁾	60.0 ¹⁾
Performance	5.1	Travel speed, laden/ unladen	mph	3.1/3.3	
	5.2	Lift speed, laden/ unladen	fpm	4.3/5.9	
	5.3	Lowering speed, laden / unladen	fpm	5.9/4.5	
	5.8	Gradeability, laden/ unladen	%	8/12	
	5.10	Service brake		Electromagnetic	
Motors	6.1	Drive motor rating S2 60min	HP	1	
	6.2	Lift motor rating at S3 10%	HP	1.1	
	6.3	Battery acc. to DIN 43531 /35 / 36 A, B, C, no		/	
	6.4	Battery voltage, nominal capacity K5	V/Ah	24/160	24/160
	6.5	Battery weight (minimum)	lbs	340	330
	8.1	Type of drive control		AC -Speed Control	
	8.4	Sound level at driver`s ear acc. to EN 12053	dB(A)	69	

1) Load section lowered: 2.5in

C. Description of the safety devices and warning labels

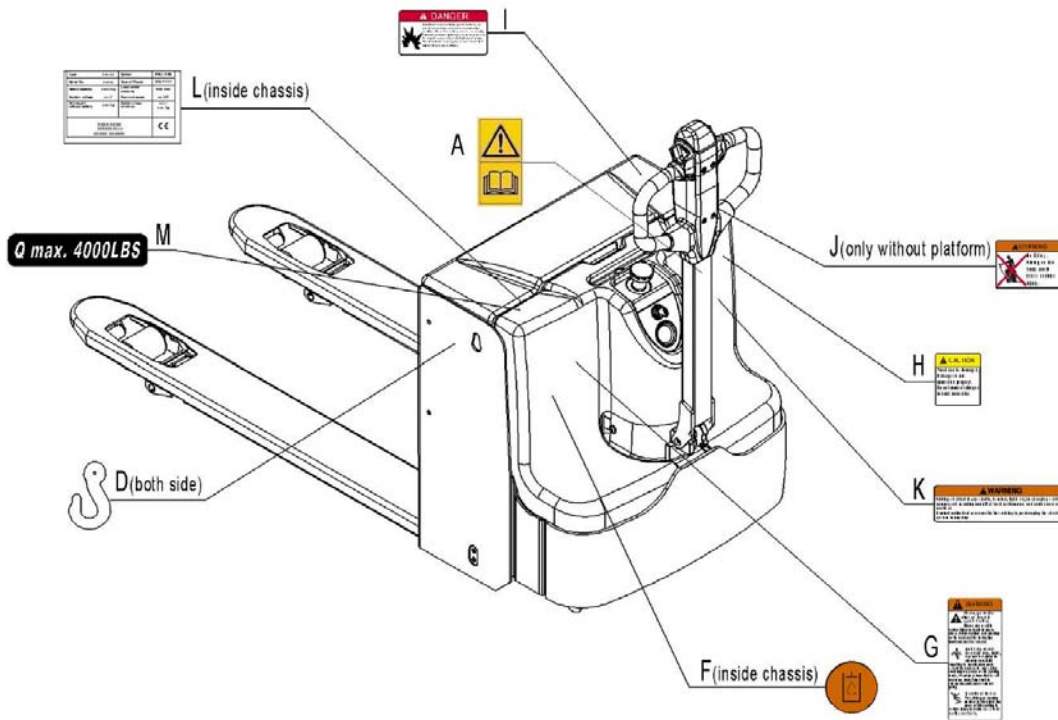


Fig. 3: Warning labels and safety devices

- | | | | |
|---|---|---|---------------------------------|
| A | Sticker to read and follow this instruction | I | Sign danger battery |
| D | Hook mark | J | Sign danger not riding |
| F | Sign oil filling point | K | Identification plate (ID-plate) |
| G | Sign warning stay clear stop truck | L | Name plate |
| H | Sign caution charge | M | Capacity sticker |

The truck is equipped with an emergency button (7) 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 (A)





Sign oil filling point (F)




Sign warning stay clear stop truck (G)

WARNING

 It is law, you must be certified and trained to operate this truck. Misuse can result in serious injury or death to you or others. All instructions and warnings on the truck and the instruction handbook must be obeyed.

 **Avoid being crushed.** Keep head, arms, hands, legs and feet within the operator area. While travelling be careful when parts extend the truck or its edges. Stop truck completely and set the parking brake, if equipped. Immediately exit and move away from truck in emergency. Look where you are going.

 **Never ride or stand on forks.** Riding or standing on forks or lifted load can cause a fall resulting in serious injury or death. Use extreme caution near docks.

Sign Caution charger(H)

CAUTION

Truck can be damaged, if charger is not connected properly. Do not connect charger to truck connector.

Sign danger battery (I)

DANGER

 Batteries can produce explosive gas. Do not smoke, use open flame, or create an arc or sparks near this battery. Ventilate well when in an enclosed area and when charging. This battery contains Sulfuric Acid which cause severe burns. Do not get in eyes, on skin, or clothing. In case of contact, flush immediately and thoroughly with water. Get medical attention if your eyes are affected.

**Sign danger not riding (J)
(only if not equipped with a foldable platform)**

WARNING

 **No Riding.** Riding on this truck could cause serious injury.

Sign warning electrical devices (K)

WARNING

Adding electrical devices (radio, terminal, lights etc.) or changing existing components or wiring can affect truck performance and could cause an accident. Contact authorized personnel before adding to, or changing the electrical system in any way.

d. Identification plate

- | | | | |
|---|--|----|---------------------------------|
| 1 | Designation, type | 9 | Hour rate |
| 2 | Serial number | 10 | Battery weight minimum/ maximum |
| 3 | Rated capacity in lbs | 11 | Nominal power in HP |
| 4 | Supply voltage in V | 12 | Load center distance |
| 5 | Own mass (self weight) in kg without battery | 13 | Manufacturing date |
| 6 | Max. battery capacity | 14 | Option |
| 7 | Battery ID | | |
| 8 | Name and address of manufacturer) | | |

1	Type	XXX XX	Option	XXX x XXXX in	
2	Serial No.	xxxxxxxx	Year of Manuf.	xx/xxxx	
3	Rated capacity	XXXX lbs	Load center distance	XXX in	14
4	System voltage	24 V	Nominal power	XXX HP	13
5	Net weight without battery	XXXX lbs	Battery mass min/max	XXX/XXXX lbs	12
6	Max. Battery capacity	XXXX Ah	Hour rate	6h	11
7	Battery ID	E			10
8	XXXX XXXX XXXXXXXX XX XXXXXX/XXXXXX			CE	9

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
- Use this truck on ramps
- Side or end load. Load must be distributed evenly on the forks.
- Use the truck with unstable, unbalanced not stable 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 button (7) by pushing when sliding load on or off the truck. If the truck has any malfunctions, follow chapter 6.

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.
- It is not allowed to use the truck on ramps.
- To prevent unintended sudden movements when not operating the tuck (i.e. from another person, etc.) switch of f the truck when not operating it.

4. COMMISSIONING, TRANSPORTING, DECOMMISSIONING

a. Commissioning

Table 2: Commissioning data

Type	PTE 40L
Commissioning weight [lbs]	910
Dimensions [inch]	65.7x28.7x52.6

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

- Check if are all parts included and not damaged
- Eventually installation of the multifunction tiller
- Eventually installation and charging the batteries (follow chapter 7)
- 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.

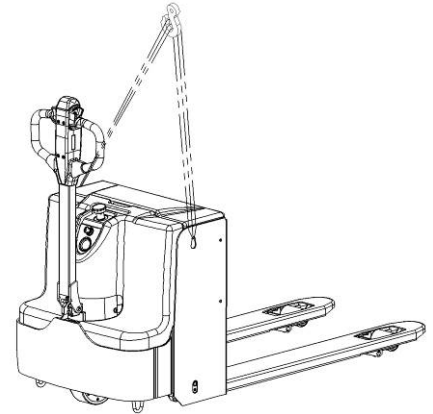


Fig. 5: Lifting with a crane

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.

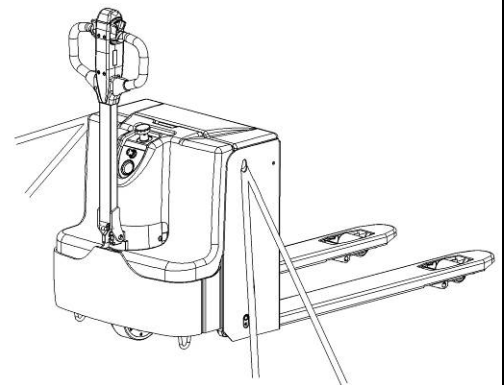


Fig. 6: fixing points

C. Decommissioning

For storage, remove the load, lower the truck to the lowest position, grease all in this handbook mentioned greasing points (regular inspection), 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 vertical creep of the truck.
- Check the smooth movement of the wheels.
- Check the function of the emergency brake by activating the emergency button.
- Check, the tiller arm- switch braking function
- Check the lifting and lowering functions by operating the buttons.

- Check if all bolts and nuts are tightened firmly.
- Visual check if there are any broken hoses or broken electric wires.

6. OPERATING INSTRUCTIONS



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

Make sure, that the load is palletized and stable and that the daily inspection is carried out.

Insert the key switch(8), turn on it. Press the horn button (14) to activate the audible warning signal.

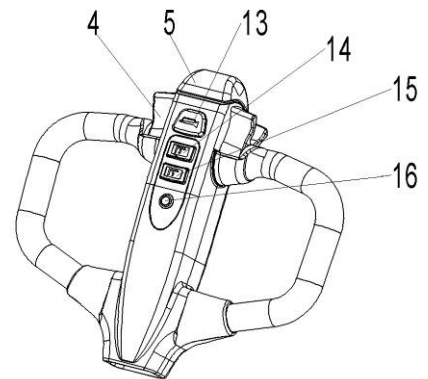


Fig.7: Tiller operating controls

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 (7),

b. Lifting



DO NOT OVERLOAD THE TRUCK! THE MAXIMUM CAPACITY IS 1800kg

Travel with the lowered forks fully underneath the pallet until the load and press the lifting button (14) until you reached the desired lifting height.

c. Lowering

Press the lowering button (15) carefully.

Lower the load until the forks are clear of the pallet, then drive the truck carefully out of the load unit.

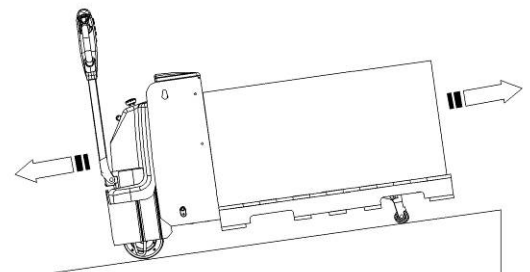


Fig. 8: Load facing uphill

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 turning on the key switch (8), 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).

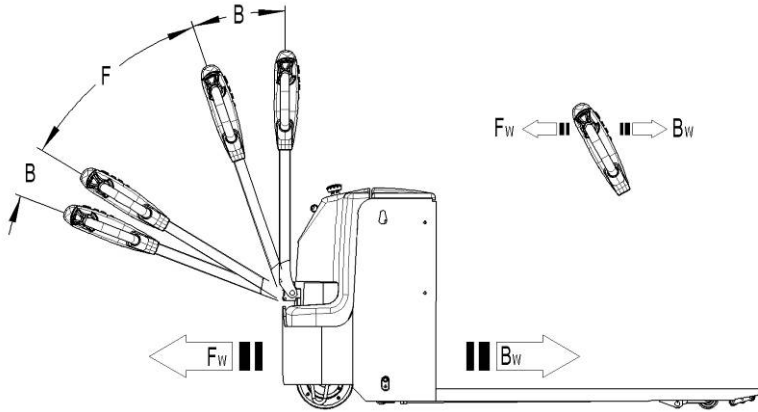


Fig. 9: Operating direction

Control the travelling speed by moving the accelerator button (4) 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.

e. Steering

You steer the truck by moving the tiller to the left or right side.

f. Braking



THE BRAKING PERFORMANCE DEPENDS ON THE TRACK CONDITIONS AND TRHE LOAD CONDITIONS OF THE TRUCK

The braking function can be activated on several ways:

- By moving the accelerator button (4) 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 (4) from one driving direction directly to the opposite direction, the truck brakes regenerative until it starts travelling 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 baking 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 travelling into the backwards direction ('Bw.') for a short distance and stops. Please consider, that this button also operates, if the truck is not travelling 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 button (7) by pushing it. If possible, park the truck on a safe area and remove the key switch (8). 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 off dock), keep safe distance immediately. If possible push the emergency button (7). All electrical functions will be stopped.

7. BATTERY CHARGING AND REPLACEMENT



- Only qualified personnel are allowed to service or charge the batteries. The instructions of this handbook and from the battery- manufacturer must be observed.
- The batteries are liquid acid traction batteries. Optional maintenance free batteries are available; for these batteries re- filling is prohibited.
- Recycling of batteries undergoes national regulations. Please follow these regulations.
- By handling batteries, open fire is prohibited, gases could cause explosion!
- In the area of battery charging neither burning materials nor burning liquids are allowed. Smoking is prohibited and the area must be ventilated.
- Park the truck securely before starting charging or installing/changing the batteries
- Before finishing the maintenance work, make sure, that all cables are connected correctly and that there are no disturbing towards other components of the truck.

As standard batteries, the truck is equipped with following liquid acid traction battery- type:

2pc 12 V/ 160 Ah (C5)

1pc 24 V/ 160 Ah (C5)



IT IS ONLY ALLOWED TO USE SEALED LIQUID ACID BATTERIES.

THE WEIGHT OF THE BATTERIES HAS AN INFLUENCE TO THE TRUCKS OPERATING BEHAVIOR.

PLEASE CONSIDER THE MAXIMUM OPERATING TEMPERATURE OF THE BATTERIES.

a. Replacement

Park the truck securely and switch off the truck with the key switch (8), and push the emergency button (7). Open the battery cover and let it stay upright, disconnect the battery plug (17), then move the battery out with a crane.

Unbolt the six screws(18) on the main cover and remove the cover(19). Unbolt the screws of the negative

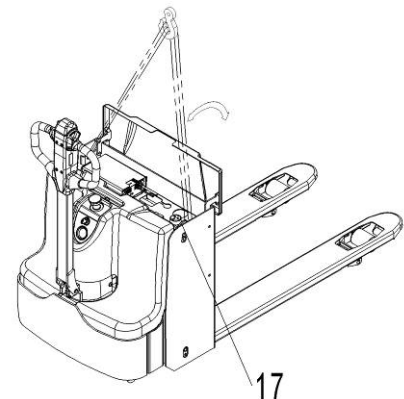


Fig. 10: Battery replacement box

terminals (indicated with '-') firstly, then unbolt the screws of the positive terminals (indicated with '+') and put the cables aside. Then take out these two batteries in proper order.

The installation is in the reverse order of the removal. Please connect the positive terminals firstly. Otherwise the tuck could be damaged.

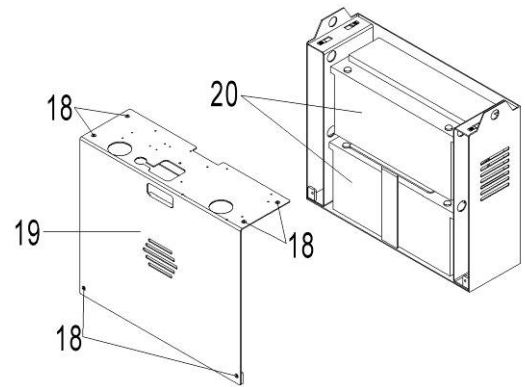
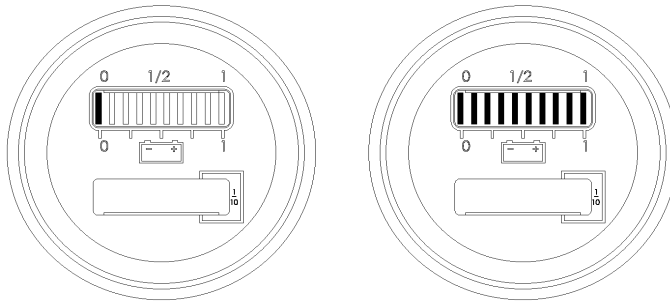


Fig. 11: Battery replacement

b. Battery indicator

Discharge status is indicated by ten red LED segments.



Battery

Battery charged

Fig.12: Battery discharge indicator

Only when the battery is properly charged, the most right LED lit. As the battery's state-of-charge decreases, successive LEDs light up, only one on at a time.

- The 2nd from left LED flashes, indicating "energy reserve" (70% depth of discharge).
- The 2 most left LEDs alternately flash, indicating "empty" (80% depth of discharge).

c. Charging



- Before charging ensure that you are using an appropriate charger for charging the installed battery!
- Before using the charger, please fully understand the instructions of the charger instructions.
- Always follow these instructions!
- The room, where you are charging must be ventilated.
- The exactly charge status can be only checked from the discharge indicator. To control the status, the charging must be interrupted and the truck must be started.

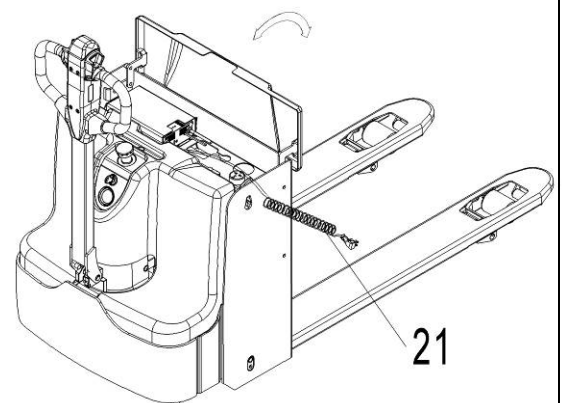


Fig.13: Battery charging

Park the truck at a dedicated secured area with a deidcated power supply.

Lower the forks and remove the load.

Switch the truck off and connect the main power connector to the power supply.

The charger starts charging the battery.

Charging is finished until the charging LED (fig.14) produces permanent green light. The charger then goes into a floating mode to prevent the battery against damages. Following table shows the function of the LED-status:

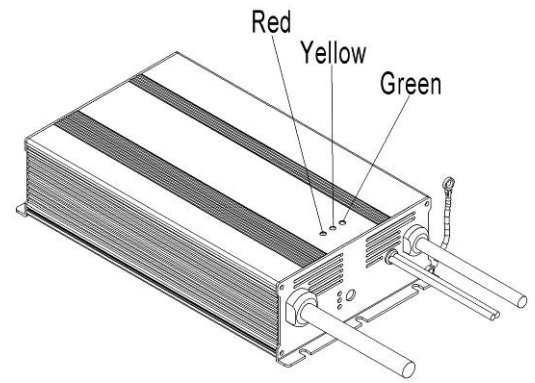


Fig.14: LED- Status

Table 3: LED-Status

LED- signal	Function
Red flashing	Fault
Yellow Flash	No battery connected
Yellow on	Normal charging
Green on	Fully charged

When charging is finished, disconnect the connector from the socket and place it in the designated pocket.

8. REGULAR MAINTENANCE



- Only qualified and trained personnel are allowed to do maintenance on this truck.
- 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 change the wheels, please follow the instructions above. The castors must be round and they should have no abnormal abrasion.

Check the items emphasized maintenance checklist.

a. Maintenance checklist

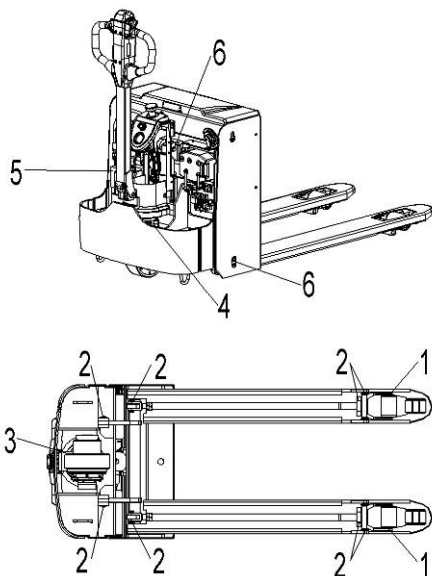
Table 4: Maintenance checklist

		Interval(Month)			
		1	3	6	12
Hydraulic					
1	Check the hydraulic cylinder(s), piston for damage noise and leakage		•		
2	Check the hydraulic joints and hose for damage and leakage		•		
3	Inspect the hydraulic oil level, refill if necessary		•		
4	Refill the hydraulic oil (12 month or 1500 working hours)				•
5	Check and adjust function of the pressure valve (4000lbs +0/+10%)				•
Mechanical system					
6	Inspect the forks for deformation and cracks		•		
7	Check the chassis for deformation and cracks		•		
8	Check if all screws are fixed		•		
9	Check the push rods for deformation and damages		•		
10	Check the gearbox for noise and leakage		•		
11	Inspect the wheels for deformation and damages		•		
12	Inspect and lubricate the steering bearing				•
13	Inspect and lubricate the pivot points		•		
14	Lubricate the grease nipples	•			
Electrical system					
15	Inspect the electric wiring for damage		•		
16	Check the electric connections and terminals		•		
17	Test the Emergency switch function		•		
18	Check the electric drive motor for noise and damages		•		
19	Test the display		•		
20	Check, if correct fuses are used		•		
21	Test the warning signal		•		
22	Check the contactor(s)		•		
23	Check the frame leakage (insulation test)		•		
24	Check function and mechanical wear of the accelerator		•		
25	Check the electrical system of the drive motor		•		
Braking system					
26	Check brake performance, if necessary replace the brake disc or adjust the air gap		•		
Battery					
27	Check the battery voltage		•		
28	Clean and grease the terminals and check for corrosion and damage		•		
29	Check the battery housing for damages		•		
30	Check and if necessary refill the battery with distilled water	•			
Charger					
31	Check the main power cable for damages			•	
32	Check the start-up protection during charging			•	

Function				
33	Check the horn function	•		
34	Check the air gap of the electromagnetic brake	•		
35	Test the emergency braking	•		
36	Test the reverse and regenerative braking	•		
37	Test the safety (belly) button function	•		
38	Check the steering function	•		
39	Check the lifting and lowering function	•		
40	Check the tiller arm switch function	•		
General				
41	Check if all decals are legible and complete	•		
42	Inspect the castors, adjust the height or replace these if worn out.		•	
43	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.



1. Load wheel bearings
2. Caster bearings
3. Gear box
4. Electric turning system
5. Hydraulic system
6. Joint

Fig. 15: Lubricating points

c. Check and refill hydraulic oil

The required hydraulic fluid- type is

- H-LP 46, DIN 51524
- Viscosity is 41.4 - 47
- Depending on the type the amount is 0,7L

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

The oil level height shall be in the not lifted position min.0.6L to 0.8L.

If necessary add oil at the filling point.

d. Checking electrical fuses

Remove the main cover. The fuses are located according to fig. 16.

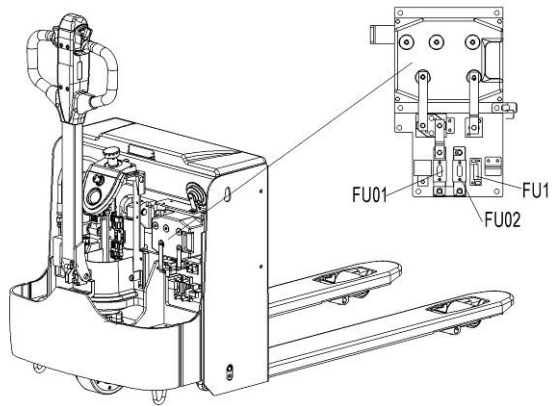


Fig. 16: Location fuses

Table 5: Size fuses

	Rate
FU01	150A
FU02	80A
FU1	10A

9. TROUBLE SHOOTING



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

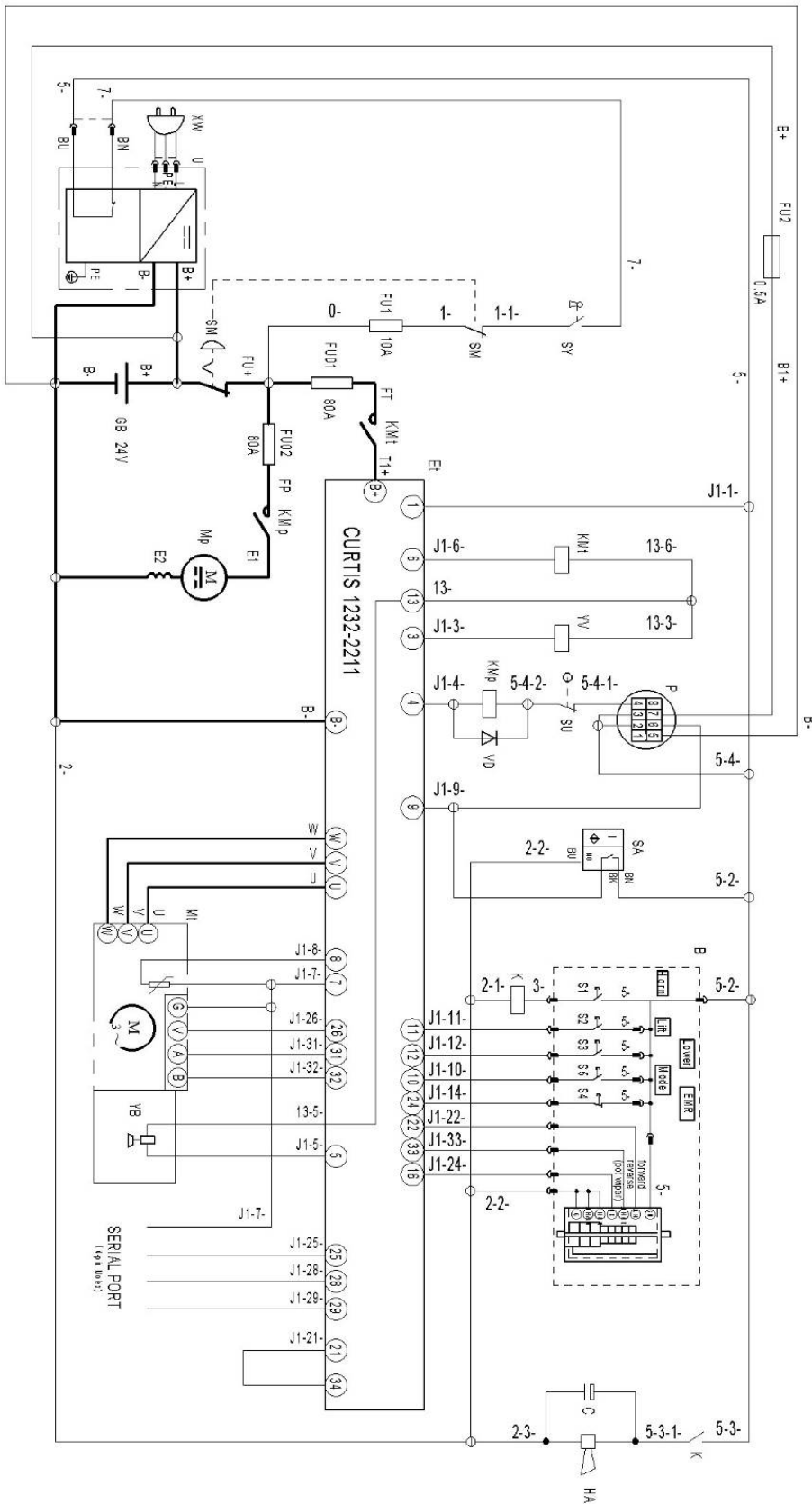
Table 6: Trouble shooting

TROUBLE	CAUSE	REPAIR
Load can't be lifted	Load weight too high	Lift only the max. capacity, mentioned on the ID-plate
	Battery discharged	Charge the battery
	Lifting fuse faulty	Check and eventually replace the lifting fuse
	Hydraulic oil level too low	Check and eventually refill hydraulic oil
	Oil leakage	Repair the hoses and/or 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 form the electrical socket.
	Battery not connected	Connect the battery correctly
	Fuse faulty	Check and eventually replace fuses
	Low battery	Charge the battery
	Combined emergency switch is activated	De-activate the combined emergency switch by insert and pull the knob.
	Tiller in the operating zone	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.

10. WIRING/ CIRCUIT DIAGRAM

a. Electrical circuit diagram



FU01:	150A
FU02:	80A
FU1:	10A

Fig. 17: Electric diagram

b. Hydraulic circuit

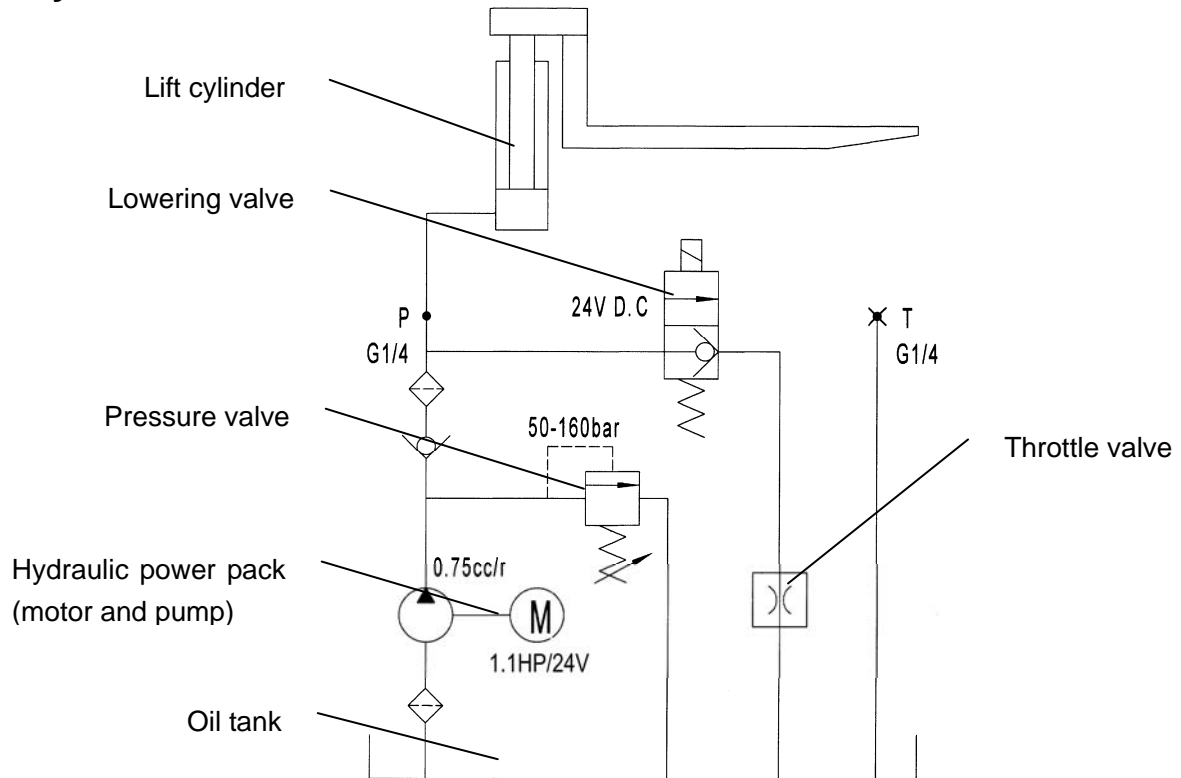


Fig. 18: Hydraulic circuit

