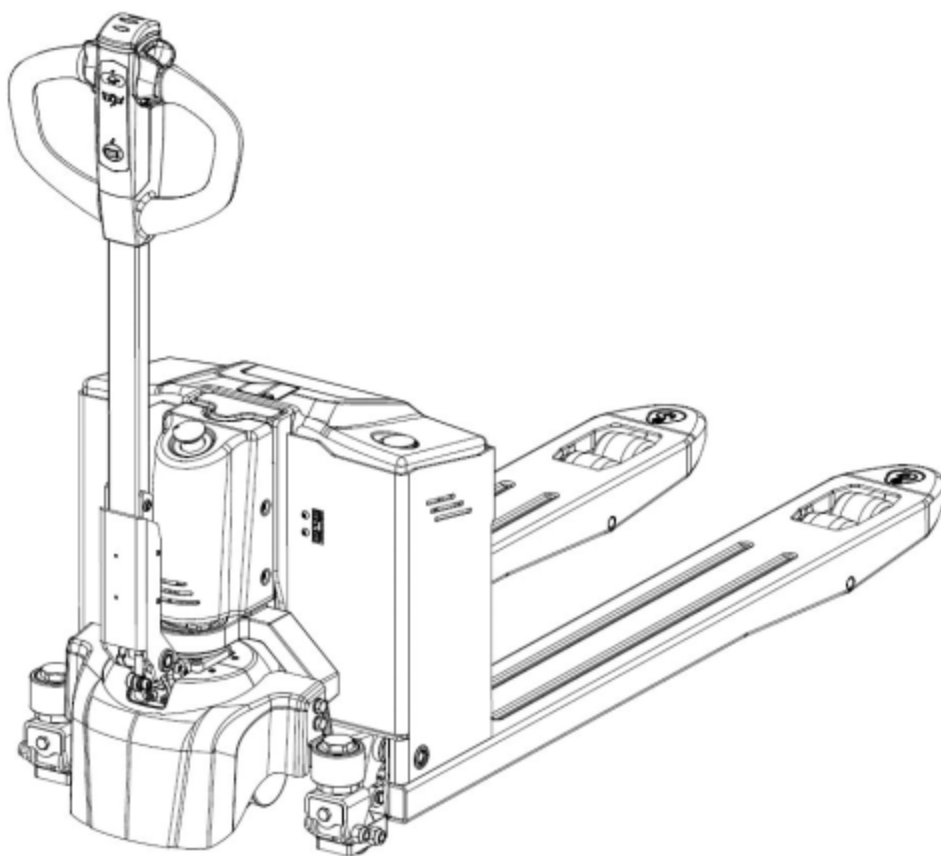


CBD15W-II/CBD20W-II

Electric Pallet Truck

- Operation Manual
- Parts Catalogue



**Thank you for choosing CBD15W-II/CBD20W-II
electric pallet truck!**

Hope they will provide great convenience for your work !

- Please read the manual carefully before starting the truck.
 - This operation manual is general, and the right to make any technical modifications to the tractors is reserved. Contents provided in this manual for reference only and if wrong in real, prevail in kind.
-

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1. Safety regulations



Safety shoes are always required to handle the pallet truck.



Safety glasses are recommended to avoid personal accidents while assembling or disassembling the pallet truck.



CAUTION

When the truck is damaged or has safety problems, stop using it immediately.



CAUTION

The pallet truck is designed for hard and flat floor only.

It's forbidden to use the truck when :

- the air contains dust or flammable and explosive gases that can cause fire or explosion.
- in freezer or some low temperature, salty or other corrosive environment.
- Rainy outdoor.
- Operate on gravel or grassland.
- the gradient of the ground is greater than the gradient of product design.



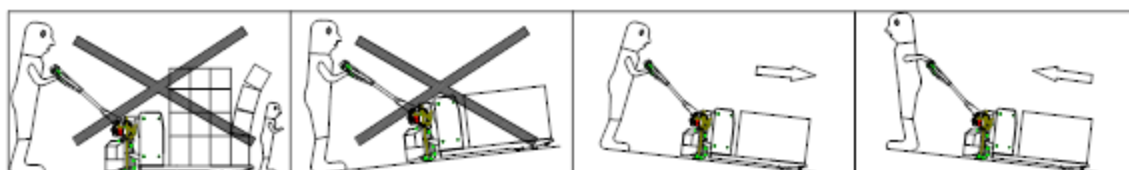
CAUTION

- Careful judgment and responsible attitude should be taken in the operation of pallet trucks.
- The pallet truck is not able to be operated with oily hands or shoes
- Operators shall not wear loose clothes or jewelry



CAUTION

- When operating the pallet truck, it is necessary to ensure that the ground has sufficient load bearing capacity, where the load is the sum of the weight of the pallet truck and the load.
- Special care should be taken if there are prominent objects that can cause personal injury
- Personnel are prohibited around the operating area of the pallet truck, which may cause personal injury, for example, when the goods fall.



CAUTION

Operators must be very carefully when handling the pallet truck on a slope. See the drawing, the operator should stand ahead of the truck. Operators must be very carefully when handling the pallet truck on a slope. See the drawing, the operator should stand ahead of the

truck. When a truck runs on a ramp, the driving wheel can be quickly turned to the maximum angle to avoid the risk that the truck will continue to slide. This method allows operation only in emergencies.



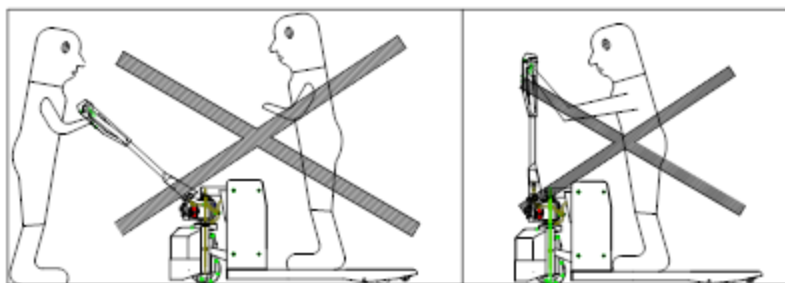
WARNING!

- Avoid high-speed operation when turning to avoid the danger of overturning.
- The goods should not be too high to block sight.
- Brake gently and carefully to avoid cargo slipping off the pallet and causing material damage.
- The pallet truck is not allowed to turn on the slope.
- Before pushing the pallet into the elevator, the operator must ensure that the elevator can withstand the total load of the pallet and cargo, the total weight of the operator and other personnel on the elevator. Make sure the load goes into the elevator first, then the operator. The elevator should keep empty when the pallet truck with load is about to go in/out of it.



CAUTION!

- The load shall not exceed the rated load of the truck.
- When stacking goods, the goods should not be too high to avoid the danger of falling down or overturning the pallet truck during handling.
- It's forbidden to ride people with the pallet truck.
- Keep clear of the pallet truck's working area, avoiding personal injuries due to sudden accidents happened over its working.
- Standing and sitting on the pallet truck is strictly forbidden.



CAUTION!

- Keep the fork at the lowest position while it's parked.
- Don't leave the truck on a slope.
- Don't leave the truck at the emergency access.
- Don't leave the pallet truck to block the traffic or affect work.
- Don't use the pallet truck in rain.
- Turn off the power when the pallet truck is unattended.

2. Allowed environment for using

This truck is designed to work only on hard and flat floor, indoor. It is not allowed to work in an environment beyond the regulations.

- Ambient temperature shall not be higher than +40°C and no lower than -10°C;
- Hard and flat ground;
- It is prohibited to use in a flammable, explosive or corrosive environment with acid and alkali;

3. Technical parameters

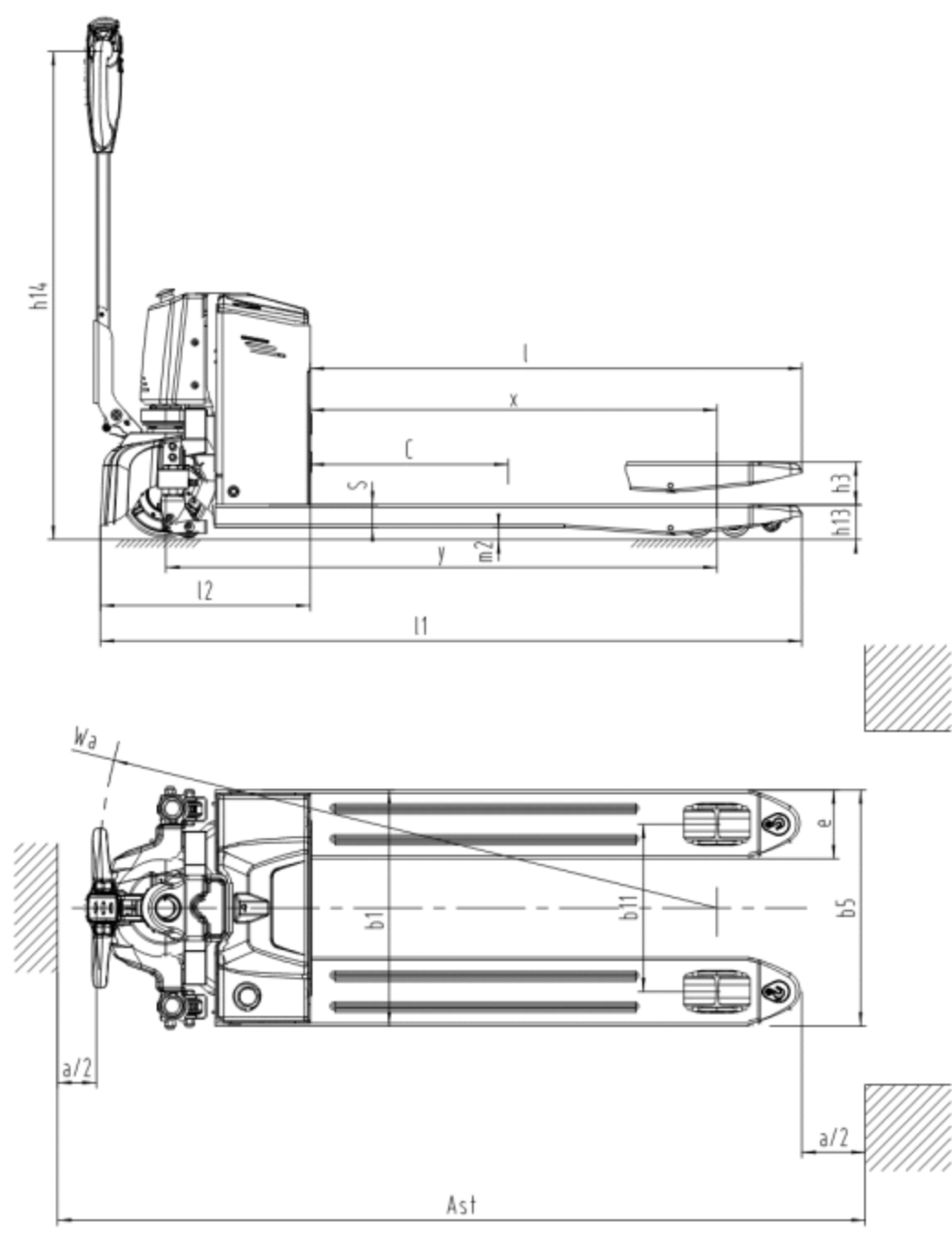


Figure 1

Characteristic	1.2	Model		CBD15W-II	CBD20W-II
	1.3	Drive: electric (battery type, mains, ...), diesel, petrol, fuel gas		Electric	Electric
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker		Walkie	Walkie
	1.5	Load capacity	Q (kg)	1500	2000
	1.6	Load center distance	c (mm)	600	600
	1.8	Front overhang	x (mm)	950/1020	950/1020
	1.9	Tread	y (mm)	1290/1360	1290/1360
Weight	2.1	Service weight	kg	180	195
	2.2	Axle loading, laden front/rear	kg	135/45	145/50
	2.3	Axle loading, unladen front/rear	kg	670/1010	860/1335
Wheel chassis	3.1	Wheel type		PU	PU
	3.2	Tire size, front		$\Phi 210 \times 70$	$\Phi 210 \times 70$
	3.3	Tire size, rear		$\Phi 80 \times 93$ $\Phi 80 \times 70$	$\Phi 80 \times 93$ $\Phi 80 \times 70$
	3.4	Additional wheels (dimensions)		$\Phi 60 \times 35$ (option)	$\Phi 60 \times 35$ (option)
	3.5	Wheel number, front/rear (x = driving wheel)		1X/2 (4)	1X/2 (4)
	3.6	Tread, front	b_{10} (mm)	460	460
	3.7	Tread, rear	b_{11} (mm)	390/520	390/520
	4.4	Lifting height	h_2 (mm)	110	110
	4.9	Height drawbar in driving position min./max.	h_{14} (mm)	650/1135	650/1135
	4.15	Fork lowered height	h_{13} (mm)	80	80
	4.19	Overall length	l_1 (mm)	1640/1710	1640/1710
	4.20	Length to face of forks	l_2 (mm)	490	490
	4.21	Overall width	b_1/b_2 (mm)	550/680	550/680
	4.22	Fork dimensions	$s/e/l$ (mm)	70/160/1150 (1220)	70/160/1150 (1220)
	4.25	Width overall forks	b_3 (mm)	550/680	550/680
	4.32	Wheelbase ground distance	m_2 (mm)	27	27
	4.34.1	isle width for pallets 1000x1200 crossways	A_x (mm)	2250/2320	2250/2320
	4.34.2	Aisle width for pallets 800x1200 lengthways	A_x (mm)	2120/2160	2120/2160
	4.35	Turning radius	W_5 (mm)	1440/1510	1440/1510
Parameter	5.1	Driving motor power	km/h	4.3/4.5	4/4.3
	5.2	Lifting motor power	m/s	25/30	20/25
	5.3	Fork Lowering speed, laden/unladen	m/s	35/25	35/25
	5.7	Gradeability, laden/unladen	%	5/20	6/20
	5.10	Service brake		EM brake	EM brake
Motor	6.1	Drive motor rating S2 60 min	kW	0.75	0.75
	6.2	Lift motor rating at S3 15%	kW	0.8	0.8
	6.4	Battery voltage/nominal capacity	V/Ah	24/65	24/105
	6.5	Battery weight	kg	36	49
	10.7	Noise level at operator's ear, according to	dB (A)	70	70

4. Handle installment

The handle is removed before shipment in the consideration of the requirement of packing and the safety over transportation, and the steps to install the hand are list as following:

- As shown in Figure 2, take out the handle assembly 1, align it with the installation position A, and fix it reliably with screws 3 and washers 2.
- As shown in Figure 3, connect the connectors of the truck body harness 4 and the handle harness 5 (pay attention to the alignment direction). As shown in B, fix the harness firmly with the wire clamp 6 and the screw 7.
- As shown in Figure 4, fix the truck body harness 5 to the handle base 10 with screws 8 and line cards 9, press the handle down and slowly release it, observe whether the harness is properly fastened, and then test whether the truck functions normally according to the truck operation instructions.
- As shown in Fig. 5, fix the cover plate 12 to the handle assembly 13 with screws 11. After the above steps, the handle installation is completed.

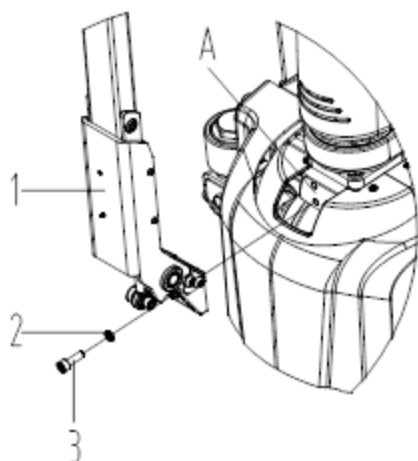


Figure 2

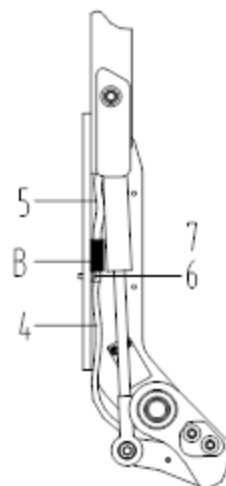


Figure 3

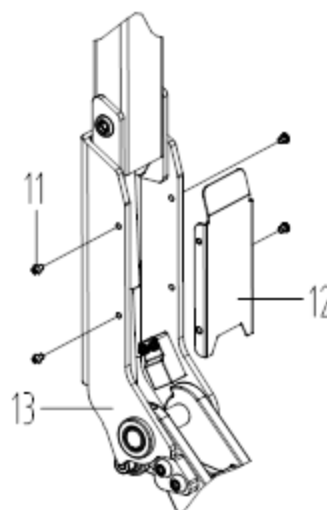
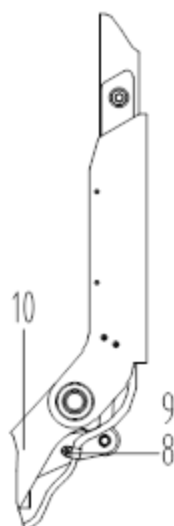


Figure 4

Figure 5

5. Operation

Truck electrified (magnetic lock)

- Turn on the electric lock
- Plug in the magnetic lock to turn on the truck easily.

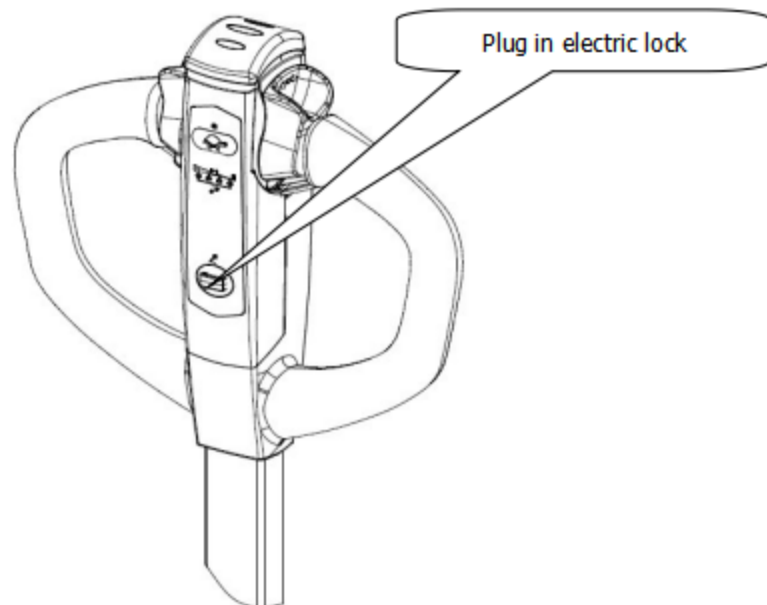


Figure 6

- Turn on the emergency stop switch

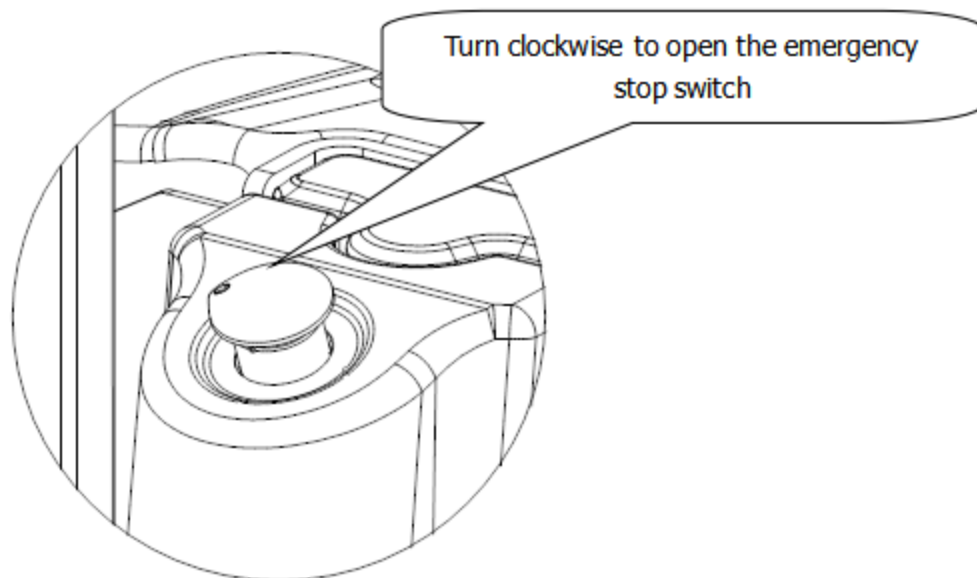


Figure 7

Fork lift and lower

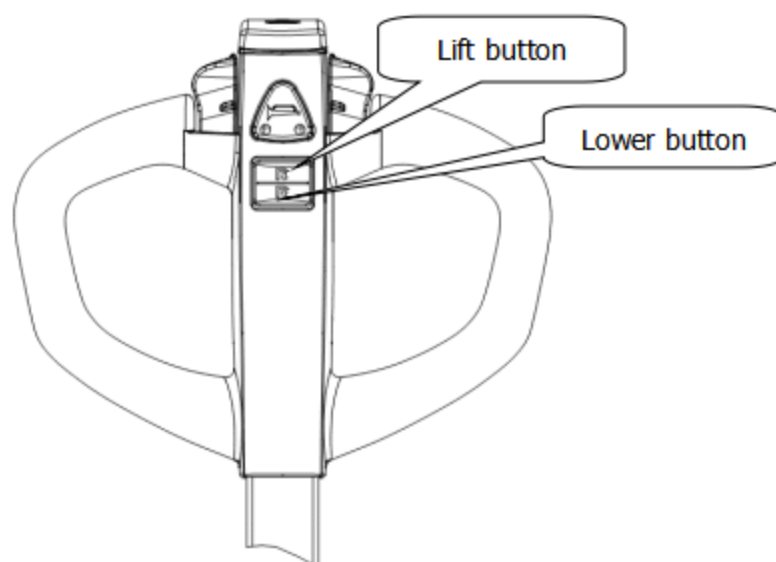


Figure 8

Figure 10

Fork lifting and lowering

- Lifting: Press the lifting button to lift
- Lowering: Press the lowering button to lower.

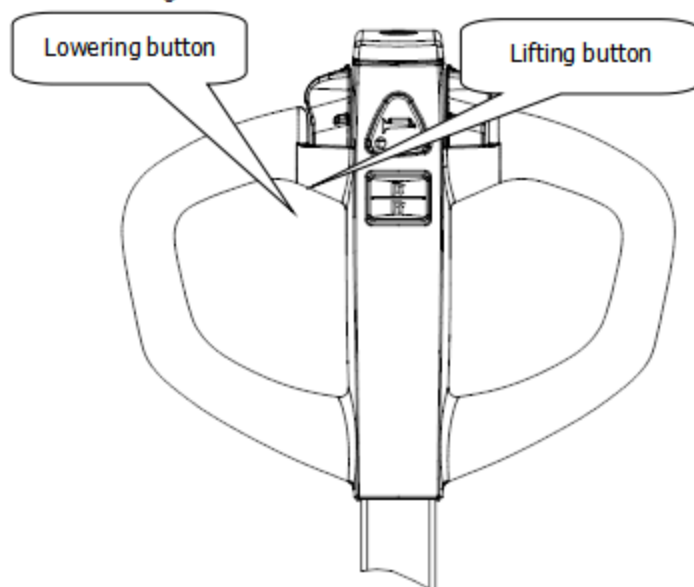


Figure 11

Traveling of the pallet truck

- Rotate the handle to the traveling zone:
A and C are the braking zones;
B is the traveling zone;

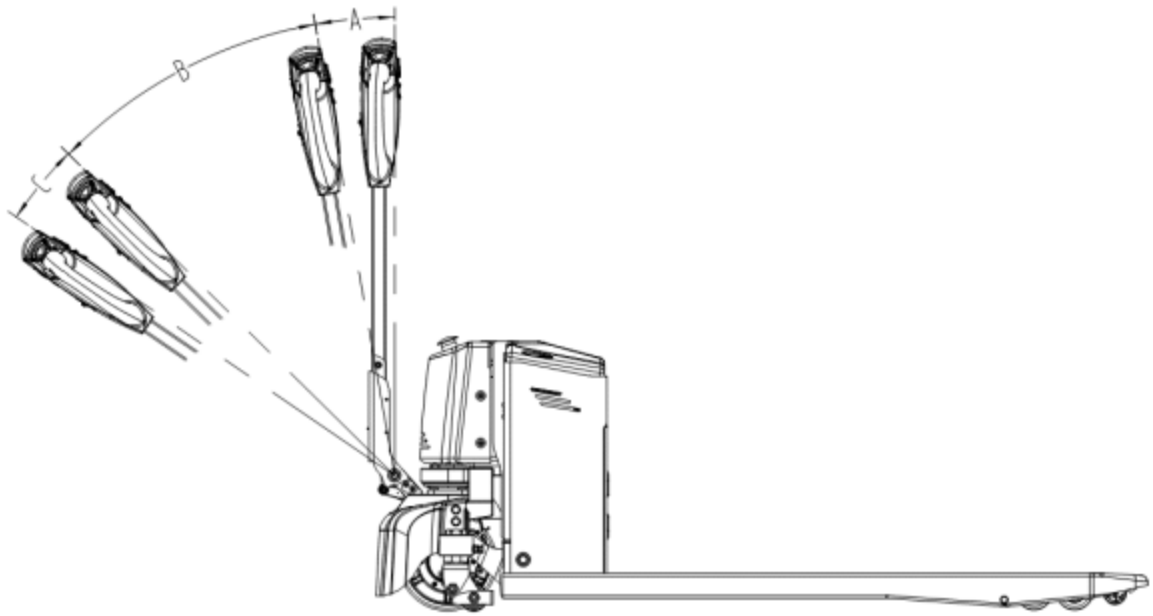


Figure 9

-Slowly rotate the accelerator to start. As shown in the figure, the rotation direction of the accelerator knob is the driving direction. The rotation angle of the knob is proportional to the driving speed. Release the accelerator knob and the knob will return to its original position automatically. At this time, the truck will slow down slowly until it stops (For safety reasons, do not accelerate rapidly)

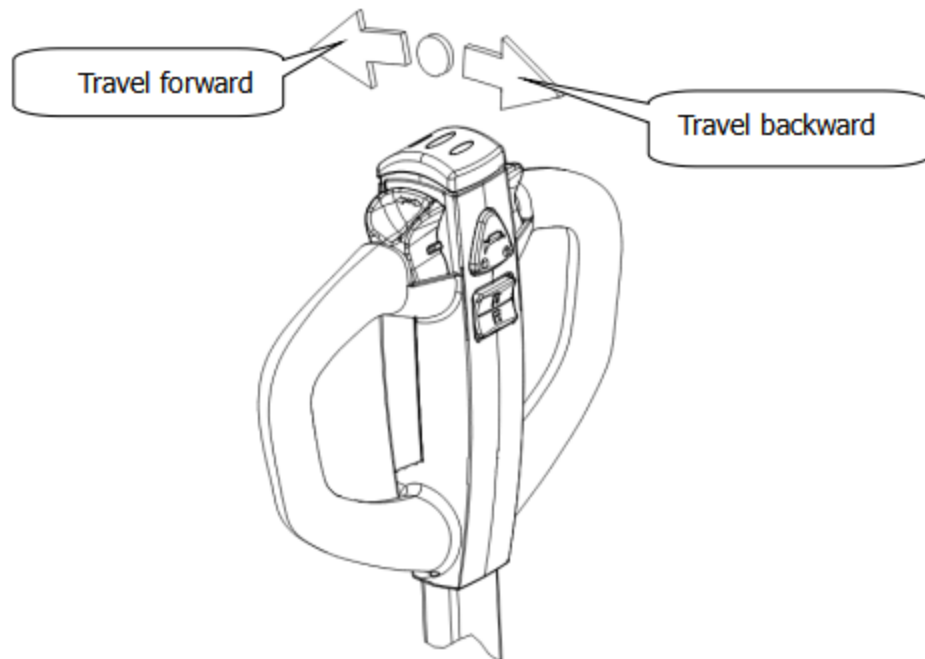


Figure 10

Braking

- -When the accelerator is released during normal driving, the truck will slow down slowly until it stops, and finally the brake will automatically lock and park.
- Turn the handle to A or C quickly for emergency braking (Figure 9), the brake will lock the wheel to achieve an emergency braking.

Emergency reverse button

The emergency reverse button is at the end of the hand. When it's touched by operator's body, the truck will stop traveling immediately, and then travel backwards for a distance. The function is set to minimize possible squeeze injuries when the truck encounters into obstacles over its traveling.

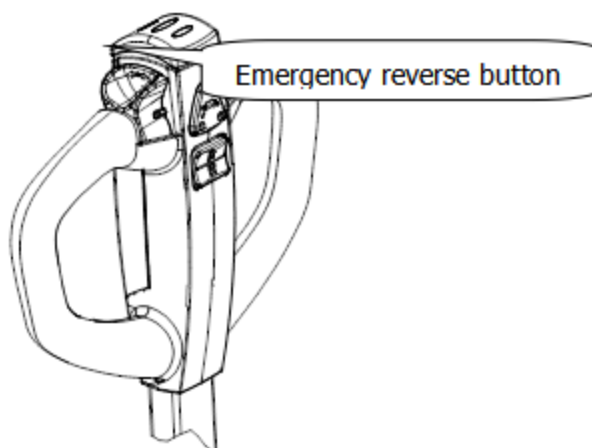


Figure 11

Parking

- Release the accelerator to stop the truck. The truck stops slowly until the brake engages and parks
- Lower the fork to the lowest position.
- Turn off the key switch.
- Turn off the emergency stop button.

6. Use, maintenance and charging of storage battery

Battery maintenance

- If the battery is fully discharged, it must be fully charged (approximately 12 hours).
- The battery shall not be stored for a long time after discharge, and shall be charged immediately after discharge.
- When the truck is not in use, the electric lock, emergency stop switch and electric lock must be turned off. Charge the battery every 3 months during long-term store.

Charge

- When the battery power indicator shows that the battery is low, charge it immediately, otherwise the battery will be damaged.
- Turn off the electric lock and emergency stop switch, connect the charging cable with the charging socket, and connect the plug with the power socket to start charging.
- When the indicator light of the charger is green, it means that the battery is fully charged. At this time, unplug the connecting cable.

Power display (magnetic lock)

The green light is always ON: 78% - 100%

Blue light is always ON: 52% - 77%

Yellow light is always ON: 26% - 51%

The red light is always ON: 16% - 25%

Red light flashing: < 15%

When the red light is always on, please prepare to drive the truck to the charging place for charging; The red light flashes as a warning, indicating that the truck is about to stop working. Please charge the battery immediately. If it is used continuously, the battery life will be seriously damaged.

7. Maintenance

Whether a truck can be used satisfactorily depends on careful maintenance. Neglect of maintenance, which may endanger personal safety and damage property. Therefore, checks should be made regularly, abnormal phenomena should be eliminated in time, and faulty cars should not be used to ensure safety and prolong the service life of cars.

Maintenance of this pallet truck is generally divided into three levels: daily maintenance, weekly maintenance and Periodic Maintenance.

Daily maintenance: To keep the surface clean and examine if the power supply cable is damaged.

Weekly Maintenance: To check the condition of the operational components, all fastening items, if oil leakage, if abnormal wearing in mechanical components exists, if abnormal temperature rises or sparks in electric equipment, etc.

Periodic Maintenance

- a. Mechanical maintenance: do it every 6 months. Main content is to check whether the fasteners are loose, whether the wheels work flexibly and whether the fork lifts normally. The running noise of the truck after maintenance is not more than 75 dB.
- b. Hydraulic maintenance: do it yearly to check whether the cylinder is in normal condition, whether there are internal and external leakage. Whether the hydraulic oil is clean or not, which is usually replaced once in 12 months. Hydraulic oil adopts ISO standard. L-HV32 and L-HV15 cryogenic hydraulic oils are used when the ambient temperature is -5-40°C and -10-5°C respectively. The waste oil replaced shall be treated in accordance with the relevant local laws and regulations. Check whether the limit valve is working properly
- c. Electrical Maintenance: do it every 3 months to check whether the electrical connectors are reliable, whether the switches are normal, and check whether the electrical insulation is normal (the insulation resistance between the electrical part and the car body should be greater than 0.5MΩ).

7.1 Adding hydraulic oil

Add hydraulic oil as shown in Figure 12 as follows:

- First close the electric lock and emergency stop switch, and operate when power off;
- Remove the screw 1 and take out the cover 2;
- Remove the oil tank cap 3, add an appropriate amount of hydraulic oil into the oil filler, and the liquid level must reach 60% of the oil tank 4 (the oil tank is made of white plastic, and the liquid level can be observed externally).

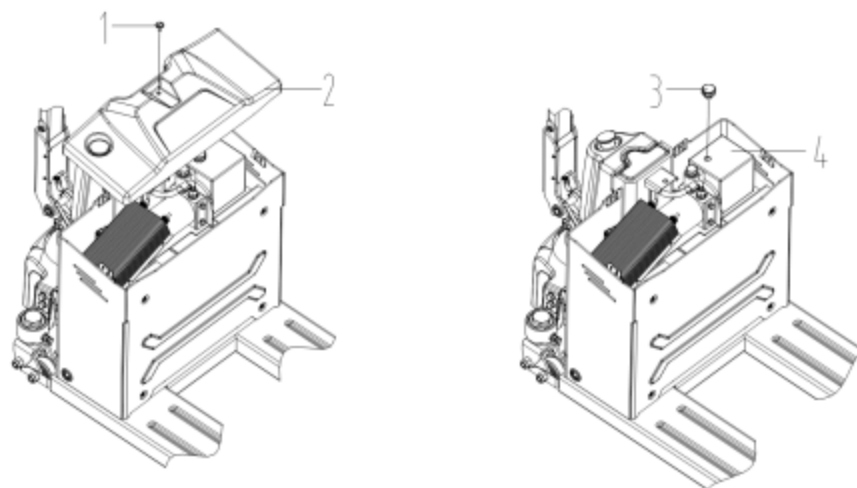


Figure 12

8. Hoisting

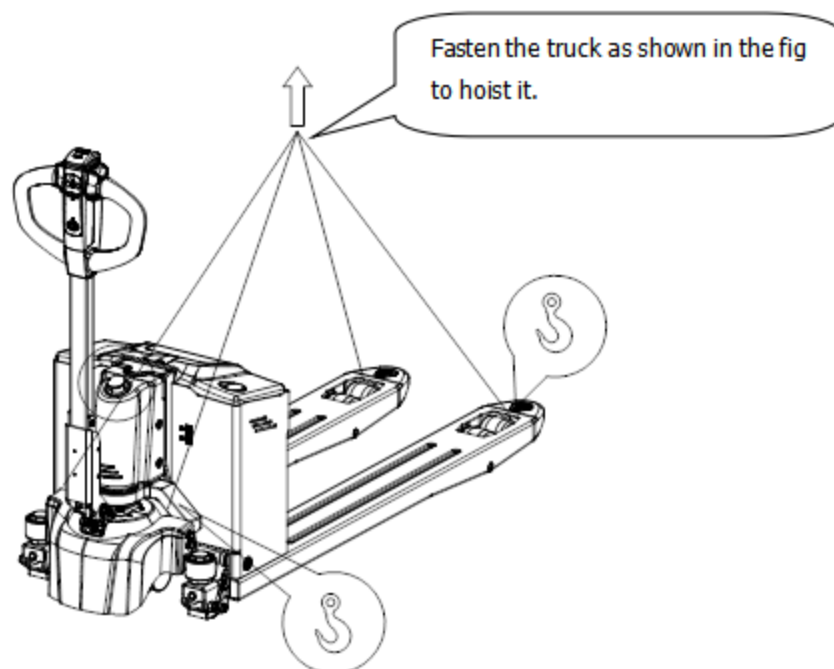


Figure 13

9. Trouble shooting

The table below provides some common failures of the truck in operation and the trouble shooting

No.	Fault	Cause analysis	Troubleshooting
1	Hydraulic oil leakage	1. Seal failure; 2. The surface of some parts is slightly damaged or worn; 3. The joint is loose;	1. Replace the seal; 2. Replace the damaged parts; 3. Re tighten the loose parts;
2	Fork lifting failure	1. The viscosity of working oil is too large or the working oil is not injected; 2. There are impurities in the oil; 3. The motor pump is damaged; 4. Set pressure is low	1. Change the working oil; 2. Remove the impurities in the oil circuit and renew the working oil; 3. Replace the hydraulic pump unit; 4. Readjust the relief valve value.
3	Fork lowering failure	1. The manual lowering solenoid valve is stuck or damaged.	1. Replace the solenoid valve
4	Lifting motor failure	1. The power supply is not turned on; 2. The battery has been completely discharged; 3. Motor damage; 4. The fuse is blown;	1. Turn on the power supply; 2. Charge; 3. Check whether the travel switch on the handle is pressed down due to collision and whether the brake is damaged; 4. Replace the fuse;
5	Charging failure	1. Charger is damaged 2. Battery is damaged 3. Wiring failure	1. Replace a charger 2. Replace a battery 3. Check the charging wiring

10. Waste treatment

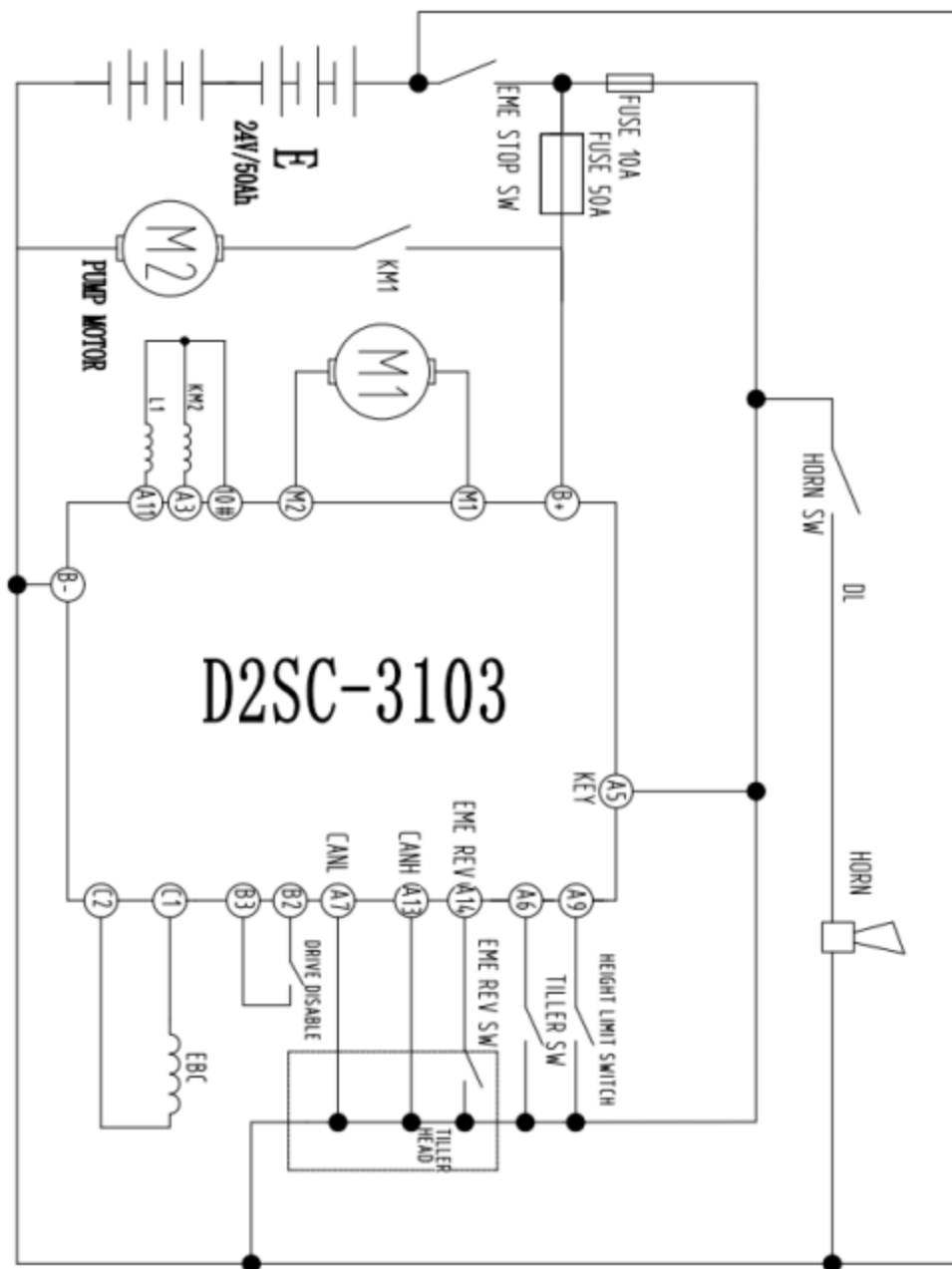
The abandoned batteries and hydraulic oil should not be placed carelessly and must be treated according to the relevant local regulations and laws. Attention must be paid to environmental protection.

11. Accessories and spare parts

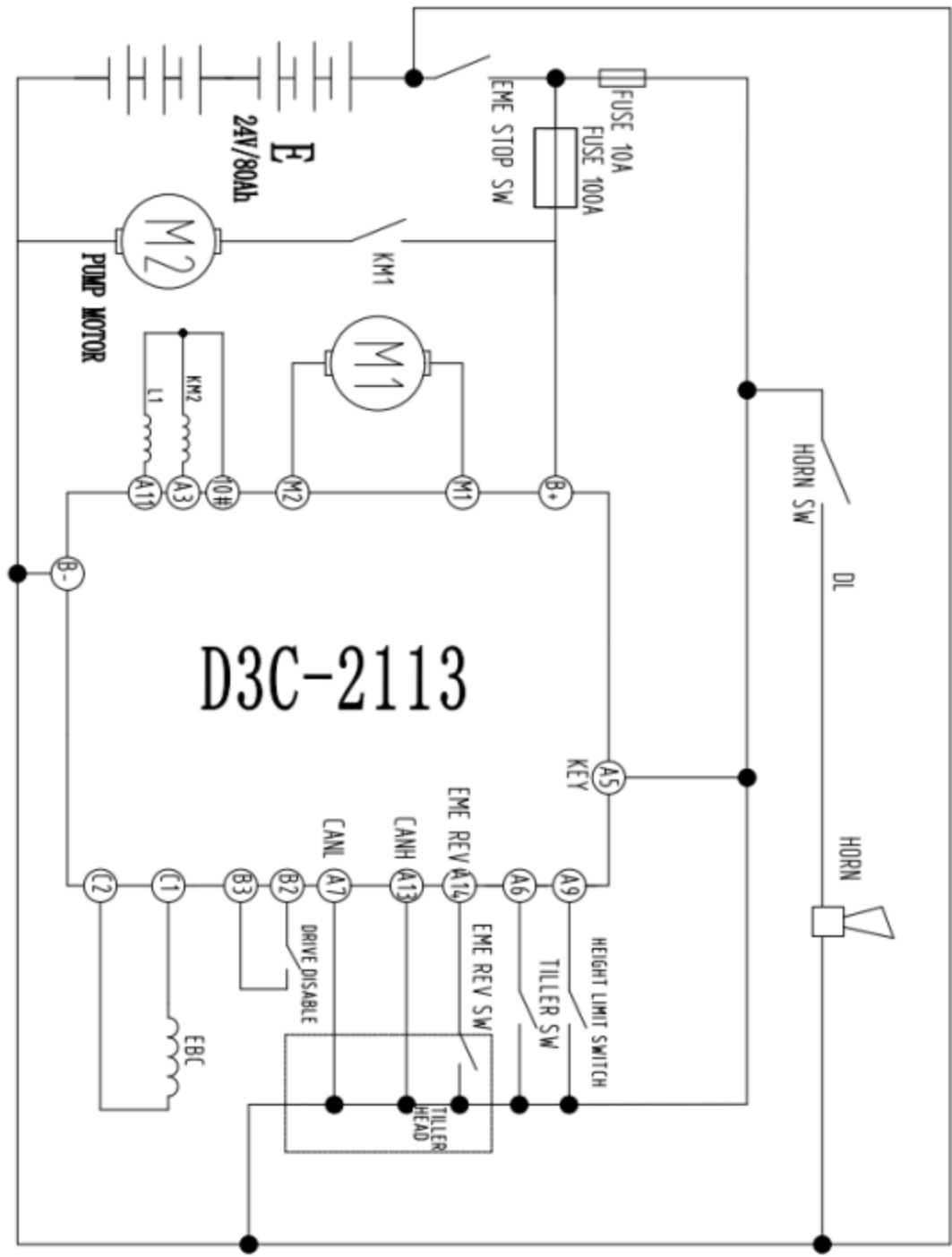
No.	Name	Application site	Specification	Qty(pc)	Remarks
1	Key	To the lock		2	
2	Charger	Charge the battery		1	

12. Electrical schematic diagram and fault code

CBD15W-II schematic diagram



CBD20W-II schematic diagram



12.1.2 Fault code table

Fault English	Fault code
Hardware Fault	42
Current Sense Fault	41
Precharge Fault	33
Brake On Fault	32
Battery Disconnect Fault	45
Parameter Fault	43
Brake Off Fault	34
Main Relay DNC	21
Wiring Falut	31
Main Driver Fault	23
Main Relay Welded	24
Throttle Fault	12
HPD Fault	35
EMR Sequencing Fault	22
Overvoltage Cutback	15
Undervoltage Cutback	14
Controller Overtemp Cutback	11
Pump SRO Fault	25
Creep Mode Fault	26
SRO Fault	27
Software Fault	36
Motor Temp Hot Cutback	44
Motor Overtemperature	46
Low BDI	51
Controller Overcurrent	52
Controller Severe Overtemp	53
Controller Undertemp Cutback	54
Parameter Change Fault	55
Severe Overvoltage	56
Motor Short	61
Motor Open	62
Gage PDO Timeout	63
PDO Timeout	64
BMS PDO Timeout	65
Driver 1 On Fault	66
Driver 2 On Fault	67
Driver 1 Off Fault	71
Driver 2 Off Fault	72
Severe Undervoltage	29

13. Packing list

Electric Pallet Truck Packing list

Consignee:
Contract No.:

Ex-work No :
Ex-work Date:

No.	Product Name	QTY	Net. Weight (kg)	Dimension (L×W×H)	Remarks
1	Pallet truck	1			A complete set
2	Accessory box	1			Technical documents, accessories and spare parts.

Note: 1. The following documents are in the file bag:

- | | |
|------------------------------|----------|
| 1. Operation manual | 1 volume |
| 2. Parts catalogue | 1 volume |
| 3. Qualification certificate | 1 copy |
| 4. Packing list | 1 copy |

2. Accessories and spare parts

No.	Name	Application site	Specification	Qty(pc)	Remarks
1	Key	To the lock		2	
2	Charger	Charge the battery		1	

Consignor: