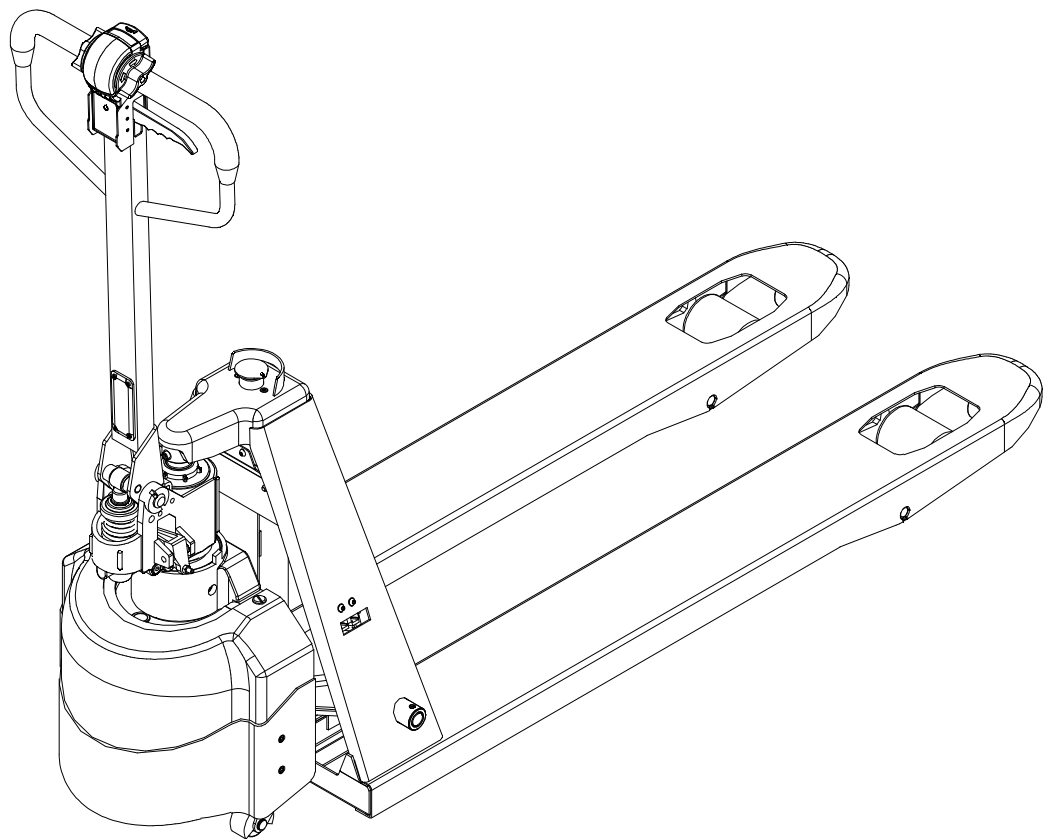


WESCO ADVANTAGE POWER

SEMI-ELECTRIC PALLET TRUCK

- Operation Manual
- Parts Catalogue





Warning! Do not use this pallet truck until you have read this operation manual!

Before using this pallet truck, please study all the items in this operation manual so that you can use it in a safe and effective manner and that this truck can serve you better.

This operation manual tells you how to use this pallet truck safely and normally and that how to keep it in a safe condition through routine maintenance.

Always conform to all the warnings given in this operation manual to prevent accidents from happening.



Danger! Danger!

Indicating upcoming dangerous situations which, if not avoided, will lead to death, serious damage of human body or huge material losses.



Warning! Warning!

Indicating potential dangerous situations which, if not avoided, will lead to death, serious damage of human body or huge material losses.



Caution! Caution!

Indicating potential dangerous situations which, if not avoided, will lead to damage of human body or huge material losses.



Attention! Attention!

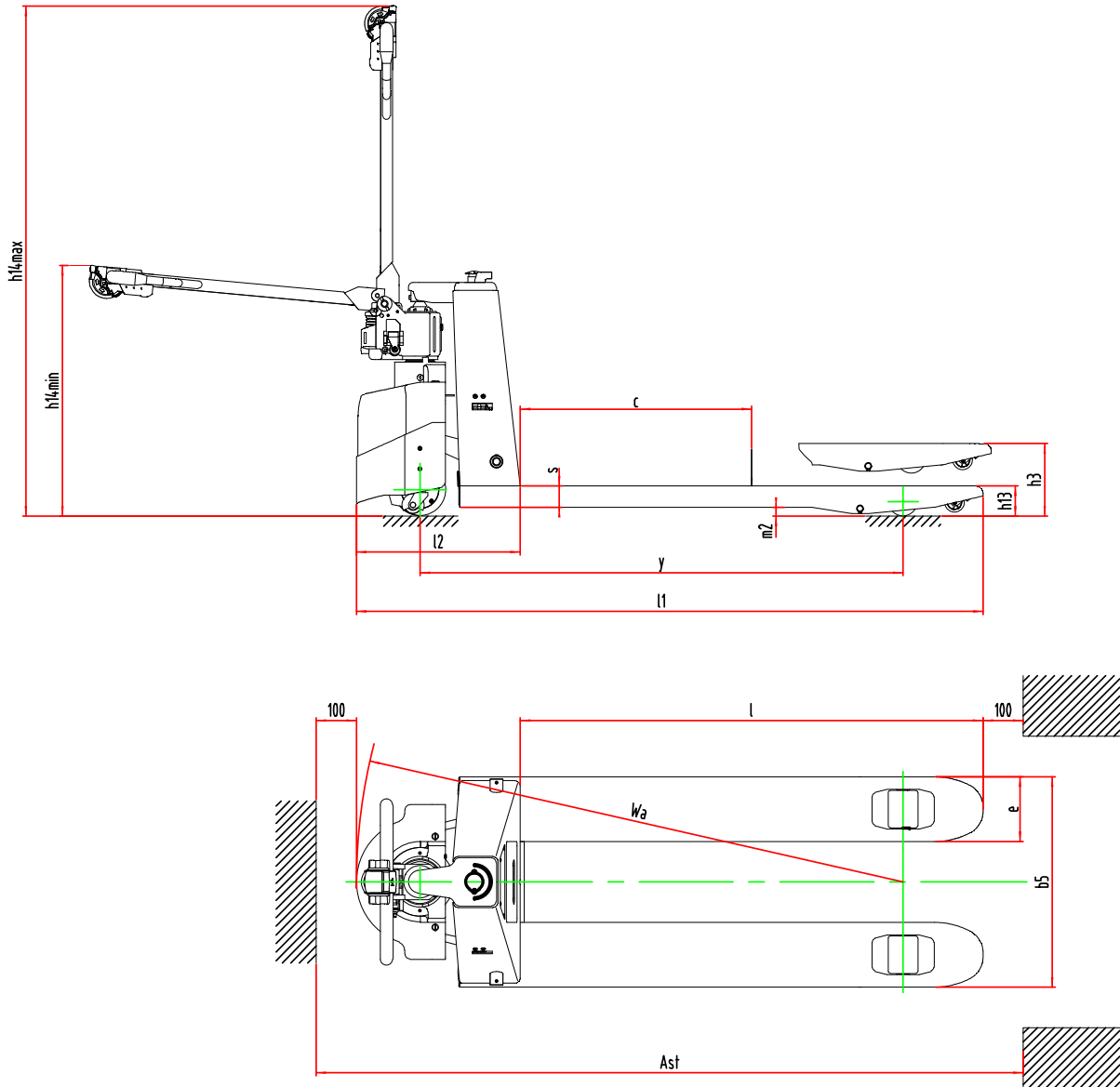
Accidents are likely to occur if you do not conform to this operation manual.

Content

1. Main Technical Parameters	1
2. Safety Norms	3
3. Electric pallet truck's applied range, transportation and storage.....	5
4. Truck Assembly	6
5. Introduction of Structure	7
6. Truck Commissioning	9
7. Use and Operations.....	9
8. Use, Maintenance and Charging of Storage Battery	11
9. Routine Maintenance	12
10. Common Faults and Troubleshooting	13
11. Waste Disposal.....	14
12. Accessories and Spare Parts	15
13. Electrical Schematic.....	16
14. Packing List.....	17

1. Main Technical Parameters

1.1 Parameter Figure



1.2 Main Technical Parameters

Model		CBD15A- II
Drive type		Electric
Operation type		Walkie
Rated load	Q(kg)	1500
Load center distance	mm	600
Min. height of fork	h_{13} (mm)	85/75
Tread	Y(mm)	1200/1270
Wheel		PU
Wheel dimension, front	mm	$\Phi 130$
Wheel dimension, rear	mm	$\Phi 80/\Phi 74$
Wheel number, front/rear (x=drive wheel)		1X-2/4
Lift height	h_3 (mm)	190/180
Min./Max. height, operation handle in driving position	h_{14} (mm)	670/1260
Overall length	l_1 (mm)	1577/1627
Length to fork face	l_2 (mm)	427
Truck width	b_1 (mm)	685/550/520
Fork dimension	s/e/l(mm)	53/160/1150(1220)
Fork width	b_5 (mm)	520/550/685
Wheelbase ground clearance	m_1 (mm)	32/22
Aisle width for pallets 1000x1200 (crossways)	A_{st} (mm)	1757/1827
Aisle width for pallets 800x1200 (lengthways)	A_{st} (mm)	1807/1827
Turning radius	W_a (mm)	1358/1428
Travel speed, laden/unladen	Km/h	4/4.5
Max. gradeability, laden/unladen	%	-
Drive motor power	KW	0.45
Battery voltage/rated capacity	V/Ah	24/20
Service weight (with battery)	Kg	115-120
Travelling brake		Electromagnetic brake
Noise level at driver' s ear according to DIN12053	dB(A)	70

2. Safety Norms



Always wear safety shoes when using the pallet truck.



Always wear protective glasses when assembling or disassembling the truck in order to prevent injury.



Attention!

Stop using the truck if it is damaged or any safety-related fault occurs.



Attention!

This truck is only designed for hard and flat ground.

Never use the pallet truck under the following conditions:

- There is dust or gas in air which may lead to fire or explosion;
- In cold storage, low temperature, salt or other corrosive environments;
- In rainy days outdoors;
- On grit or grassland.



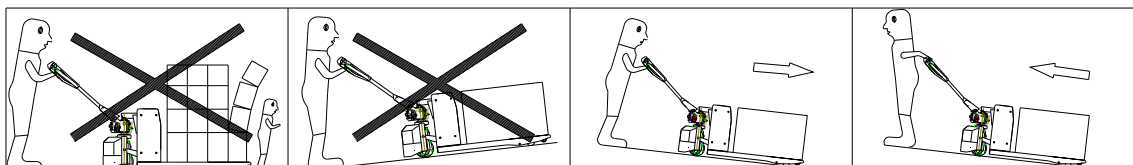
Attention!

- Be careful and responsible when operating the truck;
- Do not operate the truck with oily hands or shoes;
- Do not wear loose clothes or jewelries when operating the truck.



Attention!

- Make sure the ground has adequate capacity for bearing the load. Here, the load refers to total weight of the truck and goods.
- Be extremely careful if there is any extruding object around that can cause injury to human body or damage the truck;
- No person is allowed around the operation area, because it is likely to cause injury to human body. For example, if any goods fall off.





Warning!

- Do not make modifications on parts arbitrarily. If any part of truck is damaged, replace it with those provided by manufacturer or organizations approved by the manufacturer.



Warning!

- Never charge the battery in a closed environment or when the truck is covered. Because the hydrogen released by the battery may accumulate and cause danger.



Warning!

- Never make any modifications on the truck without approval.



Caution!

- When transporting goods on a slope, the operator shall be extremely careful and always be on the upper side of the slope, as showed in the picture above.



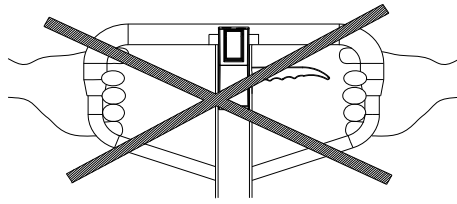
Warning!

- Do not make fast operations when turning in order to prevent overturning.
- Goods shall not be too high to prevent it from blocking sight.
- Brake lightly and cautiously to prevent goods from sliding off and material losses.
- The pallet truck shall never make turns on a slope.
- Before pushing the truck into an elevator, make sure the elevator is capable of bearing the total weight of truck, operator and other persons. When entering the elevator, let the load enter first rather than the operator. When the load or truck enters/exits the elevator, no person is allowed to stay in the elevator.

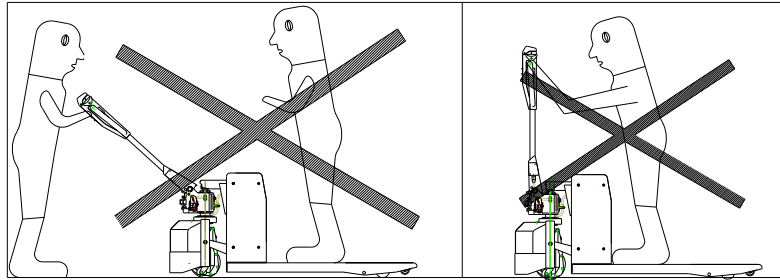


Caution!

- The rated load shall never be exceeded.
- During stacking, the goods shall not be too high, otherwise it will fall off during transportation or that the truck will be threatened with overturning.
- Never transport human beings with the truck.
- No other personnel is allowed around the truck, to prevent human injury caused by a sudden fault.
- Make sure your hands are on the upper end of handle when operating the handle or pushing the truck.
-



- It is prohibited for the truck operator to sit or stand on the truck when operating.



Attention!

- Place the forks to the lowest position when parking the truck.
- Never park the truck on a slope.
- Never park the truck at any emergency exit.
- Never park the truck at places where it may block traffic or hinder work.
- Never use the truck in rains.
- Turn off power supply while nobody is guarding the truck.

3. Applicable Scope, Transportation and Storage of Pallet Truck

3.1 Applicable scope and places of pallet truck

3.1.1 Applicable scope

- The truck is mainly used for transporting goods; overloading is prohibited.
- The truck is designed for short-distance transportation operations indoor and outdoors, not for long-distance transportation.
- Never apply the truck to other purposes except for those stipulated uses; never transport passengers.

3.1.2 Applicable environment

- Requirements for sites: the route shall not be blocked, the ground shall be hard and flat, and the sites shall be well-lighted.
- Height above sea level shall not exceed 1000m.
- Ambient temperature shall be between -25°C to $+40^{\circ}\text{C}$.
- When ambient temperature is $+40^{\circ}\text{C}$, the relative humidity shall not exceed 50%; when monthly

temperature in average is 25°C, the maximum relative humidity shall not exceed 90%.

- If the truck will be used in the following conditions for a long time, it must be equipped with special devices, and be approved by the manufacturer: temperature between -5°C and -25°C, cold storage, great variety of temperature or humidity.
- Never use the truck in flammable, explosive, acid, alkali or other corrosive environment.

3.2 Transportation of Pallet Truck

Precautions for transporting the truck:

- The electromagnetic brake shall be in the released condition.
- Support and fix the front and rear wheels with wedge blocks. At the same time, fix with the carrier with ropes through hoisting holes and holes on fork tips. Make sure the pallet truck and the carrier are fixed steadily.
- Hoist according to the position marked with “hoisting mark” on the pallet truck.
- The carrier shall not travel too fast, make sudden turns or sudden braking, in order to prevent damaging the truck and accidents.

3.3 Storage of Pallet Truck

- Turn off the electric lock, and press the emergency stop switch.
- Support the front and rear wheels with wedge blocks.
- If the pallet truck will be parked for an extended period of time, make the wheels away from ground (pneumatic tire).

4. Truck Assembly

For safe transportation and packing, controller handle has been removed, therefore, please mount the controller handle before use. The mounting steps are as follows:

- 4.1 Refer to Figure 1. Dismantle pin 1 from pin 2, and then pull out pin 2.
- 4.2 Refer to Figure 2. Take down screw 3, and take out cover plate 4 from handle assembly 5.
- 4.3 Refer to Figure 3、4. Insert handle assembly 5 into point A, connect handle assembly 5 with pump 10 through pin 2, and at this time you need to make pull rod chain 8 go through the hole in pin 2. Rotate handle 5 to the horizontal position and take out pin 9, and keep pin 9 well for the next use. Connect wiring harness in handle assembly 5 and the wiring harness on truck body through connector 6. You can fasten with a belt to ensure reliable connection (refer to Figure 5). After the wiring harness has been connected, fix wiring harness to handle assembly 5 through line card 7 according to Figure

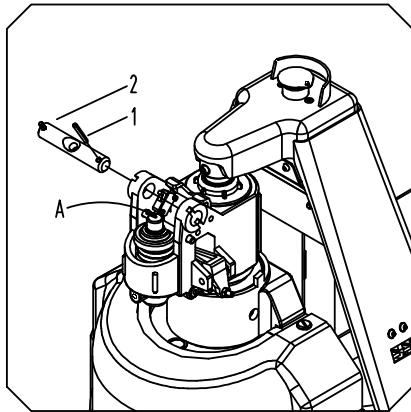


Figure 1

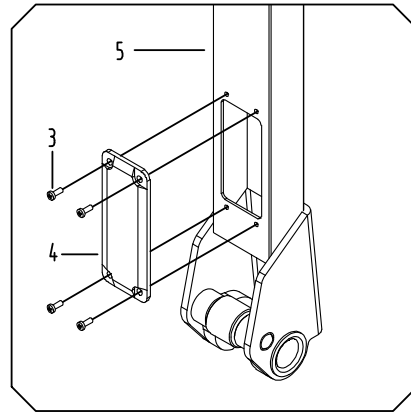


Figure 2

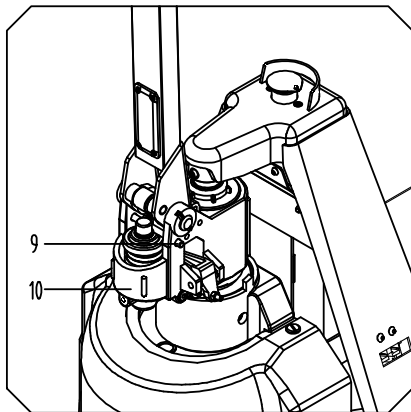


Figure 3

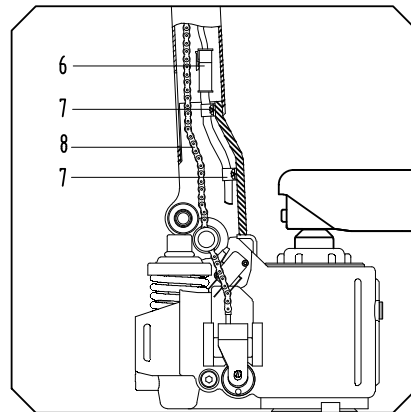


Figure 4

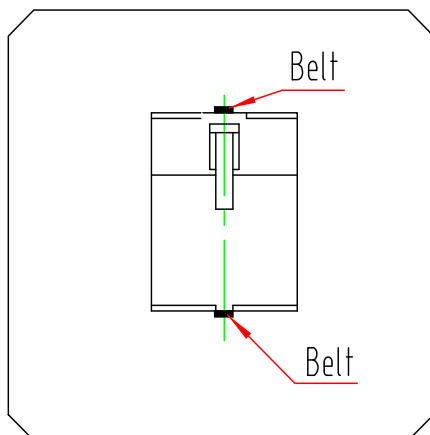


Figure 5

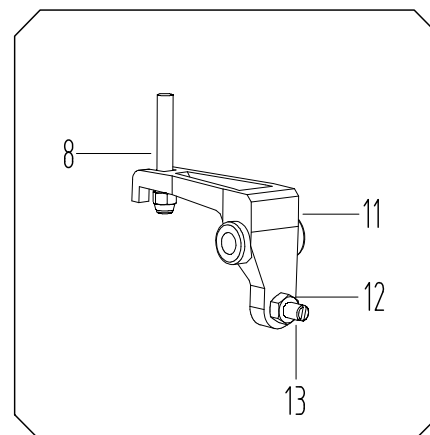


Figure 6

4.4 Refer to Figures 4 and 6. Hang the screw nut on the end of chain 8 into the groove of lever plate 11.

4.5 Finally, make pin 1 go through pin 2 and fix it. Mount cover plate 4 back to handle assembly 5.

5. Introduction of Structure

5.1 Figure 7, Truck structure, 1. fault indicator; 2. handle assembly; 3. battery; 4. controller assembly; 5. emergency stop button; 6. charge port.

5.2 Working form of this pallet truck:

Manual lifting: press jack manually to push oil cylinders up to get lifting power.

Electric travelling: the storage battery is the power source and DC motor is the power, driving the truck to travel.

5.3 This pallet truck is designed with a limit valve that can prevent overloading.

5.4 This pallet truck is designed for hard and flat indoor ground. Never use it in unsuitable occasions such as:

1. There is dust or gas, having potential of fire disaster or explosion;
2. In cold storage, or low temperature, salt, or other corrosive environment;
3. Rainy days outdoors;
4. On grit or grassland;
5. Carry passenger.

5.5 Correct use and operations will bring great convenience for your work, while incorrect use or operation will damage the truck and cause danger for you and goods.

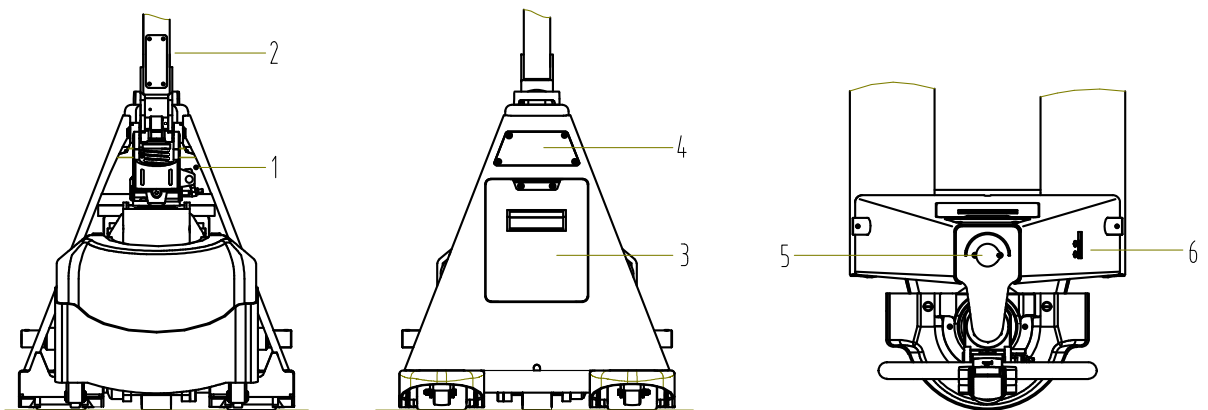


Figure 7

6. Truck Commissioning

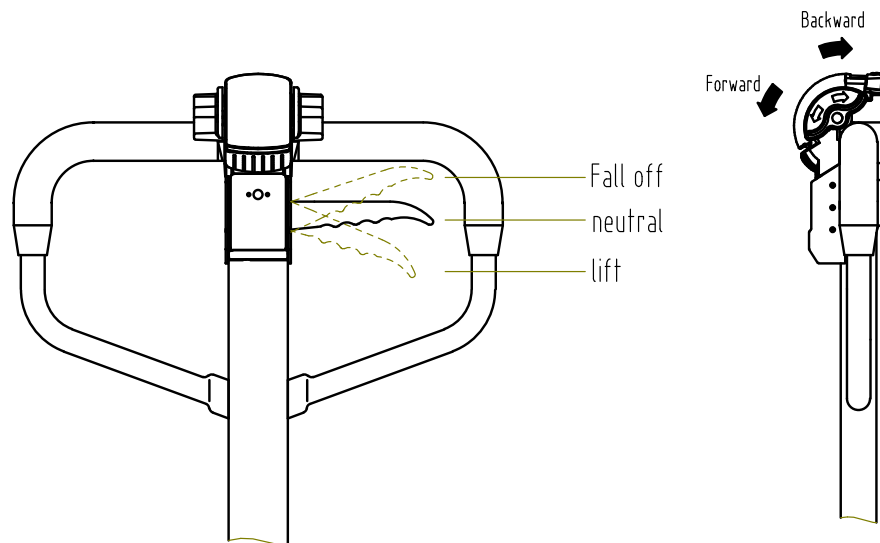


Figure 8

- 6.1 After the truck has been assembled, try swinging the handle and controlling each gear of the knob (refer to Figure 8) to see whether the lifting and lowering is normal or not. Rotate the knob of handle accelerator. Rotate it clockwise and the truck will go back; rotate it anti-clockwise and the truck will go forward; in forward direction, press the emergency reverse switch and the truck will travel reversely for about 2m.
- 6.2 Screw 12 in Figure 6 functions to adjust truck condition. When the truck lifts and then descends immediately, rotate screw 12 anti-clockwise for a little bit and try the truck until it can lift normally. If the truck cannot descend after lifted, rotate screw 12 clockwise for a little bit and try the truck again until it can descend normally. Nut 13 at screw 12 functions to lock. Release it before adjustment, and lock it after adjustment.

7. Truck Driving and Operating

7.1 Inspections before use

- 7.1.1 Please check whether the truck is normal before use: whether the jack works normally, each support wheel works normally and whether there is any stuck phenomenon. Never use a faulted truck.
- 7.1.2 Check whether the battery is powered. Pull out emergency stop lock button to turn on power supply. Check BDI on truck. If red LED lamp flashes, it shows the battery has run out of power. Please charge the battery. Never use the truck when it is out of power, because it will shorten the service life of battery greatly and even damage the battery.
- 7.1.3 Check whether the truck can brake normally; check whether lifting, lowering, travelling forward/backward and other movements are normal or not; check whether the emergency reverse movement is normal. If no fault has been identified through the inspections above, the truck can be put into use. If there is any fault, repair timely. Never use a faulted truck.

7.2 Truck use

- 7.2.1 There is cam and microswitch mounted on the spindle which operates the rocker arm. Only

when the rocker arm is for $15^{\circ}\sim 75^{\circ}$ (as shown in Figure 9), can the truck be powered to travel. If it is greater than 75° or smaller than 15° , the truck will be powered off and brake, i.e., as shown in Figure 9, when the operation handle is in area A or C, the truck will be unable to travel. During travelling, i.e., the operation handle is in area B, lift or press the handle, the truck will brake emergently; release the accelerator knob, and the truck will brake smoothly.

7.2.2 Pull up emergency stop button, turn on power supply, rotate the travelling knob. Knob forward is forward travelling, and knob backward is backward travelling. When starting, rotate the knob slowly no matter laden or unladen to make the truck start smoothly to the rated speed. Drive the truck near the goods pile (fork tip 30 cm from pile). Pull the knob to the descending position, forks to the lowest position. Insert forks slowly into cargo pallet as deep as possible. Pull the knob to lifting position, swing handle up and down, the goods are lifted to a certain height. Pull the knob to null position. Drive the truck and transport goods to the appointed position. Stop slowly. Pull the knob lightly to the descending position. Make the goods descend slowly. After the forks are completely away from the pallet, pull the knob to null position, start the truck and leave the pallet. Transportation operation is fulfilled. Turn off power supply.

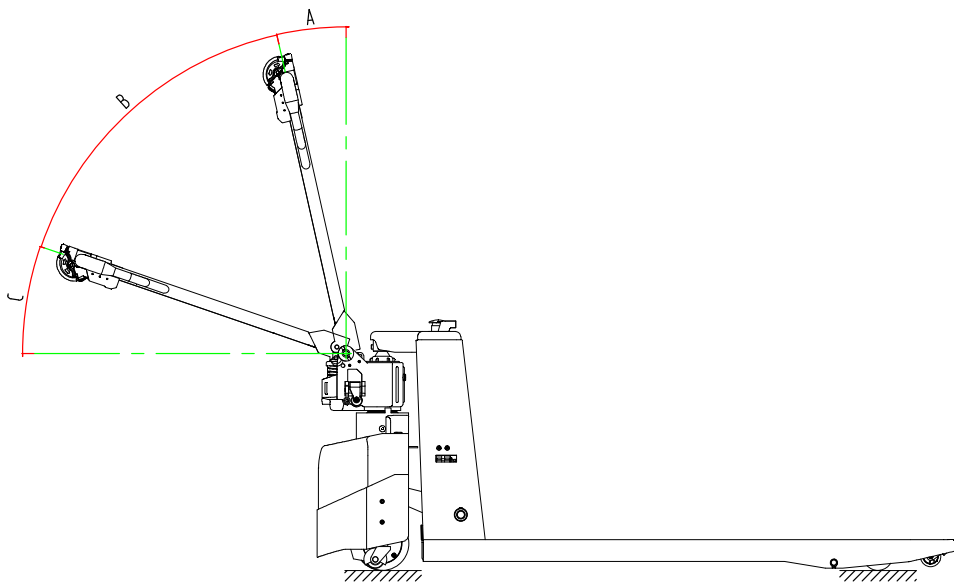


Figure 9

7.3 Precautions for driving

- The pallet truck is a kind of special equipment. Only trained and qualified driver with driving license is allowed to drive it. The maintenance shall also be conducted by trained and qualified personnel to ensure safe and normal operations.
- Overloading is strictly prohibited.
- The pallet truck is only designed for hard and flat ground. The gradient should be within the allowable range of truck parameters and have a certain friction force. Remove oil, grease and mud on the ground to prevent wheels from skidding.
- Conduct routine inspections both before and after using. Never use a faulted truck. During use, pay attention to mechanical system, electrical system, speed governor, braking performance and working condition. Stop immediately if any abnormal phenomenon should occur. Continue work

- only when the fault has been excluded.
- For special ordered truck, it has wider application scope. The user cannot modify it arbitrarily.
 - When starting, pull out emergency stop button to turn on power supply. Accelerate slowly when power is on. rotate operation handle to see whether the truck steers normally, the truck travelling is smooth, and then decelerate, and see whether braking system is normal or not.
 - Be careful when transporting bulky cargo. When sight is blocked, be guided by someone else.
 - When entering cargo area, the truck shall travel slowly. Pay attention to whether is any extruding objects which will lead to vibration and stab the wheels. When driving backward, pay attention to passengers, obstacles and uneven ground.
 - No passenger on the truck while travelling.
 - Be careful when driving on a slope. Drive slowly and cautiously down a slope.
 - Start, steer, travel and brake smoothly, especially decelerate when steering on a wet or smooth ground; never suddenly start, accelerate, stop or turn. Avoid emergency braking when travelling with load.
 - Pay attention to voltage. The rated voltage is 24 V. When power is lower than 30%, stop running immediately. Then charge the battery or replace it.
 - The operator should be familiar with the meaning and functions of each label on truck. After a complete repair, check whether the labels are completely or not.
 - When the truck is faulted, hang a warning plate to signal it.
 - Never use the truck when its housing is removed or any part is missing.
 - When transporting goods, lift the goods away from ground completely, and the maximum height should reach the allowable lift height.
 - When leave the truck, disconnect power supply and take out key.

8. Use, Maintenance and Charging of Battery

8.1 Replacing battery

- 8.1.1 Turn off power supply;
- 8.1.2 Remove screw of battery cover plate on the rear end of truck, and take down battery cover plate;
- 8.1.3 Disconnect the cable which is connected with the battery;
- 8.1.4 Take out the old battery;
- 8.1.5 Mount on the new battery. Make sure it is in the same position with the old one;
- 8.1.6 Check polarity, and connect the cable. Also make sure they have the same position;
- 8.1.7 Mount battery cover plate and fasten the screw;
- 8.1.8 Pull up emergency stop lock button and turn on power supply. Work and check;
- 8.1.9 The replaced battery shall be disposed according to local regulations.

8.2 Battery Charging

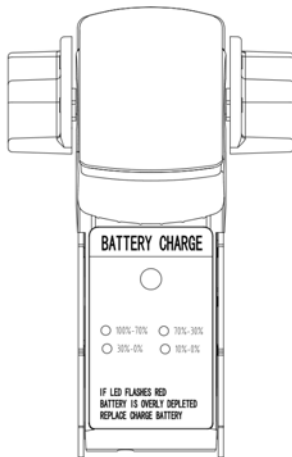


Figure 10

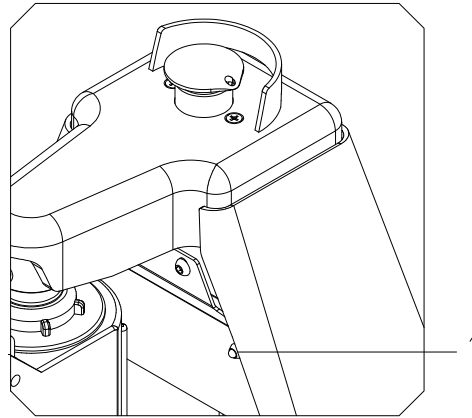


Figure 11

- 8.2.1 When red light of LED on the handle controller flashes, the truck will alarm and be unable to start. It needs charging. Refer to Figure 10.
- 8.2.2 When the truck is in low voltage, drag the truck to the charging position. Press the emergency stop lock button to turn off the power supply. Connect charger with truck charging port. Connect charger input with an external power supply to charge. Red lamp of charging indicator 1 will be lighted, as shown in Figure 11.
- 8.2.3 When green lamp of charge indicator continues to be lighted, it means the battery has been fully charged. Pull out connecting cable, and the truck is in standby condition.
- 8.2.4 It takes 8 hours for truck with lead-acid battery from normal discharging to charging status; it takes 3.5 hours for lithium battery.



Attention

When the battery is in low voltage, do not place it for a long time; charge immediately. When the truck will not be in use, carry out supplementary charge every 2 months. The gap shall not be longer than 3 months.

9. Routine Maintenance of Truck

- 9.1 Whether the truck can work satisfactorily depends on careful maintenance. When maintenance is neglected, it will harm human body and damage goods. Therefore, carry out routine inspections during use and exclude abnormal phenomena timely. In order to ensure safety and prolong service life of truck, never use a faulted truck.
- 9.2 Maintenance: there are three levels of maintenance, i.e. routine maintenance, first-level maintenance and second-level maintenance.
- Routine maintenance: once a day, mainly to keep the surface clean and check whether the power line is damaged.
- First-level maintenance: once a week, to check whether each part works normally, whether the fasteners become loose, whether there is oil leakage, whether the mechanical part has abnormal wearing, whether the electric part has abnormal temperature rise or spark. If any abnormal

phenomenon occurs, adjust and repair timely.

Second-level maintenance: periodically. Make full inspections on the truck according to the following requirements:

- a. Mechanical maintenance: once a half year, mainly to replace lubricating oil for transmission gear of driving wheel and bearing, add lubricants for each rotating joint, and check if any fasten becomes loose, if the wheels can rotate flexibility, if the forks can lift and lower normally. Noise of truck operation after maintenance shall not exceed 70 dB.
- b. Hydraulic maintenance: once every 12 months. Check whether the oil cylinders are normal, whether there is inner leakage or outer leakage, whether the hydraulic oil is clean. Normally, replace hydraulic oil once a year. Adopt ISO standard for oil quality. When ambient temperature is $-5 \sim 40^{\circ}\text{C}$, adopt L-HS32 low-temp hydraulic oil. The waste oil shall be disposed according to local regulations. Check whether limit valve works normally.
- c. Electric part maintenance: once in three months. Check whether each joint is reliable, whether all switches are normal, and check whether insulation is normal (the insulation resistance between electric part and truck body shall be greater than $0.5\text{M}\Omega$).

9.3 The driving form of the truck is chain wheel transmission. After having been used for a long time, the chains will be loose, which is a normal phenomenon. Loosen screw (2) which fixes chain tightener (1). Move chain tightener in whole towards arrow direction in Figure 12. press chain and fasten screw (2).

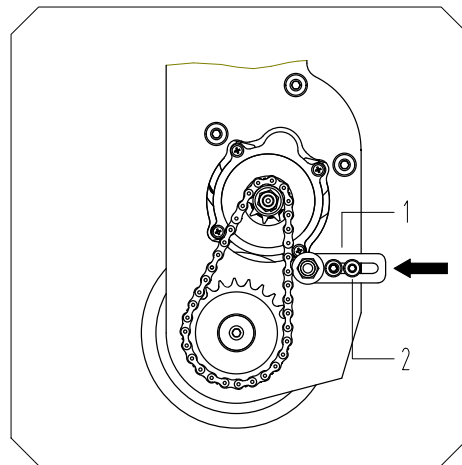


Figure 12

10. Common Faults and Troubleshooting

The table below lists some common faults and troubleshooting during lifetime of the truck:

N O.	Fault	Cause analysis	Troubleshooting
1	Lifting range not enough	Insufficient hydraulic oil	Add filtered working oil
2	Return range not in place	1. Too much hydraulic oil 2. Rotation part is distorted and	1. Suck out some work oil 2. Replace the faulted part 3. Replace the faulted part

		stuck 3. Plunger and thread sleeve stuck	
3	Forks cannot descend after having been lifted	1. Unloading device abnormal 2. Parts distorted and damaged	1. Readjust the unloading device. Refer to 4.2 2. Replace the distorted and damaged parts
4	Hydraulic oil leakage	1. Oil seal ineffective 2. Surfaces of some parts are damaged or worn 3. Loose joint	1. Replace oil seal 2. Replace faulted part 3. Fasten again
5	Forks cannot lift	1. Work oil too viscous, or no work oil has been added 2. Impurities in oil 3. Unloading device abnormal	1. Replace work oil 2. Remove impurities and renew work oil 3. Readjust unloading device. Refer to 5.2
6	When swing the handle, the forks lift and then lower immediately, and the handle returns back greatly	Valve gets stuck by impurities	Open the valve, take out and clear the parts, then install back
7	Pallet truck cannot travel	1. Power switch not opened 2. Battery out of power 3. Brake not released 4. Fuse damaged	1. Pull up the emergency lock button and open power supply 2. Charge 3. Check if the range switch on the handle has been pressed down due to collision, and if the brake switch has returned 4. Replace fuse
8	Charger cannot charge	Charger damaged	Replace charger

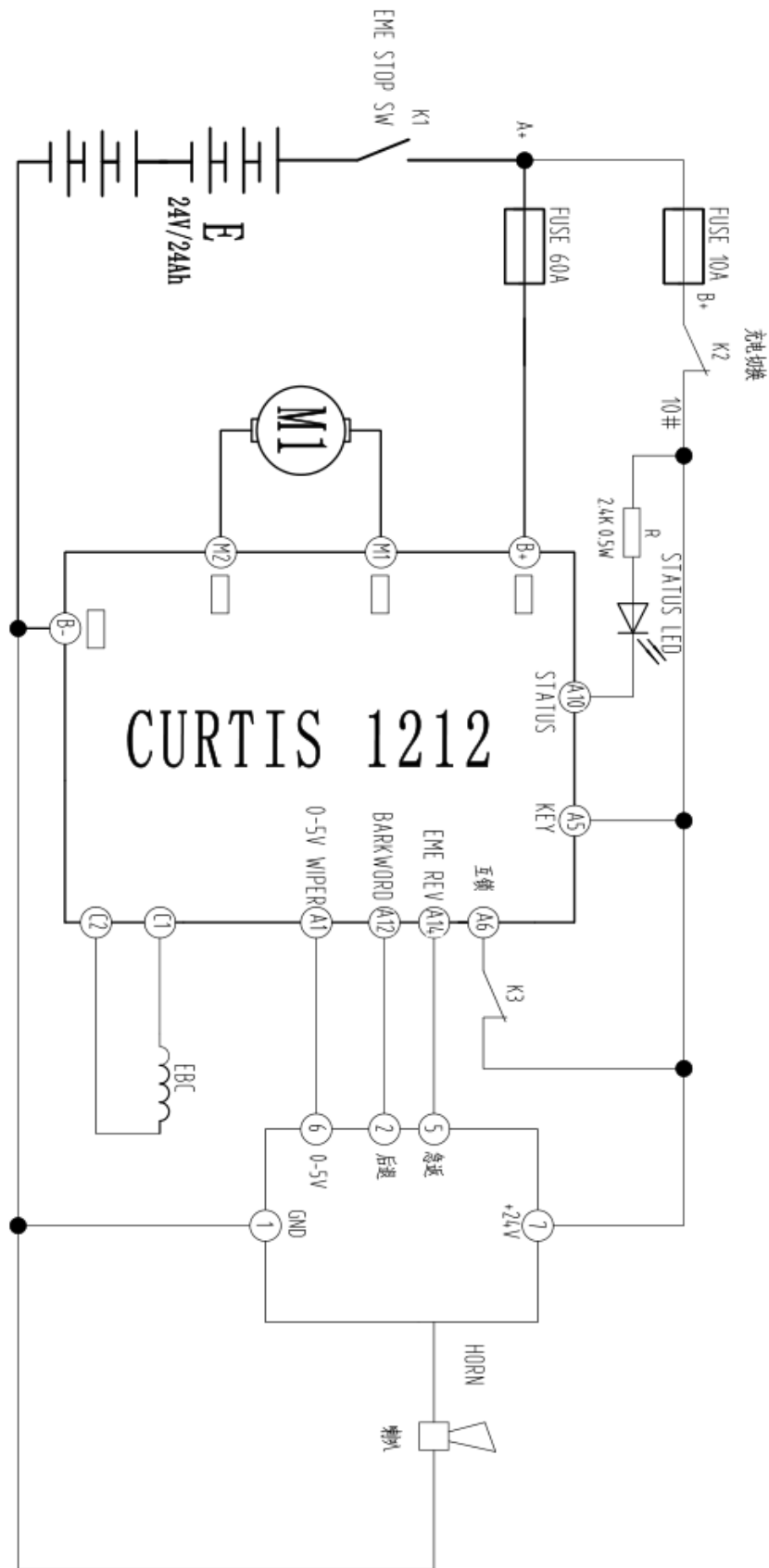
11. Waste Disposal

Never throw away wasted batteries or hydraulic oil casually. Pay attention to environment protection and dispose them according to local regulations.

12. Accessories and Spare Parts

No.	Name	Use position	Specification	Q'ty	Remarks
1	Fuse	Electric part	10A	1	
2	Fuse	Electric part	60A	1	
3	Belt	Handle wiring harness connection	3X150	1	
4	Belt	Wiring harness fixing	4X150	2	
5	Screw	Wiring harness fixing	M4X8	2	
6	Wrench	Drive wheel disassembly	S6	1	
7	Wrench	Drive wheel disassembly	S8	1	
8	Seal ring	Jack assembly	UNS35	1	

13. Electrical Schematic Figure



14. Packing List

CBD15A- II Semi-electric Pallet Truck Packing List

Consignee:

Manufacture NO.:

Contract NO.:

Manufacture date:

NO.	Name	Q'ty	Net weight (kg)	Outline dimension (l×w×h)	Remarks
1	CBD15A- II semi-electric pallet truck	1			Whole truck
2	Accessory bag	1			Technical documents, accessories and spare parts within

Note: 1. The following files are included in the document bag

①	Operation Manual	1 volume
②	Parts Catalogue	1 volume
③	Certificate of Quality	1 copy
④	Packing list	1 copy

3. Accessories and Spare Parts

NO.	Name	Use position	Specification	Q'ty	Remarks
1	Fuse	Electric part	10A	1	
2	Fuse	Electric part	60A	1	
3	Belt	Handle wiring harness connection	3X150	1	
4	Belt	Wiring harness fixing	4X150	2	
5	Screw	Wiring harness fixing	M4X8	2	
6	Wrench	Drive wheel disassembly	S6	1	
7	Wrench	Drive wheel disassembly	S8	1	
8	Seal ring	Jack assembly	UNS35	1	

Delivery unit: