

Walkie electric pallet stacker Model - CDDC

Instructions



Preface

Dear customers:

In order to make you operate the product correctly and safely, please read the instruction carefully before using it, and keep it properly so as to consult it at any time.

The operator of the forklift needs to be skilled, and the operator has responsibility to know about functions and safety guide of the forklift in details. If you have doubt in the course of use, please contact our company.

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Chapter 1 Safety Regulation

The safety regulation is summed up as following:

- ※Please check all safety switches、equipment in advance every day according to the requirement before using the forklift, so as to ensure these safety devices normal.
- ※Make sure all the precautions and design parameter on the forklift are not destroyed.
- ※The batteries must be fixed safely in the battery case.
- ※Don't use the forklift when it is damaged or out of order and cause unsafe use.
- ※When maintaining or adjusting the forklift, only professionals can do that.

1. Operating the forklift

In the range of rated height, the forklift can go up and down freely. When the forklift is used in the place of cold storage, it must be made specially. When the forklift is in design and manufacture, it has certain restriction for using occasions:

- ※ It's forbidden to use when air with inflammable and explosive dust or gas.
- ※ As the tractor of other trucks is not allowed.
- ※ Transport or lift persons is forbidden.

2. Responsibility of operators:

- ※ People who has been trained and approved can operate the forklift.
- ※ Obey the instructions and local relevant security rules, regulations and traffic rules.
- ※ It's forbidden to operate the forklift when there's oil on your hands and feet.

3. Workplace

- ※ The forklift can only run on hard and flat roads, such as concrete or pitch roads. Don't work in the greasy and dirt area so as not to skid.
- ※ Make sure the ground can bear the total weight of the forklift, that is the forklift weight, loading weight and the operator's weight.

4. Driving and guiding in the course of transportation

- ※ Don't brake and turn suddenly under the condition of driving at high speed.

- ※ Slow down the speed on the slope, keep goods in minimum position, running should be straight up and down on the slope. It's forbidden to turn back on it.
- ※ If the road surface skids, the operator should slow down the speed, in order to prevent the forklift from spinning or overturning.
- ※ Besides loading and unloading goods, the forks should not exceed 200mm high from the ground during driving. Don't lift the goods at the same time.
- ※ If sight is obstructed, please ask others for help, so as to ensure the security.
- ※ Keep a safe distance with the vehicle, persons, objects in the front.
- ※ You should beep while you over-speed.
- ※ It's forbidden to transport persons by the forklift.
- ※ Make sure the lift can bear all the weight before the forklift enters the lift.

5. Loading and unloading goods

- ※ Only at the time of loading and unloading, the forks can just be lifted and keep a certain distance with people around. It's forbidden to lift or lower the forks and guarantee the forks don't exceed 200mm from the ground while driving.
- ※ Goods loaded and unloaded should keep equal at the forks. It's not allowed to transport if it is unstable or unsafe.
- ※ If you lift goods, it's forbidden to touch the mast to avoid harming.※ Loading and unloading goods can only be done in the range of the max loading weight and loading center, also the forklift allows to adjust the symmetric position of the forks according to the size of goods. Please see the load curve in details.
- ※ On loading and unloading the over height and overweight goods, the operator should be very careful. Loading over height goods, you should provide a protective shelf on the forklift.

6. Parking precaution:

- ※ After the forklift stops completely, the forks should be put down to the minimum position, and brake the forklift.
- ※ It's forbidden to park the forklift on the slope.

- ※ The forklift should be parked at the appointed place.
- ※ It's forbidden to park the forklift at the urgent exit.
- ※ The forklift mustn't be parked at the place to obstruct normal office.
- ※ You must turn off the power after parking the forklift.

7. Loading and unloading the batteries

- ※ You should be careful while loading and unloading the batteries and the plug, please read the instruction carefully at first. For details, see the chapter of the batteries .
- ※ When changing or charging the batteries, the operator should wear labor protective glasses.

8. Maintenance

Maintenance can prevent fault and accident from occurring. Please see the chapter about maintenance for details.

All spare parts that are changed should be approved by our company. It's forbidden strictly that maintaining or reequipping the forklift which can influence security or the function of using.

Chapter 2 Precaution, Trade Mark and Sign

The forklift has the following signs:

(Please read the signs on the forklift about relevant content)

1. Lifting and lowering the hydraulic handle
2. Control switch of driving direction and speed
3. Horn sign
4. Safety sign
5. Load curve sign
6. Holding spot

Chapter 3 Introduction to the forklift

The forklift drives with electric power, and walking is controlled by the switch on the operating handle, the operating arm controls steering.

The model of CDD10C can load 1000kg at most .

The model of CDD15C can load 1500kg at most.

The forklift adopts 24V electronic system, and adjust its speed steplessly by a set of integrated circuit controller to ensure steady speed and acceleration in the course of driving. The forks rise by the advanced electric hydraulic pump, lifting and lowering the forks by lifting and lowering button on the operating handle.

If the forklift works in the cold and moist environment, it should be equipped with low-temperature oil in order to adapt to the environment.

1. Suitable occasion of the forklift.

The forklift is suitable for loading, unloading and transporting goods on a pallet.

2. Forbidden occasion of the forklift.

It can't be used in the following situations:

✘The places can cause fire or explosion, such as oil districts.

✘The forklift is used as the tractor of other trucks.

✘It's used for transporting, lifting and lowering people.

✘It works on the meadow or sand ground.

3. Forklift parameter

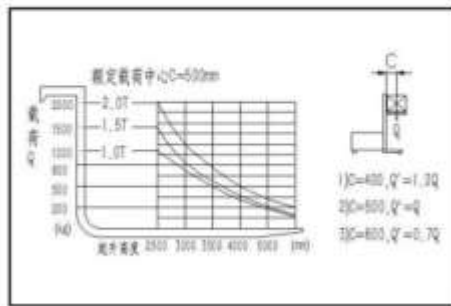
The following form is about the relevant parameters of the forklift.

Model of the forklift	CDD10C-16	CDD15C-16
Rated lifting weight (kg)	1000	1500
Driving speed without load (km/h)	4	4
Driving speed with load (km/h)	3.5	3.5
The most degree to crawl the slope with load (%)	3	3
Turning radius (mm)	1380	1380
Overall width of the forklift (mm)	800	800
Total Weight	506	596
Steering angle (°)	180	180
Material for driving wheels	Polyurethane	Polyurethane

✘The relevant parameters of the forklift are marked on the plate of the forklift.

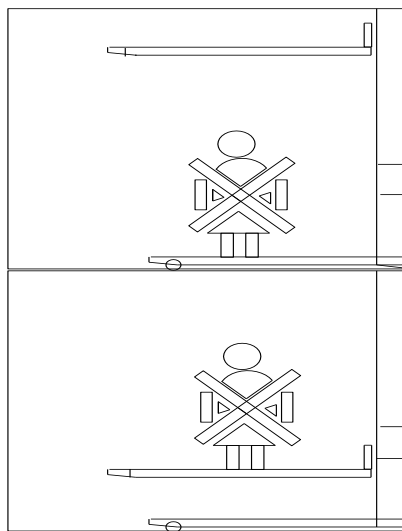
4. Load chart

通用载荷曲线



5. Safety sign

The following picture is a safety sign plate, pointing out that people are forbidden to stand on or down the forks to prevent an accident from occurring.



Chapter 4 Main Components

1. Operating arm.

In the course of driving, walking and steering is controlled by the operating arm, the

operating arm can steer maximum 180 degrees left and right. When the operating arm is on the top, it will brake automatically.

2. Plate of the forklift

The plate encloses the model of the forklift, rated load weight, the most lifting height, the weight, fully free lifting height and the serial number when it is out of our company.

3. Case cover

It can be taken down and has a good visibility at the time of using.

4. Instrument

The voltmeter, at the time of working normally, shows voltage value, reflects whether the batteries are sufficient.

5. Hydraulic control

The lifting and lowering button on the handle assembly controls lifting and lowering function.

6. Hydraulic device

The pump motor, pump and oil tank case are fixed tightly together.

7. Socket assembly

When the batteries are charging, pull out the socket and insert the plug of the charger into it.

8. Driving equipment with the barker

Enclose electromagnetic of losing electric barker, walking motor, the gearbox and driving motor, steering bearing is equipped between the driving motor and the gearbox.

9. Speed-adjusting equipment

Normal running under 24 voltage, regulate speed by electric controller.

10. Universal supporting wheels

The left and right universal supporting wheels to ensure the forklift stable.

11. Batteries

The battery is fixed in the battery case, the voltage is 24V, the capacitance is 210Ah.

Chapter 5 Control Device

1. Lifting control

Turn on the key switch, operate the handle button according to the instruction direction, you can lift or lower the forks.

2.The control of driving direction and speed.

Rotate the switch on the handle head to control driving direction, You may regulate the speed and acceleration with it.

3.The safety switch which prevents unexpected situations

The operator operates facing to the forks and goods, when you turn the forklift backwards by mistake, and you have no enough time to avoid physical injury, the operating arm is interfered with your body, the control switch is closed, the forklift brakes promptly. Before continuing running, you must resume the selection switch of the direction at the middle position.

4. Horn

The horn can ring when you press it.

5. Socket assembly

Pull out the socket and turn off the power in the following situations.

※Accident.

※Under the urgent and dangerous situation

※Welding.

Be careful!

While you weld around the forklift, the batteries are easy to be damaged. If the weld current scurries into the batteries, they will be destroyed, it is necessary to pull out the socket at this moment.

When charging, pull out the socket and link the charger plug with the movable socket After finishing charging, resume the outlet to where it is.

6. Key switch

This switch is used to control the circuit on or off.

7. Voltmeter

As the key switch is turned on, the voltmeter shows the voltage value of the group of the battery promptly, a total of ten lattices.when the lattices on the second of the far left is flashing in turn, it means that the voltage is low and the batteries need to be charged then continue to use.

Chapter 6 Accessories

The forklift truck may be equipped with different accessories in order to strengthen the security further.

1. Overhead guard (optional)

The overhead guard can prevent goods from dropping from high altitude, offer safe protection to operators.

2. Protective shelf of goods

When the goods are higher, you can install the protective shelf in order to increase stability of goods.

Chapter 7 Driving

1. Startup

Please go on in proper order as follows, otherwise the forklift does not run:

1.1 Make sure that the outlet is inserted firmly.

1.2 Turn the switch of the key on position.

1.3 Make sure that the group of the batteries has enough electricity.

Be careful!

Operating the forklift at a low electricity for a long time will damage the life-span of the batteries. You can't start the forklift before finishing charging.

1.4 The the operating arm should between the top and bottom after leaving the upper extreme point.

1.5 Choose the driving direction correctly, control the speed in the ideal state, accelerate it to the ideal speed slowly.

Warning!

Don't operate the forklift with serious function defects and hazard factor. Operators should check the following safety functions at first before working every day :

※The function of the horn is normal.

※The operation function is normal.

※The function of braking is normal.

※The hydraulic function is normal.

2. Braking.

2.1When the controlling arm moves to the supreme position upwards, the forklift truck will turn off the power brake automatically.

2.2When the direction switch is in normal running and turns to the opposite direction, it can carry out the function of electric brake. Controlling the running speed can control the brake force of the driving motor.

2.3Parking the forklift

Make the forklift stop by loosening the driving direction switch and resuming it to the empty position.

3. Steering

3.1 Steering is controlled by the operating arm, steering angle can be at the left and right direction in the range of 90 degrees.

3.2 If the forklift meets barriers, it's forbidden to pass by force, you can detour the barriers by rotating the operating arm to move ahead or go backwards.

Warning!

Do not allow the wheels skid.

If there's greasy dirt on the operator's hands or shoes, it is easy to fail operation, and make the forklift out of control, so you should wipe your hands or the shoes before driving.

4. Parking

4.1 Loosen the direction switch.

4.2 Loosen the operating arm, it will return to the braking position automatically.

4.3 Lower the forks to the lowest position, make the hydraulic system have no pressure.

4.4 Make the key switch in the off position.

Be careful!

Do not allow to drive without authorization.

If you leave, please take the key away with you.

Chapter 8 Transporting Goods

1. Transporting

1.1 The weight of goods should be in the range of the forklift allowed.

1.2 Loading and unloading goods, you should make sure it stable and safe. You should be careful to the goods beyond the height and length.

1.3 Loading and unloading the goods beyond the height, the forklift truck should assemble with a suitable protective shelf.

1.4 When the forklift truck is running, you should lower the forks to the lowest position.

1.5 Reducing the speed while turning around

1.6 You should pay attention to safety while transporting irregular objects, when turning round, please pay attention to reserving space.

1.7 If your obverse sight is obstructed, you can ask others to guide the direction.

1.8 You should slow down the speed when going up and down the slope. It's forbidden to turn back on the slope.

Warning!

The forklift has danger of overturning if you turn round on the slope.

When the forklift goes down to the slope, the distance of brake of the forklift is lengthened, and braking time is increased. So you should lower down the speed to reduce the time of brake. Don't go up and down on the slope by force.

1.10 Before the forklift enters a lift, you should make sure the lift can bear the whole weight (forklift weight, goods weight, operator weight). The forklift should enter first and leave at last.

Warning!

Before starting up the lift, you should know its loading capacity clearly to avoid an accident.

1.11 Before passing a bridge, you should reduce the speed and keep a certain distance from the platform edges.

Dangerous!

Check the loading capacity of the bridge board in advance, verify its security in order to avoid overturning and falling.

2. Loading goods

2.1 You should reduce the speed and park in front of the shelf.

2.2 Lift the forks to the necessary position.

2.3 Drive the forklift ahead slowly so that the forks insert the bottom of the board.

2.4 Lift the forks to make goods rise to a certain height.

2.5 Back off the forklift slowly so that goods break away from the shelf.

2.6 Lower goods to the minimum position, drive and leave carefully.

2.7 Run at higher speed after starting up slowly.

Dangerous!

Don't lift goods while you are driving the forklift so as not to overturn.

3. Unloading goods

3.1 Reduce the speed and park in front of the shelf.

3.2 Lift the forks to the necessary position.

3.3 Drive the forklift forward slowly to make goods pitch in the shelf correctly.

3.4 Lower down the forks, so that goods is unloaded.

3.5 Back off the forklift slowly.

3.6 Lower down the forks to the minimum position, leave carefully.

3.7 Run at higher speed after starting up slowly.

Dangerous!

Don't lift or lower the forks while you are driving the forklift so as not to turn over.

Chapter 9 Batteries and Electric Engine

Check that the battery voltage in the forklift is sufficient.

1. Changing the batteries

You can only change the batteries that are equal to the weight of the original batteries, the weight of batteries influence the stability and the braking function of the forklift.

Warning!

Don't change the weight and size of the battery at random, otherwise it will influence the center of gravity of the forklift. The battery weight is too heavy or too light, it will effect the stability and brake ability of the forklift, the weight must keep the same with the value on the forklift sign.

1.1 The order removing the battery with insufficient electric power:

Pull out the plug

Open the case cover of the batteries

Cut off the connection between the plug and the cable line.

Take out the group of batteries from the forklift with a proper hook of the battery case.

1.2 The order of installing the batteries:

- (1) Use the hanging device to hang the battery group and put it into the battery case of the forklift.
- (2) Connect the plug with the cable line correctly and accurately.
- (3) Close the case cover of the batteries.
- (4) The key switch is off.
- (5) Insert the outlet.

2. Charging

2.1 Forbid smoking and using the flame while charging.

You can choose the automatic charger to charge, pay attention to not charging insufficiently or overcharge so as not to damage the batteries.

The most electric current of the charger:

Battery	charger
2x12V/80AH	24V/10A

Dangerous!

The attendant vitriol in the electrolyte of the batteries has corrosion. If it spatters to skin, you should wash it with water and soap as soon as possible. If it enters eyes, please go to see the doctor and wash your eyes with clear water. While checking the batteries, you should wear protective glasses and gloves.

2.2 Preparation for charging after the forklift is used. The batteries must be charged as soon as possible, and they can't exceed 24 hours.

- (1) Make the key switch to the off position after parking, pull out the key .
- (2) Open the case cover of the batteries, guarantee it ventilates above the batteries.
- (3) Pull out the outlet, connect the plug of the batteries (movable plug) with the charger plug.
- (4) opening the cover of single battery in order to ventilate.
- (5) Turn on the charger to charge.

Warning!

While charging, especially in a closed area, you should keep a good ventilation environment. Oxygen and hydrogen will emerge in the course of charging, so if it meets flame or electric spark, it can cause explosion.

So you should shut off the charge power before pulling out the outlet.

2.3 In terms of charging.

Charging method and using maintenance should consult the instruction of the batteries. Usually you can judge whether electricity is sufficient with the following methods.

- (1) The proportion of the battery electrolyte keeps basic stability for over 2-3hours continuously.
- (2) Produce strong bubble on the surface of the electrolyte in the batteries, the electrolyte turns from milky to limpid.

The above-mentioned situations indicate that the electric power of the batteries is sufficient.

2.4 After being charged sufficiently

Shut off the power and the charger.

Pull out the charger plug from the battery plug.

Insert the battery outlet into the battery plug.

Close the case cover of the batteries.

The following is the contrast form between the temperature of the batteries with sufficient power and the proportion of electrolyte.

Temperatures(。 C)	Proportion(g/cm ³)
-15	1.31
0	1.30
+15	1.29
+30	1.28
+45	1.27

If it disaccords with the proportion of the form, you should adjust it by feeding acid liquid or distilled water.

3. Battery maintenance

(1) In order to guarantee the span of battery, battery can put into use under the condition of a sufficient electricity, insufficient charging battery cannot be used.

(2) Battery should avoid an overcharge and discharge. Overcharge and discharge will seriously affect the performance and battery life of the battery。

(3) Battery's liquid plug and breathable cover should be kept clean, take off or open the cover when charging , you should close it after a fully charged. Surface of the battery, cables and screw should be kept clean and dry. Such as sulfuric acid should not enter into the surface, in case of the accident, dip in with cotton on the lye then wipe away, be careful not to let the lye into the battery.

(4) After the complement of the charge, check the battery level, adding distilled water into it to keep the liquid level height in a timely manner. Under normal circumstances, it is strictly prohibited to adding dilute sulfuric acid.

(5) After using of the battery , it should be timely charged, storage period is generally not more than 24 hours.

(6) When charging,you should maintain good ventilation, it is strictly prohibited to fireworks.

(7) In the following situations, battery charge should be balanced.

a. Normal use of the storage battery (once every three months to do equalizing charge).

b. Storage battery unused for a long time

c. Backward "battery" exist in the battery (Disabled single battery refers to the voltage value is lower than other batteries or troubleshooting batteries during the process of charging and discharging), at that time equalizing charge only for disabled single cell battery.

(8) Equalizing charge method.

a. Ordinary charge first.

b. Stop an hour after it up to a full charge state, then use a 0.05 C5 charge for another 1 hour (C5) represents the battery's rated capacity.

c. According to the article B to charge and repeated several times until the charger a closing. At that time, the inside of the battery there are air bubbles occurred.

When out of service for long period, the battery should be charged for every month according to the normal method for supplement.

(10) Battery should avoid direct sunlight, away from heat source and distance should be not less than 2 m.

(11) Avoid contact with any liquid and harmful substances, no metal impurity may fall into the battery.

4.The maintenance of the machine:

(1) The battery should be powered off when check the maintenance of motor.

(2) Every three months, using 250 v meg-ohmmeter to measure the cold insulation resistance in motor, the resistance should be greater than 0.5 M Ω , you should make dry processing when less than 0.5 M Ω .

(3) Check whether the motor wire cables correctly and firmly.

(4) Check whether commutator segment between is clean, brush in box should slide freely.

(5) Check and ensure whether all fastener tighten.

(6) Check brush wear every three months, and take into consideration the change of brush.


(7) Keep an overall maintenance of the machine once a year.

Chapter 10 Fault diagnosis

(Programmer fault diagnosis display menu and LED fault diagnosis)

LED code	The programmer shows	fault phenomenon	fault cause
1,2	HW FAILSAFE	Hardware failure protection error	1.The controller is damaged
1,3	M-FAULT	M- output short-circuit	1.M- The output of short circuit 2. Direction of contactor don't suck 3. Direction contactor's suck speed is too slow
1,4	SRO	SRO fault	1.the input of the key switch, brake and the direction's sequence is not correct 2. the wrong choice of the SRO type 3. The brake switch and direction switch open circuit 4. Sequential time delay is too short
2,1	THROTTLE FAULT 1	Accelerator fault	1. Accelerator input line open circuit 2. Accelerator input line to ground or B + short circuit 3. Accelerator potentiometer failure 4. Choose the wrong type of accelerator
2,2	BB WIRING CHECK	Emergency reverse connection failure	1.BB wiring open circuit 2.BB detection circuit is open circuit

2,3	HPD	HPD order failure	1.KSI , The brake and accelerator input order is not correct 2. Choose the wrong type of HPD 3. Choosing of accelerator potentiometer adjustment is not correct
2,4	THROTTLE FAULT 2	Potentiometer low end of the trip or short circuit	1.low-end connection of accelerator is open circuit 2.low-end wiring of accelerator is short circuit 3.Choose the wrong type of acceleration
3,1	CONT DRVR OC	Output of the flow is over current	1. Coil of Reversing contactor is short circuit 2.shunt field is short circuit
3,2	DIR CONT WELDED	adhesions of reversing contactor	1. Reversing contactor closed
3,4	MISSING ONTACTOR	Not found of the contactor	1. Reversing contactor coil open circuit 2. Reversing contactor coil is missing 3. shunt field is short circuit 4.the line of connect the reversing contactor and shunt field open circuit
4,1	LOW BATTERY VOLTAGE	The battery voltage is too low	1. battery voltage <16V 2. Battery terminals is corrosion or loose 3.the loosen of control unit interface
4,2	OVER VOLTAGE	The battery voltage is too high	1. battery voltage >33V 2.The charger is still link while driving
4,3	THERMAL CUTBACK	The current decreases while eyond the temperature of work	1. temperature >85or<-25°C 2. Vehicle load is beyond 3. The controller installation is not correct 4. In extreme conditions

LED Display code sample, (2,4) :  shows LED flashed twice at first then stop, and then continue to flash 4 times.

Chapter11 Maintenance

Please carry on a routine maintenance after the forklift works for 500 hours. The efficiency, life-span and security of the forklift depend on daily maintenance.

Maintaining the forklift, the spare part changed should be offered by our company to ensure the quality. We propose to get in touch with the agent of our products or the after sale service department of our company to make your forklift work safely and economically.

1.Safety regulation of maintenance

The people who study systemically can maintain the forklift.

1.1 Keep maintaining place clean.

1.2 Don't bring loose or valuable objects with you while maintaining.

Be careful!

When you maintain the electric system of the forklift, metal touches electrified electronic elements, which is easy to cause short circuit or burning, so please take off your watch, earrings or other ornaments.

1.3 Pull out the outlet and shut off the power first before maintaining the forklift.

1.4 Turn off the key switch of the forklift before opening the left and right case covers or the electric system.

1.5 Before checking the hydraulic system, you should lower the forks, release systematic pressure.

1.6 Check whether the forklift leaks oil or not, please wipe with paper or paper board, be sure not to touch it with your hands directly so as not to scald.

1.7 The oil may be higher in the driving device or hydraulic system, so you should make the forklift cool first, then change gear oil or hydraulic oil, so that the high temperature oil can't cause burning.

1.8 Hydraulic system should be added with new clean oil.

Be careful!

If hydraulic oil is not clean, it will influence accurate hydraulic components, make ability of the whole hydraulic system reduce.

The used hydraulic oil with different brands is harmful to hydraulic components and influence ability of the system. So while adding or changing the hydraulic oil, pay attention to using the same brand.

1.9 Please obey relevant regulations, protect the environment, store and discharge the oil according to the regulations, don't discharge it to sewages.

1.10 When welding the forklift, please shut off the battery power. Because welding electric current may enter the batteries when you weld, in order to prevent it from taking place, please shut off the battery power.

1.11 When working below the forklift, you should fix the forklift with a supporting shelf.

Warning!

If it is improper to support the forklift, it will overturn and hurt people. If the forklift has no hoisting equipment or supporting shelf to protect, it's forbidden to work under it.

2. Maintenance which users can finish.

2.1 Regular maintenance and safety inspection.

(1) Carrying on regular maintenance and checking the forklift is responsibility of operators.

(2) If you don't carry on regular maintenance to the forklift, which will influence security and reliability of the forklift, it is easy to cause serious accidents.

(3) While checking and finding out the trouble, you should repair it at once and stop using it.

2. You can finish the daily, weekly and monthly maintenance mentioned in the following chart.

Position number	Check point	Check content
1	Operation controlling	Checking whether its function is normal

2	The safety switch that prevents unexpected situations	Checking whether its function is normal
3	Horn	Checking whether its function is normal
4	Steering	Checking whether its function is normal
5	Hydraulic device	Checking whether its function is normal
6	Voltmeter	Checking whether its function is normal
7	Hydraulic system	Checking the oil level and seeing whether it leaks oil
8	Driving device	Checking whether it has unusual noise and oil leakage
9	Electromagnetic clutch	Checking whether it works normally and whether it keeps in touch or not
10	Transmission	Checking whether its function is normal
11	Wheels	Checking whether they're damaged, getting rid of greasy dirt, metal scrap
12	Frame	Checking whether it's damaged, getting rid of dirt
13	Batteries	Check the level of electrolyte
14	Forks	Check whether they're out of shape or have crack
15	Lifting device	Checking whether it's damaged, getting rid of dirt
16	Hydraulic cylinder	Checking whether it's damaged and whether it leaks oil

2.2 You can finish the dayfly, weekly and monthly maintenance mentioned in the chart. (see the maintenance forms in section four).

2.3 The other maintaining parts in the maintenance form can only be finished by the maintenance men of our company or maintenance organization that our company approves.

3. Clean the forklift.

Carrying on the routine cleaning every week is very important to guarantee its reliability. Please pull out the outlet before cleaning to avoid short circuit and damage the electric system.

3.1 External clean

(1) Remove adherent objects on the wheels every day to keep them rotate flexibly.

(2) After finishing cleaning, you should add the lubricating oil to the necessary lubricating position according to the lubricating position form.

3.2 Clean electric components.

Blow off dust of the motor with compressed air.

Take care!

The electric components can't be washed with the high pressure washing device. You can't destroy the electric components on the circuit board, and keep the position of them, avoid short circuit .

4. The maintenance of electromagnetic brake

(1) Extended operation in high humidity environment can result in rust, so you should prevent, because rust on the suction surface can affect the use, please get rid of rust.

(2) Friction surface shall not be in direct contact with the hand, and not have oil on it, otherwise the brake cannot achieve maximum torque, please wipe and clean the friction surface.

(3) If the environment temperature become higher, please install it in where is well ventilated, Applicable for temperature between -10°C-40°C environment.

(4) Torque value will low at first, but it will tends to stabilization after a period of time.

(5) Please check regularly, regular examination project are: switch action is normal; There are no noise issue; no presence of abnormal fever; no foreign bodies, friction parts and no oil pollution; Friction parts of the gap is appropriate, the excitation voltage is normal.

4 Maintenance form

Position number	Running interval	1 day	1 week	1 month	3 months	6 months	1 year	3 years
1	Forklift system							
1.1	Check the cover boards (left, right)					★		
1.2	Check the fixed components of the battery case					★		
1.3	Check if there is crack on the forklift frame					★		
1.4	Check if the forklift is fixed firmly					★		
2	Motor							
2.1	Check if the joints are loose					★		
2.2	Clean the motor					★		
2.3	Check if bolts are firm					★		
2.4	Check if there is abnormal noise of bearings					★		
3	Driving system							
3.1	Check disclosure					★		
3.2	Check oil level				★			
3.3	Check noise					★		

3.4	Oil change							★
4	Wheel parts							
4.1	Remove treads and impurity on the wheels	★						
4.2	Check if the driving wheels are worn and bolts				★			
4.3	Check if the universal wheels and axles are flexible and firm					★		
4.4	Check if the universal wheels are worn				★			
4.5	Check if the supporting wheels can turn and the joints are firm					★		
4.6	Check if the supporting wheels are worn				★			
4.7	Remove and lubricate the wheel bearings						★	
5	Braking parts							
5.1	Clean the braking parts				★			
5.2	Check if the braking friction flake is worn				★			
5.3	Test braking with the brake loose			★				
6	Electric control board							
6.1	Clean and installing check					★		
6.2	Fix the cable terminals				★			
6.3	Check the connectors					★		
6.4	Check if the connectors work					★		
7	Batteries							
7.1	Check the electrolyte level (it should be 10-15mm above the polar board)		★					
7.2	Check if the connection between the forklift and the battery and the charger is firm		★					

7.3	Check the batteries and insulating covering		★					
7.4	Check the electrolyte proportion and temperature			★				
8	Hydraulic system							
8.1	Check if the pipe and joints disclose					★		
8.2	Check if the pipe is worn					★		
8.3	Check if the oil box leaks oil					★		
8.4	Check oil amount					★		
8.5	Oil change						★	
9	Cylinder							
9.1	Check					★		
9.2	Check assembling					★		
10	Mast							
10.1	Check if it is damaged and has crack					★		
10.2	Check if the wheels can move					★		
10.3	Check if the lifting chain and pins are damaged and worn				★			
10.4	Check if the oil pipe and joints disclose					★		
10.5	Check if the fork rupture evidence				★			
11	Control arm							
11.1	Check installation					★		
11.2	Check the braking switch				★			
11.3	Check if the bolts are loose					★		
11.4	Check the safety switch					★		
11.5	Check if the shock-absorbing springs can					★		

	work normally and adjust						
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5 Position form of lubrication

Position number	Lubricating places	Interval time(h)			Type of lubricating oil & fat
		500	1000	3000	
1	Wheel bearings (including steering)		L		A
2	Hydraulic system	C	O		B
3	Driving gear box	C		O	C
4	Lifting chain	L			D
5	Lifting system bearings	L			G

L=lubricate C=check O=oil change

6 Lubricating oil and fat

Type		Specification		Applying components
		>-15。 C	<-15。 C	
A	Lubricating fat	3# lithium lubricating fat gutta point 170		Bearings and bushes
B	Hydraulic oil	YB-32 (abroad ISO-L-HM46)	YC-32 (abroad ISO-VG46)	Hydraulic system
C	Driving oil	85W/90 (abroad SAE80W/90)	70W/75 (abroad SAE75W)	Gear box
D	Lubricating oil	CC30 (normal temperature SAE20W)	CC15W (low temperature SAE10W)	Chain and pipe lines
G	Lubricating fat	3#lithium lubricating fat gutta point 170		Lifting system bearings

Chapter12 Transportation and preservation of the forklift

1 Size and weight of the forklift with standard mast

Model	CDD10	CDD15
Overall length (fold the footplate) mm	1785	
Overall height mm	1825-2075	

Overall mm	width	800	
Weight (with the batteries) kg		1000-1090	1010-1100
Lifting mm	height	2075-3533	3533

2 Lifting the forklift

When hanging the whole forklift, you should hang the forklift from the hoisting holes with the hoisting equipment.

Dangerous!

Don't hang the forklift from other spots, otherwise it might make the forklift lose balance and overturn to hurt people and equipment, so you must hang from the marked spot.

(1)When hanging or hoisting the forklift to maintain, you should pay attention to the center of gravity of the forklift.

(2)The hoisting equipment must be enough intensive, safe and reliable.

3. Drawing and transporting the forklift out of order

(1)When you use drawing or the rope to tow the forklift, the towed forklift must be operated by a driver to steer and removed braking.

(2)When the braking function of the forklift is perfect, you can pull the operating arm to the operating position to pull the forklift, and ask others to help pushing (pushing position is outside the mast), send the forklift to the destination or the maintenance department of our company to repair it.

(3)If the driving wheels of the forklift breaks down, you can pull the forklift with a trailer or a tow tractor.

Be careful!

The driving wheels of the forklift must be lifted over the ground, otherwise the wheels and the motor are damaged seriously.

(4)If the electromagnetic brake of the forklift is out of order and can't brake, then the forklift will move with topography, at this moment, you must underlay the wheels with wedge blocks in a proper way to prevent it from moving.

4. Preserving the forklift

If the forklift need deposit for a long time, please take the following measure to the following parts:

Batteries:

(1)Charge the batteries again, then maintain them according to the daily method of maintaining the batteries.

(2)Do a charging maintenance and check the electrolyte level once every 3 months.

Hydraulic system:

If the forklift is deposited over one year, you need change the hydraulic oil of the hydraulic system. Please see the chapter about maintaining and the position form of lubricating.

Driving system:

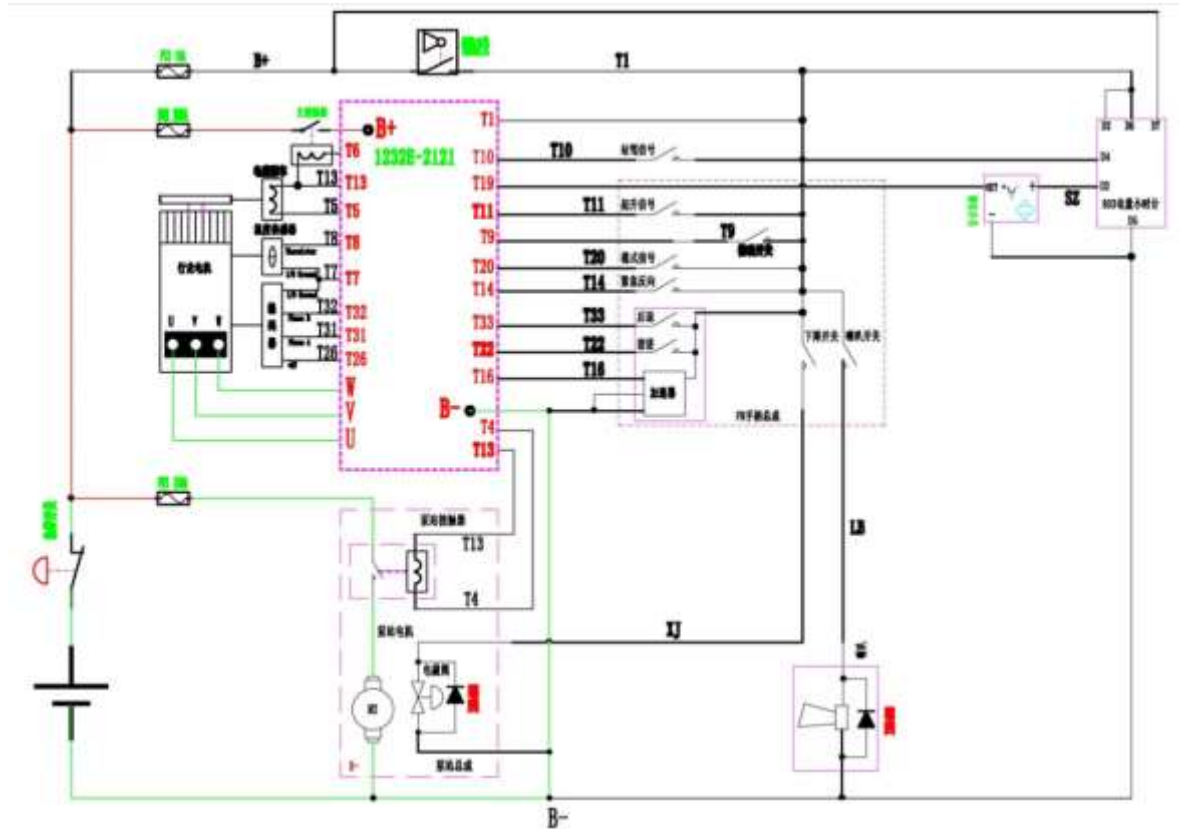
If the time of depositing is over one week, you should fix and underlay the drive wheels or

hang it in the air, do not let it move, unload goods at the same time.

5. Precaution of reusing the forklift after preserving:

(1) Before reusing after preserving for a time, you should take the function and security inspection as usual.

(2) If the depositing time is over 3 months, maintain it according to the instruction (interval) 500hours preventively.



Chapter 14 Warranty Term & After-Sale Service

1. Warranty period starting from reception or vehicle examination date which is within one year or within 1000 hour's operating. (At the expiration of warranty period)

2. Ensure content are at followings:

※Within the warranty period, in accordance with the provisions of the operating instructions,

Under the condition of normal use, If caused by material or manufacturing fault, and confirmed by the company, we can offer you a free repair or service rely on guarantee of the company.

※Such as brakes, abrupt stop switch, switch gear, operating handle parts, and power hour meter warranty period for 3 months or 300 hours guarantee.

3. Don't fall within the scope of guarantee responsibility at followings:

※Force majeure, damage caused by human factors or other unexpected disasters.

※Not in accordance with the provisions of the instruction for use and operation, the damage caused by improper operation and maintenance.

※Without the consent of the company, not using supply of the spare parts, accessories from the company and cause damages.

※Without the consent of the company, without authorization, add, change design or the damage caused by technical personnel to maintain who is out of our company.

※Normal maintenance and consumable parts such as: All kinds of spring, all kinds of tires, horn, key switch, multi-way valve, chain, micro switch, all kinds of bearings, connectors, fuse, all kinds of power line, oil and other consumable parts is not be covered.

4. Vehicle over maintenance

When shelf life is over, please contact our company or subsidiaries to communicate about back fee to ensure the long term using and maintain a good condition.

5. Announcements

Warranty certificate did not cover the company seal or altered are invalid.

Please take good care of the guarantee, if lost connect with the company or the local dealer as soon as possible.

When vehicles in need of maintenance service, please provide us vehicles and nameplate photos if unable to provide we will be seen as expire.