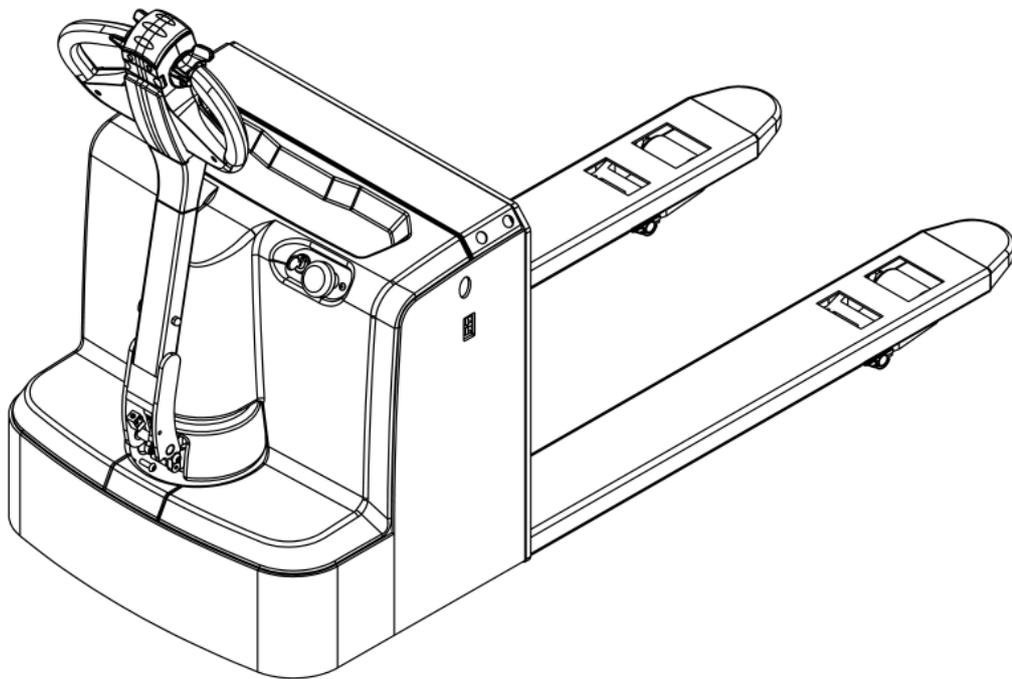


# The Specification

## EP18LI/EP20LI Series –Lithium Iron Walkie Pallet Jack

**Note:** Before using must read this manual and the various warning label!



# Introduction

In order to meet the needs of the national environmental protection request, To reduce industrial pollution and improve productivity, we develop new series of EP18LI/EP20LI Series Lithium Iron walkie Electric Pallet truck on the basis of absorption of the advantages of domestic & overseas battery Pallet truck, they are especially suitable for cargo loading and unloading, handling, stacking, etc for food, bank, light textile, station, port, logistics and other enterprises.

This manual describes the technical parameters of the Pallet truck, working principle and operation, maintenance, and other aspects. It can help operators use the Pallet truck more reasonable, make its maximum effect.

It is hoped that Operator strictly abide the regulations and the precautions in this manual when using the Pallet truck. Carefully use them so that your Pallet truck can be in the best working condition for long period of time to maximize its effectiveness. And create better economic benefits.

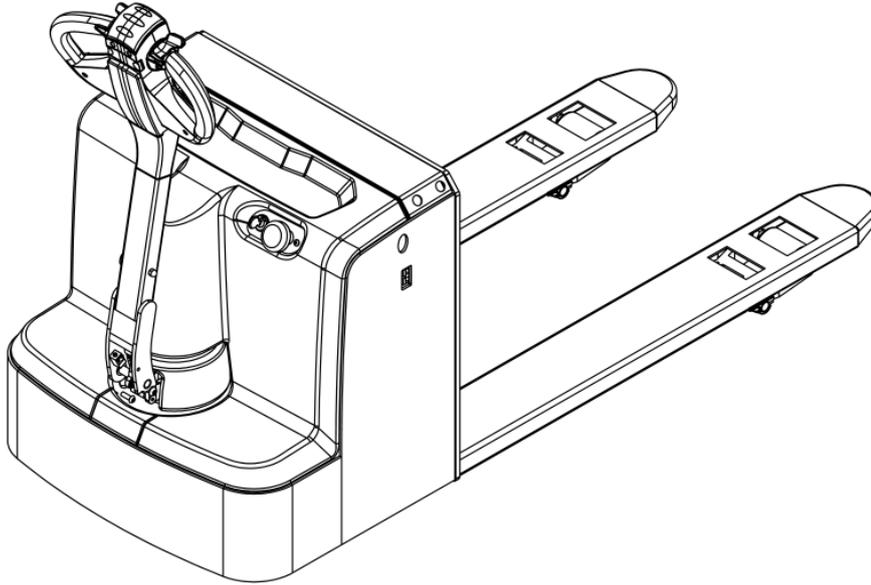
## The Statement

Our company production model EP type 4000lb/4400lb Series Lithium Iron Walkie Electric Pallet Truck is a special motor vehicle used in factory, tourist attractions, amusement places which is specified by "special equipment safety supervision regulations"

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# 1.The Introduction



EP18D is a tramp type electric pallet truck.It adopts the advanced structure such as ring rod lifting system and new ac controller,at same time it is equipped with high quality motor, lithium battery and pump station motor.It has the characteristics of superior performance, convenient operation, flexible steering, reliable braking, good dynamic performance, less noise, less pollution and beautiful appearance.

This series truck is suitable for working on the smooth ground in warehouse,if not,please don't use it.

The service environment:

- a. temperature not over +40°C, not under -10°C;
- b. the gradient can't over 3%;
- c. when environment temperature at +40°C,the relative humidity can't over 50%. At low temperature, allow big relative humidity;
- d. ground need hard and flat;
- e. It is forbidden to use this car in corrosive environment such as flammable and explosive or acid base.

## 2. Proper usage

Please use the electric pallet truck according to this specification.

This is a tramp type electric pallet truck with autonomous control, lifting and lowering is controlled by the handle button. Improper use can cause personal injury or machine damage. Operators or operating companies need to ensure proper use.

The Truck needs to be used on a firm, flat, intact surface and suitable surface. The truck is designed for indoor use at room temperature from -10°C to +40°C.

Use under light load without using permanent barriers or pits. It is forbidden to operate on the slopes. During operation, the goods must be placed approximately at the center of the truck's load center.

Lifting or carrying people is strictly prohibited. If carried goods, the goods must fall on the lifting point.

It is prohibited to use this truck on lifting or loading ramps.

The rated capacity is marked on the capacity label or nameplate. And the operator must pay attention to the warning signs and safety instructions.

Operating lighting must be at least 50 LUX.

### **Modification**

Any modification that may affect the truck rated capacity, stability or safety operations must be approved in advance by the Truck's original manufacturer or its authorized Manufacturer or its successor. This includes the effects of changes such as Braking, steering, Visibility and the addition of removable accessories.

After the manufacturer or its successor approves the modification or change, the capacity name plate, Label identification marks operation and maintenance manual must be changed accordingly.

**Truck damage caused by not following Instruction will lose its warranty.**

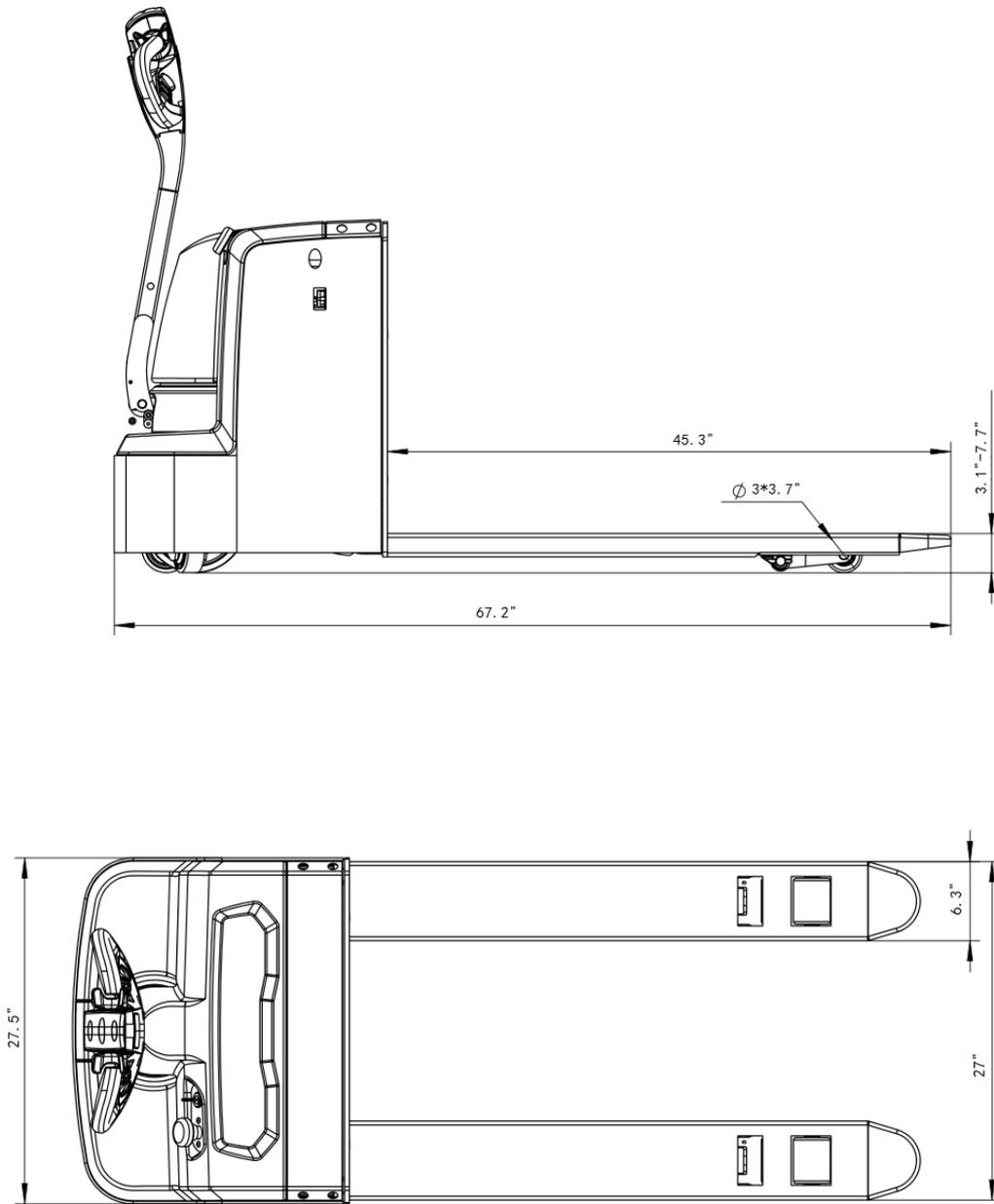
# 3.Introduction of the product

## 3.1 Model Overview

This specification is for EP18LI/EP20LI series 4000-4400LBS tramp type electric pallet truck (follow as truck) .

The type is“EP18LI/20LI—18/20 load capacity is 4000-4400LBS” meet the requirement of JB/T8452-1996 《Battery forklift model establishment method》 .

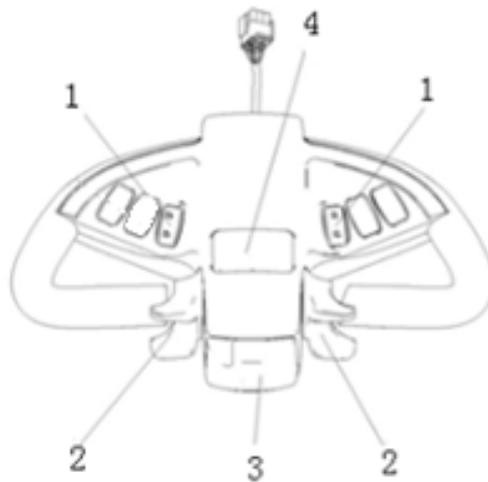
## 3.2 Model



Mode		EP18LI	EP20LI
Lift		Electric	Electric
Drive		Electric	Electric
Load Capacity	(lbs)	4000	4400
Load centre distance	(in)	24	24
Wheel base	(in)	53	53
Lowered fork height	(in)	3.3	3.3
Lifting height	(in)	7.7	7.7
Overall length	(in)	67.2	67.2
Overall width	(in)	27.5	27.5
Fork size	(in)	2/6/48	2/6/48
Outside distance of fork	(in)	27	27
Turning radius	(in)	55	55
Lifting speed,laden/unladen	(in/s)	0.8/1.1	0.8/1.1
Lowering speed,laden/unladen	(in/s)	1.5/1.5	1.5/1.5
Max. Gradient performance laden/unladen	(%)	8/15	8/15
Brake type		electromagnetic	electromagnetic
Drive motor	kw	0.75	0.75
Lift motor	kw	0.8	0.8
Lithium Battery voltage	V/Ah	24/40	24/60
Type of the drive motor		DC Motor speed control	DC Motor speed control
Noise level at operator seat	dB(A)	68	68
Service weight	(lbs)	650	680

## 4.Operating principle

With battery as power producer and controlled by electrical and hydraulic, trucks can do some actions like walking, turning, pallet fork lift, etc.



1.Switch for lifting and lowering

2.Switch for driving

3.Belly switch

4.Horn

# 5. Operating principle

## 5.1 Running system

The truck is powered by a battery, which is realized by controlling the AC motor on the drive wheel. The speed of walking is realized by frequency conversion control motor speed, which is controlled by the accelerator.

Gear box in the factory has been posited enough gear lubricating oil. And please change the gear lubricating oil every 1000 hours under normal circumstances.

If you hear abnormal sound from gear box when using, please stop and check immediately. If there are bearing failure or some problem in gear, please replace and repair them.

## 5.2 Steering system

The operating handle drives the rotation direction sensor which can send out the turn signals that makes the truck turn around.

## 5.3 Braking system

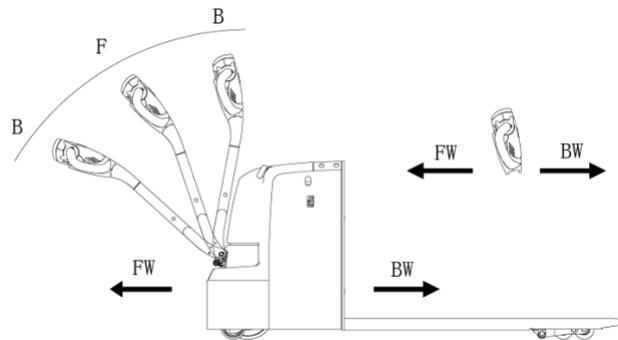
### 5.3.1 Braking performance depends on road conditions and vehicle load conditions.

The brake function can be activated by the following ways:

- Turn the travel switch (2) to "0" position or release the switch to make truck brake until it stops.
- With the driving switch (2) moving directly from one driving direction to the opposite direction, the vehicle regenerates the brake until it begins to move in the opposite direction.
- The handle moves up and down to the braking area (' B ') and the vehicle brakes. If the handle is released, the handle automatically moves to the upper braking area (' B ') and the vehicle stops until it stops.

- Belly switch (3) can prevent the operator will be squeezed, when vehicles are driven towards (' Fw) encounters an obstacle, body touch belly to slow down or start to switch

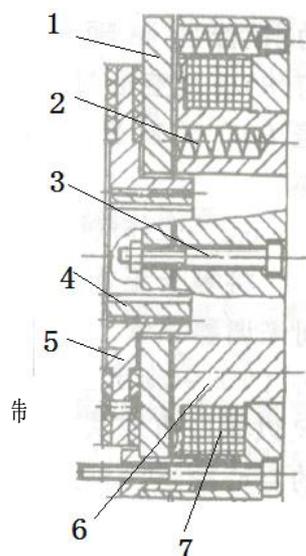
vehicles (' Bw) driven a short distance, then stop.If the handle is in the operating area and the vehicle is not moving, please consider that this is still working.



### 5.3.2 Working principle of braking:

The brake is composed of magnetic yoke assembly 6, excitation coil 7, spring 2, brake disc 5, armature 1, gear sleeve 4, mounting screw 3, etc.The brake is mounted on the end cover of the motor and the mounting screw is adjusted to the specified air gap value.The gear sleeve is fixed on the shaft, and its outer tooth is matched with the inner tooth of the brake disc. When working, torque is transferred, and the brake disc can move axially on the gear sleeve.

When the brake excitation coil 7 is energized, the magnetic field generated by the coil causes the armature 1 to attract to the yoke assembly 6, and the armature 1 is detached (released) from the brake disc 5.At this time the motor drive shaft with brake disc 5 normal start and operation.When coil 7 is cut off, the magnetic flux disappears and armature 1 is released. Spring 2 presses armature 1 and compresses the friction plate on the brake disc to generate friction, thus achieving the braking purpose.



## **5.4 Operating System**

The main working body of a moving truck is a cargo fork, which relies on a fork to carry the pallet or cargo for transport and short distance transportation. The expansion of the cylinder is realized by the control of the operating handle, and the pressure oil is provided by the pumping station.

## **5.5 Electric System**

The electrical system includes walking and operation control. The truck use AC electric control assembly.

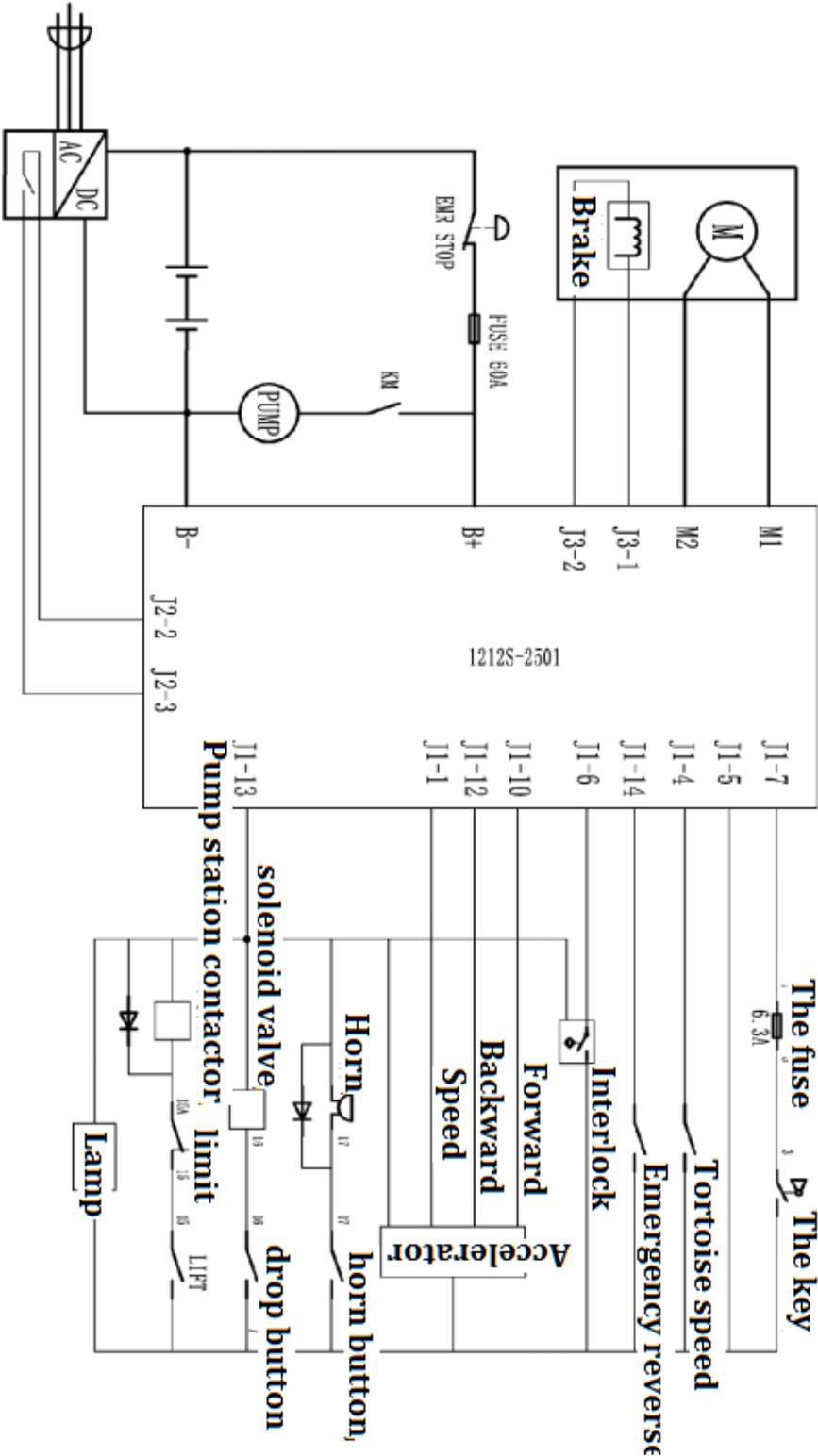
The meter has a battery indicator .When the battery power is too low, the electric meter will cut off the starting control line of the oil pump motor. The moving truck can only walk without lifting the fork, and the prompt should be charged immediately. The motor of oil pump is the dc motor for 5 minutes, so the pump motor is not suitable for long running. That is, the lifting movement should have time interval, can not continuously carry on, otherwise would make the motor heating, even burn.

Special note: when the truck is used for a long time, the starter of the oil pump motor may fail, and it can't be broken after being sucked or closed. The latter is not throw control handle, the oil pump motor is kept in the rotation, should immediately stop at this moment, to cut off the power supply (unplug battery plug-in), make the oil pump motor stop running, and promptly replace the starter.

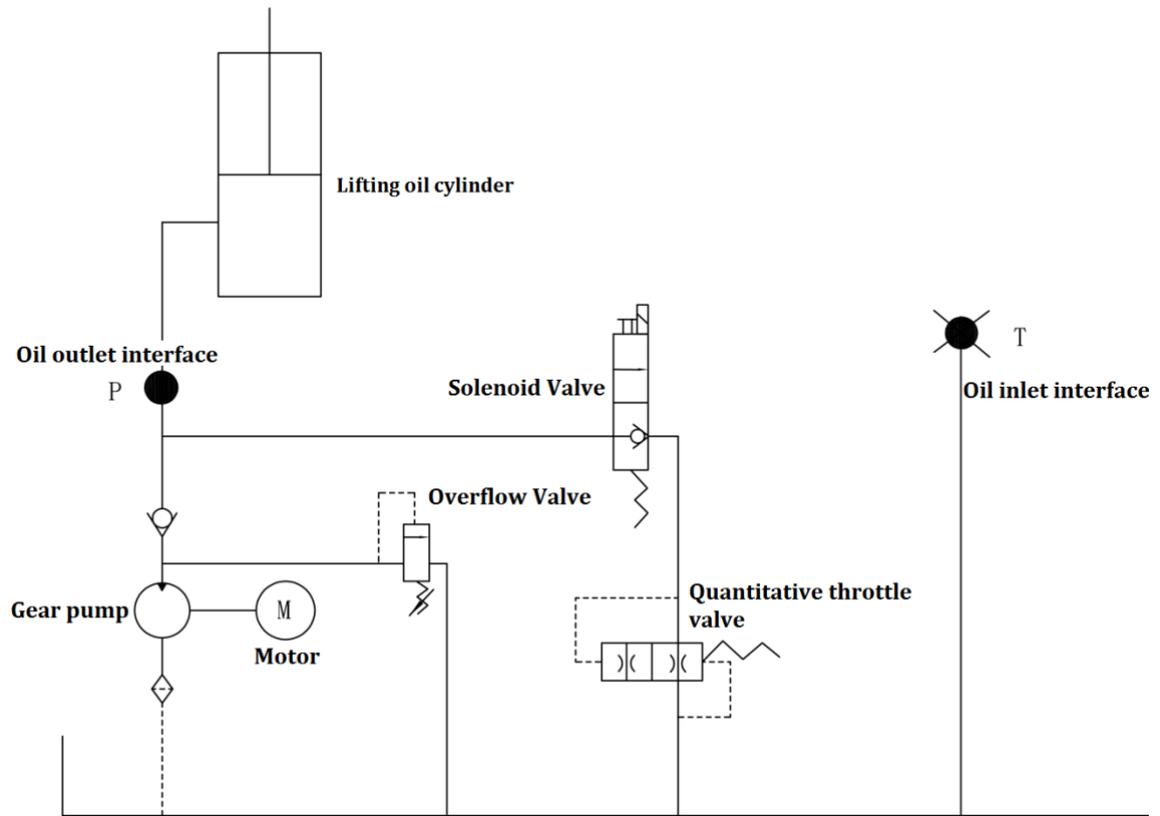
## **5.6 Hydraulic principle**

The oil pump motor drives the gear pump to provide hydraulic power, lifting oil cylinder is responsible of fork's lifting and lowering, The control of the lift oil road is controlled by the buttons on the operating handle, The lifting action is controlled by a single action oil circuit on the valve block. This model of the hydraulic system pressure can only be adjusted on the valve block, has been debugging good, before they go out after they leave the our company after-sales personnel or professional maintenance personnel are strictly forbidden to adjust themselves, so as to avoid safety accident.

# 6. Electrical Schematic Diagram



# 7. Hydraulic Schematic Diagram



# 8.Operating Instruction

Before operation, please be familiar with the function of each switch/button on the instrument panel.

## 8.1 Start, run and parking:

- 1).Insert the key into the key switch, turn to the right,pull the emergency power safety switch up, open the control circuit.
- 2).Forks rise above ground about 3.93In.
- 3).Open the travel switch slowly,till the requested speed
- 4).Any fault of the truck happening during operation, need to cut off the power immediately, and press the red emergency power switch down.
- 5).Avoid take a sudden turn during driving the truck.
- 6).Using truck Full load climbing a slope, need to know the condition of the slope, and press the travel switch as much as possible to get a maximum grade ability.
- 7).When stop driving,put the fork in the bottom,press the emergency switch down, and pull out the key.

## 8.2The usage of emergency safety switch

Press the emergency safety switch down,then the the truck's power off. Method to open it:pull the red button up.

Emergency safety switch is made of plastic, too much pressure may damage it.

## 8.3 The usage of horn button.

Press the horn button in the center of handle to notify people around.

## **8.4 Battery capacity indicator**

The stacker battery capacity indicator has electricity capacity display function.

## **8.5 Handling stacking operation**

### **1). How to transport the goods pile on weight**

Will forklift drive to the front of the items which need to carry slowly , make fork parallel to the ground, lifting the fork to height, it can be inserted into the freight insert goods fork and move forward slowly, wen the goods completely inserted into the goods after parking and stepping on the brakes, manipulating ascend handle, the heavy lifting to a certain height, make the door frame lean back, slowly astern, don't touch the adjacent goods, when weight completely left the heap of goods, reduce the goods to the right position, then walking for handling.

### **2). The weight on the heap of goods**

Will weight low, lean back door frame, to storage goods moving close to the pile of deceleration, when determining forklift with pile goods into a linear state, stepping on the brakes slowly adjust the door frame Angle to the vertical state, increase the weight will be slightly more than goods pile height, and then slowly driving forklift driving forward to pile top stop. Heap controls control lever slowly, once handling stacked drags the weight, the goods fork to the hollow position, from the weight of the goods fork, make sure barrier-free backward position, can retreat. After goods fork out weight reduce goods fork, door frame round of the reentry after handling operation.

# 9.Maintenance

The parts on the vehicle, especially safety devices, shall not be modified without permission, and the driving speed of the vehicle shall not be changed. All parts supplied by the original manufacturer are subject to strict quality inspection. To ensure the safety and reliability of the vehicle, please use the original accessories. Replacement parts, including all oil, must be collected and processed in accordance with local environmental and health laws and regulations.

## 9.1 Safety procedures for repair and maintenance

**Maintenance technician:** The maintenance and service should only be performed by special personnel trained by the manufacturer. After the technician sent by after-sales department of the manufacturer completed maintenance and servicing work, they should sign on the service log.

**Cleaning Operation:** Flammable liquid can not be used for cleaning the stacker. Before cleaning, take safety precautions to prevent electric sparks (e.g. sparks caused by short circuit). When operating the accumulator, connectors on it must be disconnected. Use soft air suction or compressed air, non-conductive and anti-static brushes to clean electric and electronic components.

**Operation of Electric System:** Operation on the electric system should only be performed by specially trained personnel. Before performing any operation on the electric system, precautions must be made to prevent electric shock. When operating the accumulator, connectors on it must be disconnected.

**Installation:** When repairing or replacing hydraulic components, electric and electronic components, make sure to install them back to their original positions.

**Wheels:** Quality of the wheels has significant effect on stability and driving performance of the stacker. Modification on wheels can be performed only with the approval from the manufacturer. When replacing wheels, ensure that the stacker is levelled as delivery state (wheels must be replaced in pairs, i.e. replace right wheel together with left one).

**Lifting chain and rollers:** Chain and rollers will be worn quickly without good lubrication. Perform periodic lubrication according to following maintenance table. Shorten

the lubrication period under adverse operation conditions (such as in dusty and hot environment).

**Hydraulic oil pipe:** The oil pipe must be changed every 6 years. When change the hydraulic assembled parts, the oil pipe should be also changed.

## 9.2 Daily Maintenance

9.2.1 Check every pole, every cable and their covers.

9.2.2 Check if the accumulator box is secured.

9.2.3 Check the stacker for oil leakage.

9.2.4 Check the chain, rollers, fork, oil pipes and horn.

9.2.5 Check the brake.

9.2.6 Check the wear and tear of drive wheels and loading wheels.

### 9.3 Professional Maintenance Manual

It is very important for safe operation of the truck to perform overall professional maintenance. Failure in performing maintenance according to specified interval may cause malfunction of the truck, and potential risk to human and equipment.

Maintenance periods listed in this manual apply to single shift a day under normal operation conditions. If using in dusty environment, the ambient temperature varies remarkably or in multi-shift situation, the maintenance period has to be shortened.

Maintain the truck according to following maintenance list. Maintenance periods are as follows:

W1 = Every 50 work hours, but at least once a week.

M3 = Every 500 work hours, but at least once every three months

M6 = Every 1000 work hours, but at least once every six months

M12 = Every 2000 work hours, but at least once every 12 months

Additional operations should be performed in trial run period:

(In initial 50 – 100 working hours or after two months)

— Check the nuts on the wheels, and tighten them if necessary.

— Check the hydraulic components for leakage, and tighten them if necessary.

—Replace the hydraulic filter.

Maintenance			Maintenance time interval●			
			W	A	B	C
Brake	1.1	Check the air gap of electromagnetic brake			●	
Electric System	2.1	Check switch operation, display the function of the equipment and	●			
	2.2	Check the alarm system and safety device		●		
	2.3	Check whether there is any damage on the cable and terminal is rigid			●	
	2.4	Check the function of the micro switch Settings	●			
	2.5	Check the controller and EPS controller			●	
	2.6	Fixed cable and motor			●	
Energy Supply	3.1	By observing the battery		●		
	3.2	Visual inspection battery charging plugs			●	
	3.3	Check whether the battery cable connection fastening, if necessary, with oil			●	
Traveling System	4.1	Check if have gearbox abnormal sound			●	
	4.2	Check the travel agency, and the oil, check the reset function of operating		●		
	4.3	Check the drive wheels and bearing wheel for wear and damage			●	
	4.4	Check the wheel bearing and fixed			●	
Massive Structure	5.1	Check whether the framework has damaged			●	
	5.2	Check whether the sign is complete			●	
	5.3	Check the door frame fixed situation			●	
The hydraulic system	6.1	Check the function of the hydraulic system		●		
	6.2	Check the hoses, pipes and interface whether fastening, sealing and presence		●		
	6.3	Check whether the damaged piston and cylinder . sealed and fixed			●	
	6.4	Check the load chain Settings.			●	
	6.5	Visual inspection door frame and check on the surface of the roller of roller			●	
	6.6	Check the goods fork teeth and load parts for wear and damage			●	
	6.7	Check the tank oil level			●	
	6.8	Update the hydraulic oil				●

## **9.4 Maintenance, Recharging and Replacement of the accumulator**

The Lithium Iron Pallet Jack must be parked in a safe location before any operation on the accumulator.

### **9.4.1 Maintenance Technician**

Battery charging, maintenance and replacement must be operated by qualified professionals. The user manual, supply preparation and charging requirements must be carefully read before the preparation operation.

### **9.4.2 Fire protection measures**

When operating the battery, smoking and open flame are strictly prohibited. Storage batteries and charging should be kept away from combustible materials, and should be kept at least 2 meters away. Places where batteries are placed should be well ventilated and equipped with fire protection facilities.

### **9.4.3 Battery type and usage note**

- a. The battery type of the car is: lithium ion battery; Battery voltage 24V; This battery belongs to environmental protection battery, without chemical mercury and cadmium.
- b. Matters needing attention:
  - 1) the battery USES the temperature environment 5 ~ 45;
  - 2) the battery shall be charged and discharged once every three months during the long period of suspension;
  - 3) before using the new battery, or for the first time after storage, please recharge the battery before use;
  - 4) do not short-circuit the battery, which may permanently damage the battery;
  - 5) do not burn or destroy batteries, which may cause the release or explosion of toxic gases;
  - 6) do not directly weld the battery;
  - 7) do not allow the battery to be in a hostile environment, such as extreme temperature, deep cycle, or frequent overcharge/discharge;
  - 8) if the battery is hot, do not touch, until cooling;

- 9) when removing the battery pack, hold the plug with your hand instead of pulling the cord;
- 10) after the battery is used, if the battery is hot and before recharging, please cool in the ventilated environment;
- 11) do not put batteries in water or seawater;
- 12) do not try to separate, squeeze, impact the battery, the battery will heat or fire, the lye in the battery will be harmful to the skin and eyes, and will damage the clothes;
- 13) keep the battery away from children.

**9.4.4 Disposition of worn-out accumulators**

Worn-out accumulators should be recycled according to local regulations, and stored in specified zone or cast-off treatment zone. These works should be done by qualified specialized companies.

**9.4.5 Specification of the battery**

Battery		Charger	
Rated power: 24V	Rated capacity: 40-60Ah	Input : 195/265VAC 50/60Hz	Output : DC24V10A

The battery's non-insulated terminal must be protected by an insulating cover. When the battery is connected and connected to the socket, the vehicle must be cut off and the switch in the closed position. When replacing or assembling the battery, make sure the battery is securely fixed in the battery box.

**9.4.6 Storage, transportation and installation of the accumulator**

The truck must be parked on the level ground steadily. To prevent short circuit, naked cable ends and the terminal posts should be covered with insulated covers. When pulling out the accumulator, properly arrange removed accumulator's connectors and cables without blocking access of the accumulator.

**9.4.7 Battery power indicator**

Battery power display table: ten article showing represent 100% of the battery. With the consumption of battery capacity, the glowing article shows will be from top to down.

The color of LED show the different states :

Name	LED Color	
The standard battery remaining power	Green	70-100%
	Orange	30-60%
	Red blinking	0-20%

Battery discharge on 70%, red lamp will blinking“Energy storage”;

Battery discharge on 80%, two lamp will blinking“run out of battery”, Must to the accumulator.

#### **9.4.8 Charging**

The Electric truck is supplied with a special charger for recharging.

Read the instruction manual carefully before recharging.

The batteries should be recharged in well-ventilated areas. Make sure no metal objects placed on the accumulator. Check all cables connection and connectors for obvious defects. Observe strictly all safety instructions, e.g. replenishment of the accumulator and preparation for recharging.

For safety working, the truck should be added protective cover before using.

## **10.Safety Precautions**

### **10.1 general rules**

**10.1.1** Operators must have the operation qualification of the truck (subject to the training approval of relevant departments).

**10.1.2** Operators must read all the contents of the user manual before using, and can only drive the van after fully understanding it.

**10.1.3** The carrier shall not carry passengers.

**10.1.4** Operators should pay special attention to the operating environment when operating, including other personnel nearby and fixed objects.

**10.1.5** Do not modify, add or disassemble the moving parts without the manufacturer's approval, so as not to affect its performance.

## **10.2 Transportation and storage**

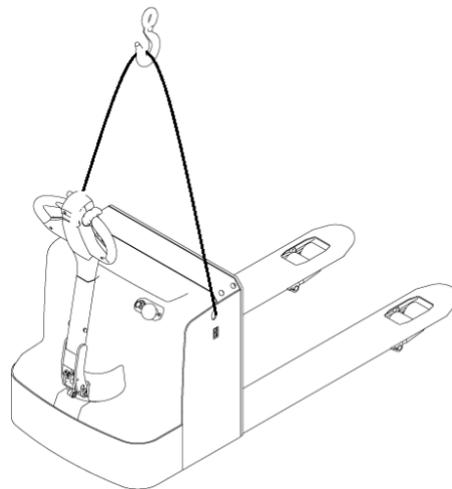
**10.2.1** When shipping in containers or cars, please note:

① The front and rear wheels are fixed with a wedge to prevent sliding during transportation.

② When using the lasso, pay attention not to put on the fragile structure of the moving vehicle;

③ When using the truck, keep the center of gravity of the truck in the middle of the fork.

④ When using the truck, keep the center of gravity between the two forks.



**10.2.2** When the van is not working, it should be parked in a dry and ventilated garage to prevent the sun and rain, and please note:

① Turn off the electric lock, cut off the power and unplug the power plug;

② After pulling up the stationary truck, the front and rear wheels are well padded.

③ In case of long-term disuse, the battery should be replenished every 15 days.

## **10.3 Check before Using**

**10.3.1** If the new vehicle is damaged during transportation, please do not put it into use and contact the supplier in time for proper treatment.

**10.3.2** New vehicles have been equipped with lubricating oil and hydraulic oil in the fuel tank.

**10.3.3** Storage battery for the moving vehicle. The battery has been charged at the factory. If the factory is long, the power may be low. Attention should be paid to the display of the electric meter before use. When the electric meter is shown to the last two bars of warning, it must be charged immediately. Open the battery cover every day before use or before charging. Check the level. If the level is too low, distilled water should be added before charging. See (battery charging and maintenance) for details.

## **10.4 Safe Operation**

**10.4.1** Requirements for drivers: the vehicle must be operated by trained personnel;

**10.4.2 Rights, obligations and duties of the driver:** the driver must clarify his rights and obligations and have been trained in the operation of the vehicle; Be familiar with the operation manual. If the vehicle is pedestrian controlled, the driver must also wear safety boots while operating.

**10.4.3 The use of unauthorized personnel shall be prohibited:** the driver shall be responsible for the vehicle during the working period, and he must prevent the unauthorized personnel from driving or operating the vehicle. It is strictly prohibited to use vehicles to transport or promote personnel.

**10.4.4 Faults and defects:** the management must be notified immediately if the vehicle has a fault or defect. If the vehicle can't operate safely (e.g., wheels are worn down or brakes are faulty), then be sure to stop using them until they are fully repaired.

**10.4.5 Safe operation and environmental protection:** the contents of inspection and maintenance must be performed according to the time interval on the maintenance list.

The parts on the vehicle, especially safety devices, shall not be changed without permission, and the operating speed of the vehicle shall not be changed.

All the spare parts of the original factory have been verified by the quality assurance department. In order to ensure the safety and reliability of the vehicle operation, the spare parts of the manufacturer must be used only. Replacement parts such as oil and fuel must be processed in accordance with the appropriate environmental protection rules.

**10.4.6 Danger zone: the danger zone usually refers to the following areas:** the area where the load lifting device (such as cargo fork or accessories) of the carrier is dangerous to the personnel during operation or lifting action, or the area where the load is being

transported. Usually this range extends to the area where the payload or vehicle attachment lands.

Unauthorized personnel must require him to leave the danger area. As long as the person may cause some kind of injury, the driver must give the warning, if the driver asks him to leave but has not left the dangerous area, must stop immediately.

**10.4.7 high-risk environment:** when working in high-risk environment, special design must be adopted to protect it.

The car is not specifically designed for high-risk environments.

**10.4.8 safety devices and warning signs:** safety devices, warning signs and warning notices described in the operation manual must be given sufficient attention.

**10.4.9 driving in public places:** cars are prohibited from driving in public places except special areas.

**10.4.10 distance between vehicles:** keep in mind that the vehicle ahead may suddenly stop at any time, so keep a proper distance.

**10.4.14 operation management:** the driving speed must be adapted to local conditions. Vehicles must travel slowly when passing through curves, narrow passages, revolving doors, and in unobstructed areas. The driver must be able to visually detect sufficient braking distance between the vehicle and the vehicle in front of him, and he must always control his vehicle. It is not allowed to stop suddenly (unless urgent), turn in the opposite direction quickly, and chase each other in places where the passage is not open.

**10.4.15 visibility:** drivers must keep their eyes on the driving direction to ensure that the path ahead is clearly visible. When the vehicle retreats, the cargo is blocked from view and must be accompanied by a second person walking in front of the vehicle to give appropriate guidance and warning.

**10.4.16 through ramps:** only known ramps are allowed, and the ramps should be clean, non-skid and allowed by vehicle technical specifications. Heavy loads on cargo forks must face upward. Turning around, going sideways, or stopping at the same place on the ramp is not allowed. The ramp must be driven slowly and be ready to brake at all times.

**10.4.17 ground load:** please check whether the weight of body and load or the pressure of wheels on the ground exceeds the bearing capacity of the ground when the vehicle is working.

**10.4.18 vehicle changes:** any changes or changes that may affect the rated load, stability or safe operation of the vehicle shall be subject to prior written approval by the original manufacturer or its successor.

## **11.Repair Manual**

## 11.1 Malfunction analysis

Fault	cause	Processing method
The vehicle can't move	The battery connector is not connected	Check the battery connector , connected if necessary
	Electric lock switch on "0"	Electric lock switch turn right
	Emergency Stop Switch not open	Open the Emergency stop switch
	Battery power runs out	Check the battery charge , If it is necessary to recharge
	The truck being charge	Interrupt charging process
	The fuse is damaged	Check the fuse
The goods cannot ascend	The truck no running	According to the "vehicle can not move" listed in the fault processing method of operation
	Less hydraulic oil	Check the hydraulic oil
	The fuse is damaged	Check the fuse
	Over weight	Note the load capacity
	the micro switch of lifting contact is not good or damaged	Check the fuse
The goods can't drop	The dirty oil blocking control valve	Check the hydraulic oil and cleaning control valve, and if necessary change, the hydraulic oil.
	Lowering solenoid valve no open or damaged	Check the lowering solenoid valve or change
Can't stop rising	Lifting micro switch damaged	Cut the power, change lifting micro switch
A direction moving	Micro switch and cable jumper contact is not good	Check the micro switch and connect jumper witch on the control handle
The truck move slowing	Battery power shortage or homologous cable jumper contact is not good	Check the battery power led and homologous cable jumper contact.
The car suddenly started	Controller is damaged.	Change the controller
	The handle which control the forward or back is no reset.	Repair or change

If above steps still can not solve problems, please contact after-sales service department of the manufacturer and have the problems solved by specially trained technicians.

## 11.2 preparation work before repair

In order to prevent accidents that may occur during the repair and maintenance operation, the following preparations must be completed:

-- park the vehicle safely.

- press the emergency stop switch to unplug the battery connector.

### **11.3 check the oil content of hydraulic oil**

Prepare the vehicle for repair and maintenance.

Open the cover of the electrical box.

Check the amount of hydraulic oil in the oil tank.

When checking the hydraulic oil, the fork and frame must be lowered to the minimum.

### **11.4 preparation work before use after maintenance**

The vehicle can only be used after the following operations have been completed.

-- clean the vehicle.

Check whether the brake function is normal.

- check whether the emergency stop switch function is normal.

-- check the horn for proper function.

Several electromagnetic brake tests will be conducted immediately after the test.

## **12. After-sales service**

If there is a problem that cannot be solved by professional maintenance staff, please contact our after-sales service staff at 877-232-6517

Note: the manufacturer reserves the right of interpretation.

If have change not notice additionally!