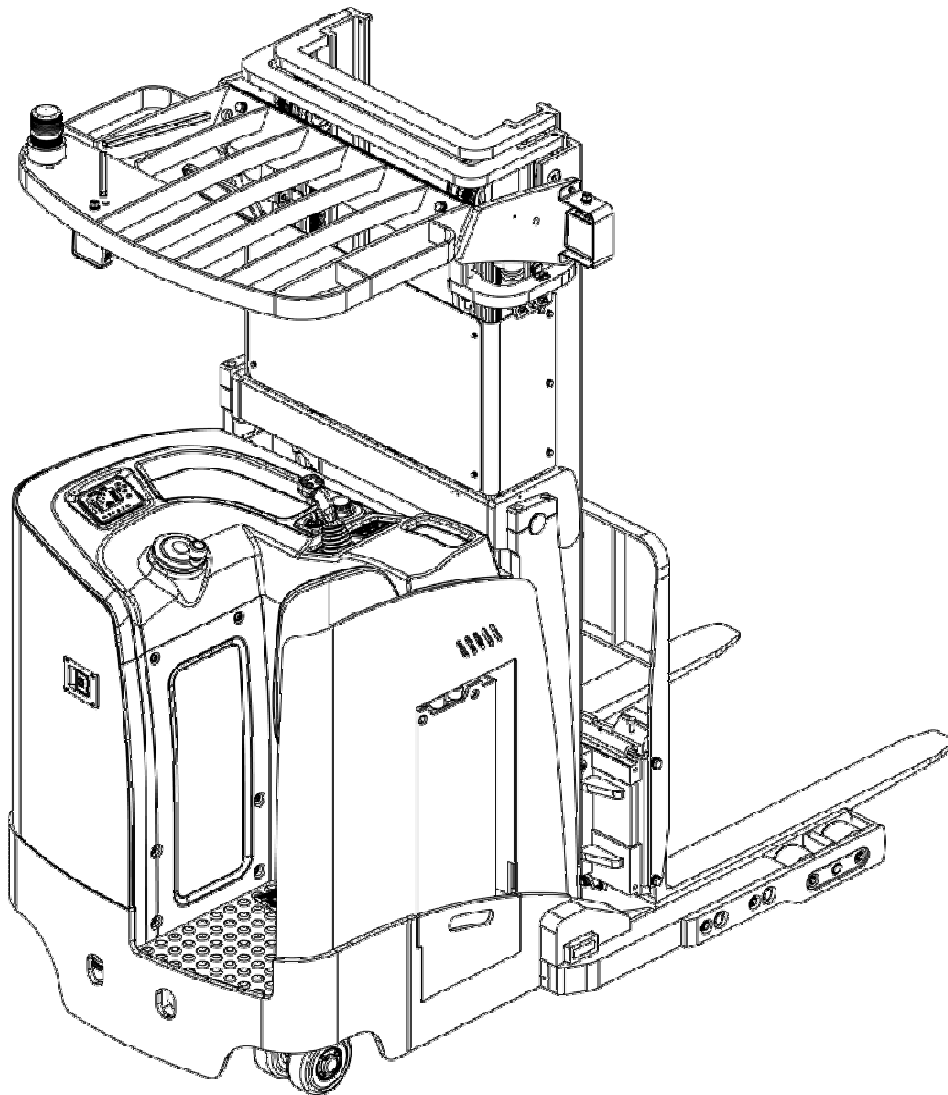


SPECIFICATION

Scissor Reach Electric Truck

EK18RR & EK18RRL



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 EK18RR & EK18RRL Type Scissor Reach Electric Truck . on the basis of absorption of the advantages of domestic & overseas battery truck, they are especially suitable for cargo loading and unloading, handling, stacking, etc for food, bank, light textile, station, port, logistics and other enterprises.

The Scissor Reach Electric Truck advanced structures such as EPS steering system, new AC controller. It is equipped with high-quality motor, traction battery and high-power pumping station motor. Therefore, it has the characteristics of superior performance, convenient operation, wide field of view, flexible steering, reliable braking, good power, low noise, no pollution, and beautiful appearance.

This manual describes the technical parameters of the Scissor Reach Electric Truck, working principle and operation, maintenance, and other aspects. It can help operators use the 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 truck . Carefully use them so that your truck can be in the best working condition for long period of time to maximize it's effectiveness. And create better economic benefits.

The Statement

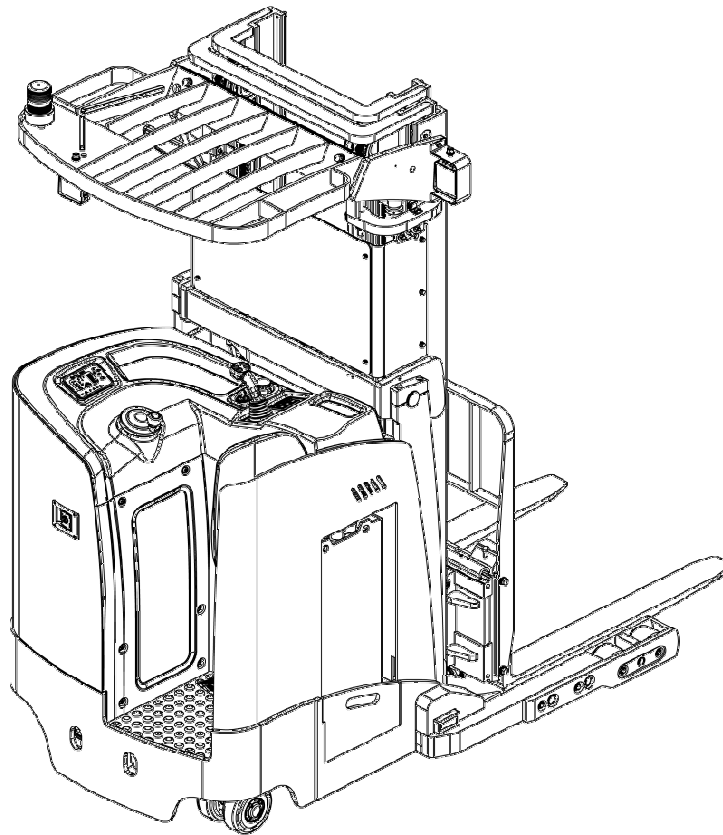
Our company production model EK18RR & EK18RRL Type Scissor Reach Electric Truck is a special motor vehicle used in factory ,tourist attractions ,amusement places which is specified by “special equipment safety supervision regulations” .

Contents

1.The General Introduction.....	1
2.Proper usage.....	2
3.Introduction of the product.....	4
3.1Model Overview.....	4
3.2Model parameters	5
3.3Safe operation and warning labels.....	8
3.4Name plate	8
4.Safety Caution.....	9
5.Test run,Transportation,Outage.....	10
5.1Test run	10
5.2Lifting & Transportation.....	10
5.3Outage.....	11
6.Routine Inspection.....	11
7.The Schematic diagram of Operating Mechanism.....	13
7.1Schematic diagram.....	13
8Operating specification.....	14
8.1Parking.....	14
8.2Loading capacity graph.....	14
8.3Lifting up.....	15
8.4Lowering down	15
8.5Fork move forward /backward/Left/Right	15
8.6Fork Tilt forward /back ward	15
8.7Traveling	16
8.8Steering	17
8.9Braking	18
8.10Brake structure &Brake Schematic.....	18
8.11Trouble.....	18
8.12Emergency situations.....	19

8.13Monitor.....	19
9Changing and Replacement for battery.....	20
9.1Replacement	20
9.2Battery display.....	21
10.Maintain Introduction.....	22
10.1Maintenance list.....	23
10.2Lubrication point.....	24
10.3Check and refill hydraulic oil.....	24
10.4Check the electrical fuse.....	25
10.5 Remove and reinstall the shield.....	25
11.Trouble shooting	26
12.After-sales service.....	27
13.Electrical Schematic diagram.....	28
13.1 Electrical Schematic diagram.....	28
14.Hydraulic Schematic diagram.....	29
14.1Hydraulic Schematic diagram.....	29

1.The General Introduction



EK18RR & EK18RRL Type Scissor Reach Electric Truck uses a battery as the power source and AC motor as power to drive the truck through gear transmission, The lifting of the fork is driven by the AC motor hydraulic drive to push the cylinder to lift and lower the cargo, Move the cargo forward & Backward .Tilt the cargo forward & backward. As the truck Electric motor for Lifting and Driving .Then it has the characteristics of labor saving, high efficiency, stable cargo operation, simple operation, safety and reliability, low noise and no pollution.

The biggest advantage of the Scissor Reach Electric truck is that it can not only realize the lifting. Lowering and handling of goods, but also can drive the goods to move forward and backward through the front and back expansion and contraction of the scissor when stacking goods. In this way, the "inconvenience" caused by the "straddle legs" of the plug-in stacker is overcome, and compared with the same type of counterbalanced forklift, it has the characteristics of small

size and more flexible operation, and is especially suitable for working in narrow passages.

The service environment:

- a. Altitude does not exceed 3937ft;
- b. Indoor room temperature at +5°C to +40°C ;
- c. When environment temperature at +40°C, the relative humidity can't over 50%, at low temperature, allow bigger relative humidity
- d. Firm, Flat ground .
- e. It is forbidden to use this car in corrosive environment such as flammable and explosive or acid base

2. Proper use

Please use the Scissor Reach Electric Truck according to this specification.

This is a stand on type Scissor Reach Electric Truck With solenoid valve to control truck lifting & lowering, Move forward and backward, Tilt forward and backward, and side shift

Improper use can cause personal injury or machine damage. Operators or operating companies need to ensure proper using,

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 +5°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 50LUX

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.Introduce of the product

3.1Overview of main components

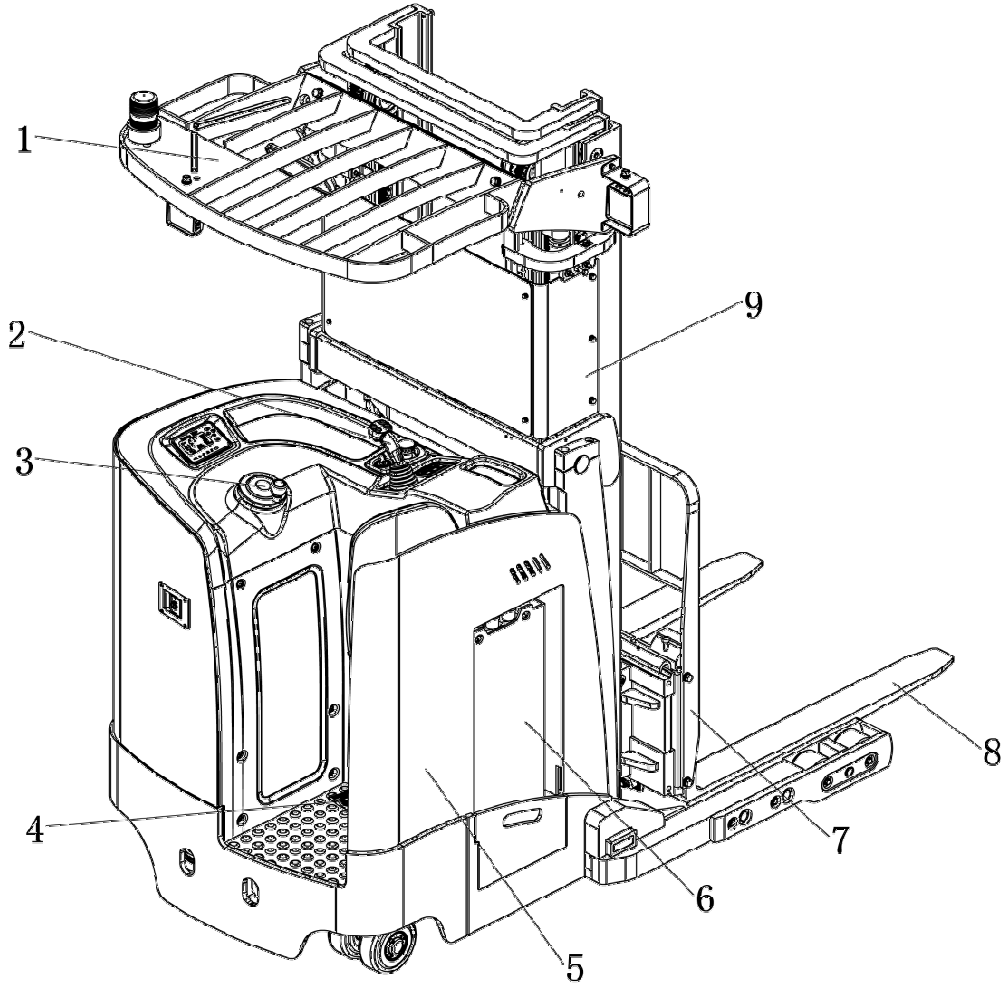


Figure 1 main components

Table 1 main components

1.Overhead guard	2.Joystick	3.Steering wheel assembly
4.Foot switch	5.Main frame assembly	6.Battery
7.Fork carriage assembly	8.Fork	9.Door frame assembly

3.2 Truck schematic diagram & Model parameters

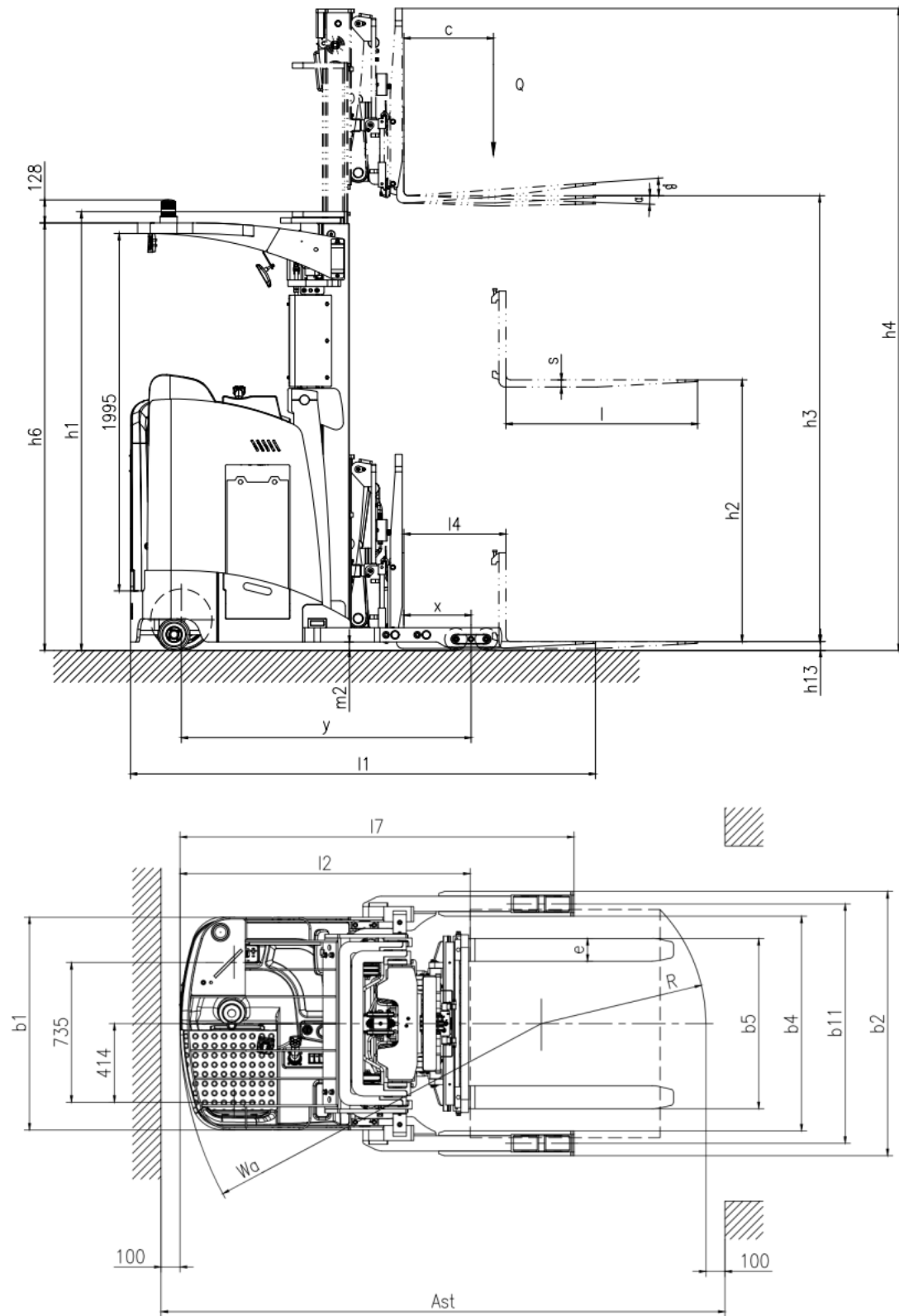


Figure 2 Schematic diagram

Table 2 The main technical parameters of the standard version.

Characteristics	1.2	Model		EK18RR	EK18RRL
	1.3	Drive type		Electric	Electric
	1.4	Type of operation		Stand on	Stand on
	1.5	Rated load capacity	Q (t)	3960	3960
	1.6	Load centre	c (mm)	19.7	19.7
	1.8	Axle centre to fork face	x (mm)	14.65	14.76
	1.9	Wheel base	y (mm)	63.62	63.7
Weights	2.1	Service weight with battery	kg	9330	8074
Wheels/Tyres	3.1	Tire material		PU	PU
	3.2	Driving wheel size	$\Phi \times w(\text{mm})$	$\Phi 13.5 \times 5.2$	$\Phi 13.5 \times 5.2$
	3.3	Bearing wheel size	$\Phi \times w(\text{mm})$	$\Phi 4.9 \times 3.2$	$\Phi 4.9 \times 3.2$
	3.4	Balance wheel size	$\Phi \times w(\text{mm})$	1x,2/4	1x,2/4
	3.5	No of Driving wheel,Balance wheel/Bearing		28.9	28.9
	3.6	Track width	b10 (mm)	49.6	49.6
	3.7	Track width	b11 (mm)	2/4	2/4
Dimensions	4.1	Mast/Fork carriage tilt ,Forward/back ward	$\alpha / \beta (^\circ)$	123.27	96.42
	4.2	Lowered mast height	h1 (mm)	79.92	53.15
	4.3	Free lift	h2 (mm)	275.59	196.85
	4.4	Lifting height	h3 (mm)	318.9	240.94
	4.5	Extended mast height	h4 (mm)	93.94	93.94
	4.7	Height of overhead guard(cabin)	h6 (mm)	1.97	1.97
	4.15	Lowered fork height	h13 (mm)	102.28	102.28
	4.19	Overall length	l1 (mm)	60.16	60.16
	4.20	Body Length	l2 (mm)	54.72/44.1	54.72/44.1
	4.21	Overall width	b1/ b2 (mm)	1.58/4.72/45.3	1.58/4.72/45.3
	4.22	Fork Size	s/e/l (mm)	35.04	35.04
	4.25	outside fork width	b5 (mm)	44.49	44.49
	4.26	Spoke/load surface spacing	b4	22.44	22.44
	4.28	Reach distance	l4(mm)	1.81	1.81
	4.32	Min.Ground clearance	m2 (mm)	116.93	116.93
	4.33	Aisle width for pallets 1000*1200 crossways	Ast (mm)	118.9	118.9
	4.34	Aisle width with pallet 800 x 1200 along forks	Ast (mm)	75	75
4.35	Min.Turning radius	Wa (mm)	81.65	81.65	

	4.37	Spoke length	17	9/9.5	9/9.5
Performance	5.1	Travel speed,laden/unladen	(km/h)	190/230	190/230
	5.2	Lifting speed, with/without load	(mm/s)	300/290	300/290
	5.3	Lowering speed, with/without load	(mm/s)	100/110	100/110
	5.4	Reach speed, with/without load	(mm/s)	6/10	6/10
	5.8	Maximum climbing ability,	(%)	Electromagnetic	Electromagnetic
	5.10	Brake Type		6	6
Drive	6.1	Drive Motor	(kW)	11	11
	6.2	Lift Motor	(kW)	no	no
	6.4	Battery voltage/rated capacity	(V/Ah)	48/420	48/420
	6.5	Battery weight ($\pm 5\%$)	(kg)	1585	1585
Others	8.1	Type of drive control		AC	AC
	8.4	Noise level at operator's ear	(dB(A))	≤ 75	≤ 75

3.3 Safe operation and warning labels

A. Refueling sign

B. Nameplate

C. warning label

D. Load capacity Sign

E. our kinds of misoperations are prohibited

F. It is forbidden to stand on /off the fork

G. Load capacity chart

H. Hook sticker

I. Warning be careful to pinch your hands

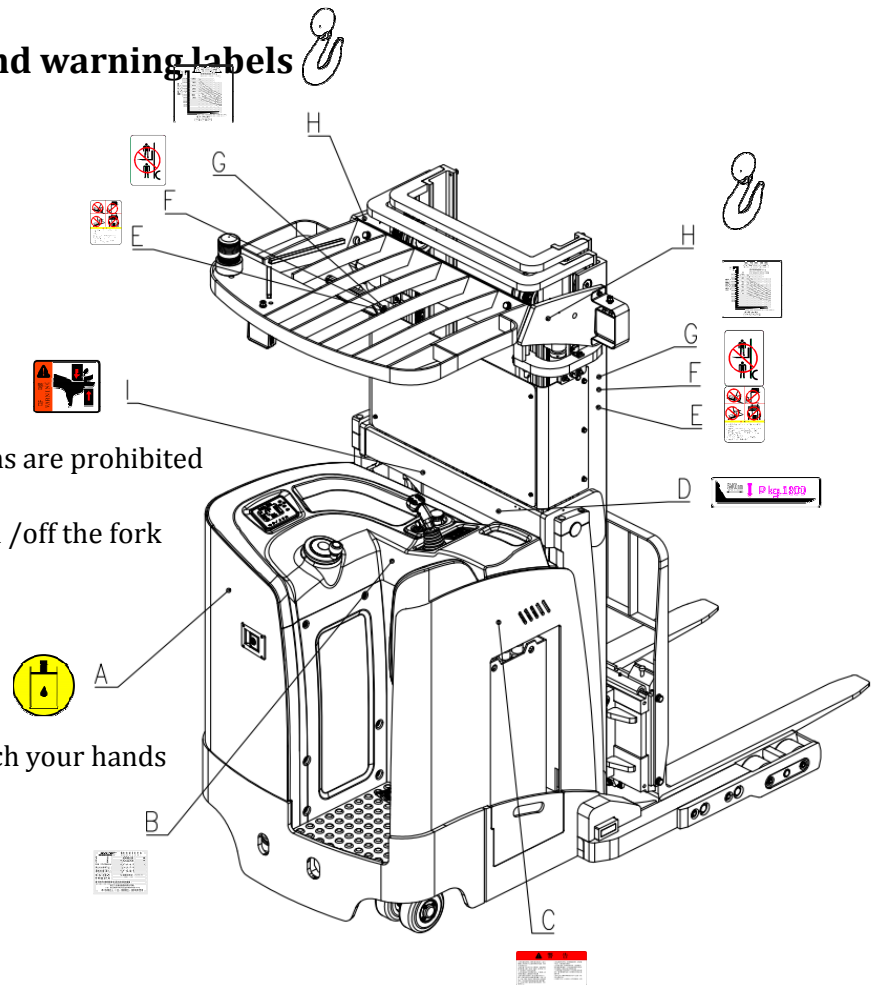


Figure 3 label diagram

3.4 Nameplate



Figure 4 Nameplate

4.Safety Caution



Please don't

- **When travel outdoor,The stacking operation makes the lifting height of the cargo higher than the lifting point**
- **Place the foot or hand under or into the lifting mechanism**
- **Allow Non-Operators to stand in front of or behind the truck durning moving or lifting / lowering**
- **Overload**
- **Put your foot on the front of the wheel may cause injury**
- **Lifting person, person may fall and cause serious injury**
- **Push and pull cargo**
- **Use the car on the slope**
- **Use the car without Shielding panel**
- **Side load or tail load ,The cargo must be evenly distributed on the fork**
- **Use this car to load unstable ,unbalanced cargo**
- **Use this car without the manufacturer's written consent**
- **The uplifted cargo will become unstable because of wind .Don't lift the cargo in windy condition**

Observing different ground condition during driving .The cargo may fall down or the car may lose control ,Please check the loading situation frequently,If the cargo becomes unstable .Stop the operation of the truck immediately . When the cargo slide or slide off the truck,Stop the car by pressing emergency stop switch .Please refer to Chapter 6 for any truck Trouble .Maintain according to regular inspection.The forklift is not waterproof,Please use it in dry environment.Continuous operation for a long time may damage the power box ,please stop operating when Hydraulic oil temperature is too high .



- **The operator should put on safety shoes when operating the forklift**
- **The car is suitable for indoor use in temperature from +5° C to 40° C**
- **Operating lighting must be at least 50LUX**
- **Don' t use the car on the slope**

- In order to prevent sudden movement of the car when the car is not operated (such as caused by others),turn off the car power and remove the key when not operating

5. Test run,Transportation,Outage

5.1 Test run

Table 3 test data

Model	EK18RR & EK18RRL
Packing weight (LBS)	About 8074
Lifting height (Inch)	196.85
Size (Inch)	106.3*104.33*59.06

After receiving our new forklift or when it needs to be retest please with process with following steps before (the first)operation of the forklift :

- Check if all parts are included .and there is no damage
- Battery installation and charging (refer to Chapter 9)
- Carry out daily inspection and machine function inspection

5.2 Lifting & Transportation

Remove the cargo during transportation ,Lowered the fork to the lowest position And according to Figure 5 Safety fixed the car with special lifting equipment

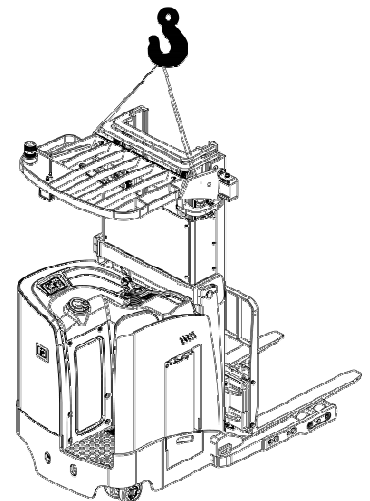


Fig 5 Lifting Point

Lifting



Use Special Crane and lifting equipment

Don't stand under shaking cargo

Don't enter the dangerous area when rising

Parking the truck safely, and And fasten the car body as fig 5 shows

Lifting the truck to the destination ,Before Moving lifting equipment please safety Fixed the car ,

The rope point can referred to figure 6

Transportation

The Truck should be firmly fixed on the truck during transportation

Lowered fork and parking the truck safety

As figure 6 shows Use the special binding belt to fix the tow big ribs of the car .And fixed other side on the carrier

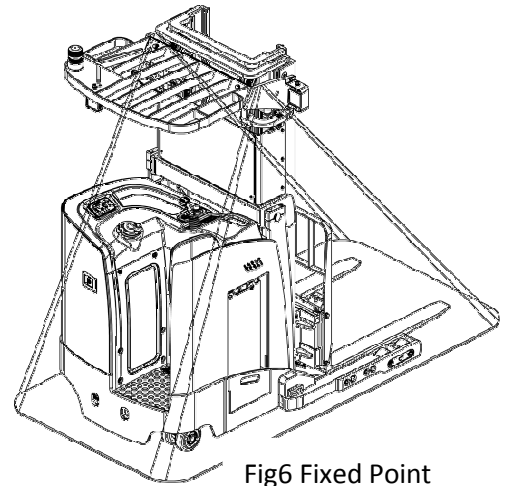


Fig6 Fixed Point

5.3 Outage

When Storage remove the cargo and lowered the fork to lowest position. Grease all lubrication points mentioned in this manual (check regularly) to prevent rust and dust. Remove the battery and check the truck to ensure no extrusion during storage.

When the car finally out of service ,send the car to designated recycling company .According to regulations ,Oil,Batteries and electronic components must be recycled .

6. Routine Inspection

This Chapter Describes check the car before using

Routine inspection can effectively find out the defect or error of this car, The following points should be checked before operation.

Remove the cargo ,Lowered the fork. Please don't use the car if there is any Problem.

- Check for scratches ,Deformation .or Cracks
- Check if the cylinder leaks of oil
- check running condition of the car
- Check if the chain or roller damage or corrosion

- Check if the wheels can move smoothly
- Press the emergency stop button to check the emergency brake function
- Check the lift function, tilt function and Reach function of the forklift
- Check the Buzzer
- Check whether the display is displayed normally
- Check that all bolts and nuts are tightened
- Check the function of Key switch
- Check the speed limit switch
- Visually Check for any damaged tube or wires
- If the car with Protective barrier .Check for damage and correct installation.

7.The Schematic diagram of Operating Mechanism

7.1 Schematic diagram

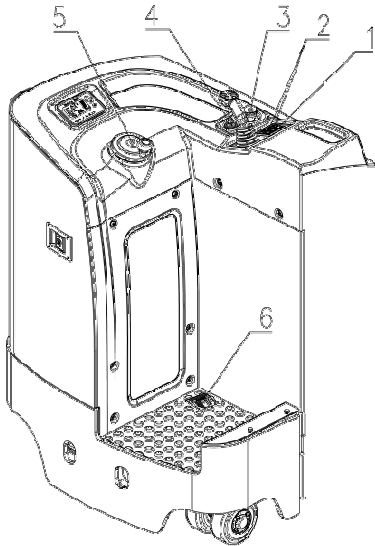


Fig 7 Operating console

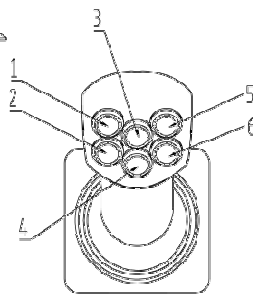


Fig 8 Schematic diagram of the joystick

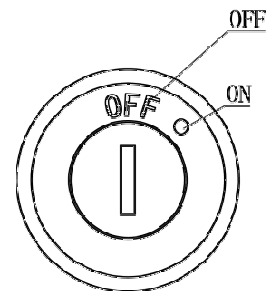
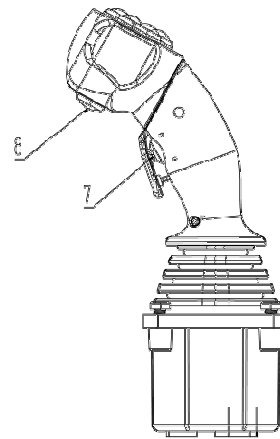


Fig 9 Key Switch

7.1 Schematic diagram of Driving and Lifting & lowering

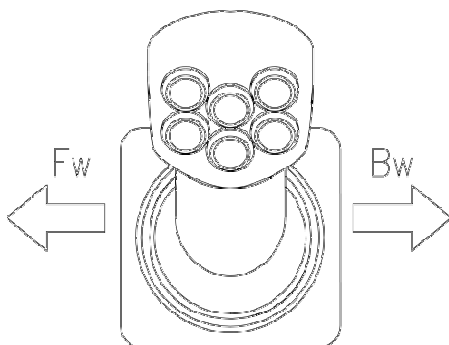


Fig 10.1 Driving diagram

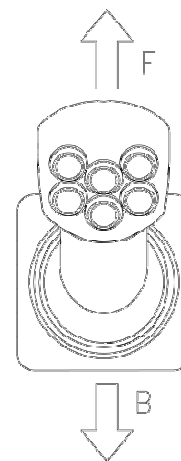


Fig10.2 Lifting& Lowering diagram

8. Operating specification



Please follow the warning and safety instructions before operating the car (see as chapter 4)

Please Ensure that cargo or other equipment will not lead to poor visibility before operating the car

Ensure cargo level and stable placed .And conduct daily inspection .Insert the key into the key Switch(Figure 9),Turn the key clockwise to "ON" position. Press the horn button(as figure8.8) to start the buzzer,Before finally inserting the key switch,The emergency stop switch(Fig 7.3) must be carefully pulled up.



8.1 Parking

Pls Don't Park on the ramp

Move the joystick (Figure 10.1) to the middle position or release the foot switch (Figure 7.6) to truck parking brake while driving. The vehicle is equipped with a parking brake.

Always lower the forks completely and drive the truck to a safe area. Turn the key counterclockwise to the "off" position and pull out the key.

8.2 Loading capacity Graph

The loading capacity Graph shows a given load center c [Inch] and a car with horizontal load ,the maximum load capacity Q [lbs]In the corresponding lifting height of the truck H [lbs],The white markings on the Door frame indicate the range of lift that can be achieved.For example, a cargo's center of gravity distance c is 19.69Inch, the maximum lifting height H is 196.85Inch, and the maximum load capacity Q is 1100lbs.

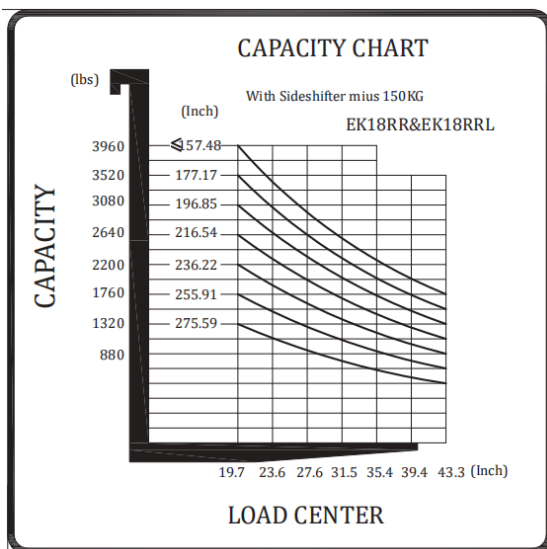


Fig11 Loading capacity chart



8.3 Lifting up

Pls don't overload, The related capacity is 1800KG .Only increase the load capacity allowed by the load capacity graph

Pull the joystick in the B direction (Figure 10.2) to realize the lifting of the cargo. Extend the fork to the bottom of the cargo, and then raise the fork to a suitable height. Retract the fork without touching the fork and the cargo with the straddle legs. Only when the fork is retracted then you can continue to lift the cargo to the desired height. This operation needs to be performed with the foot switch (Figure 7.6) depressed.

8.4 Lifting down

If the fork is on the shelf ,carefully Move the car with the pallet rack or move the car off the shelf separately ,Then Operate the joystick carefully, lower the cargo in the F direction (Figure 10.2) until the forks leave the pallet rack, and then carefully drive the truck away from the cargo. This operation needs to be performed with the foot switch (Figure 7.6) depressed.

8.5 Fork move forward /backward/Left/Right

After stepping on the foot switch (Figure 7.6), press the button (Figure 8.1) to move the fork forward.

After stepping on the foot switch (Figure 7.6), press the button (Figure 8.2), and the fork moves backward.

After stepping on the foot switch (Figure 7.6), press the button (Figure 8.5), and the fork moves to the right.

After stepping on the foot switch (Figure 7.6), press the button (Figure 8.6), and the fork moves to the left.

8.6 Fork Tilt forward /back ward

After stepping on the foot switch (figure 7.6), press the button (figure 8.3) to tilt the fork forward.

After stepping on the foot switch (figure 7.6), press the button (figure 8.4), and the fork will tilt backward.

8.7 Traveling



Only drive on the slope when the cargo are facing up

Don't drive on the slope in excess the specified specifications .

Only can driving when the fork falls to the lifting point (<11.81Inch)

The fork must be retracted before being allowed to travel under heavy load.

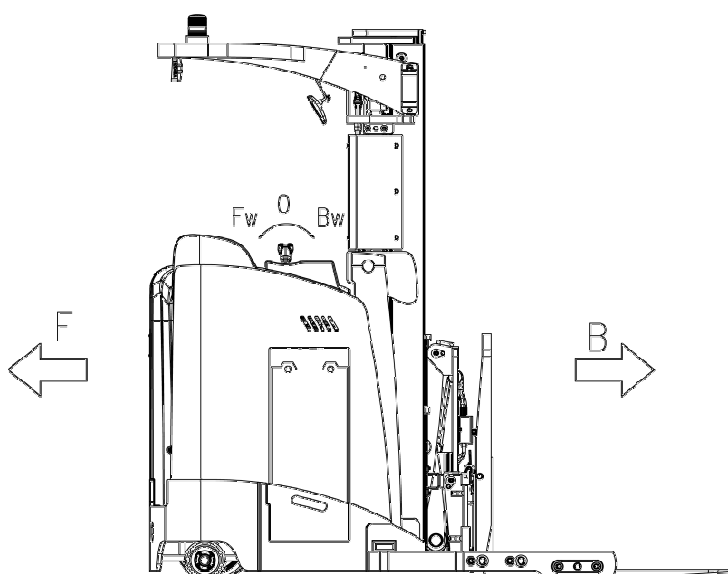


Fig 12 Driving direction

Turn the inserted key to the "open" position (Figure 9). Finally, carefully pull up the emergency stop button (Figure 7.3) to start the truck. Move the handle to the operating area ('Fw', Figure 12).

Move the operating handle to the desired forward direction 'F' or backward direction 'B' (Figure 12).

Control the driving speed by carefully moving the joystick (Figure 10.1) until the desired speed is reached.

If you move the joystick back to the middle position 0 (Figure 12) or release the foot switch, the controller will slow the truck until it stops. If the truck stops, the parking brake starts to work.

Drive the truck carefully to the destination. Observe the road surface and adjust the driving speed through the handle.

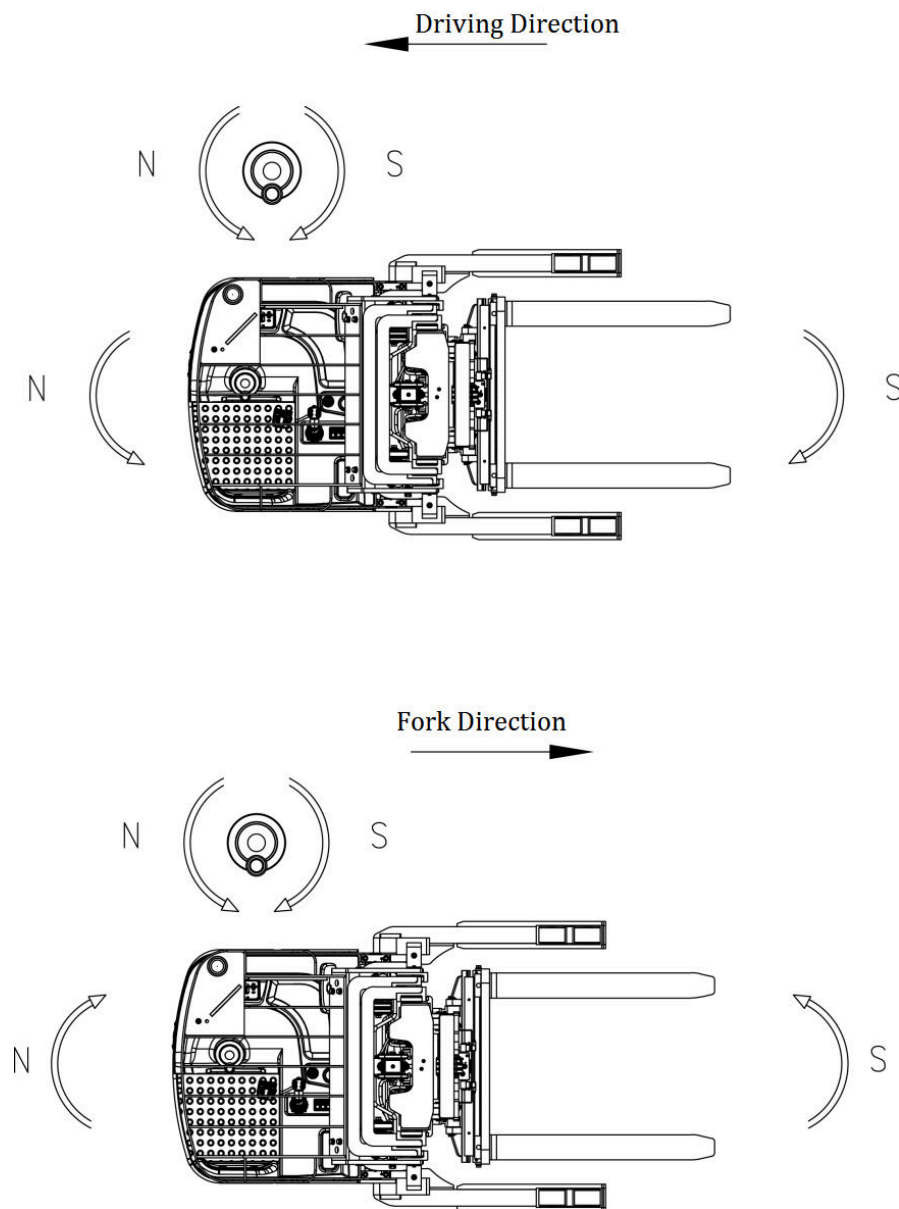
8.8Steering

The truck is equipped with a power steering system, so be careful when operating.

Steering the truck by turning the steering wheel in the N direction or S direction

When driving in the driving direction(as shown in the figure15)rotate the steering wheel in the N direction, the truck rotates in the N direction, and the truck rotates in the S direction. When rotating the steering wheel in S direction

When fork direction driving (as shown in the figure15)rotate the steering wheel in the N direction, the truck rotates in the S direction, and the truck rotates in the N direction. When rotating the steering wheel in S direction .



8.9 Braking



Braking performance depends on road conditions and the loading conditions of car

The brake function can be activated in the following ways :

- During driving, move the joystick back to the neutral position 0 (Figure 12) to truck braking.
- When driving, release the foot switch (Figure 7.6) to truck braking

8.10.Brake structure & Brake Schematic

Braking principle: as figure 11 shows including : Brake by magnetic yoke assembly 6、Magnet exciting coil 7、Spring 2、brake disc 5、Armature 1、Geared sleeve 4、Mounting screw 3 .The brake is mounted on the end cap of the motor ,and the mounting screw is adjusted to the specified air gap value.The gear sleeve is fixed on the shaft .The external teeth cooperate with the internal teeth of the brake disc.And the torque is transmitted during operation.then the brake disc can move axially on the gear sleeve .

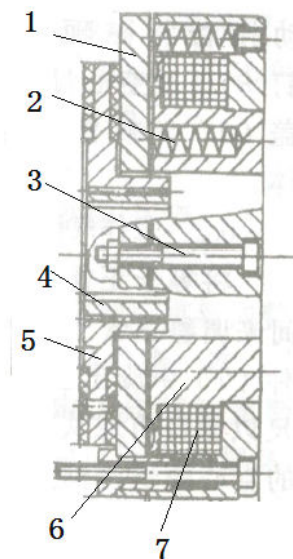


Figure 11 brake schematic

When Magnet exciting coil 7 of brake is energized .the coil produces a magnetic field that caused the armature 1 draw toward the magnetic yoke assembly 6.Armature 1 detached from the brake disc 5(Release).Then the motor drive shaft with brake disc 5 start and operate normally.When Magnet exciting coil 7 is de-energized.,The magnetic flux disappears .Armature 1 is released .and spring 2 process armature 1,then the friction plate on the brake disc is pressed to generate frictional force for braking purposes

8.11Trouble

If there is any error or the car is not operate,Stop using and press the emergency stop switch(Fig7.3).Parking the car in safe area if possible .Turn the key counterclockwise and remove the key(figure 9).Notify the manager or contact your after-sales service staff immediately .Use a special towing equipment

/lifting equipment to pull the truck out of the operating area if necessary .

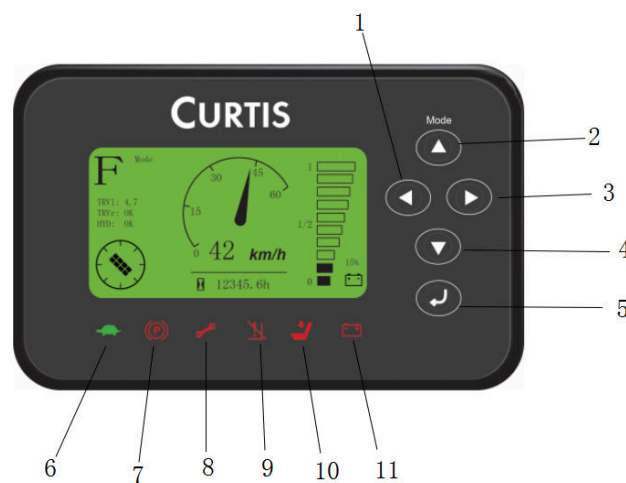
8.12 Emergency situations

Keep a safe distance in an emergency situation when the car is turned over. Press the emergency stop switch and all electrical functions will stop.

8.13 Monitor

Curtis instruments are used to realize auxiliary control functions and provide a display interface for the driver's truck operating conditions. It is composed of control circuit, accumulated time counter (liquid crystal display), battery fuel gauge, fault code display and other display circuits. According to the current demand of electric trucks, this instrument has a brand new design in the control circuit and display form, which can provide the driver with intuitive truck status information, compact structure, beautiful appearance, high degree of automation, and reliable quality.

Curtis instruments provide operators with some simple information about the operating conditions of the vehicle mechanism. As shown as below



1. Parameter adjustment key (turn left)
2. Speed mode switch key/parameter adjustment key (upward)
3. Parameter adjustment key (turn right)
4. Parameter adjustment key (turn down)
5. Parameter adjustment key (Enter)
6. Turtle speed indicator 7. Parking indicator light

8. Fault indicator

9. Lifting lock indicator

10. Seat switch (interlock) indicator light 11. Battery warning light

9. Changing and Replacement for battery



- **Only Qualified personnel are allowed to repair or recharge the battery .Please be sure to follow this manual and battery manufacturer's instructions.**
- **The battery is Lead-Acid battery.**
- **Battery recycling is subject to national regulations .Please follow these rules .**
- **When handling batteries .Don't use open flame which may cause gas explosion.**
- **Don't place flammable materials and work equipment that may generate sparks within a distance of at least 6.56 ft around the forklift that needs to be recharged**
- **It is forbidden to burn materials or burn liquid in the charging area of the battery. It is strictly forbidden to smoke. The area must be well ventilated.**
- **Parking the car safely before you start charging ,installing /replacing the battery**
- **Before finishing the repairing .please make sure that all cables are connected and there is no interference to the other part of car .**

For standard batteries, the following lead-acid battery models are installed in this category of truck:

1 3PZS/48V/420AH/1007×342×784 (L×W×H)



Only lead-acid batteries are allowed

The battery weight has a certain influence on car operation .

Please Consider the max working temperature of the battery.

9.1 Replacement

Park the car safely, Lower the fork to the lowest point .Turn off the car by key(Figure9) and press the emergency stop switch(Fig 7.3), Take off the battery side panel and the battery baffle, remove the battery connector, pull out the battery from the side of the frame and hang it out. Caution:If the lifting equipment is not safe.The battery may tip over .Installation is the opposite procedure of remove ,Please connect the positive terminal firstly .Otherwise the car is easy to damage

9.2 Charging



- **Only be charged with included charger**
- **Before using the charger ,Please fully understand the contents of the charger manual**
- **Ensure good ventilation in charging room**
- **Fully Charged situation can only be viewed from the display.to check this situation ,You need to interrupted the charging and start the car.**

Park the car in a safe area that provide dedicated power .Lower fork ,and remove the cargo.Turn off the power of car,Pull down the emergency stop switch ,then connect the connector and Charger.The charger starts charging .Finishing charging .Remove the connector from the charger,Connect the connector to the car and cover the battery cover .

10.Maintain Introduction



- **Only Qualified and trained personnel are allowed to maintain the car .**
- **Remove the cargo from the fork and lower the fork to the lowest point before maintenance .**
- **Please use the designated binding equipment or lifting equipment in accordance with chapter 5 ,if it is necessary to lift the car .Before operation .Place safety device(such as lifting jacks,Wedges or Wooden blocks)under the car to prevent accidental falling ,moving or sliding .**
- **Use approved and distributor 'S original accessories .**
- **Please consider the machine failure and accident that may be caused by the leakage of hydraulic oil.**
- **Only trained maintenance technicians are allowed to adjust the pressure Valve .**

If you need to replace wheels, please follow the instructions above. The wheel must be round and free of abnormal wear. Check the key point on the maintenance list.

0.1 Maintenance list

Table 6 Maintain list		Time interval(Month)			
		1	3	6	12
No.	Hydraulic system				
1	Check if there is any damaged noise and leakage for hydraulic cylinder and piston		•		
2	Check if there any damage and leakage for Hydraulic connector and tubing .		•		
3	Check hydraulic oil level and refill if necessary.		•		
4	Refill hydraulic oil(12 months or 1500 working hours)				•
	Mechanical system.				
5	Check the fork for deformation and cracks		•		
6	Check the base for deformation and cracks		•		
7	Check all screws are fully fixed		•		
8	Check the mast & chain for corrosion.deformation or damage ,And replace if necessary	•			
9	Check the gear box for noise and leakage		•		
10	Check the wheels for deformation and damage and		•		
11	Lubricated steering bearing				•
12	Check and lubricate the pivot point		•		
13	Grease fitting	•			
14	Protect,protective plates and replace it if they are	•			
	Electric system				
15	Check the wires for damage		•		
16	Check electrical connections and terminal conditions		•		
17	Check the function of Emergency stop switch		•		
18	Check the electric motor for noise and damage		•		
19	Check the display		•		
20	Check if the fuse is used correctly and replace if necessary		•		
21	Detection buzzer		•		
22	Check the current contactor		•		
23	Check the frame for leaks (Insulation test)		•		
24	Check the function and wear of the accelerator		•		
25	Check the electrical system of the drive motor		•		
	Braking system				
26	Check the braking performance		•		
	battery				
27	Check the battery voltage		•		
28	Clean and grease the terminal ,Check for corrosion and		•		
29	Check if battery box damage		•		
	Charger				
30	Check if the main power cord is damage			•	
31	Check the start protection procedure during charging			•	
	Function				
32	Detection buzzer	•			

33	Check the air gap for electromagnetic braking	•			
34	Check emergency braking function	•			
35	Detect reverse braking and regenerative braking	•			
36	Check steering function	•			
37	Check lift up & lift down function	•			
38	Check key switch for damage and function	•			
39	Check speed limit switch(lifting height >~400mm)	•			
	Comprehensive				
40	Check if all labels are clear and complete	•			
41	Check if the shield panel and protection is not damaged	•			
42	Check the caster ,to height adjust or replace it if worn		•		
43	Conduct a test run	•			

10.2 Lubrication point

Lubrication point according to the maintenance list .required grease specification :DIN:51825

1. .Drive gear
2. Reach cylinder hinge pin
- 3.Front wheel bearing
4. Fork hinge pin shaft
- 5.Reach rail
- 6.Door frame
- 7.Chain

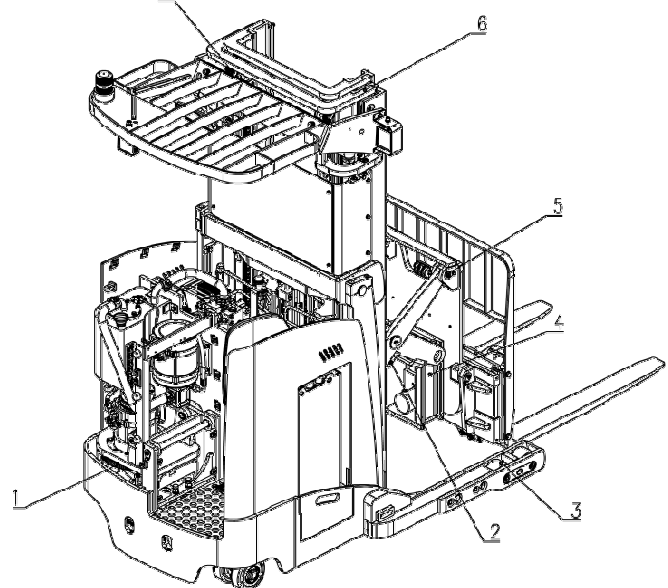


Figure 13 lubrication point

10.3 Check and refill hydraulic oil

Required hydraulic oil type:

- H-LP 46, DIN 51524
- Viscosity 41.4 – 47

Waste material such as waste oil, Waste batteries or other materials must be treated and recycled in accordance with the national regulations, It should be send to the recycling company for recycling .if necessary. The oil level should not be lower than the min amount oil required to lift cargo .Add oil to filling point if necessary.

10.4 Check the electrical fuse

Remove the cover ,The fuse is located as figure 14.

The fuse specification is shown in table5

table 5 fuse specification

Code	Specificatio	Qty
FU1	300A	2

10.5 Remove and reinstall the shield

Do not use the car if the shield is damaged or not installed properly.



If the shield needs to be removed, unscrew the fixed screw and carefully remove the shield, the screw is still on the shield. When reinstalling, place the shield in the correct position and secure each screw properly. If you need to replace parts, please contact your nearest after-sales service partner.

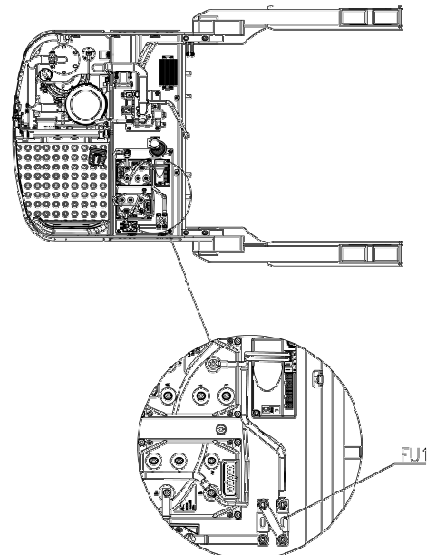


Figure 14 Fuse Position

11.Trouble shooting

- If the car is still in trouble ,please follow the instruction in chapter 8

Table6 Fault analysis

Effect of fault	Cause	Solution
Cargo can' t lift up	Overload	Lift the cargo weight indicated in Name plate
	Battery discharge	Charging the battery
	Lifting Fuse damage	Check the fuse,replace it if necessary
	Hydraulic oil level is too low	Check and fill the hydraulic oil
	Oil spill	Check the tightness of the tubing and / or cylinder
	Sensor failure	Check the sensor on the mast
Oil leakage due to inhalation	High oil quality	Reduce oil quality
The truck can't work	The battery is charging	Fully charge the battery, then unplug the main power plug from the power supply
	Battery connector is not connected	Check the battery connector and connect if necessary
	Fuse damage	Check the fuse
	Battery discharge	Charging the battery
	Emergency stop switch is activated	Insert and pull the knob to eliminate the emergency stop switch function
One direction move	Accelerator and connector damage	Check Accelerator and connector
Move slowly	Battery discharge	Check the battery status on the display
	Activated electromagnetic brake	Check electromagnetic brake
	The relevant handle harness is not connected or damaged	Check handle harness and connector
	Lower speed at height 15.75Inch and sensor failed	Check speed
	Electrical system overheating	Stop using and cool the car
	Error occur in heat sensor	Check and replace the heat sensor if necessary
Start suddenly	Controller is damaged.	Change the controller
	The accelerator was not moved	Check and replace the

	back to its intermediate position	accelerator
--	-----------------------------------	-------------

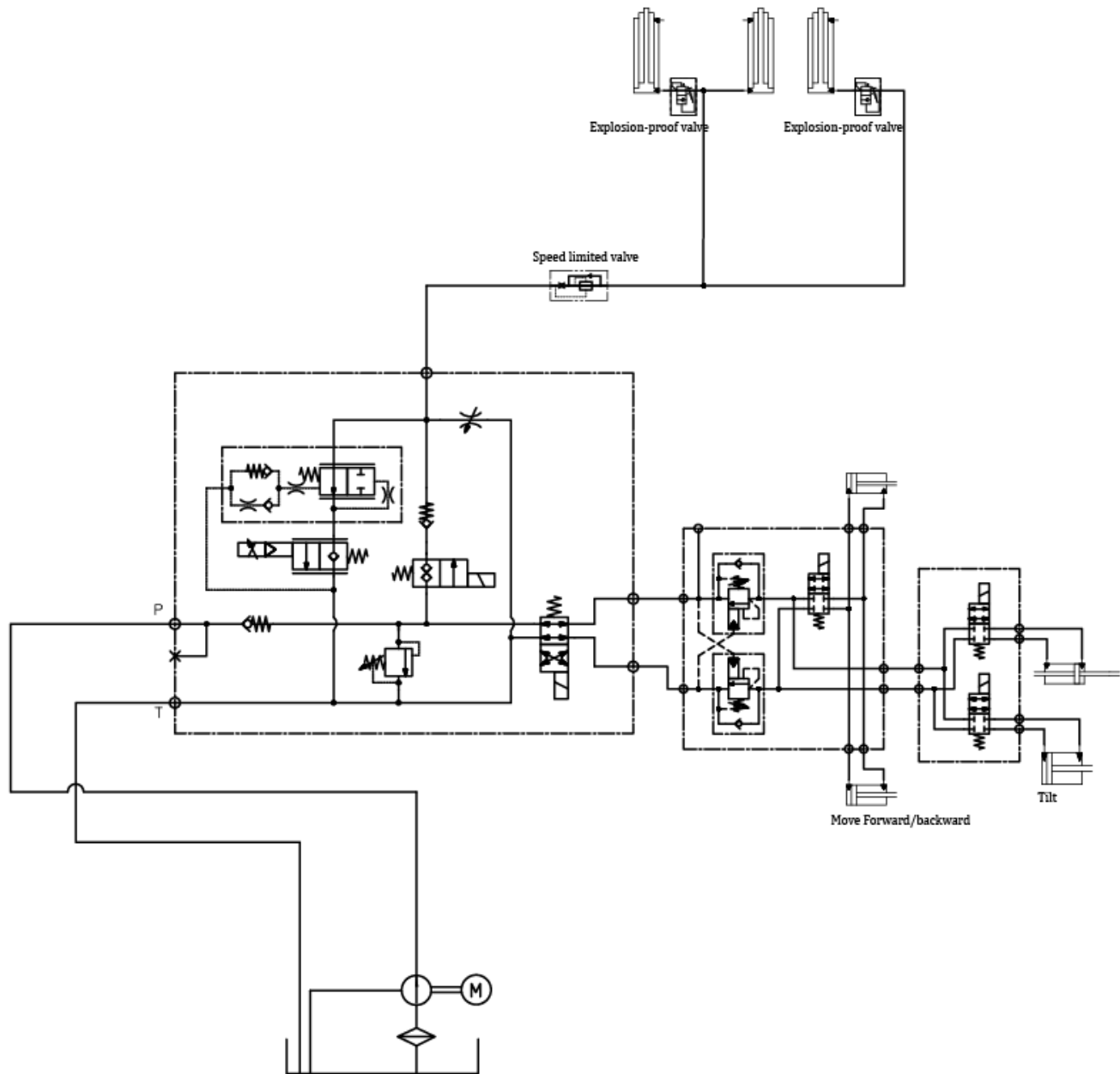
If the car brakes down and can't be operated outside the working area, Lift the car up. Place a loading device under the car and keep the car safely, Then move the car out of the aisle

12. After-sales service

If there is a fault that cannot be eliminated by professional service personnel, please contact our after-sales service personnel in timer , Sales line: 0572-60090556

14. Hydraulic Schematic diagram

14.1 Hydraulic Schematic diagram



This manual final interpretation retained by manufacturers.