

Service Manual

Operation Manual

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Preface

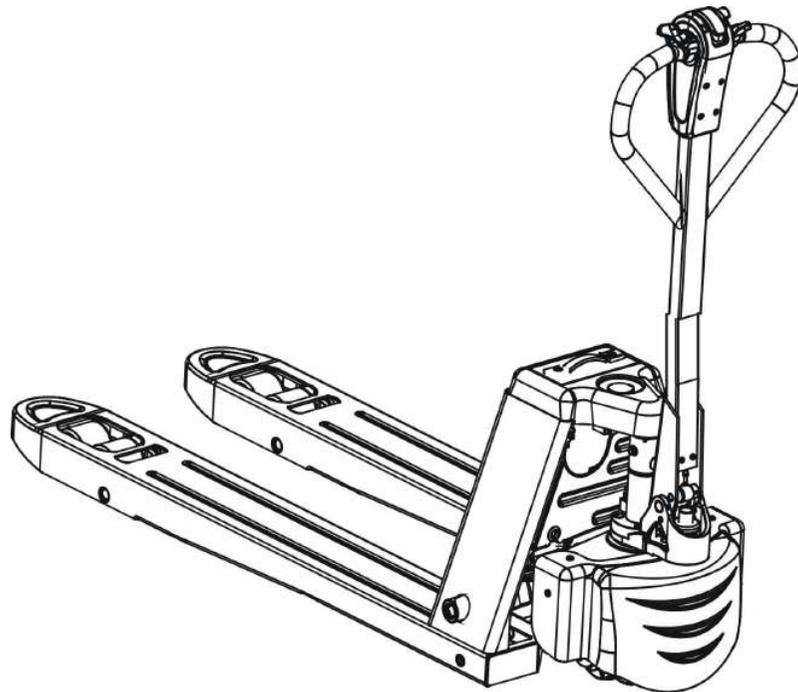
This operation manual will show you correct operating and maintaining skills for the electric pallet truck.

For personal safety and correct operation, users have to read this instruction manual carefully before using the product.

As products are constantly improved, this manual might slightly differ from the actual electric pallet truck you receive. The manual might also differ when your product is customized.

Our products are limited by Regulations on Safety Supervision of Special Equipment, users have to use our products in the specified area, like factory, warehouse, supermarket etc.

If you have any problems, you can contact the dealers.



Electric Pallet Truck
EPT15/18H(EPT33/40H)

Version No. EPTH-06

2020-12

Warning!

In order to ensure personal safety and property, the following rules must be strictly observed.

The pallet truck will have hidden danger, if you ignore to maintain it usually. Sufficient maintenance facilities, professional personnel, and maintenance schedules are required.

Electric Pallet Truck usage, maintenance method and checking

Rules:

1. Users have to check and do maintenance on regular basis.
2. Rules of parking
 - No parking on the ramp.
 - The forks must be lowered completely.
 - Press down the emergency stop button.
3. Before using the pallet truck
 - Users have to stand on the operational position.
 - Put handle in the driving position
 - Test lifting, steering, speed, operation, alarm and brake, to ensure all functions are normal.
4. Ensure the availability of firefighting facility in the workplace. Do not use flare to check battery and hydraulic system.
5. Check braking, driving, alarm and safety system on regular basis, maintain them in good working condition.
6. Keep the nameplate and warning stickers clean and readable.
7. Check and maintain lifting system regularly.
8. Check and maintain hydraulic system regularly. Ensure no oil leak of cylinder, hydraulic valve and other hydraulic system parts.
9. Park the electric pallet truck in clean areas, to ensure the lowest possibility of fire.
10. Unauthorized modification is forbidden. Modification with manufacturer's consent should come with updated nameplate and warning stickers.

Usage Rules

NOTICE OF USAGE

1. Ambient temperature 0-45 ° C, prohibit cold storage use;
2. Hard ground, flat, no sharp surface objects;
3. Prohibit to use in heavy dusty environment;
4. Prohibit to cross water, oil and muddy ground;
5. Prohibit to caught in the rain, 10 minutes use in light rain;
6. Prohibit to use in flammable, explosive, acid-base or other corrosive environments;

The pallet truck is a flat ground transport equipment as mentioned in this instruction. It is used for lifting and transporting goods. Users have to operate and maintain according to instruction rules. Using the product for applications not included in the instruction might cause damage to users, equipment or other property. Overload or unbalanced loading must be avoided. Loading capacity should strictly follow instructions on the nameplate or capacity diagram. Do not use the pallet truck in the area with risk of fire or explosion, or place of corrosion and dust.

Responsibilities and obligations of users:

In the instructions, the user refer to any natural person or legal person who directly uses or appoints someone to use the pallet truck. In the lease agreement, the lessor (Equipment owner) and the lessee (User) must reach an agreement, who carries out the responsibilities and obligations.

In order to ensure user and other peoples safety, users have to use the pallet truck according to electric pallet truck manual.

Furthermore, users have to observe accident prevention regulations, other safety technology regulations, operation and maintain regulation. All users have to read and understand this instructions.

If user can not observe these regulations, the warranty period will lose efficacy acquiescently. We have no responsibility to bear the loss because of false operation by users or any other party.

Accessories Installation: Installing extra accessories that have impact on equipment function requires written approval from us. Some modification might require approval from local authorities. Result from local authorities don't represent ours.

1. Electric Pallet Truck Introduction

1.1 Usage:

This electric pallet truck series are designed for transporting on flat ground. It can be used for both open & closed pallets.

Temperature requirement

Working temperature range: 0 - 45degree Celsius .

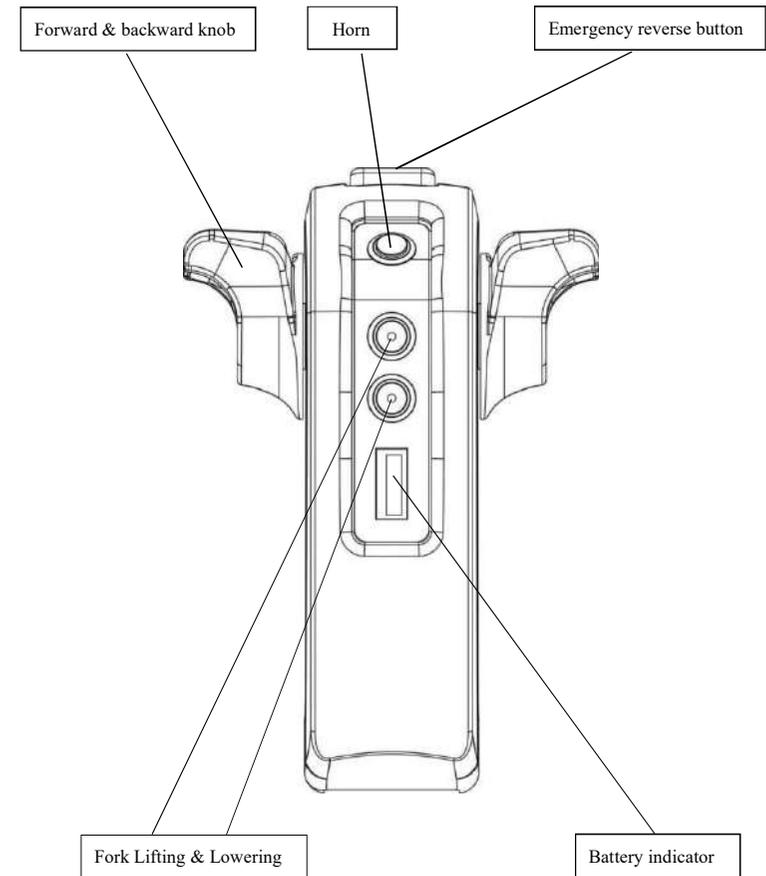
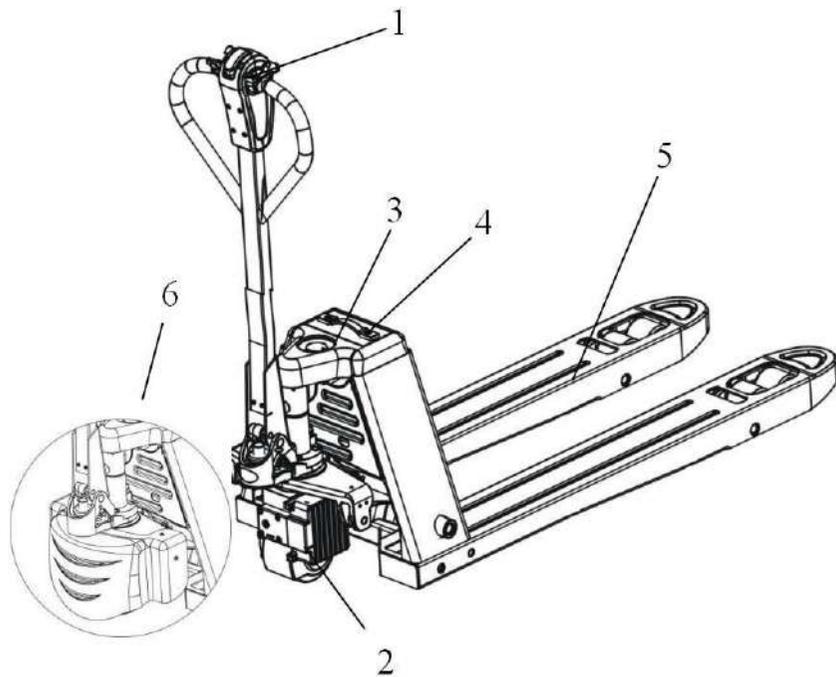
Anti-freezing parts must be applied if the pallet

truck is used in cold room with temperature lower than 5 degree Celsius, or workplace with sharp change of temperature or moisture. This modification requires approval from us.

1.2 Electric pallet truck unit

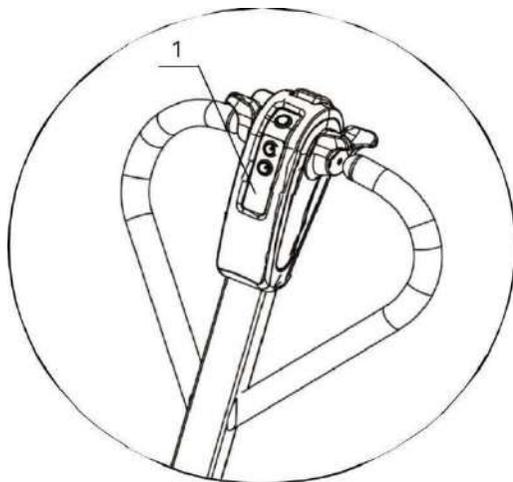
Number	Item	Number	Item
1	Handle assembly	4	Lithium battery
2	Drive motor assembly	5	Chassis
3	Emergency stop button	6	Protection cover

1.2.1 Handle Assembly



1.2.2 Power & Error code Indicator

The screen will display remaining power and error code, working hours.

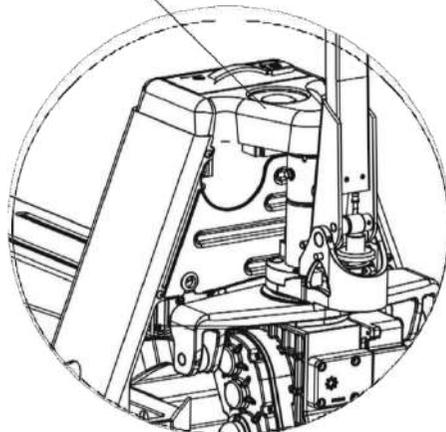


1.2.3 Emergency Stop Button(PowerOn/Off)

Press the emergency stop button to cut off electric system, all electric functions stop work and truck will be braked.

Pull up the Emergency stop button for power on, press down the button for power off.

Emergency Stop Button



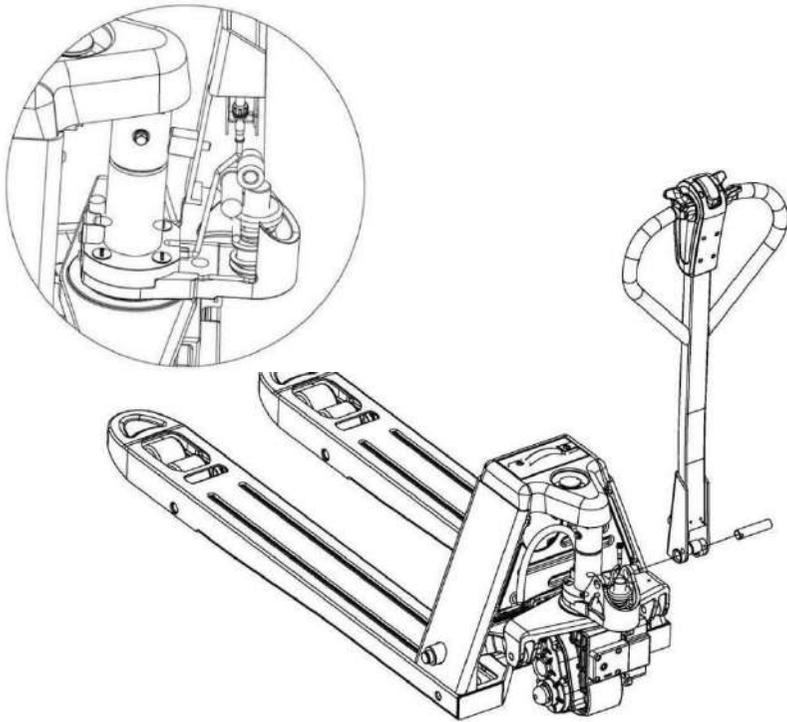
1.2.4 Intelligent Control (option)



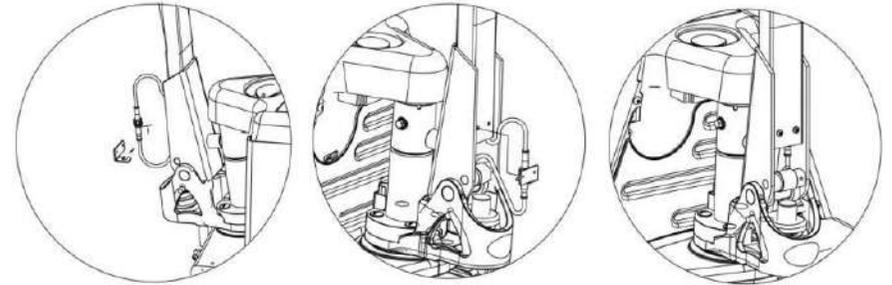
Intelligent Control			
Technical Data			
1	Communication technology	RF	
2	Distance	2m	
3	Battery Type	Non-rechargeable alkaline battery	
4	Battery Model	L828(12V/27A)	
5	Battery Replacement	Available	
ICON	FUNCTION	OPERATION	Reminds
1	 Lock/Unlock	Under lock state, the vehicle cannot be operated. The vehicle can be operated in the unlock state; A vehicle with 2 intelligent control keys, different vehicles are not universal. Unlock: Power on, press the button to open the lock with 2 beeps, the screen of the handle displays the symbol of unlock after operation successfully; Lock: Press the button again, hear 1 beep, the operation is successful, the handle screen shows the lock symbol!	Unlock: 2 beeps + unlock symbol Lock: 1 beep + lock symbol
2	 UP-Right Drive Mode	Press the button to enter the UP-Right Drive mode, the vehicle can move forward and backward in the upright state of the handle, and there is a beep warning sound, the handle screen shows the upright prompt, at the same time the vehicle speed is reduced to half of the set speed; Press the button again to cancel the upright function, return to the normal mode, the beep warning disappears, and the driving speed is reset;	Up-Right drive: continuous beeps + screen display + speed deceleration Normal: 1 beep + screen display + speed reset
3	 Traveling Speed Setting	Press the button to set the driving speed from Level 1 to Level 5; Level 1 speed 0.5km/h---> Level 2 speed 1.5km/h---> Level 3 speed 2.5km/h---> Level 4 speed 3.5km/h---> Level 5 full speed If the speed setting is successfully switched, the speed level information will be displayed on the screen once. After setting the speed, there is memory function, the vehicle speed is still the last set speed after restart not back to full speed.	The handle screen display the speed level when switched
4	 Horn	Horn button: press and hold the button to keep beeps, release to stop beep.	Beep warning
TROUBLESHOOTINGS			
1	Signal light with little light or no light	Battery to be replaced or keys damaged	
2	Function button failure	The key is damaged, replace it	

1.2.5 Handle Installation

1. Handle Numbers correspond to chassis numbers.
2. The handle matches the hole of the handle socket.
3. Install handle pin shaft and spring pin completely, pay attention to the corresponding hole position.
4. The wires should be connected and placed inside the handle.
5. After completing the above steps, pull the handle down to the lowest position and remove the fixing pin, complete handle installation.
6. Handle assembly wire harness installation: as shown in the picture, put the wire harness into the handle and be careful not to break the wires.

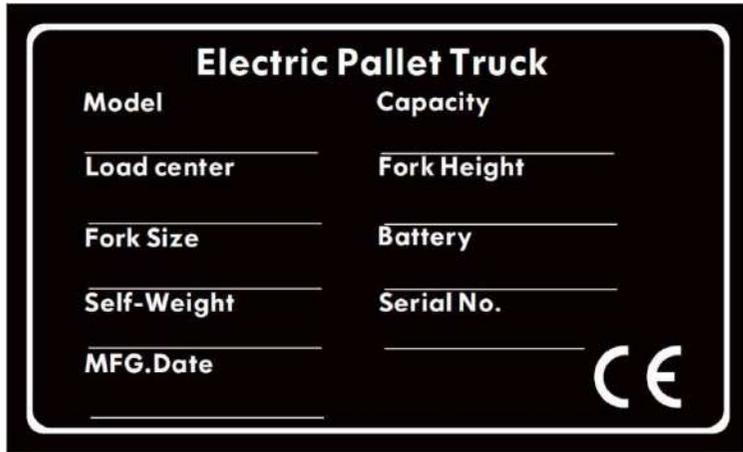


1. Hold the wires through the wire holder.
2. Put the wire and wire holder into the handle tube and fix the screw.



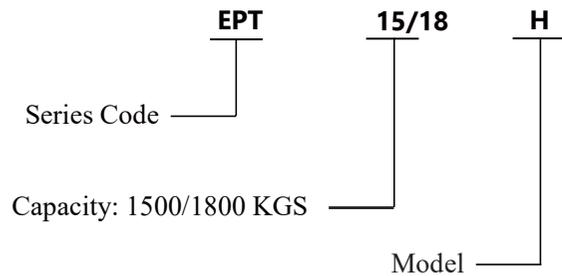
1.3 Nameplate and Model Instructions

Electric pallet truck nameplate



Please offer the model number on the nameplate, if users want to consult after-sales technical service or purchase parts.

Model Instruction:



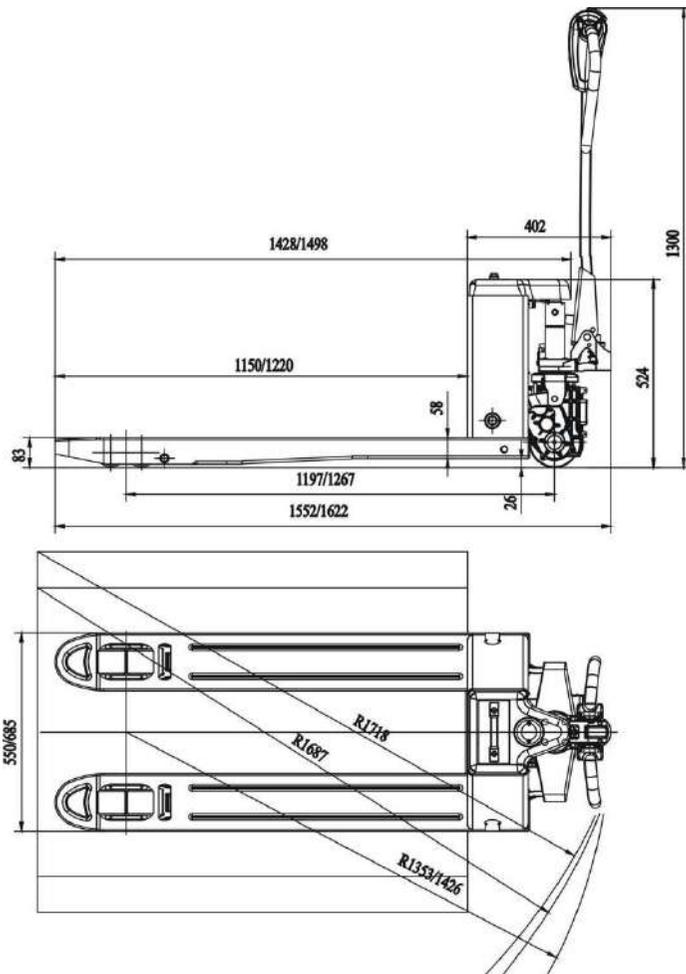
1.4 Pallet Truck Specifications

The following data is according to standard GB/T27542-2011, the producer has rights to update the data.

1.4.1 Specifications:

Model			EPT15H(EPT33H)	EPT18H(EPT40H)	
Characteristics	Capacity	kg/lb	1500(3300)	1800(4000)	
	Load center	mm/in	600(23.6)	600(23.6)	
	Standard overallfork width	mm/in	550/685(21.6/27)	550/685(21.6/27)	
	Fork length	mm/in	1150/1220(45/48)	1150/1220(45/48)	
	Overall length	mm/in	1552/1622(61/63.8)	1552/1622(61/63.8)	
	Overall height(with tiller)	mm/in	1300(51)	1300(51)	
	Rear body width	mm/in	550/685(21.6/27)	550/685(21.6/27)	
	Minimum turning radius	mm/in	1353/1426(53.2/56)	1353/1426(53.2/56)	
Performance	Max.Traveling speed	laden	km/h mph	4(2.5)	4(2.5)
		unladen	km/h mph	5(3.1)	5(3.1)
	Gradeability	laden	%	6	6
		unladen	%	20	20
Motor	Traveling	kw	DC 0.75 Brushless	DC 1.0 Brushless	
	Lifting	kw	DC 0.5	DC 0.5	
Battery	Voltage	v	48	48	
	Capacity/type	Ah	10Ah/15Ah Lithium	10Ah/15Ah Lithium	
Brake type	Travel brake	/	Regenerate	Regenerate	
	Brake	/	Electromagnetic	Electromagnetic	
Controller	Controller	/	STAXXB1501	STAXXB1501	

1.4.2 Dimensions



Transport & First Time Operation

2.1 Transportation

Transporting, loading & unloading

1. Transporting equipment must bear the pallet truck weight.
 2. Capacity of the transporting equipment must be bigger than pallet truck gross weight (with battery and wooden pallet weight).
 3. The wooden pallet or box should be strong enough to bear the pallet truck weight, and big enough to pack it.
- Park the pallet truck as instructed.
 - Truck forks should embed into the pallet completely to transport.

Notice!

- Avoid the fork legs were scratched by ground, when load the pallet truck into pallet.
- Avoid the pallet truck were scratched, please carry them on the flat ground.
- Avoid the pallet truck drop down, please lifting and lowering the pallet carefully.

2.2 First Time Operation

Pallet truck should be driven by battery power only. Please check and test the pallet truck after transporting.

- Check if the equipment is complete in good working condition.
- Test if hydraulic system is working.
- Install the battery, avoid electric wires damage.
- Charge the battery.
- Wheels have ductility, it will have a little distortion after long time parking. This is normal. The wheels will restore to original shape after some time use.

3. Operation

3.1 Safety Rules

Operation Authority

Operator should be trained how to use the pallet truck by specific department. The operator need passed the test of operation skill and emergency processing, must be authorized by user or owner.

Operator Responsibilities, Obligations and Regulations:

The operators should be trained operation rules and passed tests by the grantors who must authorize the operator to use the pallet truck.

The operators have obligations to learn and understand this instruction completely.

The operators have responsibility to operate the pallet truck according to relevant rules and regulations.

It is important that the operators have to put on protective boots before operating the pallet truck.

Authorization and Operation Limits

Do not operate the pallet truck except authorized person. Do not use the pallet truck to carry and lift person.

Operators have responsibility of personal safety and pallet truck safety when they are operating the pallet truck.

Equipment problems process:

Please inform the supervisor when the pallet truck has any problems. Example: Wheels abrasion and brake stop working etc. It must be used after repair.

Maintenance & Repair

Do not repair and refit the pallet truck without authorization, especially the switch and safety device.

Dangerous Area

Dangerous area is the area where person will be hurt. The main threats from pallet truck broken, bearing parts broken, driving, lifting & lowering goods. Example: area where the goods or parts will drop down.

- People cannot be allowed in the dangerous area except operator.
- Dangerous area must has the warning signs.
- Please stop working when other people in the dangerous area.

Protective Devices & Warning Signs

Protective devices instructions and warning signs must be strictly observed according to the regulations of this instruction.

3.2 Pallet Truck Operation

3.2.1 Preparatory work

Operator must ensure there is no people in the dangerous area before working.

- Checking and testing the pallet truck before working.
- Observe the pallet truck to ensure no obvious damage on wheels or fork tips.

3.2 Pallet Truck Operation

3.2.1 Preparatory work

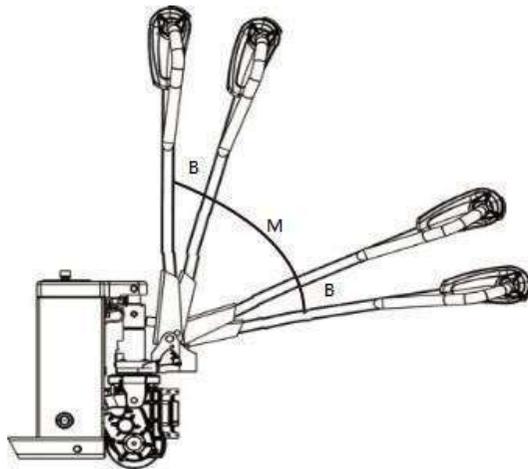
Operator must ensure there is no people in the dangerous area before working.

- Checking and testing the pallet truck before working.
- Observe the pallet truck to ensure no obvious damage on wheels or fork tips.

3.2.2 Driving

Driving

Lower the handle into the M driving area. Shift driving throttle into backward driving and forward driving. The more throttle is pressed, the higher driving speed is.



3.2.3 Smart Function

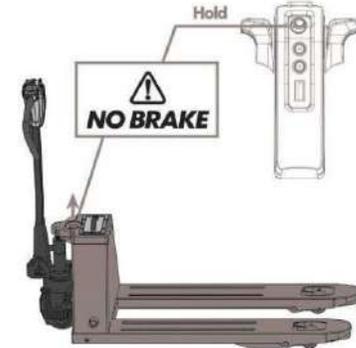
Up-Right Drive

Reverse Button & Forward Throttle Remain Pressed, Power On



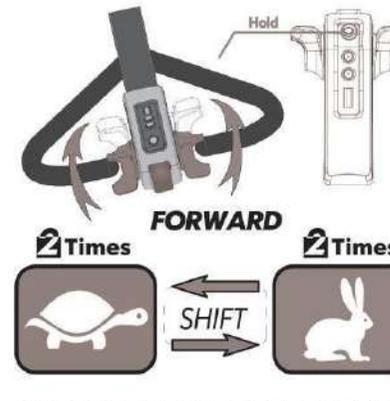
Engineering Mode (Brake Release)

Horn Remains Pressed & Power On



Turtle Speed

Horn Remains Pressed & Forward 2 times



⚠ In up-right drive mode, vehicle will move when handle is operated at any position. Please avoid misoperation.

⚠ Brake release mode is only for emergencies, not allowed for vehicle with normal conditions.

Steering

Pull the handle to left side or right side as needed.

Braking

Emergency Stop Button

Press the emergency stop button, all of electric devices will stop working.

Forced Brake

Method 1: Release the handle.

Method 2: Pull-down the handle into the B range (Picture 3.2-1).

Method 3: Pull-down the handle to lowest position.

Electric Regenerative Braking

Release the driving throttle, the speed will be 0 km/h.

Plug Braking

Turning the driving throttle to reversed side, the pallet truck stop until begin to travel reversed side.

3.2.4 Pick & Place Goods

It is dangerous if goods are stacked without rules.

Notice !

If the pallet truck still move slowly when the handle is in forced brake position, it is a problem, truck should be fixed immediately.

Notice!

The driving throttle should be back to original position rapidly when it is released. If not, it is a problem.

Notice !

Please make forced braking or plug braking in situations where danger might occur.

Notice !

Before stacking the goods, please confirm the goods are correctly placed. Cargo weight must be lower than truck load capacity.

-Inform people to leave the working site. Operator must stop working if someone is in the dangerous working area.

-Pallet truck can only be used to transport correctly packed goods. Please take protective measures if goods face possibility of falling.

-Do not transport goods by broken loading equipment (Example: Pallet, pallet truck etc.)

-People are forbidden to enter or stay under any lifted goods.

-People are forbidden to enter any lifted goods.

-Do not use the pallet truck to lift people .

-Forks should be moving under the goods

Notice !

Try avoid lifting the forks to highest position, this protects cylinder with longer working life.

3.2.5 Parking Regulation

Please park the pallet truck in the safety area when you leave it. Keep the forks at lowest position. Press down the emergency stop button and remove the key switch.

Notice !

Do not park on the ramp. Goods must be fully lowered.

Battery Usage & Maintenance

4.1 Safety Instructions

4.1.1 Battery System Safety

Battery voltage range: 40-54.6v

Do not soak in water

Precharge timely when low power, if not, it will damage the battery lead to fault.

Failure to operate in accordance with installation and use methods in this manual might cause threat to your life and property.

Avoid fire

- Do not expose the lithium battery to an environment over 60 degree Celsius
- Do not put the lithium battery near any heat source, eg. stove, fireplace etc.
- Avoid direct strong sunlight
- Do not place the lithium battery near flammable and explosive objects.

Avoid explosion

- Prohibit strong impact
- Prohibit piercing
- Prohibit throwing into fire

Avoid electricity leakage

- Do not open the lithium battery
- Do not touch the lithium battery with wet hands
- Do not expose the lithium battery to moisture or liquids
- Do not place the lithium battery within easy reach of children or animals

Avoid damage to battery system

- Prohibit contact with liquids and corrosive chemicals
- Prohibit high temperature and high pressure
- Prohibit stamping, dismantling, or hitting

4.2 Installation and Operating

4.2.1 Installation Environment

The environmental temperature of installing lithium battery should be between 0 degree and 40 degree, with no excessive humidity, to ensure the best operating environment; Avoid big temperature gap between two sides of the battery (5 degree Maximal)

4.2.2 Technical Parameters

Basic Information and Performance of Lithium Battery							
Model	48V/10Ah; 48V/15Ah						
Capacity	10Ah/15Ah						
Voltage	48V						
Battery life	≈ 800-1000 charging and discharging cycles						
Work environment		Low temperature	0°C	45°C	55°C	75°C	High temperature
Work environment temperature	Room temperature	Use condition	Use allowed			Prohibited	
		Discharge capacity	Capacity loss	Normal Discharge		Prohibited	
		Battery life impact	No impact			Prohibited	
	Cold storage	Use condition	Use prohibited in cold storage (non-cold storage models)				
		Discharge capacity					
		Battery life impact					
Battery temperature	/	Use condition	Use allowed			Automatic battery protection	
		Discharge capacity	Capacity loss	Normal Discharge		Automatic battery protection	
		Battery life impact	No impact			Capacity loss	Automatic battery protection
Charging environment temperature	/	Use condition	Charging Prohibited		Charging Prohibited(Automatic battery protection)		
		Battery life impact	Charging Prohibited		Charging Prohibited(Automatic battery protection)		
Battery parameter setting	≈20°C	Voltage	39.2V	43.5V	44.5V	54.6V	
		Power display	Black screen	0%	4%	100%	
		Vehicle condition	No output, vehicle power off	Vehicle stops	Drive speed lowers + charging reminder shows		Normal

4.3 Emergency Handling

Emergencies handling methods as below

4.3.1 Fire

If the product gets smoke and fire, please leave the site immediately. Disassembling or unauthorized repairing is strictly prohibited. Please contact our company or the authorized dealer for technical support as soon as possible.

4.3.2 Water

If the product becomes immersed in water, please leave the site immediately. Disassembling or unauthorized repairing is strictly prohibited. Please contact our company or the authorized dealer for technical support as soon as possible.

4.3.3 Unusual Smell

If the battery produces a distinct unusual smell, please remove the battery pack immediately. Avoid contact with leaked liquids and gases. Any sort of contact requires immediate cleaning up.

4.3.4 Necessary Safety Equipment

Self-contained breathing apparatus and personal protective equipment Heptafluoride propane fire extinguishing system.

4.4 Supporting facilities and Precautions

4.4.1 Charging Requirements

Battery has built-in protection system, when the system has occurred discharge, the internal MOS will cut off the input, showing a high impedance state (OD),it need to charge the charger to activate. The maximum charge voltage of charger is 29V, use three-stage constant voltage charging, charging cut-off current is 0.3~0.5A. Normal charging maintenance. When lithium battery is in stock, at least charge one time each three months..

4.4.2 Precautions

1. The battery is prohibited to charge in less than 0 degrees Celsius otherwise it will cause serious battery recession, or even a security incident.
2. The battery is prohibited to charge at low temperatures, but can use in not less than -20 degrees Celsius environment. But the capacity will be inadequate, this is a normal phenomenon.

Usage environment	Capacity
55℃	≥ 95 %
25℃	≥ 100 %
-10℃	≥ 50%

Note: Although the battery can be discharged at very low temperatures, but the process of taking battery out is easy to produce condensate water droplets, which will break the battery internal electronic devices and cause unpredictable dangers. If taken from the cold environment, battery needs to wait at least 4 hours to be charged.

3. The battery protection class is IP20, when installed in the machine, it is IP50. Please do not wash the battery directly with water.
4. If lithium battery is not in use for a long time, please charge it once every three months to half capacity for storage.
For 10Ah battery, 2A charger takes 5 hours; 6A charger takes 1.6hours.
For 15Ah battery, 2A charger takes 7.5hours; 6A charger takes 2.5hours.
5. When battery is not used for long, please disconnect it from trucks, to avoid over discharging.

5. LCD Trouble Shooting

When controller detects failure, the truck stops working. LCD gives fault identification codes. The LCD uses two-digit code. Two short flashing and one long interval means 11, two short flashing, one short flashing and one long interval means 21, etc. Error code display on handle LCD screen

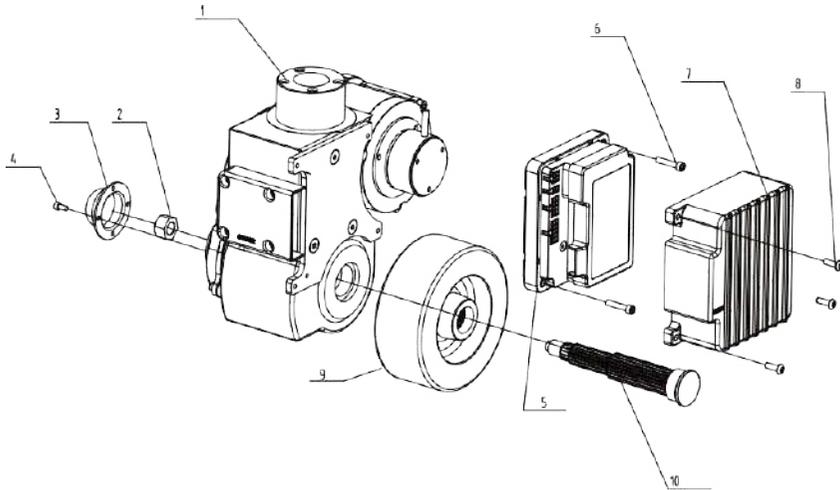
No	Error Code	Error	Possible Cause
1	11	Parameter error	Wrong parameter setting
2	12	Over current	Motor short circuit or controller failure
3	14	M+ current 0 bit detection error	Controller failure
4	15	M- current 0 bit detection error	Controller failure
5	16	Emergency reverse button has signal when turn on power	Emergency reverse button stuck or LCD monitor fault
6	18	Motor hall sensor error	Motor hall sensor failure, controller failure, or bad connection
7	19	Temperature sensor failure	Temperature sensor failure or circuit disconnection
8	21	Potentiometer error	Acceleration potentiometer failure or circuit fault
9	22	Overheating current limit	Controller is overheated, causing current limit
10	23	Overheating protection	Controller is overheated, and automatically stops working
11	25	Over temperature, current output limit	Motor over temperature, current output limit
12	26	Motor stall	Motor stall protection
13	27	Electromagnetic brake error	Electromagnetic brake is broken, causing open circuit
14	29	Motor open circuit	Motor open circuit or Motor failure
15	31	Low battery voltage, current limit	Low battery voltage causing current limit
16	32	Low battery voltage protection	Low battery voltage, truck is shut down
17	33	High battery voltage	Lithium battery with high temperature
18	35	Contact error	Controller failure
19	38	Communication error	LED display fault or harness fault
20	39	Controller version error	Controller version is not updated

Note: Error code might change due to updated controller versions. Please refer to the actual instructions on the controller or contact the technician.

6. Drive Wheel Disassemble

1. Let the drive wheel #10 suspend.
2. Dismantle controller cover (#7) by removing 3 bolts #8.
3. Loosen controller (#5) by removing 2 bolts #6. Avoid force on wires.
4. Dismantle nut cover (#3) by removing 4 bolts #4.
5. Remove nut #2, gently knock out the wheel shaft #9 and remove drive wheel #10.

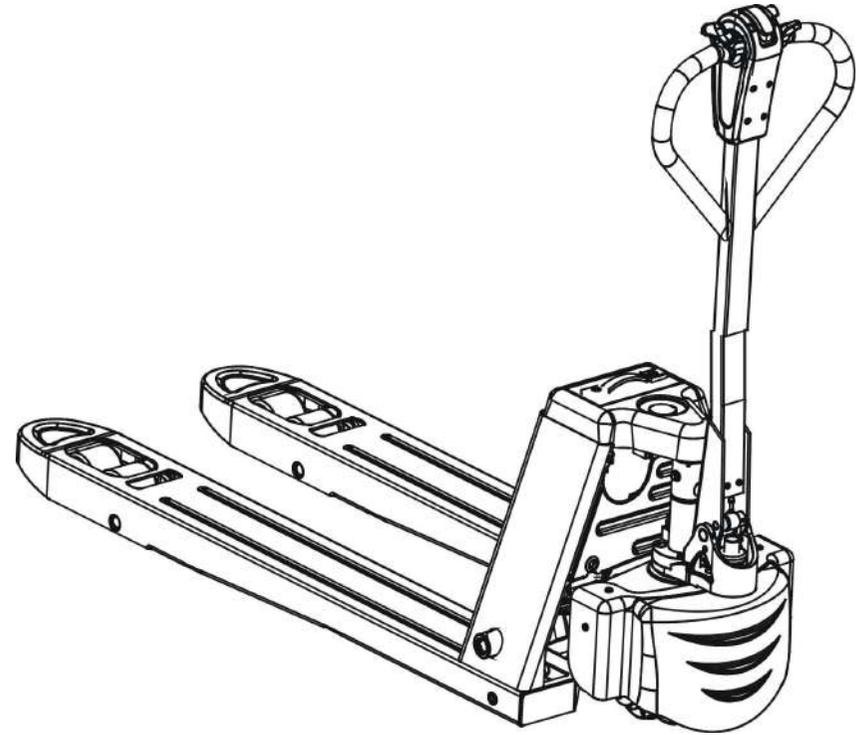
No.	Reference	No.	Reference
1	drive assembly	6	bolt
2	nut	7	controller cover
3	nut cover	8	bolt
4	bolt x 4	9	drive wheel
5	controller	10	wheel shaft



EPT15/18H(EPT33/40H)

Electric Pallet Truck

Parts Manual



- Warning** Read and observe all warnings on this unit before operating it.
- Warning** DO NOT operate this equipment unless all factory installed guards and shields are properly secured in place.

PARTS ORDERING INSTRUCTIONS

HOW TO ORDER

When ordering the parts, please supply part number, parts name, quantity, model and serial number of your machine. Supplying this information will assure prompt, efficient handling of your order.

Since your dealer carries many parts in stock and maintains up-to-date files on all parts, he will be able to process your order immediately. If, for some reasons, the parts is not in stock, he will order it from the factor. In either event, he maintains a current file of service manuals, which give all available parts ordering or technical information.

WHERE TO ORDER

Always order parts from the dealer who sold you the machine. If it is necessary for the dealer to order parts from the factory, he is able to get prompt service for you. Parts are shipped in accordance with shipping instructions given on the order.

INSTRUCTION FOR RETURNING PARTS

Under NO CIRCUMSTANCES parts will be accepted at the factory for credit without prior approval. We can not accept responsibility for parts returned without authorization.

If you have some parts which must be returned, contact your dealer. If he believes parts be returned, he will arrange for authorization to return the parts.

CHANGES

When changes are made to the machine, revised pages for this manual will be issued.

These pages must be inserted in your parts manual as soon as they are received. Failure to keep your parts manuals up to date will result in confusion and may cause you to order wrong parts.

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2020-08 4th Edition

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Fig.1 Handle assembly

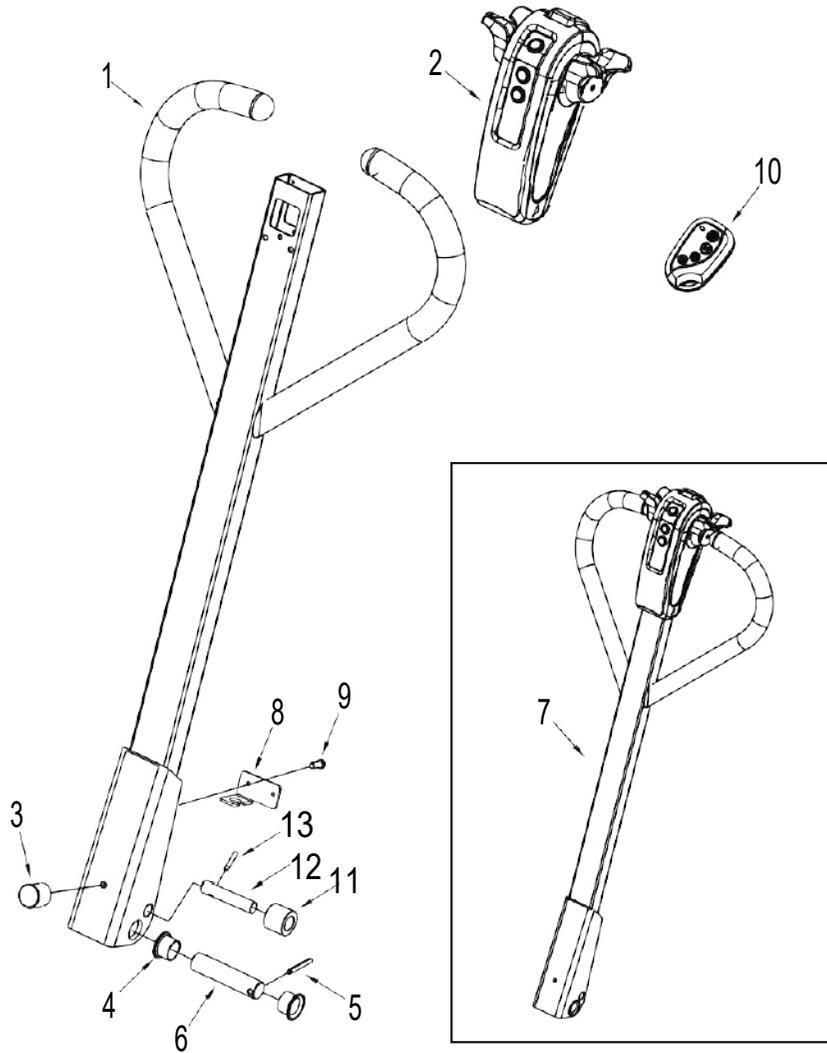


Fig.1 Handle assembly

Item#	Part No.	DESCRIPTION	QTY
1	31401001	Handle body	1
	30201002	Control box assy.	1
2	31101078	Control box assy. (Intelligent control) option	(1)
3	30202001	Limit washer (~2020.06.01)	1
4	21402003	Self-lubricating bearing 20X30X16.5	2
5	20901001	Spring pin Ø5x35	2
6	30202011	Handle shaft	1
7	30201013	Handle assy.	1
	31101079	Handle assy. (Intelligent control) option	(1)
8	31402006	Location block	1
9	20102402	Screw M4*8	2
10	31101080	Remote control (Intelligent control) option	2
11	31102038	Pressure Roller with bearing	1
12	31102039	Roller Axle	1
13	20901010	Spring pin 4*20	1

Fig.2 Control box assembly

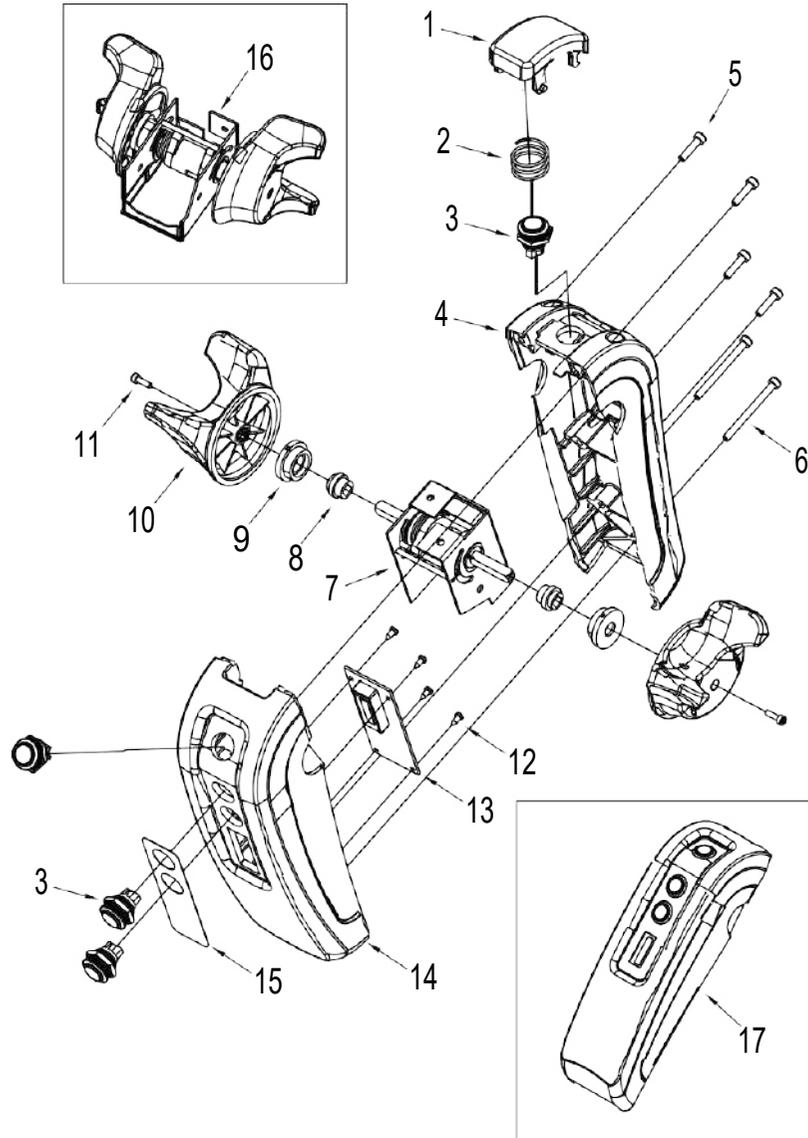


Fig.2 Control box assy.

Item	Part No.	DESCRIPTION	QTY
1	30202004	Emergency reverse button	1
2	30202005	Spring	1
3	10301010	Button Inching switch	4
4	30202002	Bottom cover	1
5	20101402	Screw M4X16	4
6	20101401	Screw M4X45	2
7	10301012	Potentiometer	1
8	30202008	Inner spacer column	2
9	30202007	Outer spacer column	2
10	30202009	Control Knob	2
11	20101301	Screw M3X10	2
12	20301002	Screw ST2.9*6.5	4
13	10301011	Monitor	1
13	10301061	Monitor (Intelligent control) option	1
14	30302003	Control box cover	1
15	30202006	Sticky board	1
16	31101012	Potentiometer assy.	1
17	31101013	Handle upper cover assy.	1
17	31101081	Handle upper cover assy. (Intelligent control) option	1

Fig. 3 Driving system

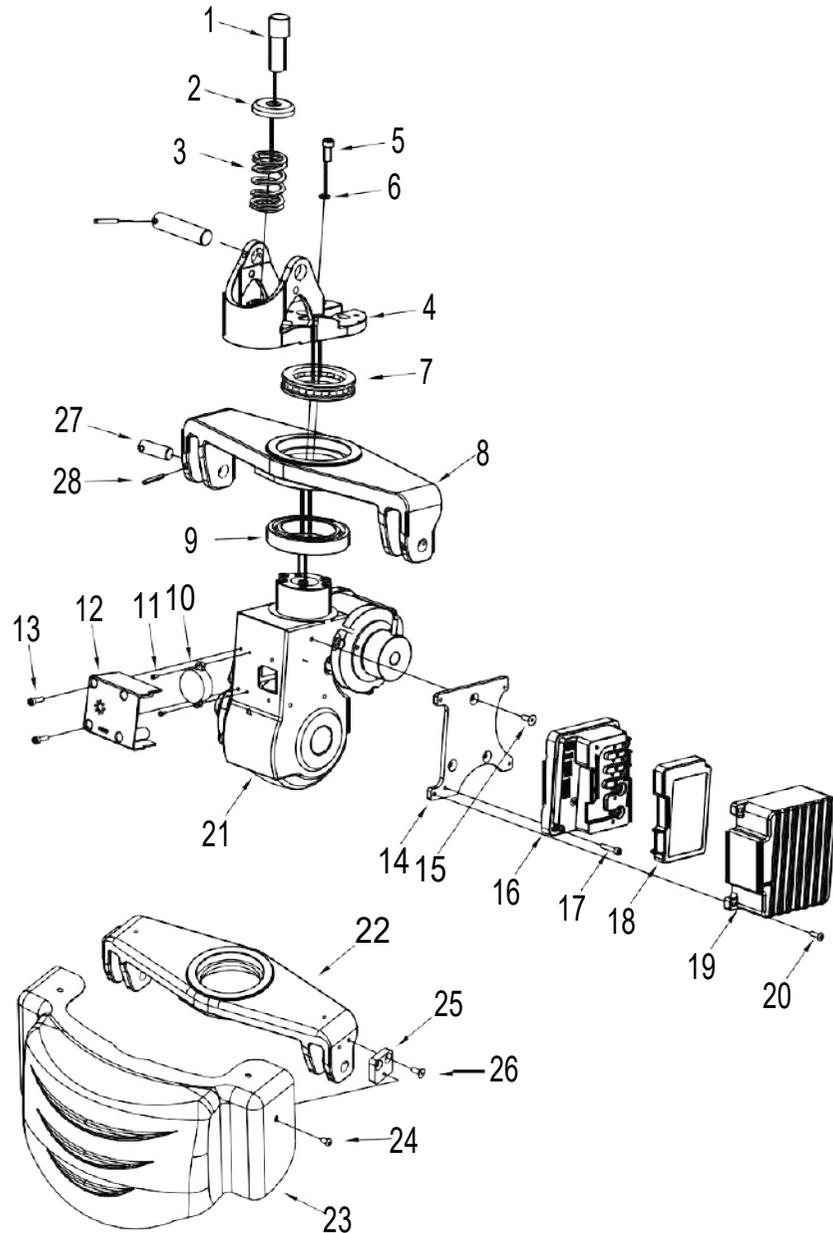


Fig.3 Driving system for EPT15H

Item	Part No.	DESCRIPTION	QTY
1	30202012	Axle	1
2	30202013	Spring cover	1
3	30202014	Spring	1
4	30202064	Handle socket (~2020.05.31)	1
	31402004	Handle socket (2020.06.01~)	1
5	20101802	Screw M8X25	4
6	20601001	Spring washer Ø8	4
7	20503001	Plane bearing	1
8	31302001	Continuous frame(Without drive wheel cover)	1
9	20501002	Bearing 6013-2RS	1
10	10301043	Buzzer	1
11	20102402	Screw M4*8	2
12	31102002	Wires cover	1
13	20101505	Screw M5X16	4
14	31102004	Mounting plate for controller	1
15	20103602	Screw M6X16	3
16	10301016	Controller	1
	10301062	Controller (Intelligent control) option	1
17	20101502	Screw M5X25	2
18	21102021	Wires cover for controller	1
19	31102001	Controller cover	1
20	20304502	Screw M5X16	3
21	31101001	Driving unit assy. (0.75Kw Motor)	1
22	30202030	Continuous frame (~2020.04.30)	1
	31302003	Continuous frame(2020.05.01~)	1
23	30302006	Cover (~2020.04.30)	1
	31502005	Cover standard 30mm ground clearance(2020.05.01~)	1
24	20102603	Screw M6X10	4
25	21102040	Overplate	2
26	20103603	Screw M6X20	4
27	30102007	Coupling shaft	2
28	20901002	Elastic Pin Ø5x40	2

Fig. 4 Driving system (For EPT18H)

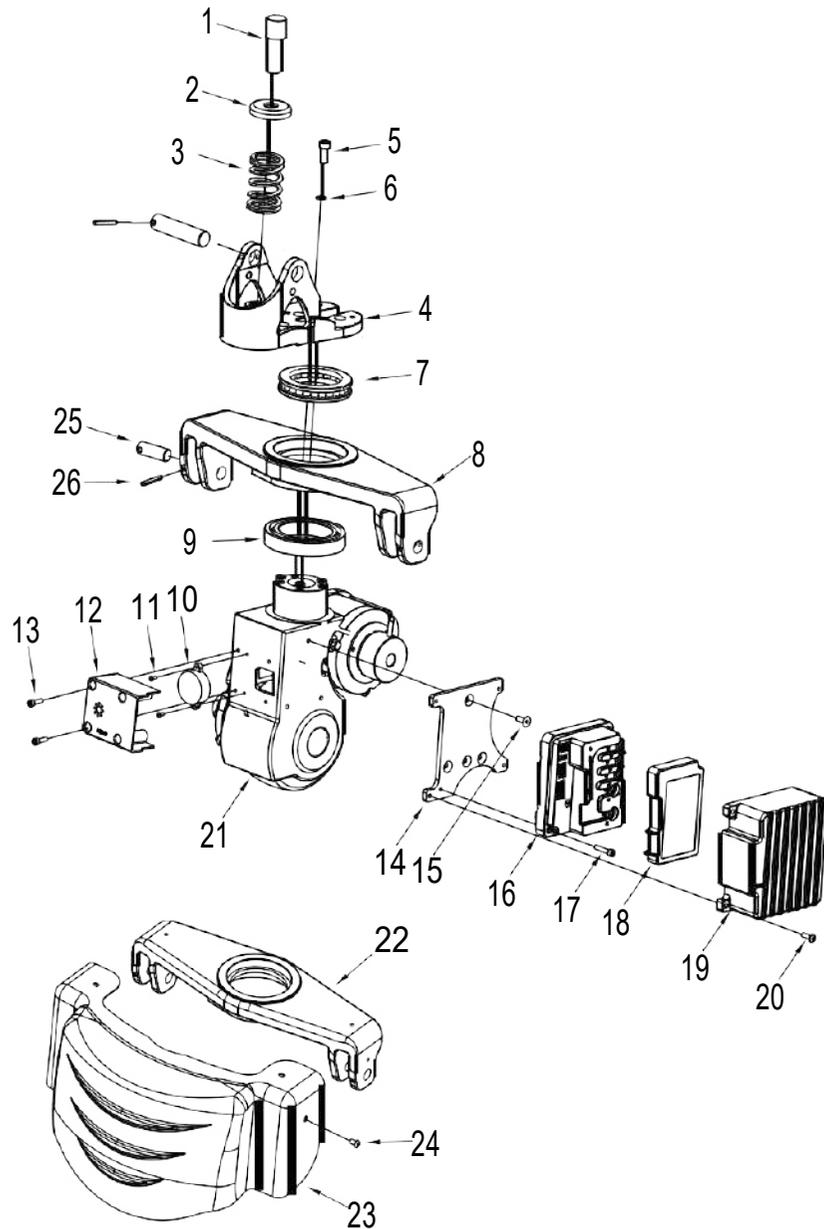


Fig.4 Driving system for EPT18H

Item	Part No.	DESCRIPTION	QTY
1	30202012	Axle	1
2	30202013	Spring cover	1
3	30202014	Spring	1
4	30202064	Handle socket (~2020.05.31)	1
	31402004	Handle socket (2020.06.01~)	1
5	20101802	Screw M8X25	4
6	20601001	Spring washer Ø8	4
7	20503001	Plane bearing	1
8	31502001	Continuous frame(Without drive wheel cover)	1
9	20501002	Bearing 6013-2RS	1
10	10301043	Buzzer	1
11	20102402	Screw M4*8	2
12	31102002	Wires cover	1
13	20101505	Screw M5X16	4
14	31102004	Mounting plate for controller	1
15	20103602	Screw M6X16	3
16	10301016	Controller	1
	10301062	Controller (Intelligent control) option	1
17	20101502	Screw M5X25	2
18	21102021	Wires cover for controller	1
19	31102001	Controller cover	1
20	20304502	Screw M5X16	3
21	31501004	Driving unit assy. (1.0Kw Motor)	1
22	31502004	Continuous frame	1
23	31502005	Cover	1
24	20102603	Screw M6X10	4
25	30102007	Coupling shaft	2
26	20901002	Spring Pin Ø5x40	2

Fig. 5 Drive assembly

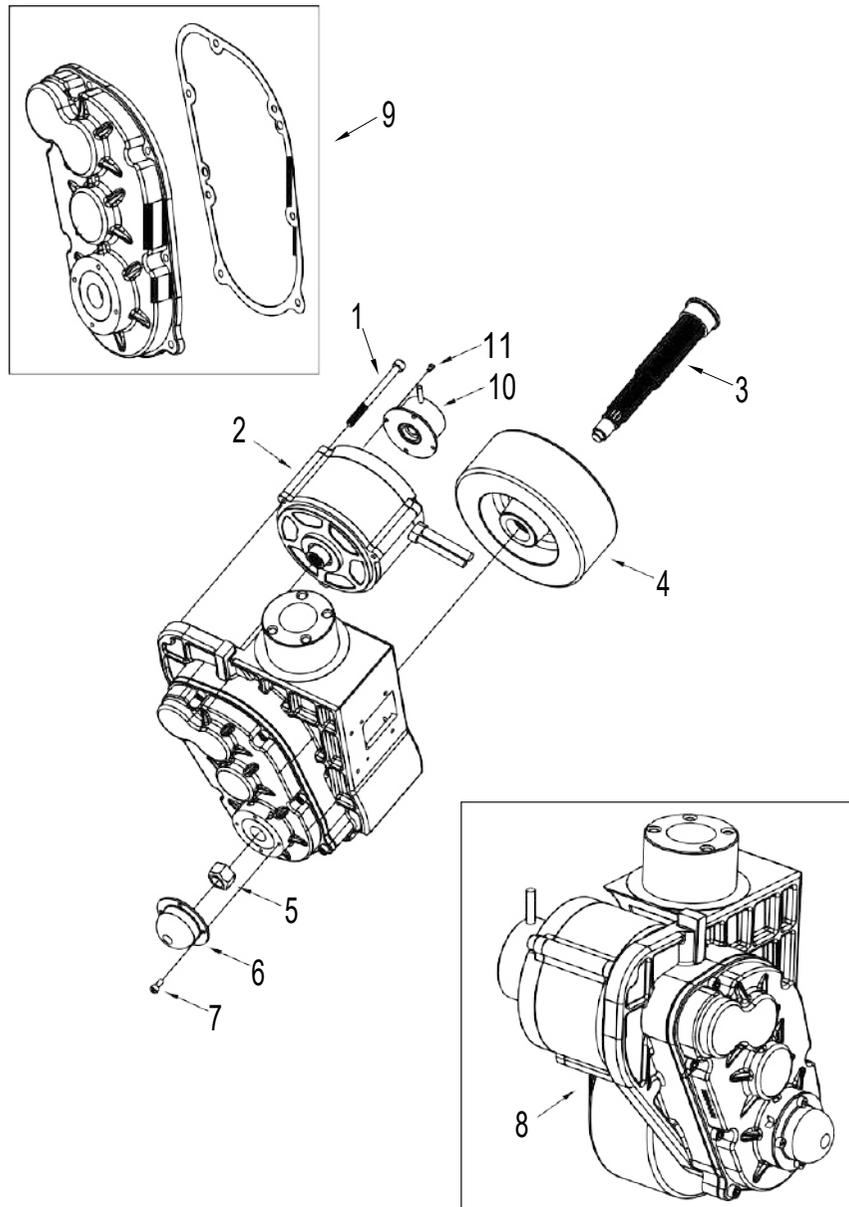


Fig.5 Driving unit Assy.

Item	Part No.	DESCRIPTION	QTY
1	20101605	Screw	3
2	31101003	Motor assy. 0.75Kw for EPT15H	1
2	31501005	Motor assy. 1.0Kw for EPT18H	1
3	31102013	Axle	1
4	31102003	Drive wheel Ø140*55mm (~2020.11.30)	1
4	31102129	Drive wheel Ø140*55mm (2020.12.01~)	1
4	31102090	Drive wheel Ø140*55mm with REACH certified (option)	1
5	20401004	Nut	1
6	31102007	Nut cap	1
7	20303003	Screw M4*10	4
8	31101001	Drive unit assy. for EPT15H	1
8	31501004	Drive unit assy. for EPT18H	1
9	31101082	Gearbox cover assy.	1
10	31101002	Brake assy.	1
11	20105001	Screw M4*10	3

Fig.6 Hydraulic unit assembly

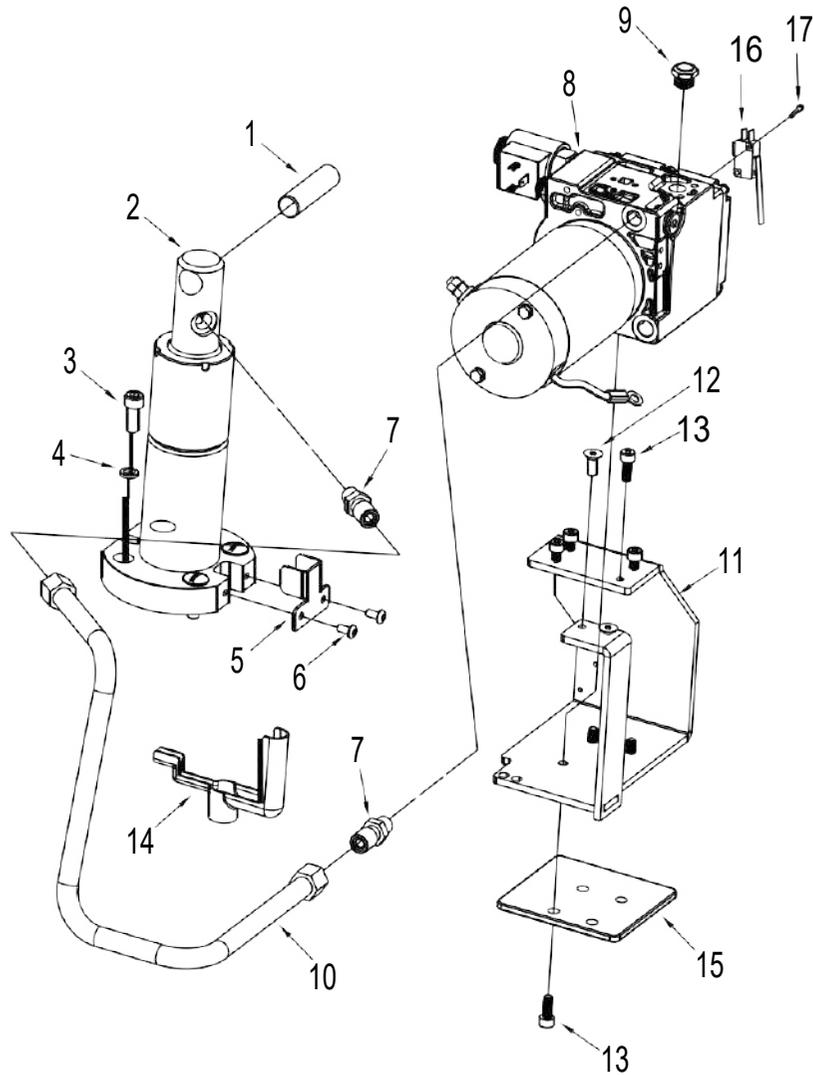


Fig.6 Hydraulic unit assy.

Item	Part No.	DESCRIPTION	QTY
1	30202024	Piston rod fixed shaft	1
	30201011	Cylinder assy. Ø32 (~2020.03.31)	1
2	31501002	Cylinder assy. Ø35 (2020.04.01~2020.6.30)	1
	31501014	New Cylinder assy. Ø35 (2020.06.15~)	1
3	20101801	Screw M8X20	4
4	20601001	Washer Ø8	4
5	30202035	Clip	1
6	20101603	Screw M6X10	2
7	30202022	Oil pipe connector	2
	31101004	Hydraulic unit assy. (DELI)	1
8	31101046	Hydraulic unit assy. (VIBO)	1
9	30202054	Plug Screw	1
10	30202021	Oil pipe	1
11	31102015	Mounting plate	1
12	20103602	Screw M6X16	1
13	20304503	Screw M6X16	9
14	31402005	Cable sleeve	1
15	30202036	Oil tank block	1
16	10301014	Lifting limitation switch	1
17	20202301	Screw M3X16	2

Fig.7 Hydraulic unit assy. (VIB0)

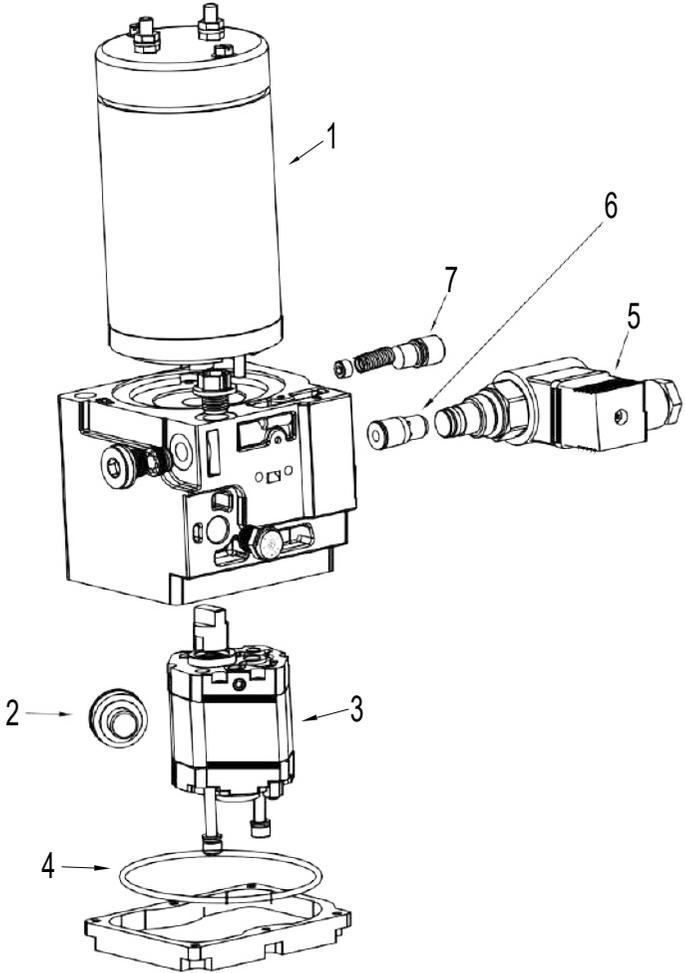


Fig.7 Hydraulic unit parts (VIB0)

Item	Part No.	DESCRIPTION	QTY
1	31101070	Hydraulic motor	1
2	31102074	Oil strainer	1
3	31102075	Hydraulic pump	1
4	31102077	O-ring φ90X2.65	1
5	31102080	Solenoid valve	1
6	31102081	Pressure relief valve	1
7	31102082	Relief value	1

Fig.8 Hydraulic unit assy. (DELI)

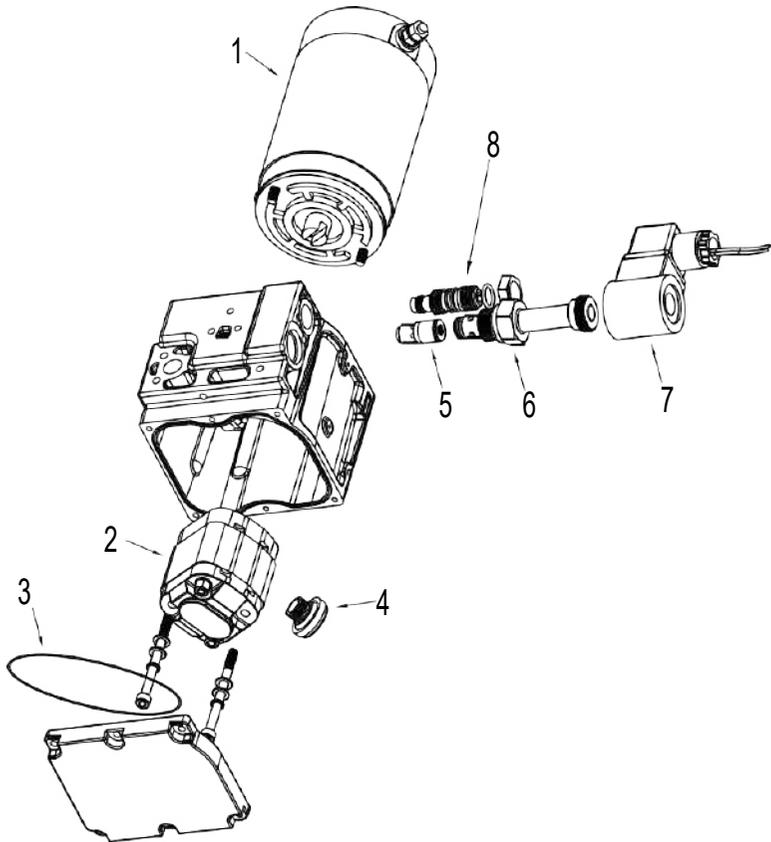


Fig.8 Hydraulic unit parts (DELI)

Item	Part No.	DESCRIPTION	QTY
1	31102093	Hydraulic motor	1
2	31102097	Oil strainer	1
3	21101013	O-ring $\phi 90 \times 2.65$	1
4	31102100	Oil strainer	1
5	31102102	Balance valve	1
6	31102103	Solenoid valve	1
7	31102104	Coil	1
8	31102108	Relief value assy.	1

Fig. 9 Cylinder assembly $\Phi 32$ (~2020.03.31)

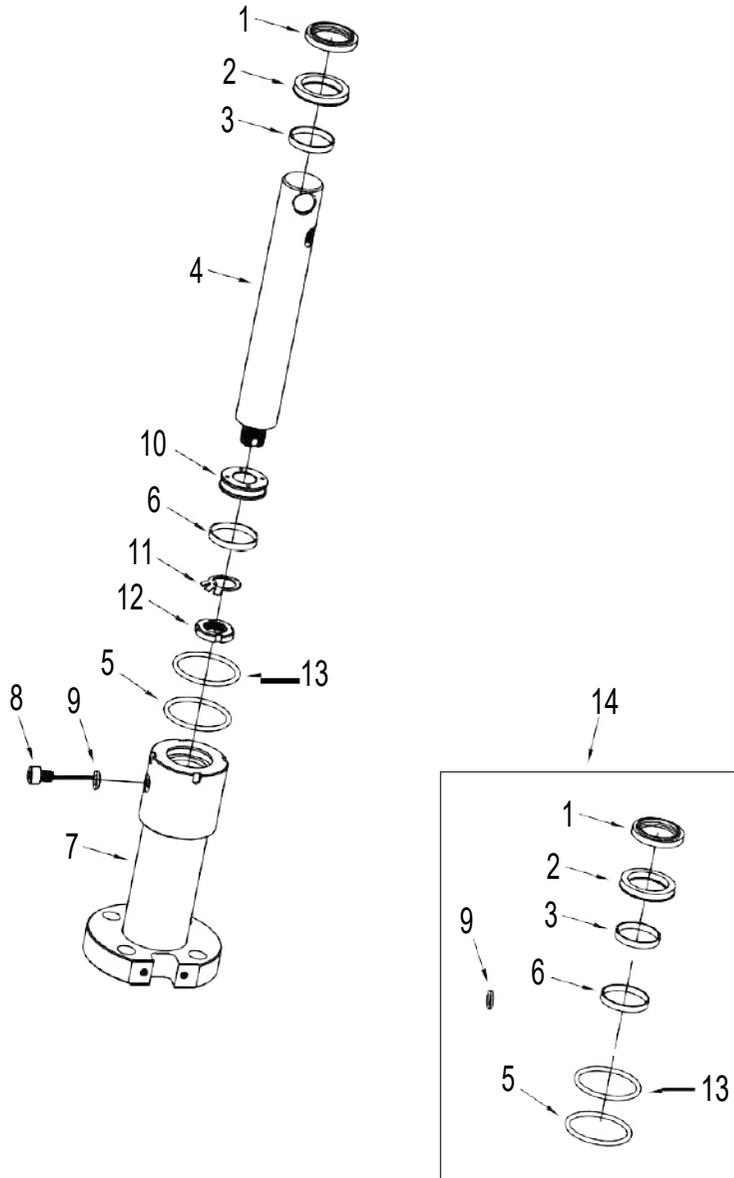


Fig. 9 Cylinder assy. $\Phi 32$
 (~2020.03.31)

Item	Part No.	DESCRIPTION	QTY
1	21201003	Dust ring $\Phi 32 \times 42.5 \times 6$	1
2	21102003	Seal washer $\Phi 32 \times 42 \times 6$	1
3	30202046	Guide belt	1
4	30202049	Piston rod $\Phi 32$	1
5	21101008	O-ring $\phi 48 \times 2.5$	1
6	30202047	Guide belt	1
7	30201030	Cylinder body	1
8	30101804	Screw M8X10	1
9	21103003	Washer	1
10	30202048	Guide sleeve	1
11	21501001	Retreating pad	1
12	20404001	Round nut M18	1
13	21101011	Nylon washer	1
14	31101014	Pump seal kits(***) Including item 1/2/3/5/6/13	1

Fig. 10 Cylinder assembly $\Phi 35$
(2020.04.01~06.30)

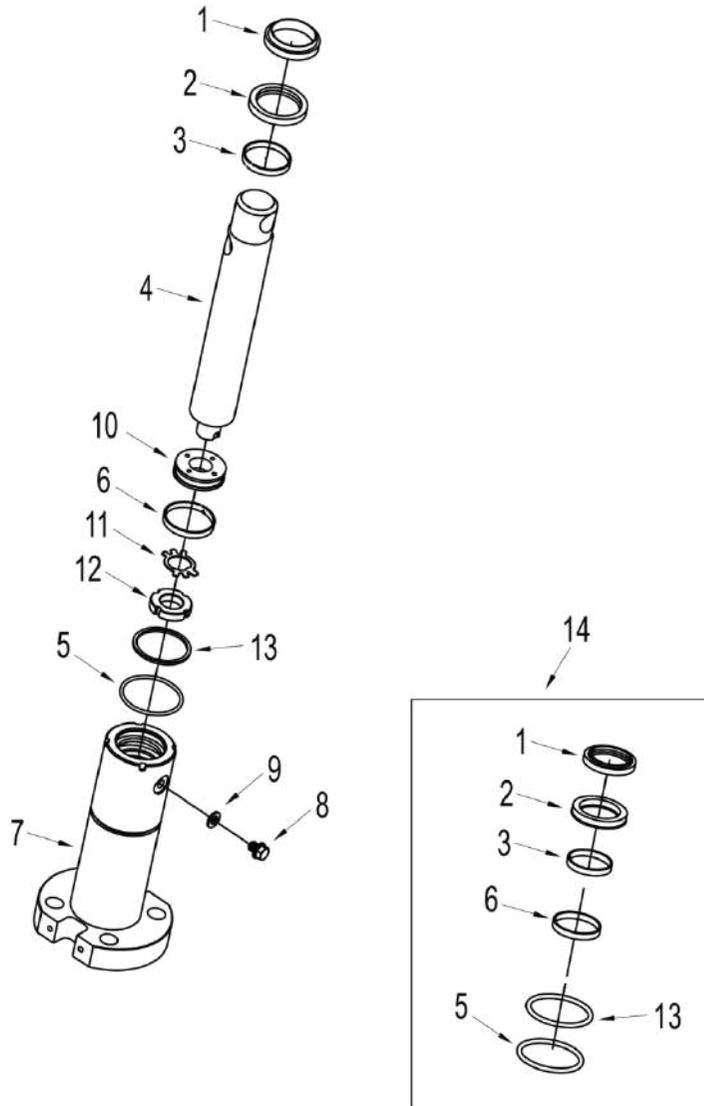


Fig. 10 Cylinder assy. $\Phi 35$
(2020.04.01~2020.06.30)

Item	Part No.	DESCRIPTION	QTY
1	21201005	Dust ring $\Phi 35 \times 43 \times 6$	1
2	21102005	Seal washer $\Phi 35 \times 45 \times 6$	1
3	31102030	Guide belt	1
4	31102031	Piston rod	1
5	21101012	O-ring $\phi 50 \times 3.5$	1
6	31102032	Guide belt	1
7	31101024	Cylinder body	1
8	30101804	Screw M8X10	1
9	21103003	Washer	1
10	31102029	Guide sleeve	1
11	21501001	Retreating pad	1
12	20404001	Round nut M18	1
13	31102028	Nylon washer	1
14	31101025	Pump seal kits (Including item 1/2/3/5/6/13)	1

Fig. 11 Cylinder assembly $\Phi 35$ (HUACHANG)
(2020.06.15~)

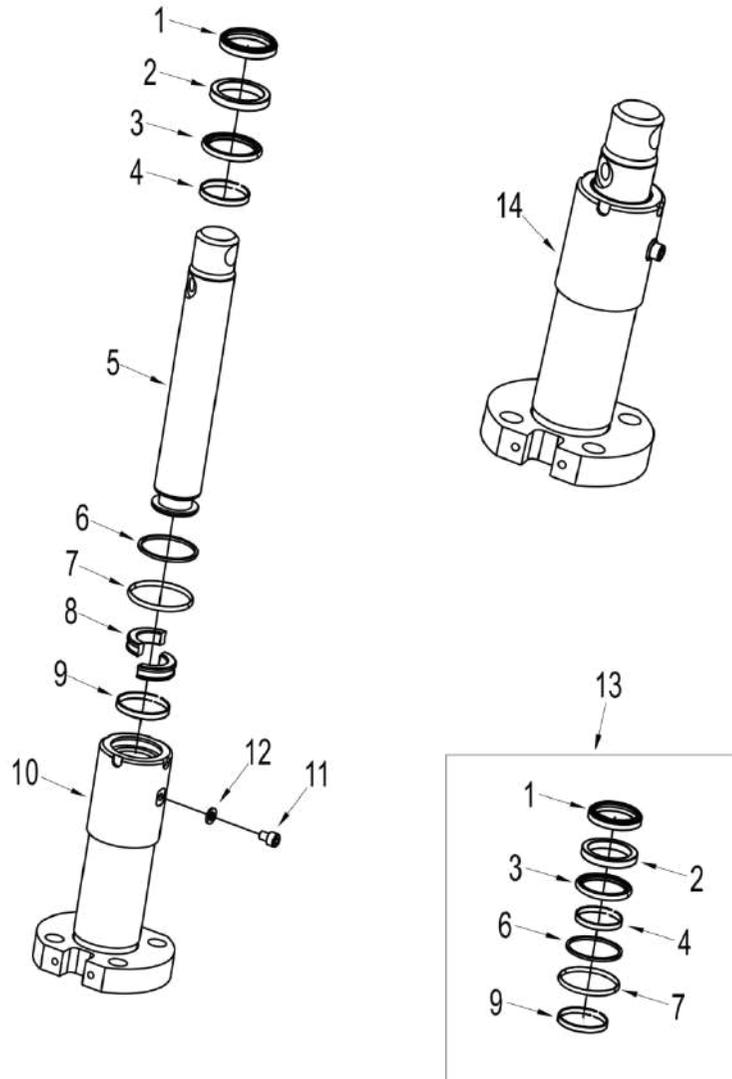


Fig. 11 New Cylinder assy. $\Phi 35$
(2020.06.15~)

Item	Part No.	DESCRIPTION	QTY
1	21201006	Dust ring $\Phi 35 \times 43 \times 6$	1
2	21102006	Seal washer $\Phi 35 \times 45 \times 6$	1
3	21105001	Stefan	1
4	31102111	Guide belt	1
5	31102110	Piston rod	1
6	31102112	Nylon washer	1
7	21101015	O-ring $\phi 50 \times 3.5$	1
8	31102113	Guide sleeve	2
9	31102114	Guide belt	1
10	31101085	Cylinder body	1
11	20101608	Screw M6X8	1
12	21103005	Washer	1
13	31101086	Pump seal kits (Including item 1/2/3/4/6/7/9)	1
14	31501014	New Cylinder assy. $\Phi 35$ (2020.06.15~)	1

Fig. 12 Frame

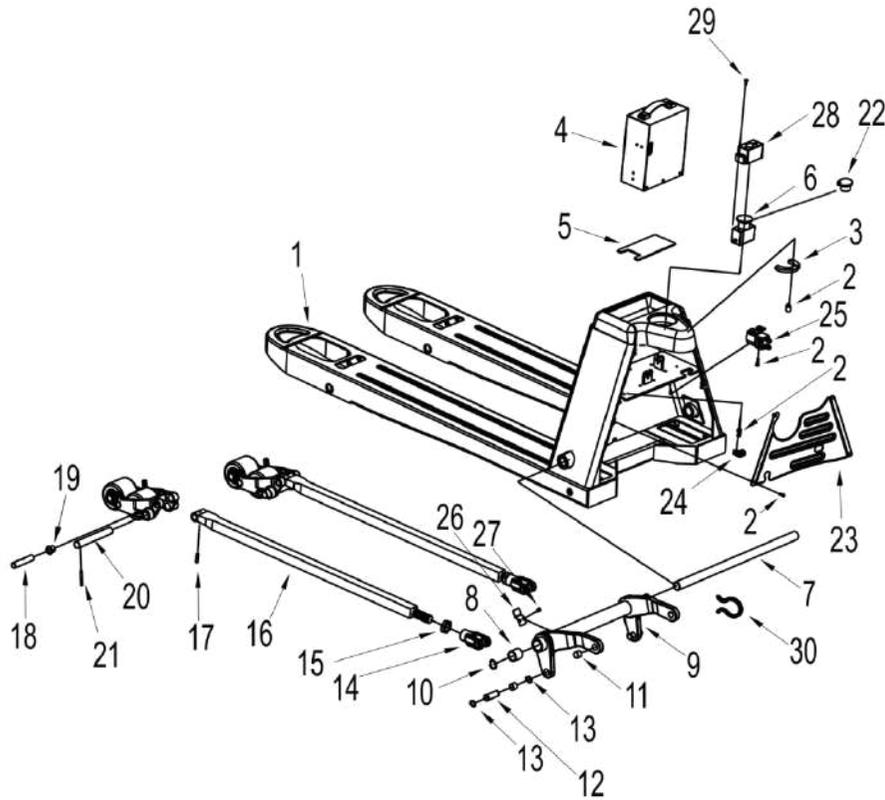


Fig. 12 Frame

Item	Part No.	DESCRIPTION	QTY
	31101036	Frame 550*1150	1
1	31101041	Frame 685*1150	1
	31101042	Frame 685*1220	1
2	20304502	Screw M5X16	2
3	31102041	Cover plate	1
	10301047	Li-Battery 48V/10Ah (standard) (~2020.11.30)	1
	10301051	Li-Battery 48V/15Ah (option) (~2020.11.30)	1
4	10301092	New Li-Battery 48V/10Ah (standard) (2020.12.01)	1
	10301091	New Li-Battery 48V/15Ah (option) (2020.12.01)	1
5	30102022	Cushion block	1
6	10301002	Emergency Stop Switch	1
7	30102021	Long Shaft (550)	1
	30102031	Long Shaft (685)	1
8	21401001	Self-Lubricating Bearing 30X25X30	2
	31401004	Rocker Arm (550) for EPT15H	1
	31401005	Rocker Arm (685) for EPT15H	1
9	31501001	Rocker Arm (550) for EPT18H	1
	31501003	Rocker Arm (685) for EPT18H	1
10	20802002	Gasket Ø25	2
11	21401002	Self-Lubricating Bearing 16X18X15	4
12	30102024	Axle	2
13	20801001	Gasket Ø16	4
14	30102059	Joint	2
15	20403001	Nut M22X1.5	2
	30101014	Connecting Rod (1150)	2
	30101015	Connecting Rod (1220)	2
17	20901004	Spring Pin Ø5x25	2
18	30102058	Connected Shaft	2
19	21402002	Self-Lubricating Bearing 16X18X17	4
20	30102025	Shaft	2
21	20901002	Spring Pin Ø5x40	2
22	10301008	Emergency Stop Switch Cover	1
	31102042	Cover 550	1
23	31102043	Cover 685	1
	30202038	Cables sleeve	1
25	31102020	Contactors	1
26	31102018	Limitation block	1
27	20202501	Screw M5X10	2
28	31402002	Switch sleeve	1
29	20103501	Screw M5X10	2
	31102054	Nylon gasket 3mm	*
30	31102055	Nylon gasket 2mm	*

Fig. 13 Double loading wheel assembly

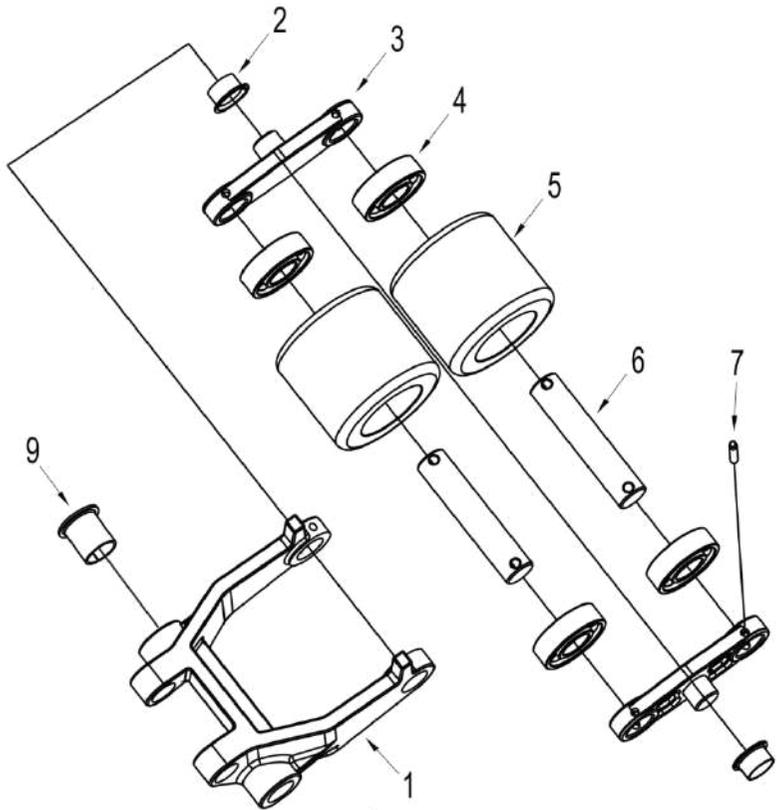


Fig.13 Double loading wheel Assy.

Item	Part No.	DESCRIPTION	QTY
1	30102057	Wheel Fork	2
2	21402001	Self-Lubricating Bearing 18X20X12	4
3	30102027	Tandem Mounting Plate	4
4	20501001	Bearing 6204-2RS	8
5	30102029	Double PU Loading Wheel 80*70mm	4
5	31102091	Double PU Loading Wheel 80*70 with REACH certified	4
6	30102028	Axle	4
7	20901003	Spring Pin Ø5x30	8
8	30101025	Double PU Loading Wheel ASY.	2
8	30101066	Double PU Loading Wheel ASY. with REACH certified	2
9	21402004	Self-Lubricating Bearing 20X23X26.5	2

Fig.14 Single loading wheel assembly

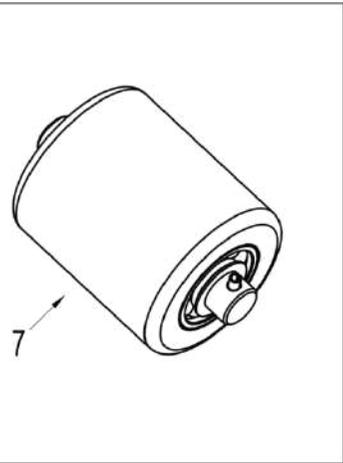
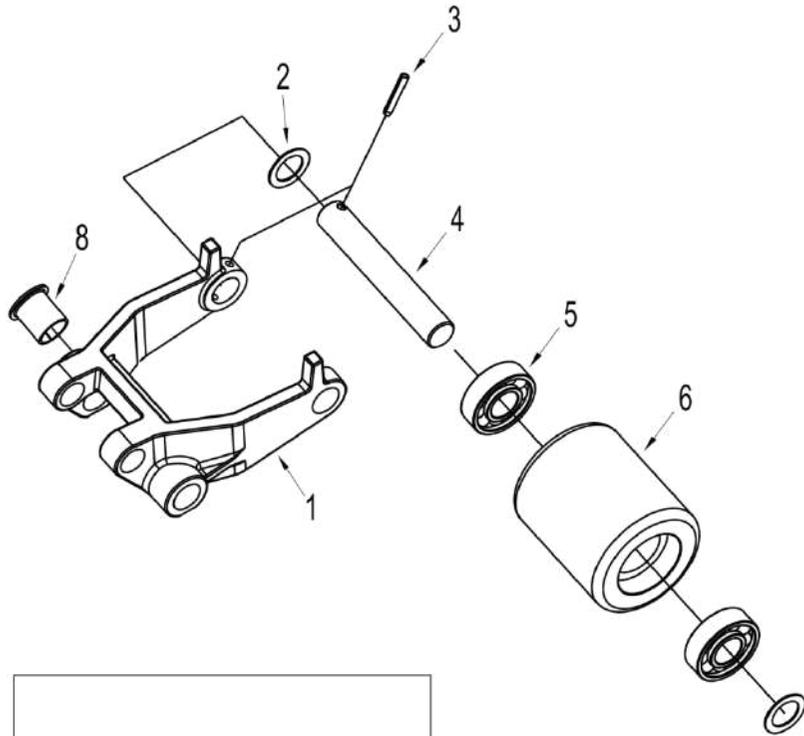


Fig.14 Single loading wheel Assy.

Item	Part No.	DESCRIPTION	QTY
1	30102057	Wheel Fork	2
2	30102082	Washer	4
3	20901003	Spring Pin Ø5x30	2
4	30102080	Axle	2
5	20501001	Bearing 6204-2RS	4
6	30102081	Single PU Loading Wheel 80*93	2
	31102092	Single PU Loading Wheel 80*93 with REACH certified	2
7	30101026	Single PU Loading Wheel ASY.	2
	30101067	Single PU Loading Wheel ASY. with REACH Certified	2
8	21402004	Self-Lubricating Bearing 20X23X26.5	2

Fig.15 Charger & Cables

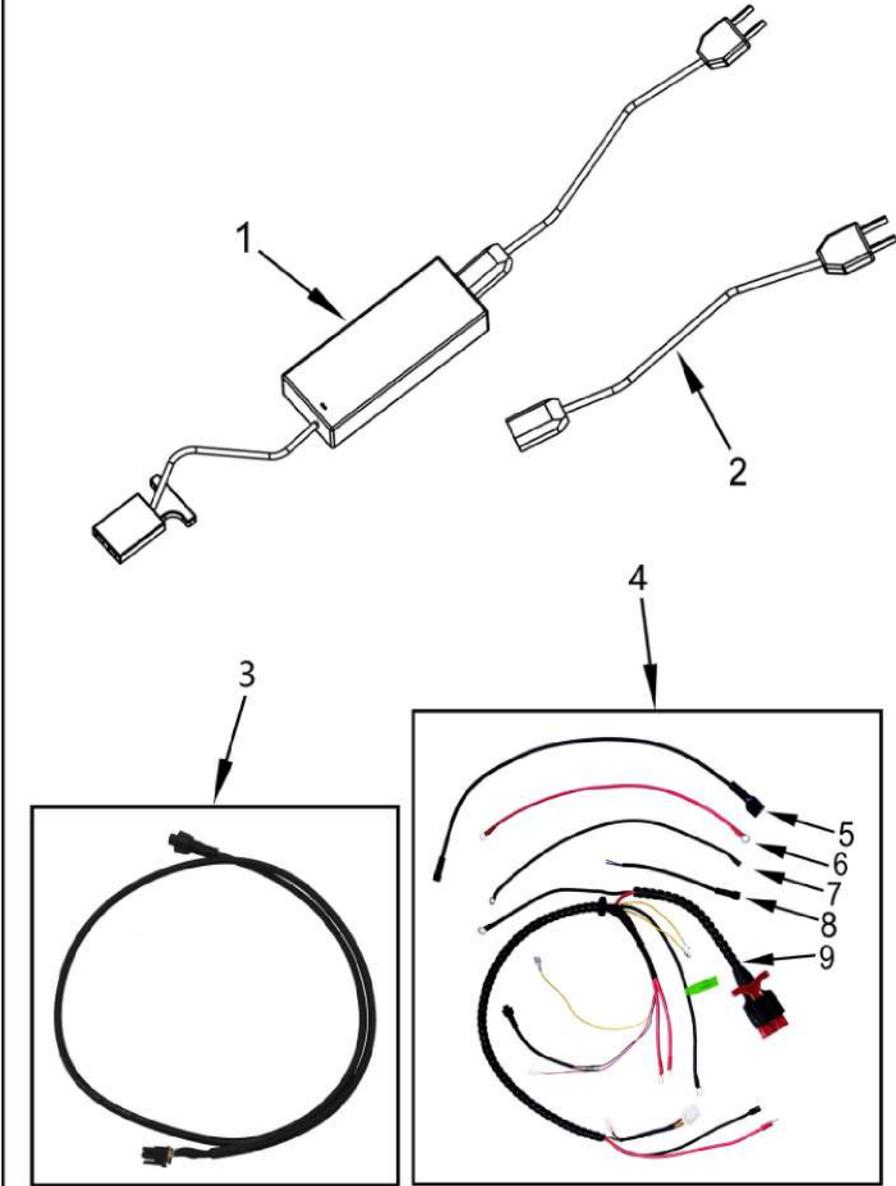


Fig.15-1 Charger and cable harness

Item	Part No.	DESCRIPTION	QTY
1	10301063	Old Charger 48V/2A(100~240V) European standard	1
	10301064	Old Charger 48V/2A(100~240V) Australian standard	1
	10301065	Old Charger 48V/2A(100~240V) American standard	1
	10301066	Old Charger 48V/2A(100~240V) British standard	1
	10301071	Old Charger 48V/2A(100~240V) Indian standard	1
	10301072	Old Charger 48V/2A(100~240V) Brazilian standard	1
	10301073	Old Charger 48V/2A(100~240V) Japanese Standard(PSE certified)	1
	10301074	Old Charger 48V/2A(100~240V) South African standard	1
	10301075	Old Charger 48V/2A(100~240V) Israeli standard	1
	10301076	Old Charger 48V/2A(100~240V) Italian standard	1
	10301085	Old Charger 48V/2A(100~240V) Switzerland	1
	10301086	Old Charger 48V/2A(100~240V) Germany standard	1
	10301067	Old Quick charger 48V/5A(100~240V) European standard (Option)	1
	10301068	Old Quick charger 48V/5A(100~240V) Australian standard (Option)	1
(1)	10301069	Old Quick charger 48V/5A(100~240V) American standard (Option)	1
	10301070	Old Quick charger 48V/5A(100~240V) British standard (Option)	1
	10301077	Old Quick charger 48V/5A(100~240V) Indian standard (Option)	1
	10301078	Old Quick charger 48V/5A(100~240V) Brazilian standard (Option)	1
	10301079	Old Quick charger 48V/5A(100~240V) Japanese Standard(PSE certified) (Option)	1
	10301080	Old Quick charger 48V/5A(100~240V) South African standard (Option)	1
	10301081	Old Quick charger 48V/5A(100~240V) Israeli standard (Option)	1
	10301082	Old Quick charger 48V/5A(100~240V) Italian standard (Option)	1
	10301083	Old Quick Charger 48V/5A(100~240V) Switzerland (Option)	1
	10301084	Old Quick Charger 48V/5A(100~240V) Germany standard(Option)	1
	10301098	New Greatway Charger 48V/2A European standard	1
	10301105	New Greatway Charger 48V/2A Australian standard	1
	10301099	New Greatway Charger 48V/2A American standard 110V	1
	10301106	New Greatway Charger 48V/2A British standard	1
10301107	New Greatway Charger 48V/2A Indian standard	1	
1	10301108	New Greatway Charger 48V/2A(Brazilian standard	1
	10301109	New Greatway Charger 48V/2A Japanese Standard(PSE certified)	1
	10301110	New Greatway Charger 48V/2A South African standard	1
	10301111	New Greatway Charger 48V/2A Israeli standard	1
	10301112	New Greatway Charger 48V/2A Italian standard	1
	10301113	New Greatway Charger 48V/2A Switzerland	1
	10301114	New Greatway Charger 48V/2A Germany standard	1

Fig.15 Charger & Cables

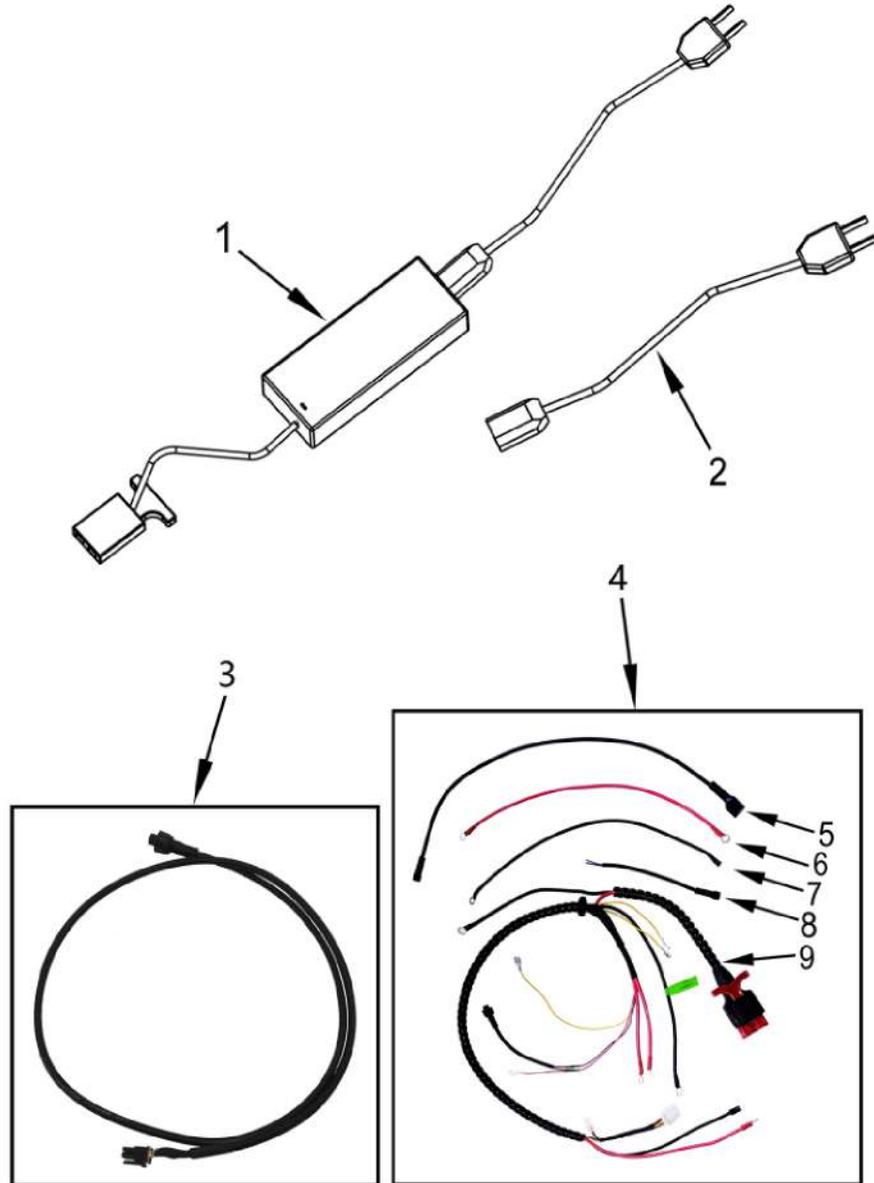


Fig.15-2 Charger and cable harness

Item	Part No.	DESCRIPTION	QTY
	10301100	New Greatway Quick charger 48V/5A European standard (Option)	1
	10301115	New Greatway Quick charger 48V/5A Australian standard (Option)	1
	10301101	New Greatway Quick charger 48V/5A American standard (Option) 110V	1
	10301116	New Greatway Quick charger 48V/5A British standard (Option)	1
	10301117	New Greatway Quick charger 48V/5A Indian standard (Option)	1
(1)	10301118	New Greatway Quick charger 48V/5A Brazilian standard (Option)	1
	10301119	New Greatway Quick charger 48V/5A Japanese Standard(PSE certified) (Option) 110V	1
	10301120	New Greatway Quick charger 48V/5A South African standard (Option)	1
	10301121	New Greatway Quick charger 48V/5A Israeli standard (Option)	1
	10301122	New Greatway Quick charger 48V/5A Italian standard (Option)	1
	10301123	New Greatway Charger 48V/5A Switzerland (Option)	1
	10301124	New Greatway Charger 48V/5A Germany standard (Option)	1
	10302059	Plug(American Standard) for New Greatway 48V/2A charger	1
	10302060	Plug(European Standard) for New Greatway 48V/2A charger	1
	10302061	Plug(Australian Standard) for New Greatway 48V/2A charger	1
	10302062	Plug(British Standard) for New Greatway 48V/2A charger	1
	10302063	Plug(Indian Standard) for New Greatway 48V/2A charger	1
	10302064	Plug(Brazilian Standard) for New Greatway 48V/2A charger	1
2	10302065	Plug(Japanese Standard with PSE certified) for New Greatway 48V/2A charger	1
	10302066	Plug(South African Standard) for New Greatway 48V/2A charger	1
	10302067	Plug(Israeli Standard) for New Greatway 48V/2A charger	1
	10302068	Plug(Italian Standard) for New Greatway 48V/2A charger	1
	10302069	Plug(Switzerland Standard) for New Greatway 48V/2A charger	1
	10302070	Plug(Germany Standard) for New Greatway 48V/2A charger	1
	10302059	Plug(American Standard) for New Greatway 48V/2A charger	1
	10302028	Plug(American Standard) for New Greatway 48V/5A quick charger	1
	10302027	Plug(European Standard) for New Greatway 48V/5A quick charger	1
	10302026	Plug(Australian Standard) for New Greatway 48V/5A quick charger	1
	10302029	Plug(British Standard) for New Greatway 48V/5A quick charger	1
	10302038	Plug(Indian Standard) for New Greatway 48V/5A quick charger	1
(2)	10302048	Plug(Brazilian Standard) for New Greatway 48V/5A quick charger	1
	10302049	Plug(Japanese Standard with PSE certified) for New Greatway 48V/5A quick charger	1
	10302050	Plug(South African Standard) for New Greatway 48V/5A quick charger	1
	10302032	Plug(Israeli Standard) for New Greatway 48V/5A quick charger	1
	10302051	Plug(Italian Standard) for New Greatway 48V/5A quick charger	1
	10302052	Plug(Switzerland Standard) for New Greatway 48V/5A quick charger	1
	10302053	Plug(Germany Standard) for New Greatway 48V/5A quick charger	1
3	10302018	Handle cables	1
4	10302019	Truck body cables	1
5	10302040	Truck body communication line	1
6	10302041	B+ lead wire for hydraulic motor	1
7	10302042	B- lead wire for hydraulic motor	1
8	10302043	Lead wire for lowering solenoid valve	1
9	10302044	Truck body cable harness integration	1