

CE

CBD20X
FULL ELECTRIC PALLET TRUCK
OPERATION INSTRUCTIONS



Carefully read the instructions and obey all kinds of warning labels before operation.
Please confirm that the vehicle is safe without damage.

STATEMENT

The CBD20X vehicles manufactured by our company are only used in the factories, tourist attraction, playground and other areas specified by Regulation on Special Equipments Safety Supervision.

Mar 16, 2019

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Reserve it well for future reference!

1 . Product Introduction and Safety Guidelines

Welcome to use this full electric pallet truck. Please read this manual carefully to fully understand how to operate this truck safely and skillfully.

- 1.1 This truck is mainly made of recyclable steels to ensure its environmental friendliness. Any waste produced during the process of operating, maintaining, cleaning or disassembling shall be recycled or treated according to local regularities and by professionals in the designated area. Any improper treatment to the waste of those such as cylinder, battery or electronics could pose a hazard to the environment or personnel.
- 1.2 This truck is a logistics equipment for carrying and moving goods on the ground, and do not use it for carrying persons.
- 1.3 Operate and maintain this truck strictly according to this manual.
- 1.4 Only the trained personnel are allowed to operate this truck, who know well the instructions and follow the safety guidelines.
- 1.5 The users shall ensure that this truck is only used for the specified purposes and avoid any hazard to the safety of the user or any other persons.
- 1.6 Working conditions: It is advisable to use this truck on the flat, dry and clean cement or other hard ground. The operating temperature is from 5°C to 40°C. Special protecting devices are needed if used below 0°C.
- 1.7 Avoid any overloading or uneven loading.
- 1.8 Do not use this truck in the area where the fire accident and explosion may happen or in the corrosive, rusty and dusty areas.
- 1.9 Do not change the spare parts, especially the safety devices. Attention: Do not adjust the pressure relief valves of all models. Use the spare parts provided by manufacturers of this truck only.
- 1.10 Do not maintain or modify this truck unless you are trained and authorized.
- 1.11 Hazardous area: It usually refers to the area where people may suffer from injuries. The danger mainly comes from the truck itself, its loading parts, and also includes the possibility of sudden drop of goods or devices while moving or lifting the goods.
- 1.12 While operating, the users take the full responsibility of the truck. Prohibit any other unauthorized personnel operating the truck. And do not use it to carry or lift people.

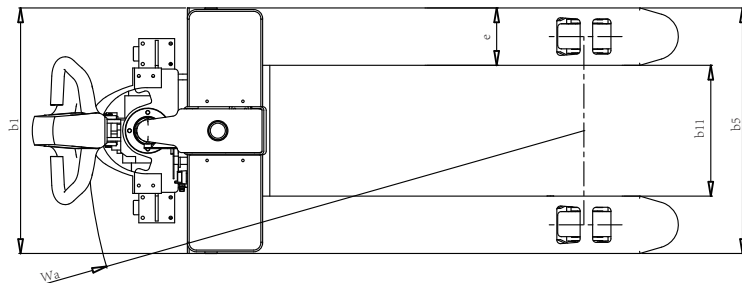
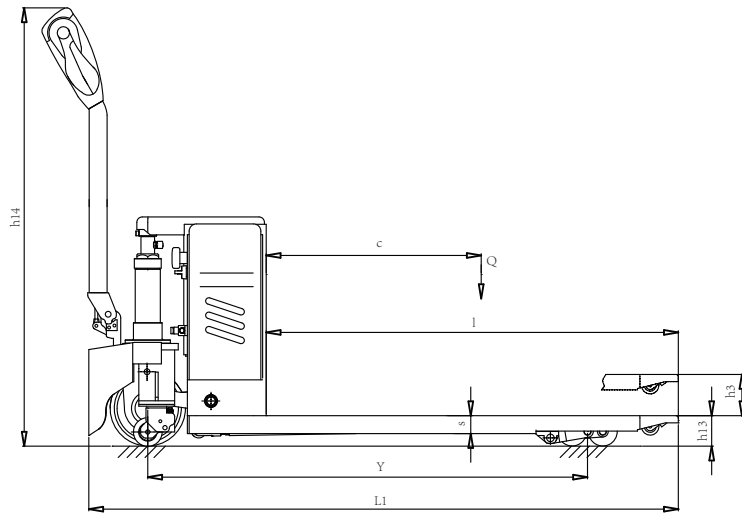
- 1.13 If any damage or defect is found on the truck, stop using it immediately and report to the supervisor in time. The truck with faulty functions, such as worn wheels or brake dysfunction, is not allowed to use before a proper treatment.
- 1.14 Do not park the truck on slopes. Turn off the power and take off the key before leaving. Disconnect the battery plug for a long time parking.
- 1.15 Protective shoes: according to the Standard EN-345:1-S1, wear the standard protective shoes while operating the truck.
- 1.16 Do not extend your feet out of the pedal while operating a truck with the pedal in case of injuries.
- 1.17 Charge the battery in ventilating area and keep off fire or other inflammable and explosive stuff.
- 1.18 After a long time parking, please recharge the battery before using it.
- 1.19 The equipment user mentioned in this manual refers to any natural or legal person who uses the truck himself or appoints others to use it. Under some special circumstances such as for a lease, the equipment user shall sign a contract with other users as the owner party and bear the obligations to regulate the operation.
- 1.20 The equipment user shall guarantee that it is only used for specified purposes and avoid any potential hazard to the operator and other persons. Besides, the user shall strictly observe the accident prevention procedures, safety rules and operating and maintaining rules. Make sure that all operators read this manual carefully and understand fully.
- 1.21 **Special Attention: The main power switch is the emergency stop switch. For the sake of heat dissipation and equipment safety, the battery meter and fan start to work if the emergency stop switch is on. For the purpose of equipment safety and energy conservation, and also truly indicating the service time, please turn off the power if not using the truck for a long time.**
- 1.22 **A built-in charger is the standard configuration for this truck. Press the emergency stop switch (OFF), otherwise, it will damage the electric elements. Whether the emergency stop switch is on or off can be judged by the battery meter: the meter goes out if you press the switch (OFF); and the meter goes on if you turn on the switch (ON).**

WARNING

Our warranty will turn invalid automatically if this operating manual is violated. And this is also applied to the illegally export products without the manufacturer's authorization. If the client or any other third party operates this truck illegally without the permission of our Customer Service Department, our company will not take the responsibility for any loss.

NOTICE: For the need of further improvement to the product, the manufacture reserves the right to modify the design or specifications without further notice and incurring in any sanction.

2 . Product Size and Diagram



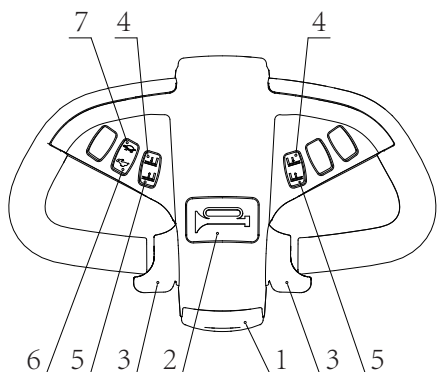
3 . Technical Parameters List

PROPERTY	Model		CBD20X
	Capacity	Q(Kg)	2000
	Load center	C(mm)	600
	Type of lifting		Electric
	Operating type		Walkie
WHEEL	Material		PU
	Wheel base	Y(mm)	1230/1300
	Quantity of Driving/Balance/Bearing Wheel		1×2/4
	Bearing wheel size	mm	Φ80×70
	Driving wheel size	mm	Φ210×75
	Balance wheel size	mm	Φ75×46
SIZE	Min.fork height	h_{13} (mm)	85
	Max.fork height	mm	200
	Max.lifting height	h_3 (mm)	115
	Fork outside width	b_5 (mm)	560/685
	Fork inside width	b_{11} (mm)	240/365
	Fork length	l (mm)	1150/1220
	Single fork size	e/s (mm)	160/50
	Overall length	L_1 (mm)	1650/1720
	Overall width	b_i (mm)	685
	Overall height	h_{14} (mm)	1220
	Handle vertical height	mm	1220
	Min.turning radius	W_a (mm)	1385/1455
PERFORMANCE	Travel speed(laden/unladen)	km/h	4/5
	Lifting speed(laden/unladen)	mm/s	25/30
	Lowering speed(laden/unladen)	mm/s	30/20
	Fast/slow adjustment function		Yes
	Gradeability	%	≤4
MOTOR	Driving mode		DC
	Drive motor	Kw	24V0.75KW
	Lift motor	Kw	24V0.8KW
BATTERY	Battery capacity	V/Ah	2×12/80
	Charger		24V12A
WEIGHT	Battery weight	Kg	24
	Net weight	Kg	230

4 . Operating Instructions

- 4.1 Pay attention to the personnel training and follow the safety rules. Check the condition of the truck and read every warning sign.
- 4.2 Check the battery meter before using. When the battery goes below 30% (the meter shows 3 bars), the controller will shut down the lifting function for protection, and the moving speed will also slow down into half. If this happens, please recharge immediately, otherwise it will shorten the life span of battery!
- 4.3 Handle function: fork lifting or descending, driving forward or backward, emergency reverse, handle turning, horn, braking, etc.

Operating Buttons and Diagram



Structure & Function of Control Handle

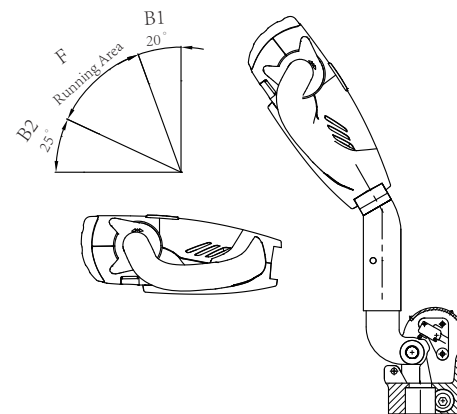
- 1.Back Button
- 2.Horn Button
- 3.Forward & Backward Button
- 4.Descending Button
- 5.Lifting Button
- 6.Fast mode
- 7.Slow mode

- 4.4 Correct operating procedure:
 - ① Pull the emergency stop switch (ON);
 - ② turn on the key switch (electric lock);
 - ③ press the handle to the working position (photoelectric switch lights on);
 - ④ rotate the handle accelerator.

The correct operating procedure is the precondition to ensure the safety of personnel. If the procedure is incorrect, the truck will not move (the Fault LED flickers)! Re-operate according to the correct procedure.

- 4.5 Adjust the angle and position of the handle to control the drive.
Turn the drive switch to the needed direction (forward or backward) within the moving area F. The greater the angle is, the faster it moves. The personnel should control the speed based on the real situation; drive slowly in the turning, narrow roadway, slope or the unsighted places.
- 4.6 When the electric lock switch is on and without any operation, the controller will go into sleeping mode for power-saving, and the truck cannot move. Restart the electric lock switch.

Suggestion: Turn off the electric lock switch and emergency stop button if not used for a long time.



- 4.7 Brake: Release the handle (back to the B1 area automatically), or push it to the B2 area (release the drive switch and back to the original position), or pull out the plug (cut the power) and other ways to brake.
- 4.8 Move the truck without driving function: release the electromagnetic brake before moving (screw off after the motor moves to the round maintenance window).

5 . Battery Charging

- 5.1 Park the truck before any operation on the battery. Only the trained personnel are allowed to operate in non-smoking and well-ventilated area equipped with fire extinguishers.
- 5.2 Standard battery. Charge when the power goes below 30%. Press the emergency stop switch (OFF) while charging. Otherwise it may cause damage to the electric elements!
- 5.3 Charge the battery promptly when it runs out. No more than 24 hours. Charge the battery fully once a month even when it is not used for a long time.
- 5.4 Do not place any metals or other conductive objects on the battery. Use the truck only when the battery cover is closed. No smoking, fire or other inflammable and explosive materials nearby.

6 . Maintenance

- 6.1 Regular maintenance is the precondition to ensure the reliable performance and safety as well as to delay the damage of the truck.

6.2 Lubrication List

LUBRICATING PARTS	LUBRICANT TYPE	Intervals	
		3 months	6 months
Wheels & Rollers	Lithium grease	▲	
Lifting Parts	Machine oil	▲	
Hinge Pin	Lithium grease		▲
Hydraulic Device	L-HM/HV 32# hydraulic oil; 40 C viscosity		▲

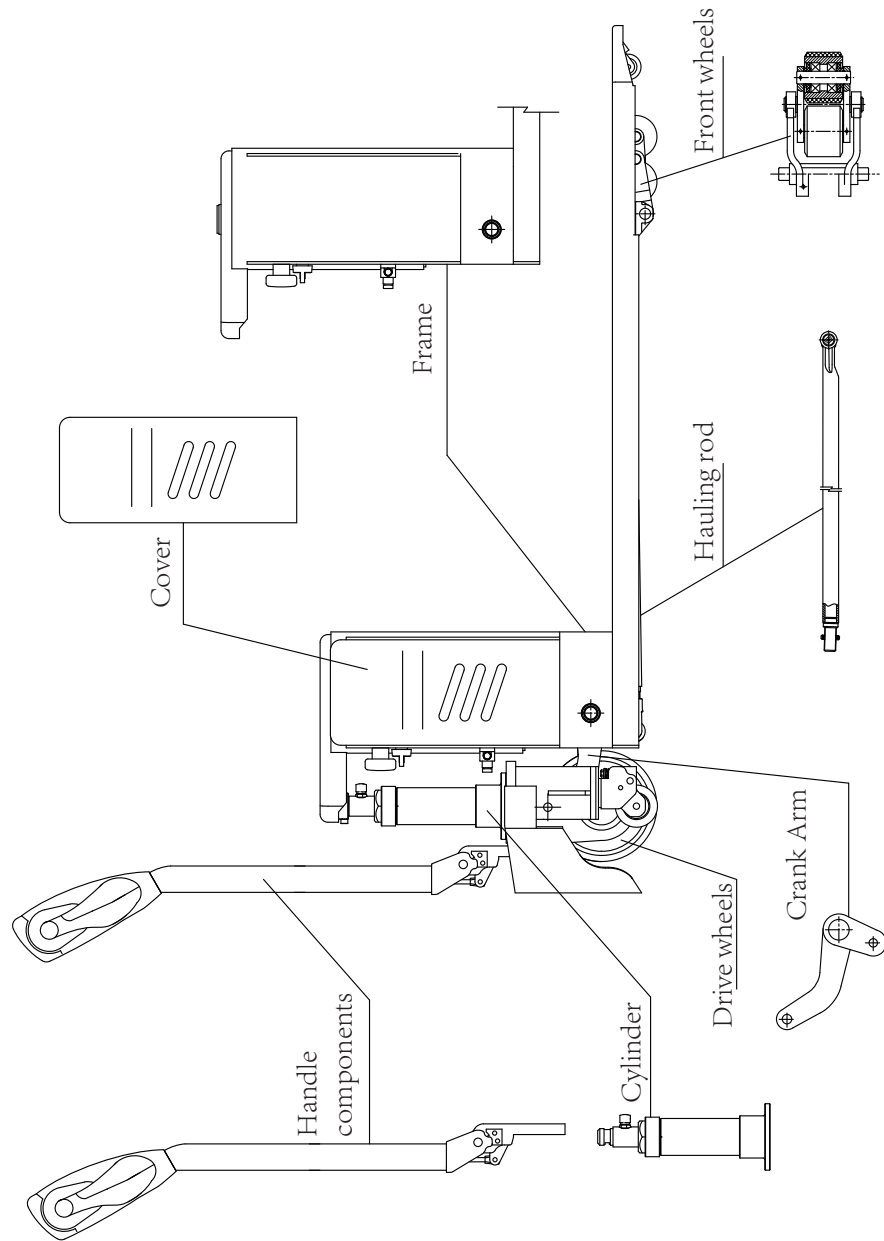
6.3 Clean mechanical components with a wet cloth. Do not directly spray water, steam or inflammable liquid. Clean the electrical components with non-metallic brushes. The waste oil should be disposed as the local regularities require.

The maintenance of the full-electric truck should be done by the professionals according to the intervals specified in the above tables.

6.4 Regular Maintenance List

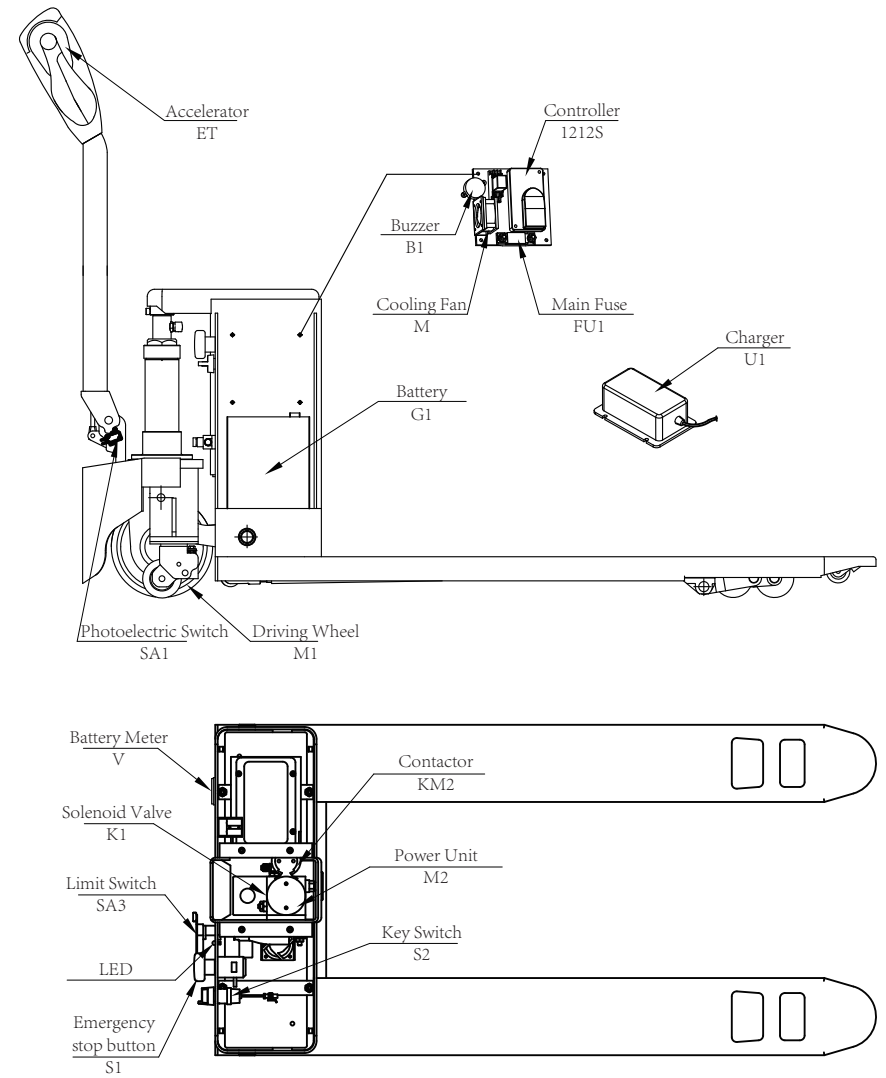
PARTS	CHECKLIST	INTERVALS (month)		
		3	6	12
Frame	Check the bearing part	▲		
	Check the tightness of bolts and nuts	▲		
	Check the condition of supporting parts and the machine	▲		
Wheels & Bearings	Check the abrasion degree	▲		
	Check the bearing's performance		▲	
	Check the connecting and fixing parts	▲		
Handle	Check the flexibility		▲	
	Check the sidewise movement (turning)	▲		
	Check whether it can rebound to the vertical position		▲	
Electric System	Check the micro-switch	▲		
	Check the connectors and cable	▲		
	Check the master switch		▲	
	Check the horn	▲		
	Check the emergency brake button	▲		
Hydraulic System	Check the safety device	▲		
	Check the function			▲
	Check the oil quantity	▲		
	Check the leakage and abrasion of joints		▲	
Cylinder	Change oil/filter	▲		
	Check the leakage			▲
	Check the abrasion of sealing parts	▲		
Motor	Check the fixation	▲		
	Check the abrasion of carbon brush	▲		
Battery	Check the starting motor relay		▲	
	Check the density and level of electrolyte	▲		
	Check the tightness of battery pack and terminals	▲		
	Check the cables		▲	
Load	Lubricate the electrodes with Vaseline		▲	
	Check the safety devices	▲		
	Lifting test with rated load	▲		

7 . General Assembly



8 . Power & Electrical Configuration Diagrams and Lists

8.1、 Power & Electrical Configuration Diagrams



8.2、Electrical Configuration List

NO.	SYMBOL	NAME	SPEC.& MODEL	FUNCTION	QTY.
1	S1	Emergency Stop Button	ZDK33-125A	Emergency stop/main power switch	1
2	S2	Key Switch	JK410-NL/2	Controller power switch	1
3	V	Round Battery Meter	ZT-DL-03/24V	Battery display	1
4	FU1	Ceramic Fuse Base	RQD-1/220v、800A		1
5		(Main) Fuse	CNL-100A	Main fuse wire	1
6	1212S	Controller	1212-S	Control moving	1
7	M	Cooling Fan	DC24V,0.2A	Inner cooling	1
8	M2	Power Unit	FFF-062	Fork lifting and descending	1
9	FU2	Glass Fuse Wire	4A	Control loop fuse	2
10	FU3	Fuse Wire Base		Battery meter & fan fuse	2
11	D1/D2	Diode	IN2408	Free-wheeling diode	2
12	LED	LED	LED	Charging display	1
13	M1	Driving Wheel	JK210-SY	Moving motor	1
14	G1	Battery	DJM1280/12V 80Ah		2
15	U1	Charger	WT2412PM	Charge the battery	1
16	SA1	Photoelectric Switch	TP-SM5P1 10~30VDC PNP	Brake inter-lock	1
17	SA3	Limit Switch	8108	Height limit	1
18	B1	Buzzer (horn)	HYD-216W /24VDC	Horn, back the truck	1
19	ET	Accelerator	0-5V Hall-type	Control moving forward or backward	1
20		Cooling Aluminium Plate		Assembly, cooling	1
21		Handle Wiring Harness	CBD20X	Connecting handle and control wiring harness	
22		Control Wiring Harness	CBD20X	Connecting control wiring harness and handle wiring harness	
23		Motor Wiring Harness	CBD20X	Connecting controller and motor	

9 . Standard Parts & Wearing Parts List

NO.	NAME	SPEC/MODEL	QTY	PLACE	NOTES
1	Composite Bushing	Φ18×Φd16×15	4	Crank arm	
2	Front Wheel	Φ80×70	4	Front wheel frame	PU wear-resisting
3	Spring Pin	Φ5×35	8	Front axle	
4	Deep Groove Ball Bearing	6010(80×50×16)	1	Base	
5	Single-row Tapered Roller Bearing	30212(110×60×23.75)	1	Base	
6	Bushing	D23×d20×11.5	4	Balance arm	
7	Gas Spring	Φ10×290; travel 40; 650N full-stage damping	1	Control handle	
8	M6 Set Screw	M6×12	1	Bearing head	
9	Oil Pipe Connection	G1/4"flat-M14×1.5 bulge	1	Pump/Oil pipe	90°elbow
10	Oil Pipe Connection	M14×1.5 flat-M14×1.5 bulge	1	Pump/Oil pipe	Straight
11	High-pressure Oil Pipe	25.6Mpa; inner diameter 1/4"; length 380mm	1	Pump/Oil pipe	M14×1.5
12	Wear Strip	D55×d50×L9.7	1	Lifting cylinder barrel	
13	Y-ring	D55×d47×10	1		
14	Circlip	D55×d47×1.5	1		
15	Dust Ring	d38×D46×5.5	1		
16	O-ring	D38×3.55	1		
17	Circlip for Shaft	d16	4	Crank arm pin	
18	Bushing	D23×d20×21.5	4	Front wheel frame	
19	Composite Bushing	D18×d16×12	2	Handle elbow	
20	Composite Bushing	D29×d25×25	2	Crank arm connection	
21	Deep Groove Ball Bearing	6204(47×20×14)	8	Double front wheel	
22	Circlip for Hole	D25	2	Crank arm sleeve	

Remarks: 1、Warranty period: within 1 year after the purchase or 1000 hours of service time.
2、Wearing parts and sealing parts are separately provided to clients' request.

10 . Failure Catalog

Charger Indicator Catalog (T0)		
NO.	Charging Indication	Description
1	Red light flickers	Charging
2	Green light keeps on	Full
Charger Fault Indication		Description
1	Red Green Red---	Overvoltage(overcurrent) protection
2	Red Green---	Output under-voltage
3	Red Green Red Green---	Over-high/low temperature
4	Green Red---	High temperature protection
5	Red Green Red Green Red---	Abnormal input AC voltage
6	Green Red Green---	Composite fault



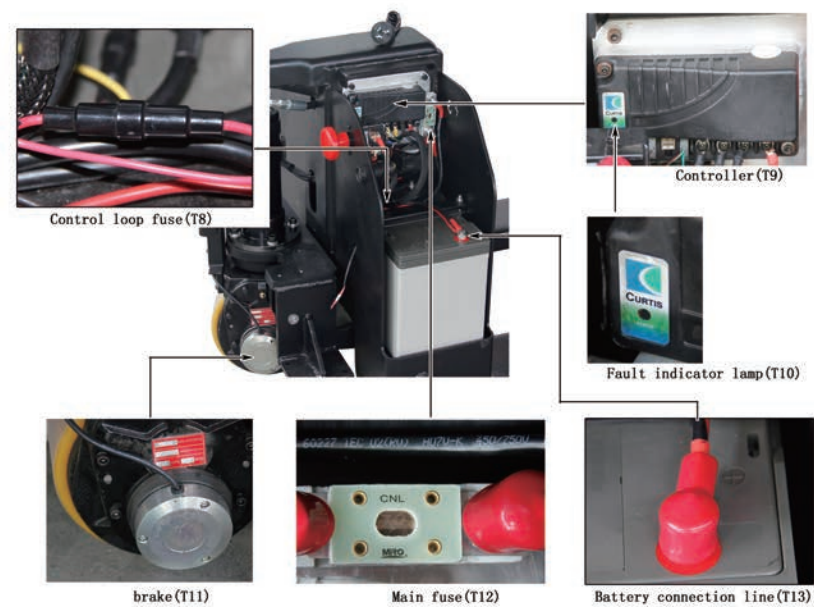
Trouble shooting				
NO.	PROBLEM		CAUSE	SOLUTION
1	Truck fails to move	Battery meter displays	E-lock switch is "OFF"	Turn the E-lock switch to "ON"(T3)
2			Handle out of drive range F	Rotate the accelerator to the drive range F (T6)
3			Handle not pressed to the working position	Press the handle to the working position (photoelectric switch is on T16) and rotate the accelerator (T6)
4			Press the handle to the working position and photoelectric switch is out	Adjust the distance of photoelectric switch to see if it lights on. If not, replace the switch(T16).
5			Control loop fuse is burnt	Replace the control circuit fuse(T8)
6			Fault of the controller	Refer to the controller fault code list on page 19
7			Low power	Recharge (T1)
8	Battery meter no display	Battery meter no display	Loose connection of battery connecting wire	Check the connecting wire. If necessary, reconnect the line and tighten the terminal screws (T13)
9			Emergency stop switch is off	Pull up to turn on the emergency stop switch (T2)
10			Main fuse is burnt	Replace the main fuse (T12)
11			Battery runs out	Check the battery charging condition. Recharge if necessary (T1)

NOTICE:

- The main power switch is the emergency stop switch (T2). The battery meter and fan start to work if the emergency stop switch is on. For the purpose of equipment safety and energy conservation, please turn off the power if not using the truck for a long time.
- Press (OFF) the emergency stop switch (T2), otherwise, it will damage the electric elements.
- Correct operating procedure: ① Pull the emergency stop switch(ON); ② turn on the key switch (electric lock);③ press the handle to the working position (photoelectric switch lights on); ④ rotate the handle accelerator. The correct operating procedure is the precondition to ensure the safety of personnel. If the procedure is incorrect, the truck will not move (the Fault LED flickers T10, refer to the fault code list on page 19)! Re-operate according to the correct procedure.

- When the electric lock switch is on and without any operation, the controller will go into sleeping mode for power-saving, and the truck cannot move. Restart the electric lock switch. Suggestion: Turn off the electric lock switch and emergency stop button if not used for a long time.
- When the battery goes below 30% (the meter shows 3 bars), the controller will shut down the lifting function for protection, and the moving speed will also slow down into half. If this happens, please recharge immediately, otherwise it will shorten the life span of battery!

12	Fail to lift the goods	Motor contactor closed (press the LIFT button and the contactor closes)	Air in the hydraulic system (motor is running)	Idling several times to eliminate air. (T14, T7)
13			Inadequate hydraulic oil (Motor is running)	Check the oil level and see if any leakage. Fix the problem.(T4, T19)
14			The pipe connection is loose or cracks (motor is running)	Tighten the pipe connection or replace the cracked pipe (T4, T19)
15			Motor connecting wire is loose (motor is not running)	Tighten the connecting wire. Replace the motor wire if necessary. (T14)
16			Pump motor is damaged (motor is not running)	Replace the pump motor (T14)
17		Motor contactor not closed	If the battery meter has no display, refer to CAUSE 8/9/10/11	Refer to SOLUTION 8/9/10/11
18			If the battery meter has display, refer to CAUSE 1/5/7	Refer to SOLUTION 1/5/7
19			Poor contact/damage on the Lifting button of handle	Check/replace the lifting button(T7)
20			Poor contact/damage on the lifting travel switch	Check/replace the lifting travel switch (T5)
21			Poor contact/damage on connecting wire	Check/replace the connecting wire (T14, T15)
22			Poor contact/damage on the motor contactor	Check/replace the motor contactor (T15)
23		Lift the goods slowly	Refer to CAUSE 12/13	Refer to SOLUTION 12/13
24	Forks fail to descend		Dirty oil and the control valve is blocked	Check the hydraulic oil and clean the control valve. Replace the oil if necessary (T18, T19)
25			Poor contact/damage on the descending button of handle	Check/replace the descending button (T7)
26			Unopened/damage magnetic valve of handle	Check/replace the magnetic valve(T18)
27			Poor contact/damage on the connecting wire	Check/replace the connecting wire
28	Forks descend slowly		Refer to CAUSE 24	Refer to SOLUTION 24
29	Unidirectional move		Damage on the handle accelerator	Check/replace accelerator
30			Poor contact/damage on the connecting wire	Check/replace connecting wire (T7, T9)
31	Move slowly		Low battery	Check the battery and recharge immediately (T1)
32			Tight brake	Check adjusting screw (T11)
33			Damage on brake coil/brake is unloosed due to poor contact of the brake wire	Check/replace the brake, wire and connection (T11)
34	Sudden start		Fault/damage on controller	Replace the controller (T9)
35			The handle accelerator is not reset	Fix to reset or replace (T6)



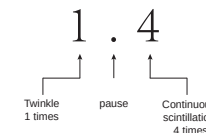


CONTROLLER FAULT CODE LIST				
NO	Display programmer	LED Code	Problem	Diagnosis
1	THERMAL FAULT	1.1	over/under-temperature cut-off	1) temperature $>80^{\circ}\text{C}$ or $<-10^{\circ}\text{C}$
				2) overload
				3) work in extremely harsh environment
				4) magnetic brake is unreleased
2	THROTTLE FAULT	1.2	Overvoltage of the sliding and low end of potentiometer	1) open or short circuit of accelerator input terminal
				2) accelerator potentiometer fault
				3) accelerator type choice fault
3	SPEED POT FAULT	1.3	Limit potentiometer fault	1) open or short circuit of limit potentiometer
				2) open circuit of limit potentiometer
4	UNDERVOLTGE FAULT	1.4	Under-voltage of battery	1) battery voltage $<17\text{V}$
				2)poor contact of battery or contactor

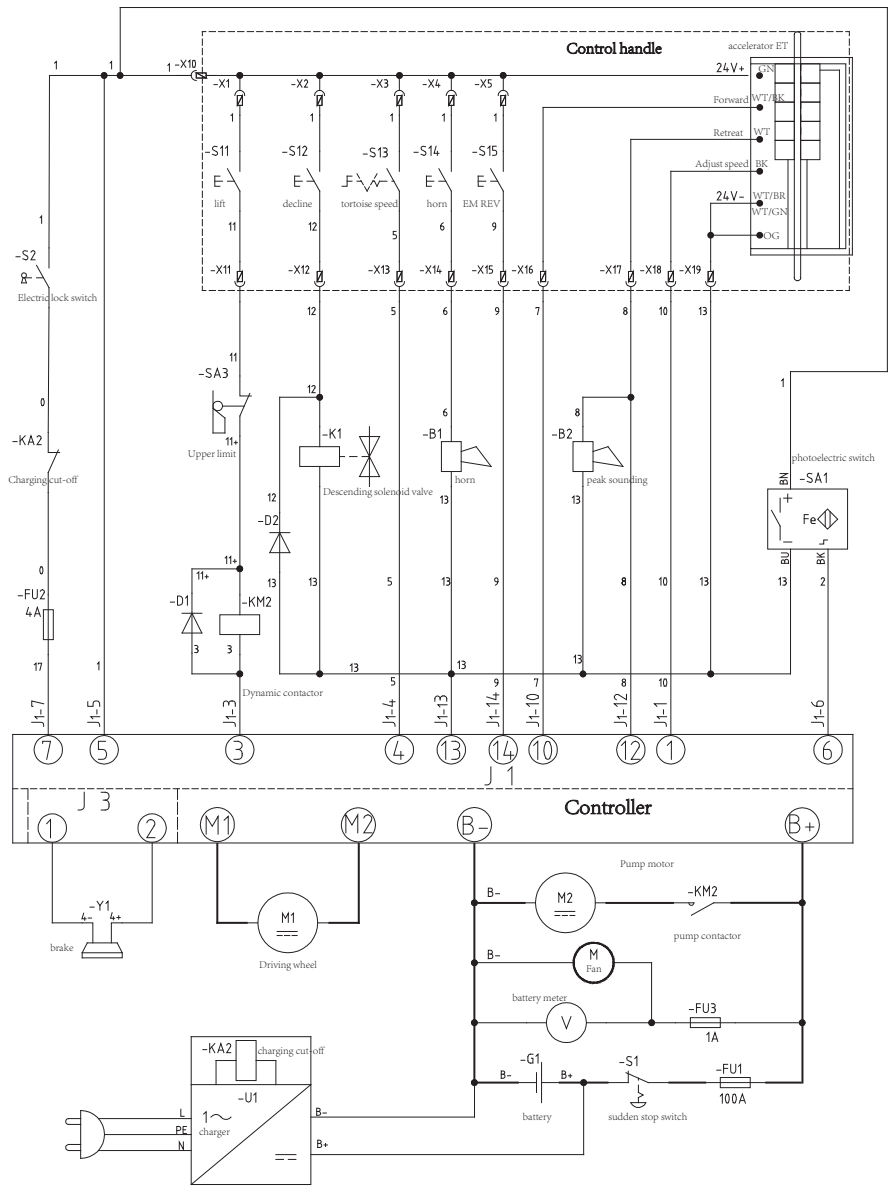
5	OVERVOLTGE FAULT	1.5	Overvoltage of battery	1) battery voltage $>31\text{V}$
				2) charger is still connected while operating the truck
				3) poor contact of battery
6	MAIN OFF FAULT	2.1	Main contactor coil drive "OFF" fault	1) main contactor coil start fault
7	MAIN FAULT	2.3	Main contactor fault	1) adhesion or open circuit of main contactor
				2) main contactor coil drive fault
8	MAIN ON FAULT	2.4	Main contactor coil "ON" fault	1) main contactor coil OFF fault
9	WIRING FAULT	3.1	HPD fault time exceeds 10 seconds	1) wrong operation on accelerator
				2) accelerator terminal or mechanic part fault
10	BRAKE ON FAULT	3.2	Brake ON fault	1) open circuit of magnetic brake coil
				2) short circuit of magnetic brake drive
11	PRECHARGE FAULT	3.3	Precharge fault	1) controller fault
				2) low battery voltage
12	BRAKE OFF FAULT	3.4	Brake OFF fault	1) short circuit of magnetic brake coil
				2) open circuit of magnetic brake drive
13	HPD FAULT	3.5	HPD fault	1) wrong operating order of accelerator, key switch, push or prohibit input
				2) wrong adjustment of accelerator
14	CURRENTSENSE FAULT	4.1	Current-sense fault	1) short circuit of motor or wire
				2) controller fault
15	HARDWARE FAILSAFE	4.2	Overvoltage of motor	1) motor voltage does not match the accelerator input
				2) short circuit of motor or wire
				3) controller fault
16	EEPROM CHECKSUM FAULT	4.3	EEPROM fault	1) EEPROM fault or invalid
17	BATTERY DISCONNECT FAULT	4.5	Battery disconnect	1) battery disconnected
				2) poor contact of battery
18	Low BDI	5.5	Lower battery	1) low battery, lifting locked

Remarks on LED (fault indicator T10) code: Under normal circumstances and without fault, LED is stable. If the controller detects any fault, 2 digits fault code will flicker on LED. It will last until the fault has been fixed.

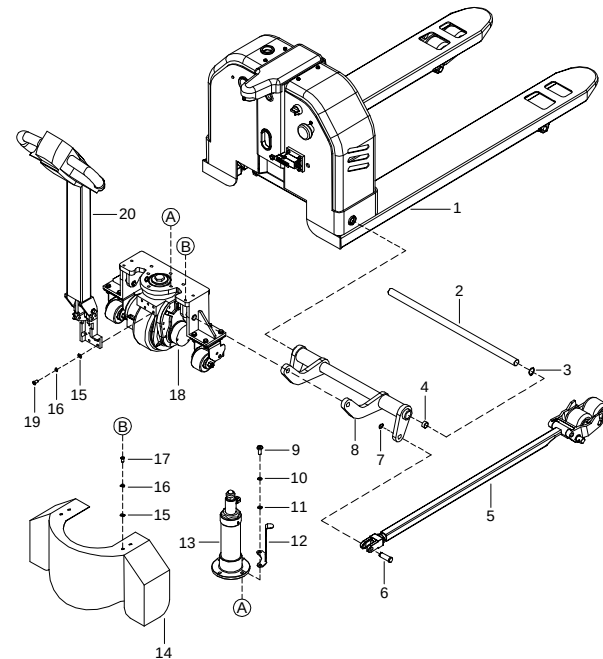
NOTICE: LED can only indicate one fault every time. If multiple faults are detected, the code with highest priority will flicker until it is fixed. For example, code "1.4" –under-voltage of battery:



11 . Electrical Schematic Diagram



12 . Exploded View

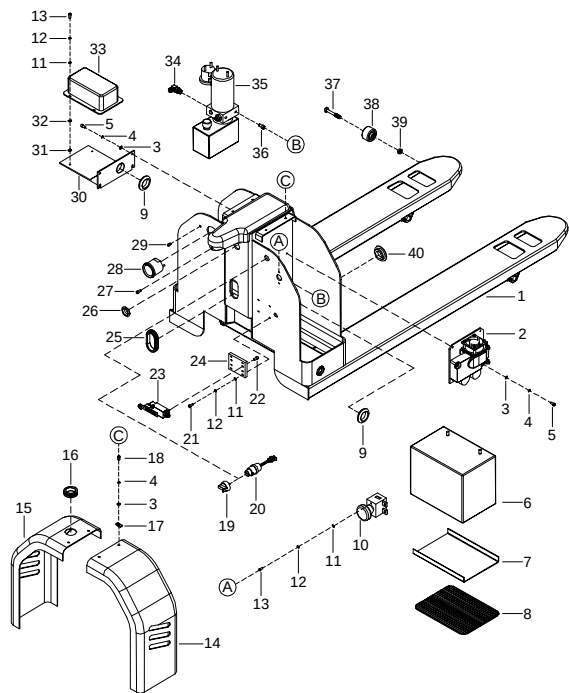


P1

NO.	NAME	QTY.	REMARKS
1	Rack assembly	1	see P2
2	Crankshaft	1	685
2	Crankshaft	1	560
3	Hole retaining ring 25	2	
4	Composite bushing D29xd25xh25	2	
5	Push Rod front wheel assembly	2	see P4
6	Crank pin shaft	2	
7	Axis retaining ring 16	2	
8	Crankshaft assembly	1	685
8	Crankshaft assembly	1	560
9	Semi-circular head inner hexagonal screw M10x30	4	
10	Missile pad 10	4	
11	Flat pad 10	4	
12	Limit plate	1	
13	Cylinder assembly	1	see P5
14	Driving wheel housing	1	
15	Flat pad 8	9	
16	Missile pad 8	9	
17	Semi-circular head hexagonal screw M8x15	4	
18	Drive pedestal assembly	1	see P6
19	Semi-circular head hexagonal screw M8x20	5	
20	Handle assembly	1	see P8

Note: Figures A and B are the corresponding installation locations.

Rack assembly

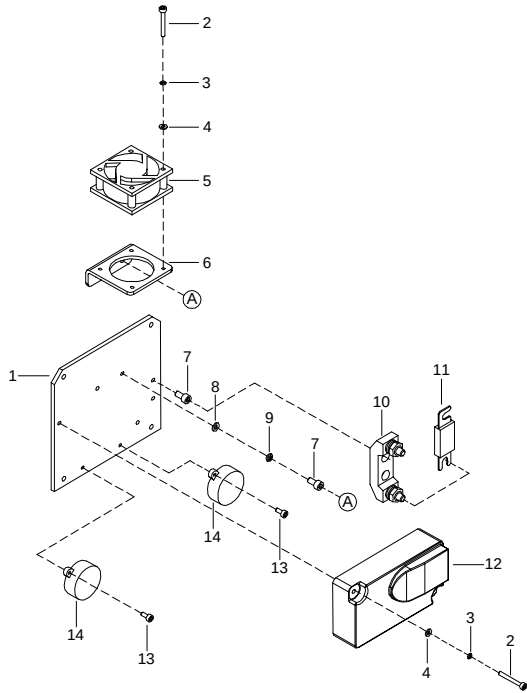


P2

NO.	NAME	QTY.	REMARKS	NO.	NAME	QTY.	REMARKS
1	Frame	1	685/1220	21	Cylindrical head inner hexagonal screw M5×20	4	
1	Frame	1	560/1150	22	Cylindrical head hexagonal screw M5×10	4	
2	Controller assembly	1	see P3	23	Travel switch	1	
3	Flat pad 6	12		24	Travel Switch Installation Board	1	
4	Missile pad 6	12		25	Elliptical guard coil 40×83	1	
5	Cylindrical head hexagonal screw M6×15	8		26	Guard coil 30	1	
6	Battery 80Ah/12v	2		27	Hexagonal screw M6×12 in cylindrical head	1	
7	Battery pad	2		28	Round Gauge 24V	1	
8	Rubber gasket	2		29	Charging indicator Led(7v)	1	
9	Guard coil 40	2		30	Fixed plate of built-in charger	1	
10	Mushroom switch 125A	1		31	Insulation bushing 5	4	
11	Flat pad 5	10		32	Insulation gasket 5	4	
12	Missile pad 5	10		33	Built-in charger	1	
13	Semi-circular head cross screw M5×15	6		34	Tubing right angle joint	1	M14×1.5 / G 1/4
14	Right box cover	1		35	Power Unit Assembly	1	see P9
15	Left box cover	1		36	Cylindrical head inner hexagonal screw M8×15	2	
16	Guard coil 42	1		37	Hexagonal bolt M10×65	2	
17	Plug nut M6	4		38	Enter roller	2	
18	Semi-circular head hexagonal screw M6×15	4		39	Self-locking nut M10	2	
19	Key	1		40	Plastic cover of axle sleeve	1	
20	Key switch seat	1					

Note: Figures A、B、C are the corresponding installation locations.

Controller assembly



NO.	NAME	QTY.	REMARKS
1	Controller mounting board	1	
2	Cylindrical head inner hexagonal screw M4×30	6	
3	Missile pad 4	6	
4	Flat pad 4	6	
5	Cooling fan	1	DC24v /0.2A
6	Fan mounting plate	1	
7	Cylindrical head hexagonal screw M5×10	4	
8	Flat pad 5	2	
9	Missile pad 5	2	
10	Ceramic fuse holder	1	220v /800A
11	Fuse 100A	1	
12	CURTIS controller 1122P	1	
13	Cylindrical head inner hexagonal screw M4×10	2	
14	Buzzer	2	

Note: Figures A is the corresponding installation locations.

Push Rod front wheel assembly

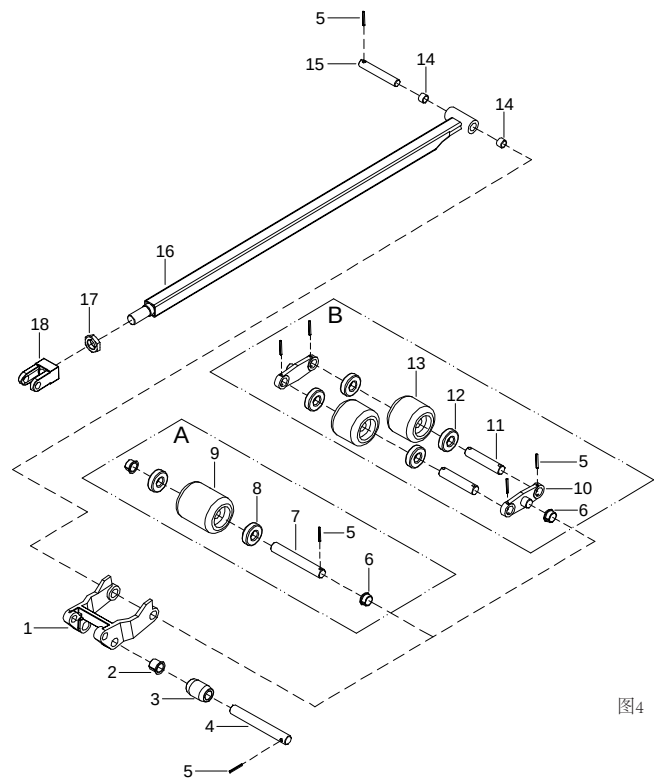


图4

NO.	NAME	QTY.	REMARKS
1	Front wheel frame	1	
2	Flanging Composite Bushing 20×23×21.5	2	
3	Exit rollers	1	
4	Wheel shaft	1	
5	Elastic cylindrical pin 5×37	6	
6	Flanging Composite Bushing 20×23×11.5	2	
7	Single front axle	1	Single front wheel set
8	Bearing 6204	2	
9	85 Single Front Wheel 80×93	1	
9	75 Single Front Wheel 74×93	1	
10	Balance arm	2	
11	Double front axle	2	Double front wheel set
12	Bearing 6204	4	
13	85 Double Front Wheel 80×70	2	
13	75 Double Front Wheel 74×70	2	
14	Composite bushing 16×18×30	2	
15	Push rod shaft	1	
16	Push rod assembly	1	1150
16	Push rod assembly	1	1220
17	Thin Hexagon Nut M22×1.5	1	
18	Push rod fork	1	

Note: The double-dotted line area A in the figure is a single front wheel group; the area B is a double front wheel group.

Cylinder assembly

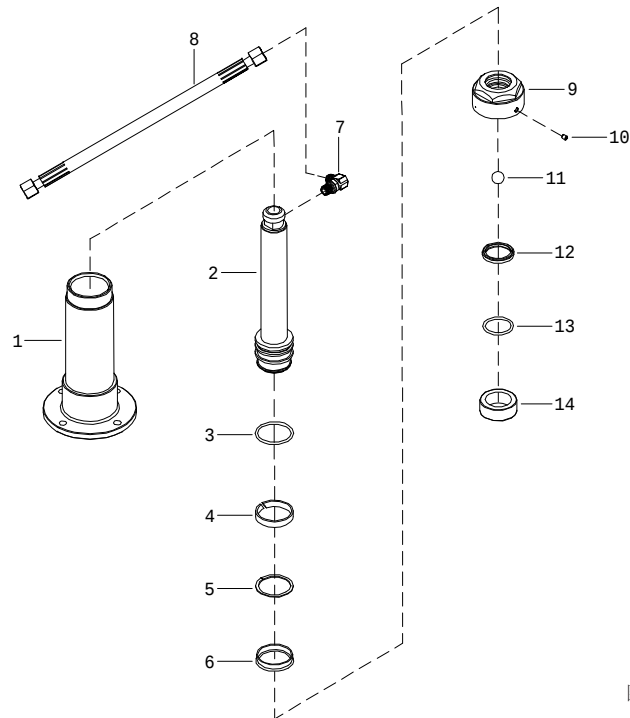
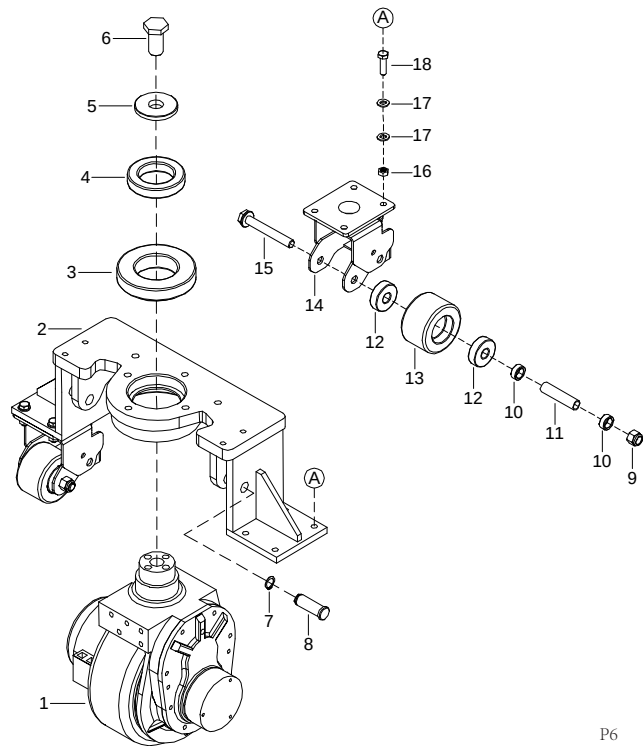


图5

NO.	NAME	QTY.	REMARKS
1	Cylinder assembly	1	
2	Lift rod assembly	1	
3	O-ring d48.7×3.55	1	
4	Wear-resistant belt D55×d50×9.7	1	
5	Baffle ring D55×d47×1.5	1	
6	Y-ring for hole D55×d47×10	1	
7	Tubing right angle joint	1	M14×1.5 / M14×1.5
8	Tubing	1	
9	Cylinder nut	1	
10	Internal Hexagonal Cone End Fixing Screw M6×6	1	
11	Steel ball S 18	1	
12	Dust-proof ring D46×d38×5/6.5	1	
13	O-ring D38×3.55	1	
14	Cylinder top sleeve	1	

Drive pedestal assembly

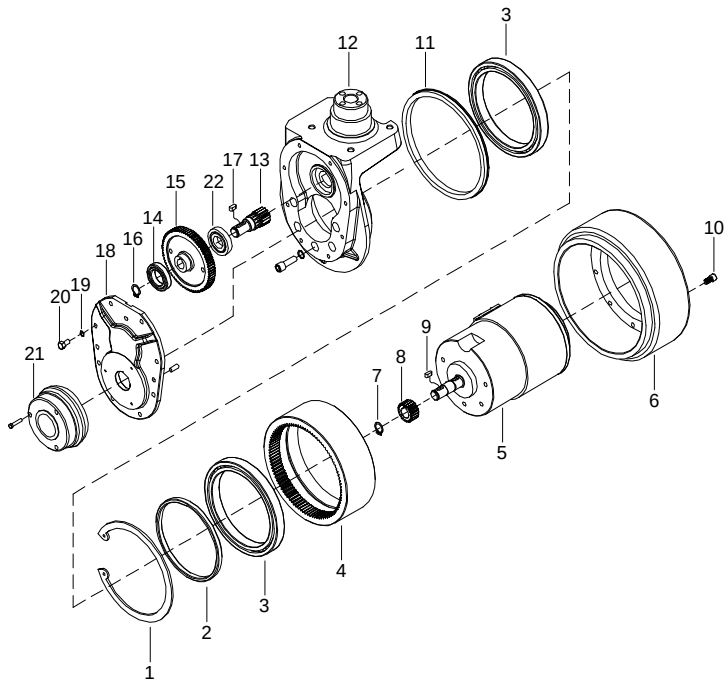


P6

NO.	NAME	QTY.	REMARKS
1	Drive Wheel Assembly	1	see P7
2	Pedestal assembly	1	
3	Bearing 30212	1	
4	Bearing 6010	1	
5	Bolt pad	1	
6	Drive Wheel Connection Bolt M20×1.5	1	
7	Axis retaining ring 16	2	
8	Crank pin shaft	2	
9	Self-locking nut M12	2	
10	Balancing Wheel Separator	4	
11	Balancing wheel sleeve	2	
12	Bearing 6302	4	
13	Balancing wheel 75×46	2	
14	Balancing Wheel Frame Component	2	
15	Hexagonal Flange Bolt M12×90	2	
16	Self-locking nut M8	8	
17	Flat pad 8	16	
18	Hexagonal bolt M8×30	8	

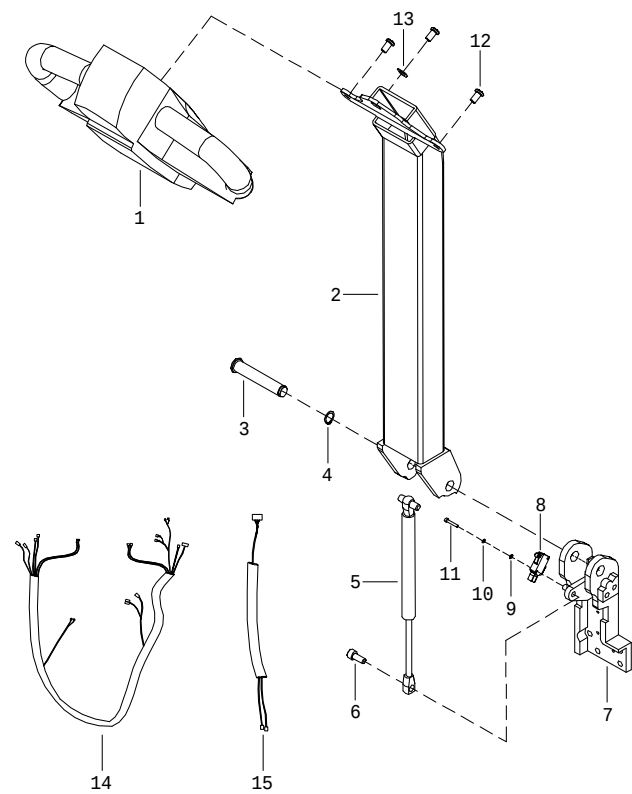
Note: Figure A is the corresponding installation location.

Drive Wheel Assembly



NO.	NAME	QTY.	REMARKS
1	Hole retaining ring 150	1	
2	Spacer	1	
3	Bearing 61824-2RS	2	
4	Straight gear ring	1	
5	Electric machinery	1	
6	Driving wheel	1	
7	Axis retaining ring 15	2	
8	Small helical teeth	1	
9	Flat bond 5 x 5 x 12	2	
10	Cylindrical head inner hexagonal screw M6×25	8	
11	Skeleton Oil Seal 16×30×8	1	
12	Box body	1	
13	Small straight teeth	1	
14	Bearing 61905-2Z	1	
15	Large helical teeth	1	
16	Axis retaining ring 16	1	
17	Flat bond 5×5×18	1	
18	Case cover	1	
19	Missile pad 6	8	
20	Cylindrical head hexagonal screw M6×16	8	
21	Brake assembly	1	
22	Bearing 16004-2Z	1	

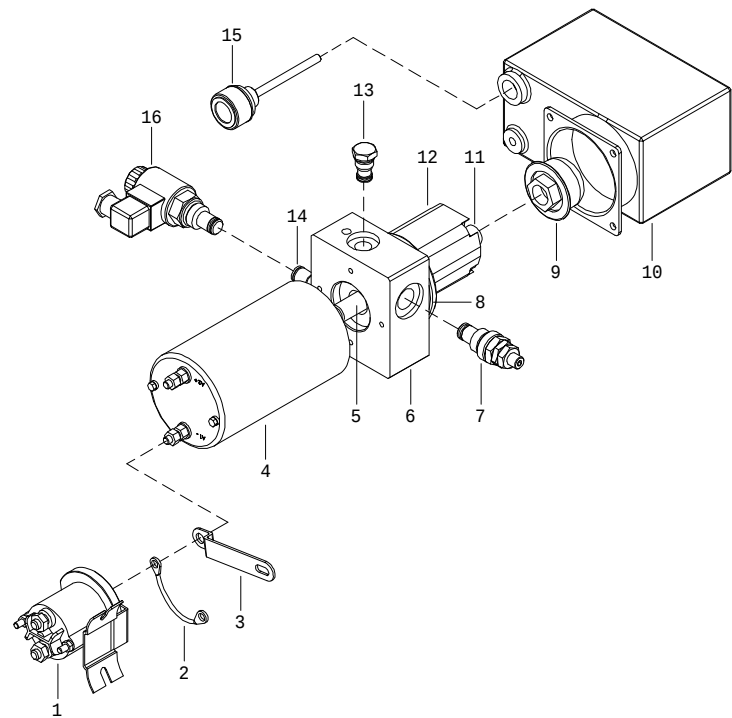
Handle assembly



P8

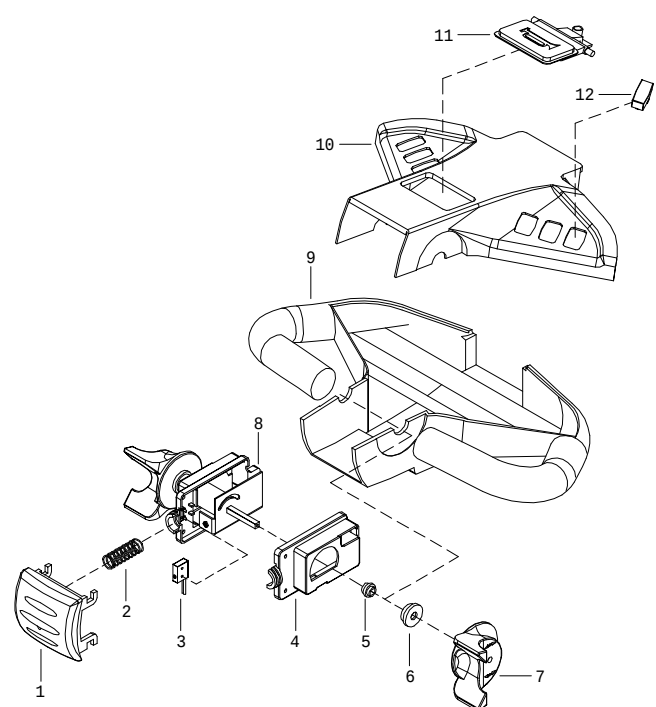
NO.	NAME	QTY.	REMARKS
1	Control Handle Assembly	1	see P10
2	Handle square tube assembly	1	
3	Handle pin	1	
4	Axis retaining ring 16	1	
5	Air spring 8×290	1	650N
6	Semi-circular head hexagonal screw M8×20	1	
7	Handle steering seat assembly	1	
8	Micro-switch V15T16	1	
9	Flat pad 3	2	
10	Missile pad 3	2	
11	CYLINDRICAL HEXAGONAL SCREW M3×20	2	
12	Semi-circular head hexagonal screw M8×15	3	
13	Large washer 8	1	
14	Harness assembly	1	
15	Handle control wiring harness	1	

Power Unit Assembly



NO.	NAME	QTY.	REMARKS
1	Starting switch	1	
2	Connecting line	1	
3	Copper connecting piece	1	
4	Electric machinery	1	DC24V / 0.8KW
5	coupling	1	
6	Valve block	1	
7	Relief valve	1	
8	Seal ring	1	
9	Filter screen	1	
10	tank	1	
11	Joint	1	
12	gear pump	1	
13	Check valve	1	
14	Flow control valve	1	
15	Oil dipstick	1	
16	Solenoid valve	1	

Control Handle Assembly



NO.	NAME	QTY.	REMARKS
1	Emergency reverse switch	1	
2	Reverse switch spring	1	
3	The micro switch	6	
4	Support shell	1set	
5	Axle sleeve	2	
6	Shaft sleeve	2	
7	Accelerator knob	2	
8	accelerator	1	ET-126MCU
9	Handle base	1	
10	Handle upper cover	1	
11	Horn switch	1	
12	Control switch	3	