Eoslift

Electric Pallet Truck
Operating Instructions
W20 Series

BEFORE YOU BEGIN

Welcome to use the electric pallet truck. For your safety and correct operation, please carefully read this instruction book and warnings on the truck before using it.This Operation Instruction of the truck is edited for you to completely acquire and master the safety operation of the truck.

The majority of this truck consists of steel, it can be completely recycled. Waste material in conjunction with repairs, maintenance, cleaning or scrapping, must be collected and disposed of in an environment–friendly way and in accordance with the directives of respective countries. Such work must be carried out in areas intended for this purpose. Recyclable material should be taken care of by specialized authorities. Environmentally hazardous waste, such as oil filters, batteries and electronics, will have a negative effect on the environment, or health, if handled incorrectly.

All of the information reported herein is based on data available at the moment of printing. Our products are constantly being developed and renewed, we reserves the right to modify our own products at any moment without prior notice and incurring in any sanction. So, it is suggested to always verify possible updates.

Electric Pallet Truck
W20 Series

Eoslift Warehousing Equipment Co., Ltd.

No.99, Yanjia Road, Yuantong Town, Haiyan, Zhejiang

Year of Manufacture: 2014

1.Safety Operation Regulation

1.1 Requirement on operator
The truck must be operated by trained person, who can demonstrate the moving and operating of the truck to user and can instruct vividly the user how to operate the truck. During operation, the operator must be responsible for the truck and prevent unauthorized person in driving or operating the truck. The truck is strictly forbidden to lift or carry person.

1.2 Failure and fault
In case of any failure or fault, please notify the administrator immediately. In case that truck can not work safely (such as wheel worn–out or brake fault), please stop using the truck until they are properly repaired.

1.3 Danger area
Danger area refers to: the area where the truck or its lifting device (such as fork or attachment) is working or lifting, which brings potential dangerous factors to person; or the area for load transportation. Generally, the range of danger area extends to the point of load lowering or truck attachment lowering.
Unauthorized person must be kept away from danger area. For any circumstance with potential danger to person, the operator must give warning notice. If someone still stays in danger area while being requested to leave, the operator must stop the truck immediately.

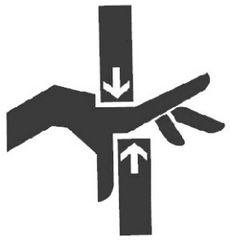
1.4 Safety device and warning signs
Enough importance should be attached to safety device, warning sign and warning notice introduced above in Operation Instruction.
The truck should always be driven with the height of forks less than 300mm except when placing or removing load!

1.5 Passengers
Never ride on the truck or let any one else ride.

1.6 Keep Distance
The truck should not be driven on public roads outside a specific area. Remember that the vehicle in front of you may brake suddenly. Keep a reasonable distance.

1.7 Visibility
The operator must stare at driving direction to ensure legible sight for the road condition ahead. In case that cargo carried interrupts the sight, reverse driving is requested. If it doesn’t help in this way, there must be another person walking ahead of truck to give guidance and warning.

1.8 Operation protection
Keep your hands and feet away from all moving parts, such as forks and wheels.



1.9 No unbalanced load or overload
An unbalanced load will lead to the goods fall off the ground or more severely the truck will turn over.

1.10 Speed
Adjusting the speed to the floor conditions, the line of sight and operational safety. Avoid fast acceleration, rapid braking and cornering at speed, there is a risk for overturning or that the load may fall off.
Speed option is only available when protection arm is open.

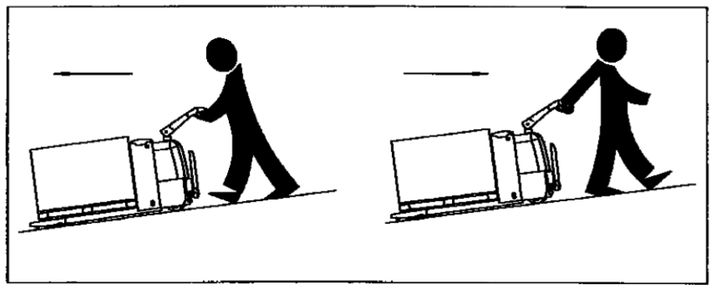
1.11 Signaling
Use the signal horn to attract attention when make a turning.

1.12 Floor Load
Carefully check notices or directives about the max. floor load or max. wheel pressure to ensure that these are not exceeded.

1.13 Smooth Travel
Drive the truck smoothly. Quick steering will be dangerous. Avoid sudden movement of controls. And always remember to travel with forks at low position close to the ground.

1.14 Loaded travel/ unload travel
When operating loaded truck, keep the rear end of the truck pointed downhill. When operating unloaded truck, keep the rear end of the truck pointed upgrade.

1.15 Driving on Slope
The cargo carried must face to upward direction of the slope.
Take safety measures to the downward slip direction of the truck: when control button at “0” position, please pull the handle backwards immediately and release it according to actual requirement to enable the electromagnetic brake to work automatically and control the speed and direction of truck (for downward slip).

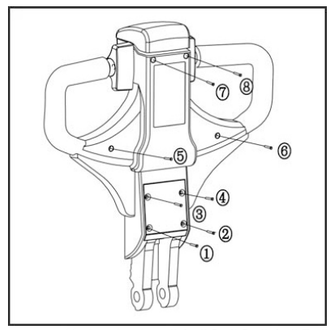


1.16 Parking
The truck should always be parked on a level surface, engaged with a parking brake. The forks must be lowered to their lowest position, so that no one may accidentally trip over them. Always turn the ignition to the “OFF” position and remove the ignition key from the electrical lock when leaving the truck.
If the truck is left unused for a prolonged period without it being recharged, the battery plug should be disconnected.

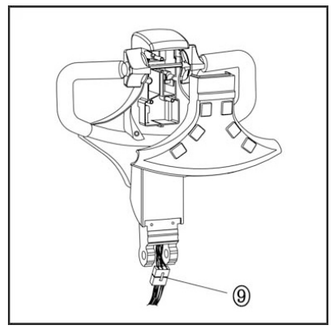
1.17 Repair
Without professional training and specific authorization, the operator is forbidden to repair or change any part of the truck. Any change of installation position of switches and safety devices is strictly forbidden by operator to avoid efficiency decrease of the truck.

All spare parts from original manufacturer are qualified by Quality Assurance Authorities. To ensure the safety and reliability of truck operation, only spare parts from manufacturer can be applied. The parts replaced, including oils and fuels, must be disposed according to related environmental protection regulations.

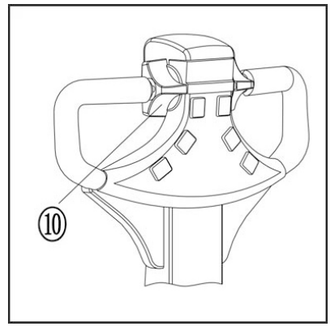
2.Control Bar Assembly Instruction



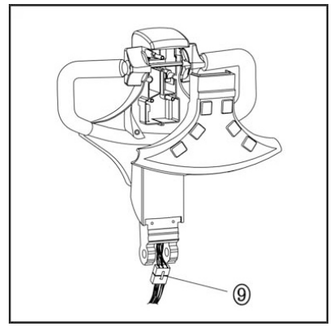
(1) Screw off the bolts #1,#2,#3,#4,#5,#6
Warning: not to screw off the middle bolt #7



(2)Push the cover aside



(3) Join the wire connection #9



(4) Fix the cover back and tightening
The 6 pieces of bolts

3. Operation Instructions

3.1Power on & off
3.1.1Turn on the truck by turning the key to right—power on.
3.1.2Turn on the truck by turning the key to left—power off.
3.1.3Always turn off the truck when leaving the truck.

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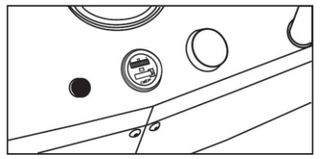
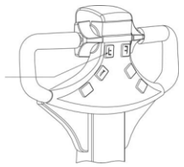
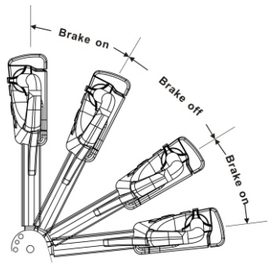


3.2 Braking
Loose the throttle button will make truck slow down and stop.

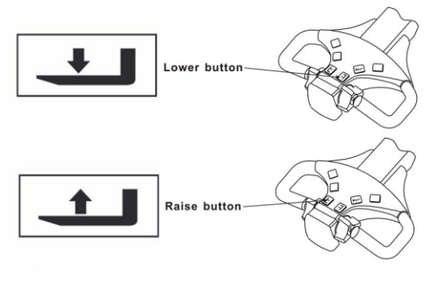
Throttle button



Move the handle all the way down or all the way up to apply the brake.



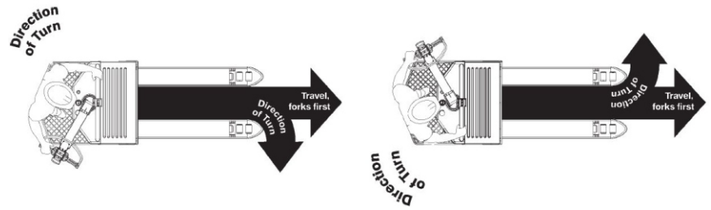
3.3 Raising and lowing
Raise: Push raise button until the forks are at the desired height.
Lower: Push lower button until the forks are at the desired height.



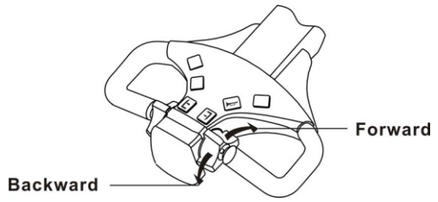
3.4 Horn

Horn Button

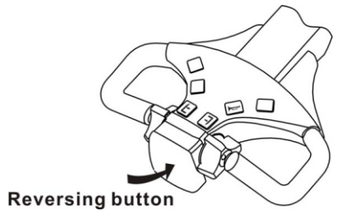
3.5 Steering
Control steering by moving the control handle from side to side.



3.6 Travelling
Rotate the throttle button in the direction you want to travel.The farther you rotate the throttle button from the neutral position, the faster the truck will travel.



3.7 Reversing button
If you accidentally hit the reversing button while working in the close corner the truck will move in the direction of the forks.
Be careful, the reversing button can not prevent all injuries.



3.8 Emergency stop button
Push down emergency stop button will cut any current of the machine, make immediately stop.

3.9 Battery indicator
Discharging status of battery is indicated on battery capacity meter with ten indicator bars for each 10% increase. On the bottom, the machine's working hour can be displayed.

If the battery capacity meter indicates capacity insufficient soon after lifting system works, the lifting function will be resumed only after recharging the battery to at least 70% of the capacity.

Battery sufficient

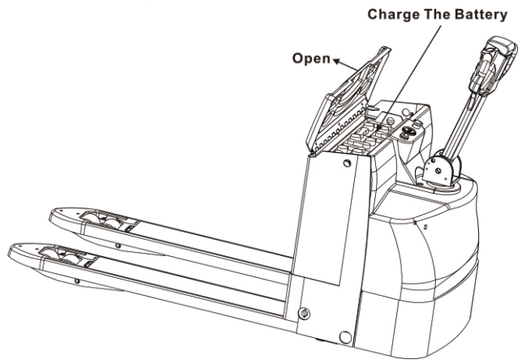
Battery charger requirement, to be re–charged

Before charging the battery

(1)Make certain the charge is the same voltage and amperage as your battery.
(2)Be sure the charger is turned off before connecting the battery to the charger. Otherwise you might create a spark which could cause the battery explosion.
(3)Make sure the truck key switch is turned off.

3.10 Charge the battery

When the battery indicator shows “charger require”, the battery should be charged at once. It is not necessary to open the battery cover when you want to charge, please operate as following steps:
(1) Turn off the key switch of truck.
(2) Connect the charger plug to the truck charger plug.
(3) See charge instruction to operate charger.



3.11 Steering motor control fault codes

Indicator light twinkle times	Clause
Keep on	Good working condition.
Keep off	No power or the controller damaged. The indicator light is damaged in condition of the machine working well.
1	Steering potentiometer damaged or the join line disconnected.
2	Magnetic Steel of the motor shaft too far from the coder chips on the back cover.
3	Coder damaged, join line disconnected, carbon brush loose contacted, motor stalling
4	Proximity switch join line disconnected or power line loose contacted.
5	Proximity switch too far from the detection block of the gearwheel, normally 1mm–1.5mm, or the earth wire disconnected
6	The motor long time over–current or short circuit.
7	Relay damaged or the power line loose contacted.
8	Service voltage beyond the maximum working voltage.

4.Technical specification

Identification	1	Manufacturer's type designation		W20
	2	Drive unit		Electric
	3	Operator type		Walkie
	4	Rated capacity	kg	2000
	5	Load centre distance	mm	600
	6	Wheel base	mm	1375
	7	Service weight (with battery)	kg	610/510/460
Wheels Chassis	8	Tyres type		PU
	9	Tyre size, front (single/tandem)	mm	¢ 73X98/80X58
	10	Tyre size, rear (balance roller/steering wheel)	mm	¢ 115X55/252X67
	11	Wheels number front/rear		2 (4) /1+1
Basic Dimensions	12	Lift height	mm	110
	13	Height of tiller in drive position min./max.	mm	870/1220
	14	Lowered fork height	mm	85
	15	Overall length	mm	1730
	16	Overall width	mm	720
	17	Fork dimensions	mm	1150/1200X180X55
	18	Width across forks	mm	540/685
	19	Min. Aisle width 1000x1200	mm	2140
	20	Min. Aisle width 800x1200	mm	2100
	21	Turning radius	mm	1655
Performance Data	22	Travel speed, loaded/unloaded	km/h	3.5/3.5
	23	Lift speed, loaded/unloaded	mm/s	56/60
	24	Lowering speed, loaded/unloaded	mm/s	57/59
	25	Gradeability, loaded/unloaded	%	5/7
	26	Service brake		Electromagnetic
Electricengine	27	Drive motor rating s260 min	kw	AC 1.5
	28	Lift motor rating at s315%	kw	DC 2
	29	Battery acc. To din 43531/35/36, a, b, c no		3PZS210(Maintenance-free)
	30	Battery voltage, nominal capacity	V/Ah	24/210(140/70)
	31	Battery weight	Lb	200(100/50)

5. Maintenance of the Truck

5.1 Safety Operation and Environmental Protection

The instructions in the chapter of "Operation of Inspection and Maintenance" should be performed based on the time interval specified in Maintenance List.
Any part on the truck, especially safety device, can not be changed without permission. Change of operation speed of the truck is strictly forbidden.
All spare parts from original manufacturer are qualified by Quality Assurance Authorities. To ensure the safety and reliability of truck operation, only spare parts from manufacturer can be applied. The parts replaced, including oils and fuels, must be disposed according to related environmental protection regulations.

5.2 Safety Rules for Maintenance of Pallet Truck

Maintenance staff: Repair and Maintenance of the truck should only be performed by qualified professionals trained by manufacturer. The after–sales service department of manufacturer has dispatched special technicians who can be commissioned to sign on the maintenance record in the maintenance service appointed by manufacturer.
Lifting of truck: For lifting of the truck, the hoisting equipment should be safe and reliable (especially

the hoisting position). When the truck is lifted, necessary measures should be taken to avoid slip and turnover of the truck (wedge block or wood block can be applied). The truck can be lifted by hoisting equipment only when the forks are fixed and connecting cable with enough strength is applied.
Cleaning operation: Flammable fluid is strictly forbidden in cleaning of the truck. Before cleaning work starts, safety measures must be taken to avoid sparkle (e.g. caused by short circuit). Any operation of battery should be performed after cutting off the power of the battery. All electric elements and electronic assemblies can only be cleaned by weak wind blower or compressed air, or by in conductive and anti–static brush.
If the truck is cleaned by water jet cleaner or high pressure cleaner, all electric elements and electronic assemblies should be covered in advance to avoid humidity which will cause fault of function. Cleaning by steam nozzle is prohibited.
Operation of electrical system: Operation of electrical system of the truck should be
performed by trained professionals only. Before any operation of electrical system, protection measures to avoid electric shock should be properly taken. During operation of battery, separate the socket of battery apart to cut off the power of the truck.
Operation of Welding: To avoid damage of electric and electronic assemblies, the assemblies should be removed away from the truck before welding.
Installation: After repair or replace the hydraulic components, electric elements and electronic assemblies, please install and confirm them at original positions.
Wheels: The quality of wheels take great effect on the stability and driving performance of the truck. Any change of wheels should be discussed with and approved by the manufacturer. During replacement of wheels, the truck must be kept horizontally as original state (wheels must be replaced by pairs, e.g. both left and right).
Lifting chains: Without lubrication, the lifting chains will be soon worn out. The time interval in maintenance manual is applicable for normal operation condition. In case of poor operation condition (dust, temperature), it is necessary to feed lubrication regularly.
Hydraulic oil pipe: Oil pipe should be replaced every six years. Together with replacement of hydraulic assembly, the oil pipe of hydraulic system should be replaced.

5.3 Maintenance and Inspection

Complete and professional maintenance is an important part for safety operation of pallet truck. Any negligence of maintenance of stipulated time interval will cause failure of truck and cause potential danger to person and equipment.
The maintenance cycle stated in instruction manual refers to the normal condition with single shift operating. Under dusty condition, temperature varying greatly or under multiple shifts operating, the maintenance cycle should be shortened.

— Check if any loosened nut on wheels and tighten it if necessary
— Check if any leakage of hydraulic parts and tighten it if required
— Replace hydraulic filter

5.4 Maintenance List

CONTRO TROUBLESHOOTING CHART

LED CODE	PROGRANNER LCD DISPLAY	FAULT CATEGORY	POSSIBLE CAUSE	FAULT CLEARANCE
0.1	NO KNOWN FAULTS	0	N/A	N/A
1.1	CURRENT SHUNT FAULT	1	1. Abnormal vehicle operation causing high current spikes 2. Current sensor out of range 3. Controller failure	Cycle KSI. if problem persists, replace the controller
1.2	HW FAILSAFE	1	1. Noisy environment 2. Self-test or watchdog fault 3. Controller failure	Cycle KSI. if problem persists, replace the controller
1.3	M-SHORTED	1	1. Inernal or external short of M-to B- 2. Incorrect motor wiring 3. Controller failure	Check wiring;Cycle KSI. if problem persists, replace the controller
1.4	SRO	3	1. Improper sequence of KSI,interlock and direction inputs 2. Interlock or direction switch circuit open 3. Sequencing delay too short 4. Wrong SRO of throttle type selected 5. Misadjusted throttle pot	Follow proper sequence; adjust throttle if necessary; adjust programmable parameters if necessary
2.1	THROTTLE WIPER HI	1	1. Throtte input wire open or shorted to B+ 2. Defective throttle pot. 3. Wrong throttle type selected	When Throttle wiper high input returns to valid range
2.2	EMR REV WIRING	1	1. Improper sequence wire or wire open	Re-apply emergency reverse or cvcle interlock
2.3	HPD	3	1. Improper sequence of KSI,interlock, and throttle inputs 2. Misadjusted throttle pot 3. Sequencing delay too short 4. Sequencing delay too short 5. Wrong HPD or throttle type selected	Follow proper sequence; adjust throttle if necessary; adjust programmable parameters if necessary
	SRVC TOTAL	3	1. Total maintence timer expired	Reset with proqrammer
	SRVC TRAC	3	1. Traction maintenance timer expired	Reset with proqrammer
	TOTAL DISABLED	3	1. Total disable timer expired	Reset with proqrammer
	TRAC DISABLE	3	1. Traction disable timer expired	Reset with proqrammer
2.4	THROTTLE WIRPERLO	1	1. Throttle pot wire open of shorted to B+ 2. Wrong throttle type selected 3. Defective throttle pot	When throttle Wiper Low input returns to valid range
3.1	FIELD SHORT	1	1. Main contactor coil shorted 2. Field winding shorted to B+ or B- 3. Field resistance too low	Check contactor coil and field winding;cycle KSI
3.2	MAIL CONT WELDED	1	1. Main contactor stuck closed 2. Main contactor driver shorted	Check wiring and contactor; cycle KSI
3.3	FIELD OPEN	1	1. Field winding connection open 2. Field winding open	Check wiring and cycle KSI
3.4	MISSING CONTACTOR	1	1. Main contactor coil open 2. Main contactor missing 3. Wire to main contactor open	Check wiring and cycle KSI

Battery

Name	Symbol	eriod of maintain(hrs/per)								
		ectrolyte vel	Electrolyte proportion	Battery quantity	Terminal looseness	Looseness of connecting wire	Cleanness of the battery surface	If there is tool on the battery	The tightness of air cap	Far away from firing
Maintenance level 1	B1			8	8	8		8		8
Maintenance level 2	B2	50	50	50	50	50	50	50	50	50
Maintenance level 3	B3	200	200	200	200	200	200	200	200	200
Medium term of overhaul	Z	600	600	600	600	600	600	600	600	600
Large–scale over haul	D	200	1200	1200	1200	1200	1200	1200	1200	1200

Name	Symbol	Period of maintain(hrs/per)			
		Check connector for worn	Check contactor for running	Check inching switch for running	Check the connection among motor battery and
Maintenance level 1	B1				
Maintenance level 2	B2				
Maintenance level 3	B3				
Medium term of overhaul	Z	600	600	600	600
Large–scale over haul	D	1200	1200	1200	1200

Motor

Name	Symbol	Period of maintain(hrs/per)				
		Clean the foreign body on the motor	Clean or replace the bearing	Check the carbon brush and comm–utater for worn, if spring	If the connection is correct and firm	Brush carbon powder on shift plate and shift device
Maintenance level 1	B1					
Maintenance level 2	B2					
Maintenance level 3	B3	200		200	200	
Medium term of overhaul	Z	600		600	600	600
Large–scale over haul	D	1200	1200	1200	1200	1200

Brake system

Name	Symbol	Period of maintain(hrs/per)					
		Check the brake state	Whether the micro	Tightness	Wearing	Clearance between	Whether brake agility
Maintenance level 1	B1	8					8
Maintenance level 2	B2	50					50
Maintenance level 3	B3	200	200	200			200
Medium term of overhaul	Z	600	600	600	600	600	600
Large–scale over haul	D	1200	1200	1200	1200	1200	1200

Transmission unit

Name	Symbol	Period of maintain(hrs/per)						
		Abnormal noise (box)	Check oil leakage	Replace oil	Lubrication rollers	Whether steering agility	If there is tool on the battery	Rotate handle
Maintenance level 1	B1	8	8			8	8	8
Maintenance level 2	B2	50	50		50	50	50	50
Maintenance level 3	B3	200	200		200	200	200	200
Medium term of overhaul	Z	600	600		600	600	600	600
Large–scale over haul	D	1200	1200	Replace	1200	1200	1200	1200

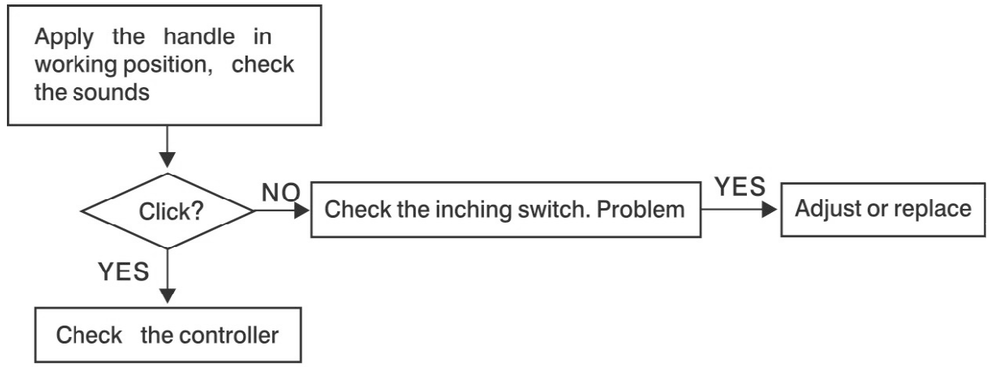
Hydraulic system

Name	Symbol	Period of maintain(hrs/per)						
		Check for oil level change oil	Clean suction strainer	Drain for foreign matter	Check for oil lesks looseness collapse deformation and damage	Replace hoses	Check hydraulic pump for oil leaks or noise	Check pump drive gear for wear
Maintenance level 1	B1	8				8	8	
Maintenance level 2	B2	50				50	50	
Maintenance level 3	B3	200			200	200	200	200
Medium term of overhaul	Z	600			600	600	600	600
Large–scale over haul	D	Replace	1200	1200	1200	1200	1200	1200

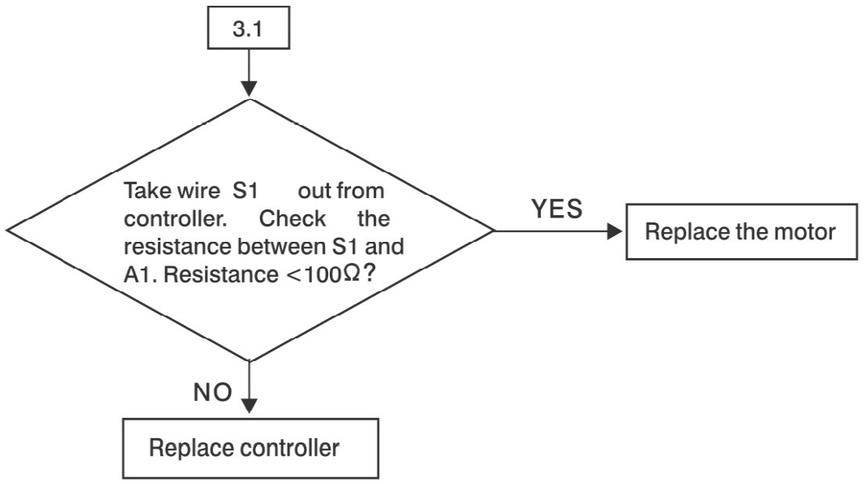
Wheel

Name	Symbol	Period of maintain(hrs/per)		
		Wearing or crack	Tighten bolt	Where there is rope on the wheel
Maintenance level 1	B1	8(eye)		850
Maintenance level 2	B2	50	50	50
Maintenance level 3	B3	200	200	200
Medium term of overhaul	Z	600	600	600
Large-scale over haul	D	1200	1200	1200

Unable to move forward
Unable to move backward



Trouble showing code of controller



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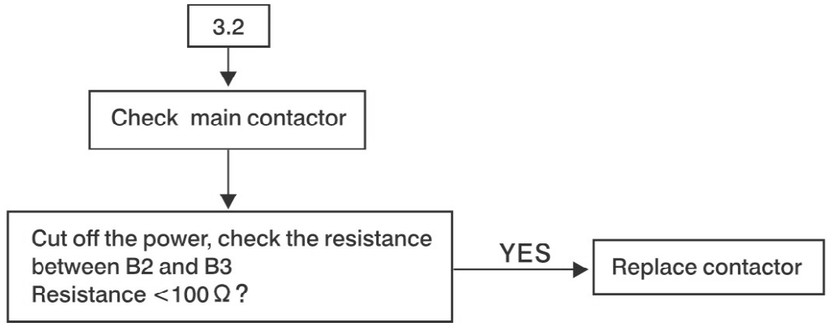
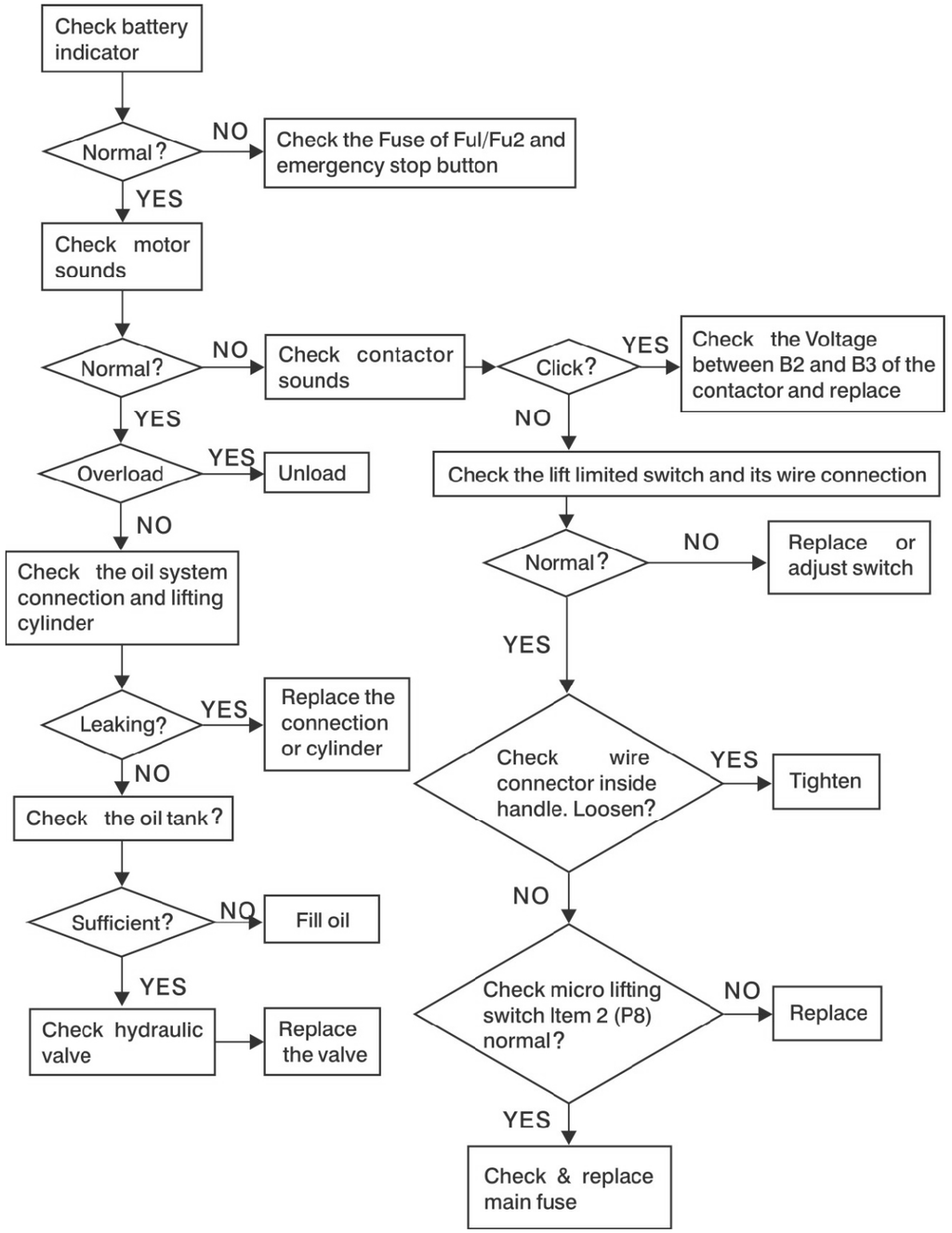
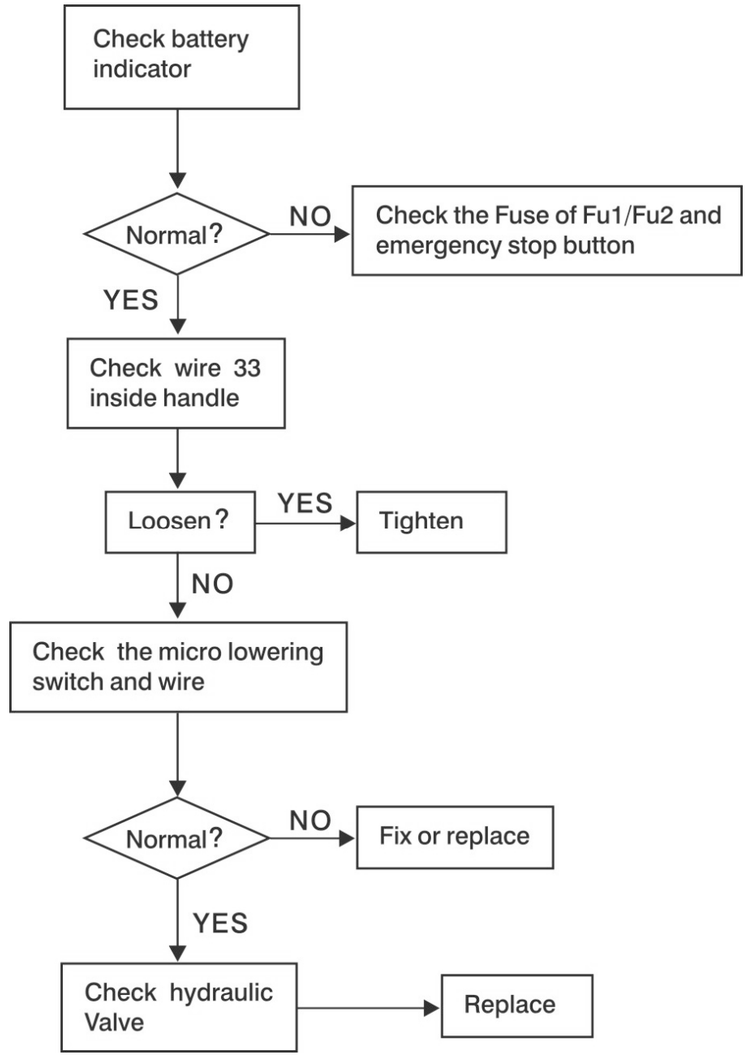


Unable to lift



Unable to lower



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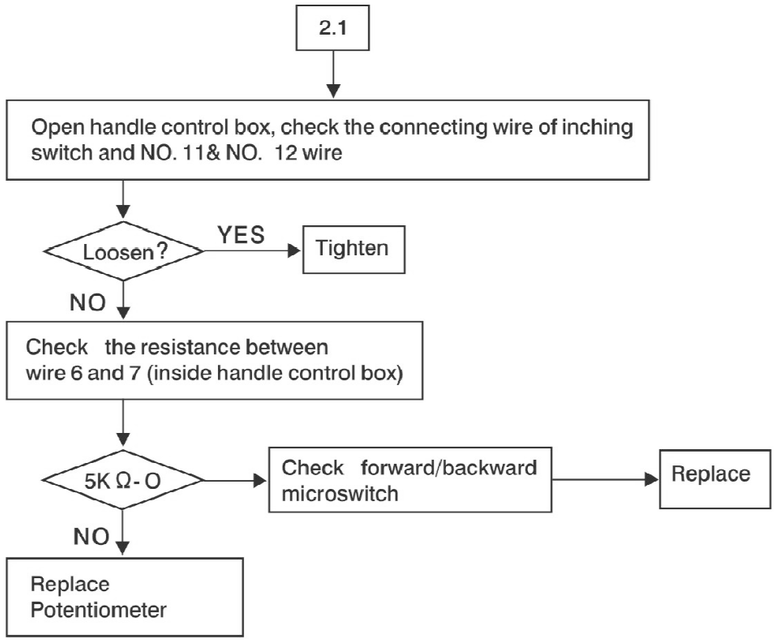

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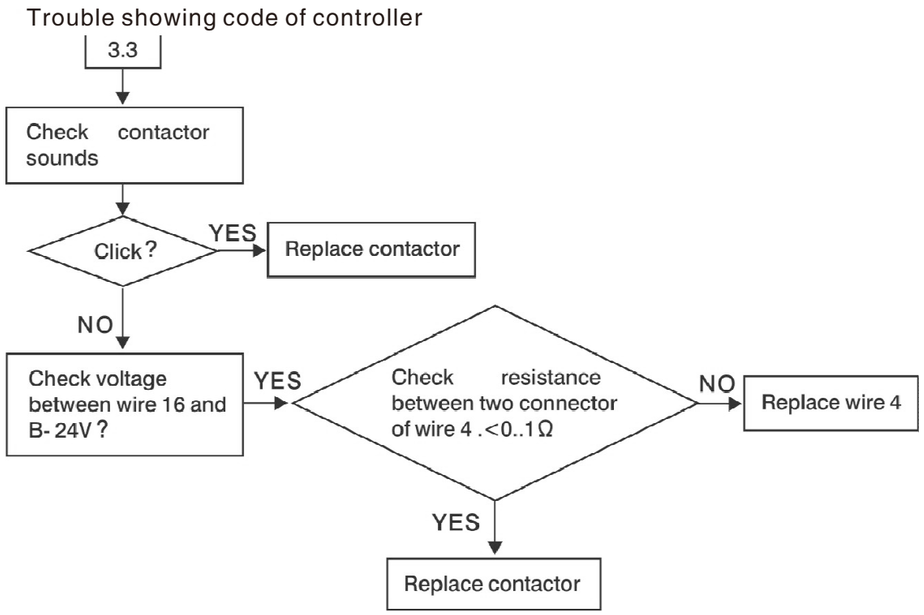
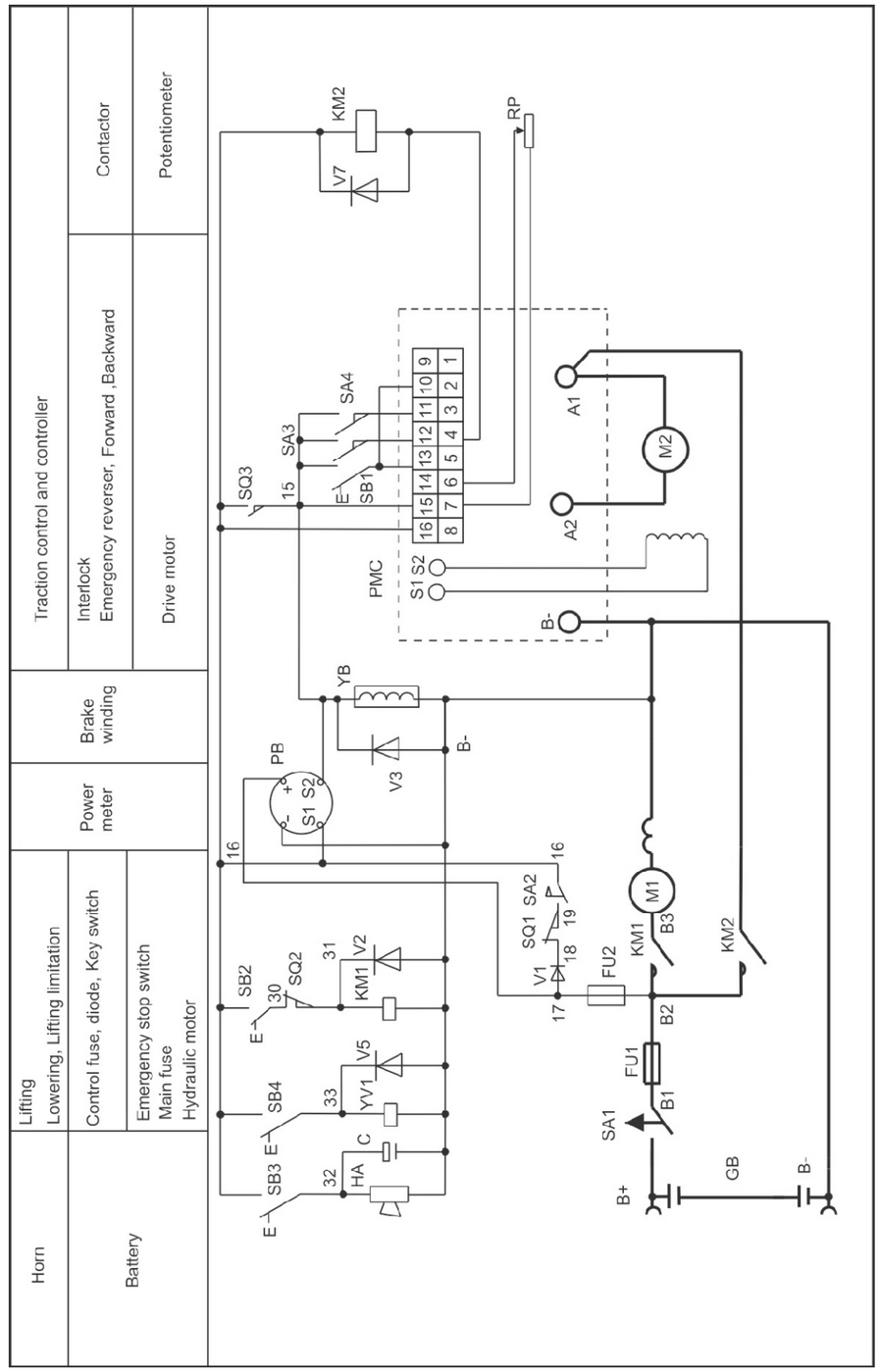


Circuit Diagram for W20



Parts List

Fig.1 Steering control system

ITEM#	PART#	NAME	#FOR ASSY.
1	1500500001	Handle assembly	1
2	2000508001	Outer covering plate	1
3	2000537002	Washer	2
4	2000541002	Screw	2
5	2000512002	Lubricated bush	2
6	2000513001	Pin shaft	1
7	2000536001	Sping pin	1
8	2000534003	Rubber washer	1
9	2000931004	Screw	4
10	2000534002	Rubber sleeve	1
11	2000513003	Pin shaft	1
12	2000541004	Screw	2
13	4300534001	Rubber sack	1
14	2000525004	Screw	1
15	2000535005	Installing plate	1
16	2000504001	Steel ball	1
17	2000507004	Inching switch	1
18	2000537003	Washer	2
19	2000541001	Screw	2
20	2000541003	Screw	2
21	2000537001	Washer	2
22	2000508002	Inner covering plate	1
23	4300501001	Handle socket	1
24	7300500001	Electron hanbgrip	1

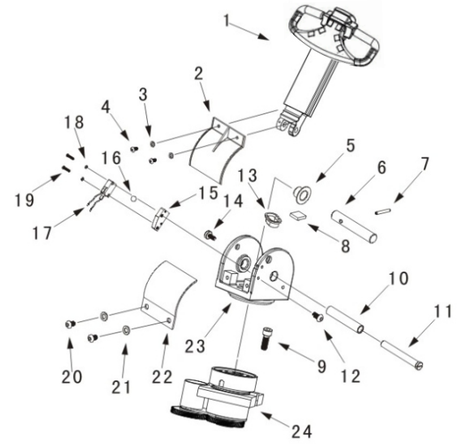


Fig.2 Handle assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	1500500001	Handle assembly	1
2	5300500002	Switch box assembly	1
3	2000442001	Screw	4
4	4300501004	Handle tube	1
5	6000502002	Pneumatic spring seat	1
6	2000525010	Joint	1
7	4000519004	Pneumatic spring complete	1
8	2000527002	Snap ring	1
9	2000520003	Joint	1
10	2000525006	Shaft	1
11	1000527001	Snap ring	1
12	4000517001	Covering plate	1
13	2000542001	Screw	4
14	4000500006	Pneumatic spring assembly	1

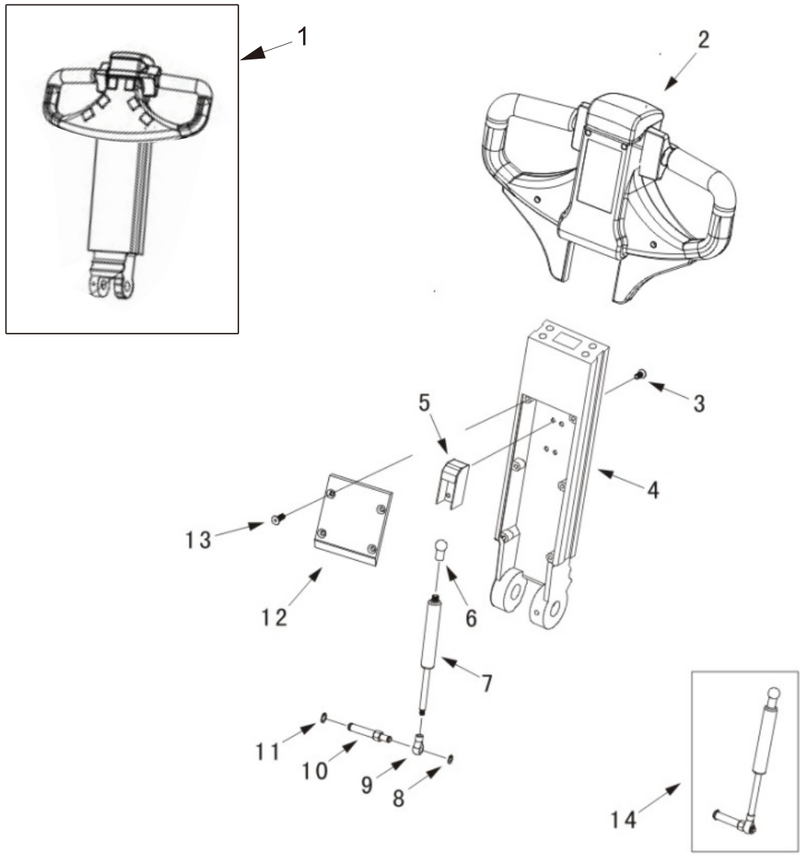


Fig.3 Switch box assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	5300500002	Switch box assembly	1
2	5300518003	Emergency reverser button cover	1
3	2000519004	Spring	1
4	5300500001	Cover assembly	1
5	4300500004	Stepped switch assembly	1
6	2000507002	Emergency reverser button	1
7	5300517002	Handle	1
8	6000131001	Screw	4
9	1001437003	Washer	4
10	1200518001	Supporting plate	1
11	6000131006	Screw	2
12	4300531001	Screw	2
13	9300517001	Seat	1

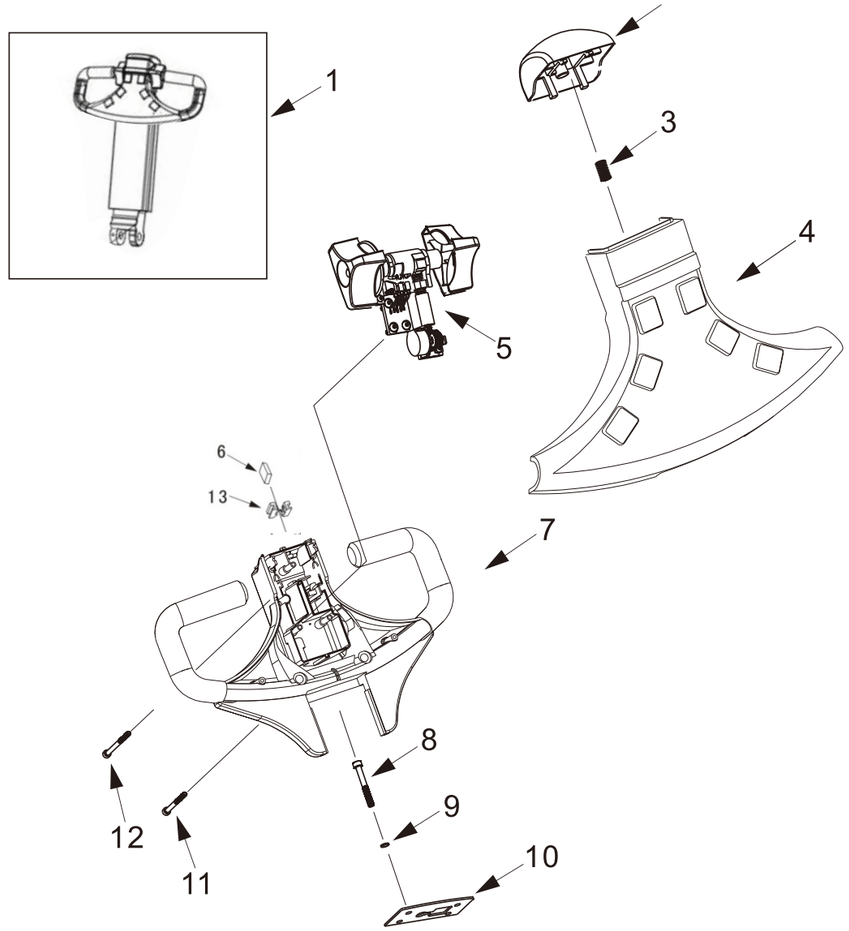


Fig.4 Switch box assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	4300500007	Cover assembly	1
2	4300508002	Cover	1
3	4300508003	Button cover	2
4	4300540003	Rubber contact	2
5	4300519001	Spring	6
6	4300541001	Screw	12
7	2000507002	Inching switch	6
8	4300518001	Isolate block	6
9	2000441002	Screw	12
10	1000504001	Washer	12
11	2000539002	Nut	12
12	4300508004	Button cover	2
13	4300508005	Button cover	2
14	4300540004	Rubber contact	2
15	4300540005	Rubber contact	2

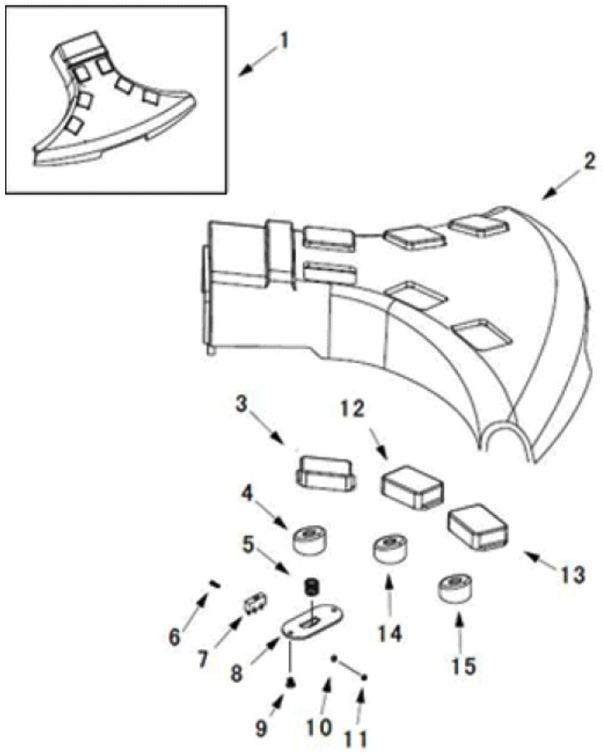


Fig.5 Stepped switch assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	4300500004	Stepped switch assembly	1
2	2000538005	Screw	2
3	2000507003	Inching switch	2
4	2000535001	Isolate block	2
5	2001141005	Screw	2
6	4300518003	Fastening bracket	1
7	1000504001	Washer	2
8	2000539002	Nut	2
9	4300501005	Cam	1
10	4300513001	Cam shaft	1
11	1002343003	Rack	1
12	2000519004	Spring	1
13	4300900002	Screw	2
14	2001437005	Circlip	2
15	4300540001	Right control knob	1
16	4300512001	Shaft sleeve	2
17	4300535001	Fastening bracket	1
18	2000541004	Screw	4
19	4300540002	Left control knob	1
20	4300518004	Baffle	1
21	2000521001	Gear	1
22	4700418001	Fastening bracket	1
23	4700400001	Potentiometer	1

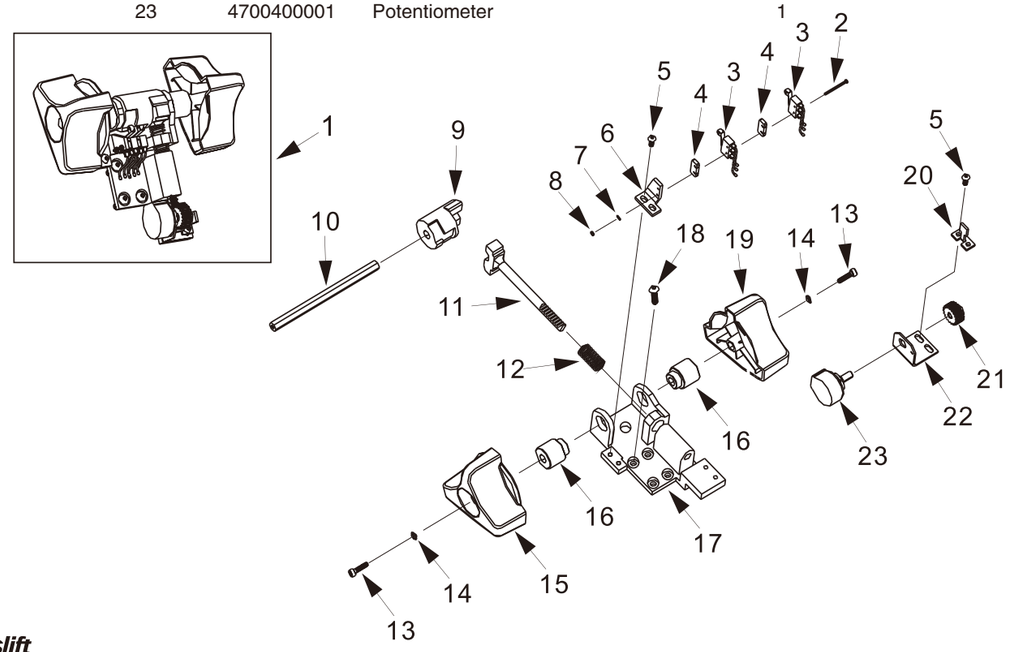


Fig.6 Driving system

ITEM#	PART#	NAME	#FOR ASSY.
1	7800300001	Electromotor	1
2	1000131001	Screw	4
3	2001037001	Washer	4
4	7800300002	Electromotor	1
5	5501221004	Gear	1
6	7800337001	Washer	1
7	7800330002	Screw	1
8	1500318001	Flange	1
9	0300320001	Axletree	1
10	7800300003	Gear box assembly	1
11	2000325001	Double-head bolt	5
12	4000332001	Drive wheel assembly	1
13	2000325002	Nut	5
14	8700406001	Limittation Switch	1
15	9300312002	Sleeve	1

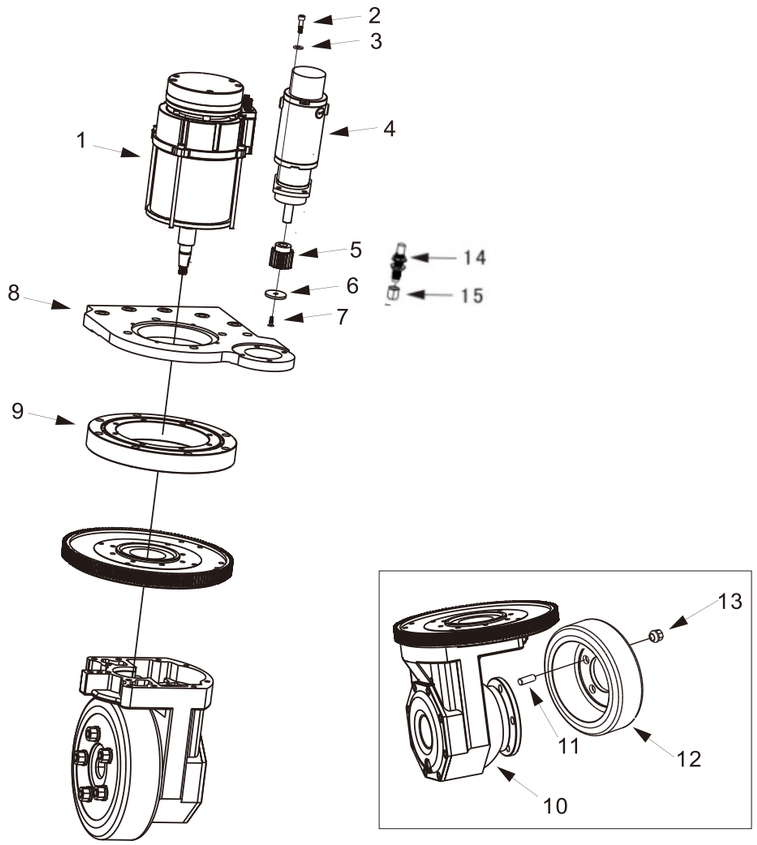


Fig.7 Gear box assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	2000130002	Screw	4
2	7800321001	Gear	1
3	2000125001	Nut	1
4	2000121006	Gear	1
5	2000120003	Bearing	2
6	2000141001	Screw	8
7	2000625001	Bolt	2
8	2000603010	Washer	2
9	2000111002	Side cover	1
10	2000128002	O-ring	1
11	2000130001	Bolt	1
12	2000135001	Washer	1
13	2000121002	Gear	1
14	2000120002	Bearing	1
15	2000137001	Washer	2
16	2000137002	Washer	2
17	4000201001	Gear	1
18	4000101001	Flat	1
19	2001037001	Circlip	8
20	2000731003	Screw	8
21	2000120001	Bearing	1
22	2000105001	Seal washer	1
23	2000121003	Spline shaft	1
24	2000126001	Gear box body	1
25	7800300003	Gear box assembly	1

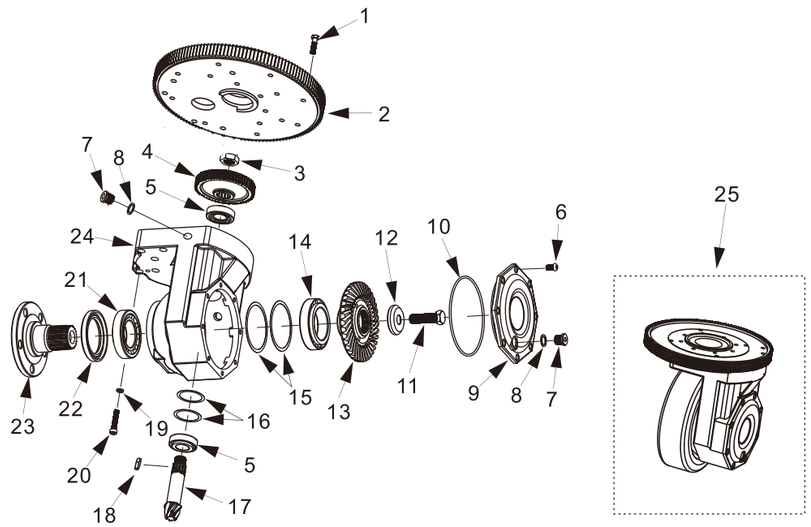


Fig.8 Driving system

ITEM#	PART#	NAME	#FOR ASSY.
1	0301000001	Brake assembly	1
2	2001021001	Spline	1
3	2001427001	Snap ring	1
4	4301412002	Sleeve	1
5	2000628005	0–ring	1
6	2001021001	Flat key	1
7	0301400001	Moto r	1
8	0301431001	Screw	4
9	2001212003	Position sleeve	1
10	2001405001	Dus t ring	1
11	2001228001	O–ring	1
12	2001420001	Bearing	1
13	2001427001	Snap ring	1
14	2001227003	Snap ring	1
15	2000121005	Gea r	1
16	2001435001	Semicircle key	1
17	2001425002	Nu t	1

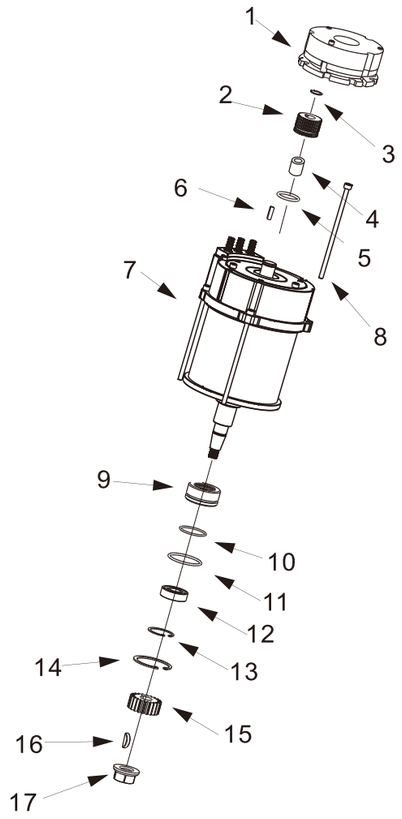


Fig.9 Drive motor

ITEM#	PART#	NAME	#FOR ASSY.
1	0301415001	Tie–in	3
2	0301408001	Plastic mantle	1
3	4300900002	Screw	2
4	0301411001	Cover	1
5	2001420001	Bearing	1
6	2001427002	Snapring	1
7	0301412001	Spring	1
8	0301400002	Rotor	1
9	0301400001	Drive motor	1

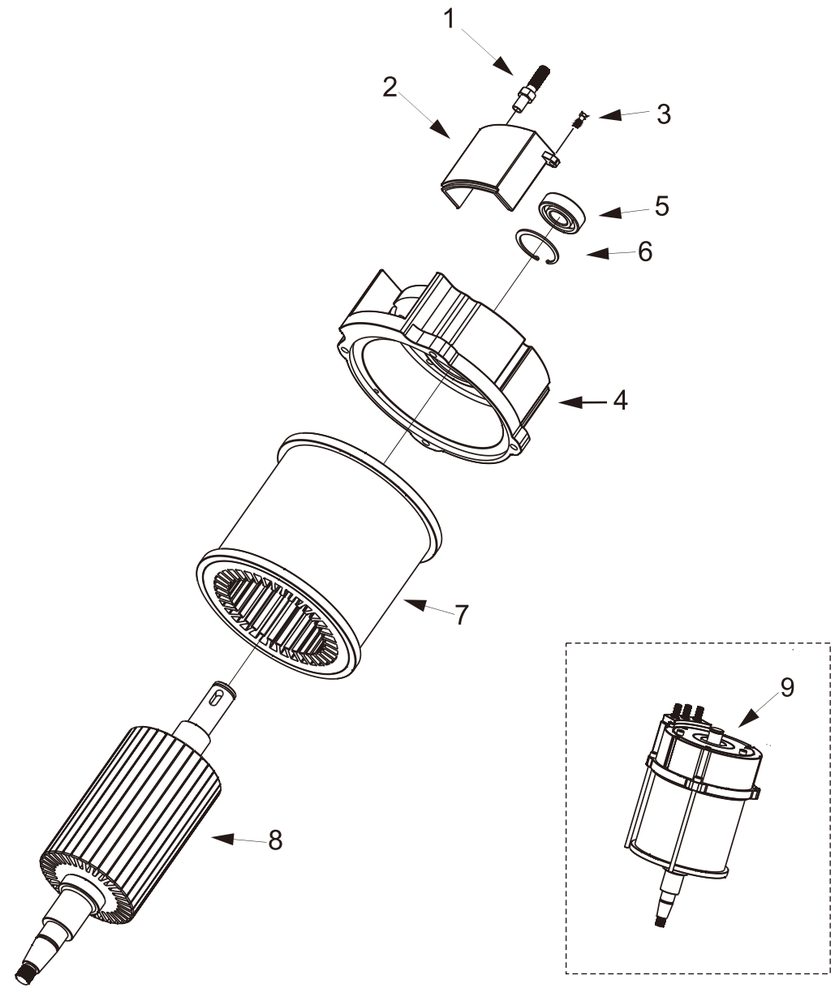


Fig.10 Hydraulic system

ITEM#	PART#	NAME	#FOR ASSY.
1	8700615004	Joint	1
2	6000637001	O–ring	2
3	4000600007	Hydraulic power unit	1
4	1500617001	Washer	1
5	1500615001	Joint	1

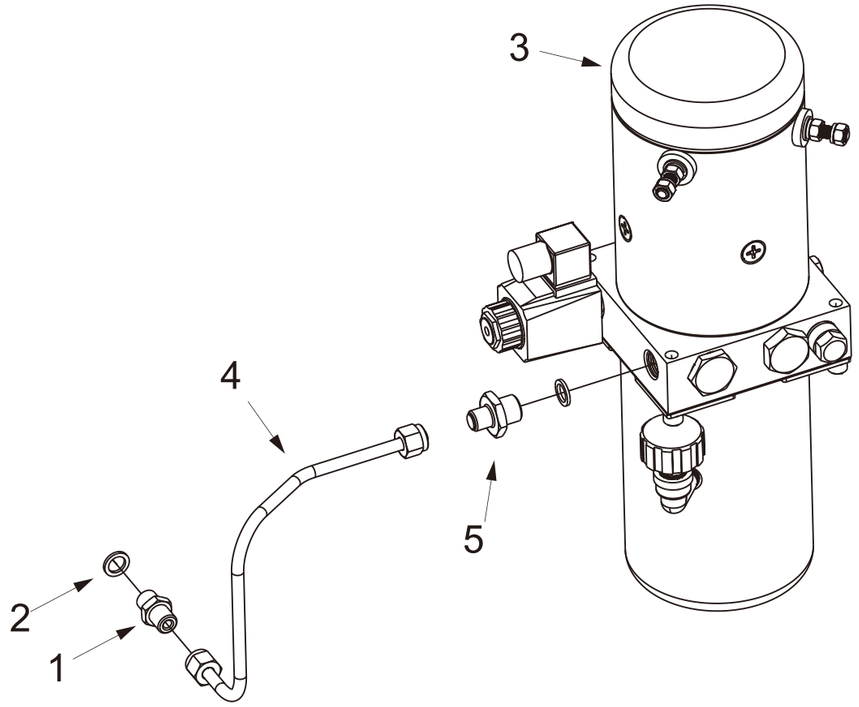


Fig.11 Cylinder assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	4700613001	Pistonrid	1
2	2800605002	Dustring	1
3	4700612001	Supporting tach	2
4	2800605001	Seal washer	1

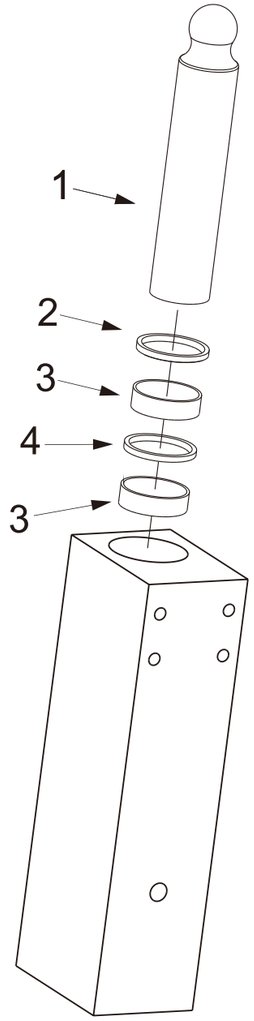


Fig.12 Hydraulic power unit

ITEM#	PART#	NAME	#FOR ASSY.
1	1001400001	Hydraulic motor	1
2	2000612004	Connecting bearing sleeve	1
3	4000600006	Valve assembly	1
4	1000628001	O–ring	1
5	1000600007	Oil pump	1
6	2000631003	Screw	2
7	2000631001	Screw	2
8	1000626001	Oil tank	1
9	1000609001	Washer	4
10	1000741001	Screw	4
11	1000635002	Joint	1
12	1000605005	Oil plug	1
13	1000605006	Cover	1

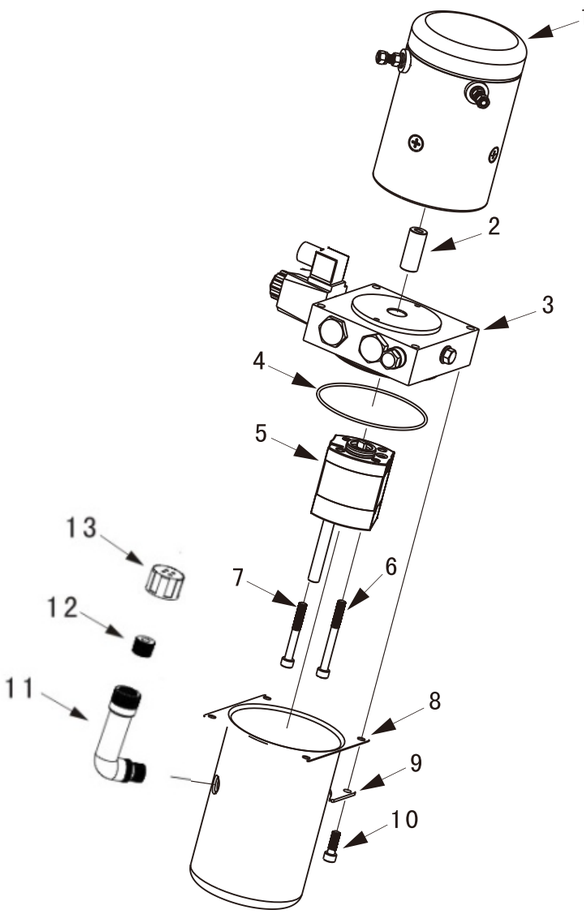


Fig.13Valve assembly

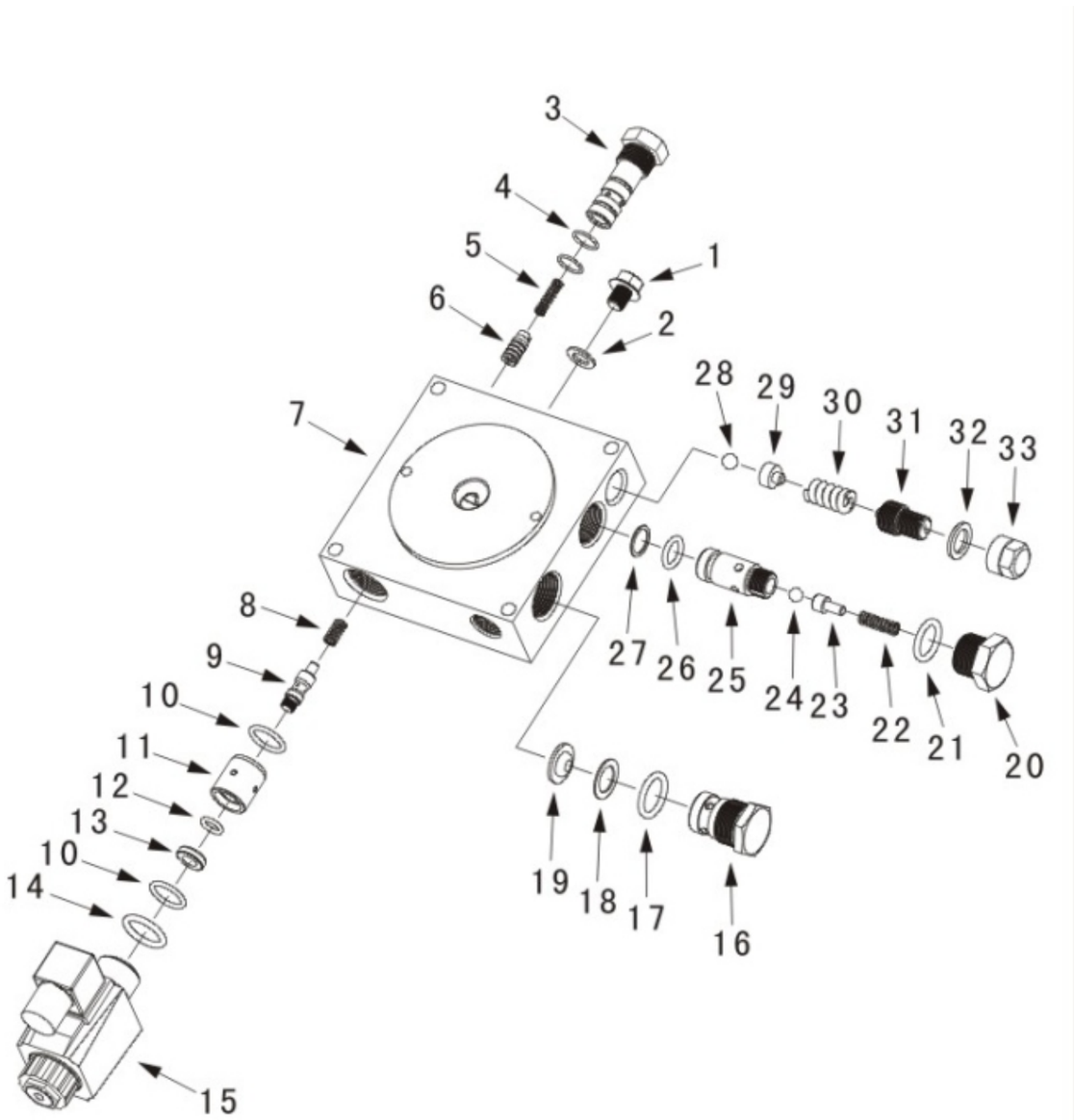


Fig.13 Valve assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	2000630001	Bolt	2
2	2000637001	Washer	2
3	2000625003	Bolt	1
4	2000628014	O–ring	2
5	2000619004	Spring	1
6	2000614008	Core of slide valve	1
7	4000603010	Valve body	1
8	2000619001	Spring	1
9	2000613003	Core of slide valve	1
10	2000628007	O–ring	2
11	2000612006	Slide valve sleeve	1
12	2000628015	O–ring	1
13	2000610001	Washer	1
14	2000628001	O–ring	1
15	2000603018	Electromagnetic coil	1
16	1000603003	Plug	1
17	2000628018	O–ring	1
18	2000637005	Washer	1
19	2000634002	Filter net	1
20	1000603012	Valve holder	1
21	2000628009	O–ring	1
22	2000619003	Spring	1
23	2000613001	Spring socket	1
24	2000504001	Steel ball	1
25	2000603004	Valve holder	1
26	2000628010	O–ring	1
27	2000634001	O–ring protection washer	1
28	1000604001	Steel ball	1
29	1000603013	Spring socket	1
30	1000619001	Spring	1
31	1000303014	Pressure adjusting bolt	1
32	2000637002	Washer	1
33	1000603016	Nut	1
			1

Fig.14 Oil pump

ITEM#	PART#	NAME	#FOR ASSY.
1	2000628001	O–ring	1
2	2000605006	Seal washer	1
3	2000628002	O–ring	1
4	4000611001	Oil out cover	1
5	2000628016	O–ring	2
6	2000628017	O–ring	2
7	2000605002	O–ring protection washer	2
8	2000612002	Oil discharge block	2
9	1000621005	Drive gear	1
10	1000621006	Driven gear	1
11	2000633001	Pin	4
12	1000603006	Pump body	1
13	2000611006	Oil feed cover	1
14	2000628019	O–ring	1
15	4000625002	Oil suction pipe	1

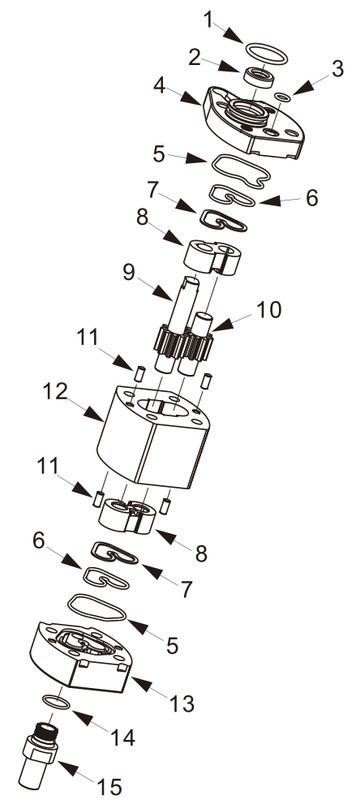


Fig.15 Frame

ITEM#	PART#	NAME	#FOR ASSY.
1	1500724001	Frame	1
2	1500724002	Bracket	1
3	7300300001	Balance wheel assembly	1
4	1500400001	Electric panel assembly	1

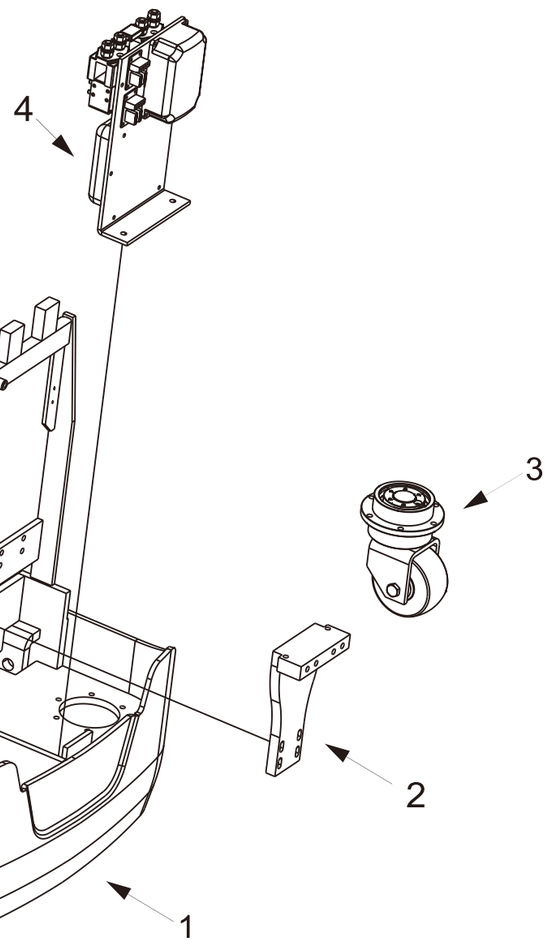


Fig.16 Banlance wheel assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	4300327001	Mat	1
2	7300712002	Mat	1
3	7300320001	Bearing	1
4	7300218001	Wheel seat	1
5	1001031003	Screw	6
6	7301218001	Wheel bracket	1
7	1000339001	Nut	1
8	2000737003	Circlip	1
9	2000305001	Dust ring	2
10	2300312001	Bush	2
11	1000320002	Bearing	2
12	4000312002	Wheel sleeve	1
13	2700332001	Balance wheel	1
14	7300330001	Screw	1
15	7300300001	Balance wheel assembly	1
16	4300304001	Nut	1
17	4300720002	Bearing	1
18	7300305001	Pressurize circle	1

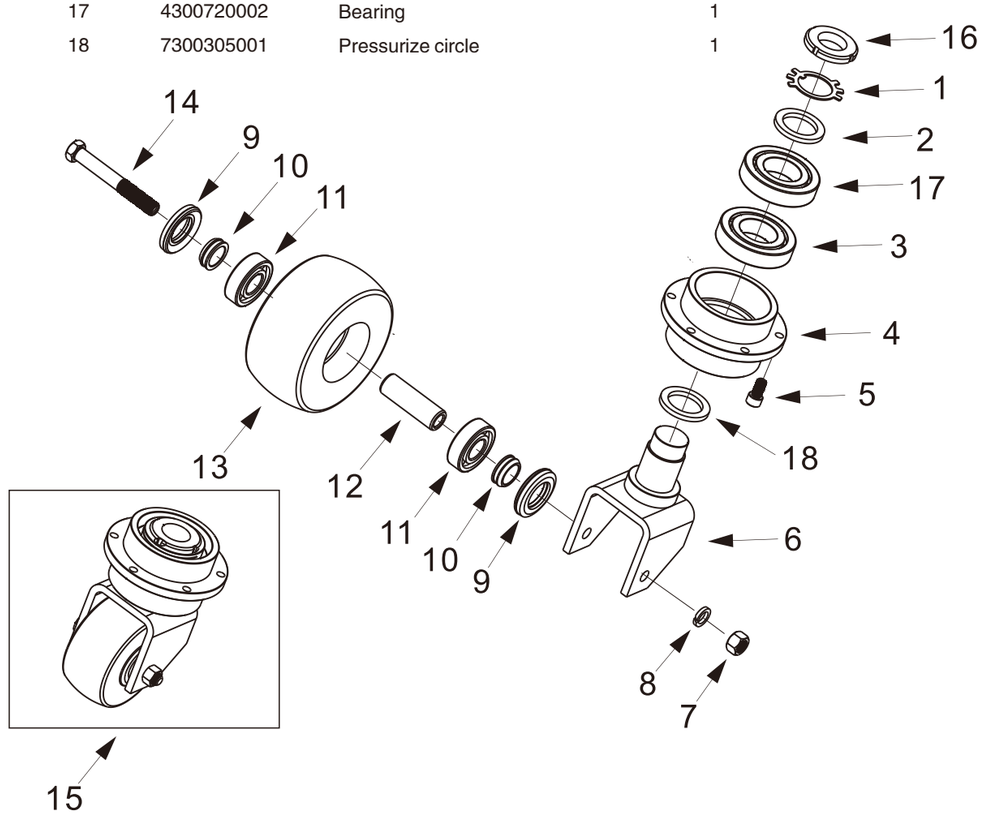


Fig.17 Electric panel assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	1500400001	Electric appliance assembly	1
2	1500418001	Install plate	1
3	4000400024	Circuit board	1
4	4000412001	Washer	8
5	2001141005	Screw	8
6	1500400002	Controller	1
7	2001427001	Washer	12
8	1000441005	Screw	8
9	7800400002	Controller	1
10	1000441006	Screw	4
11	4300407002	Contact	1
12	2000407010	Fuse	1
13	4300407001	Contact	1
14	2001141001	Screw	8
15	2001437006	Washer	8
16	4300406003	Circuit board	2
17	2001437003	Washer	4
18	1000407014	Tuse	1

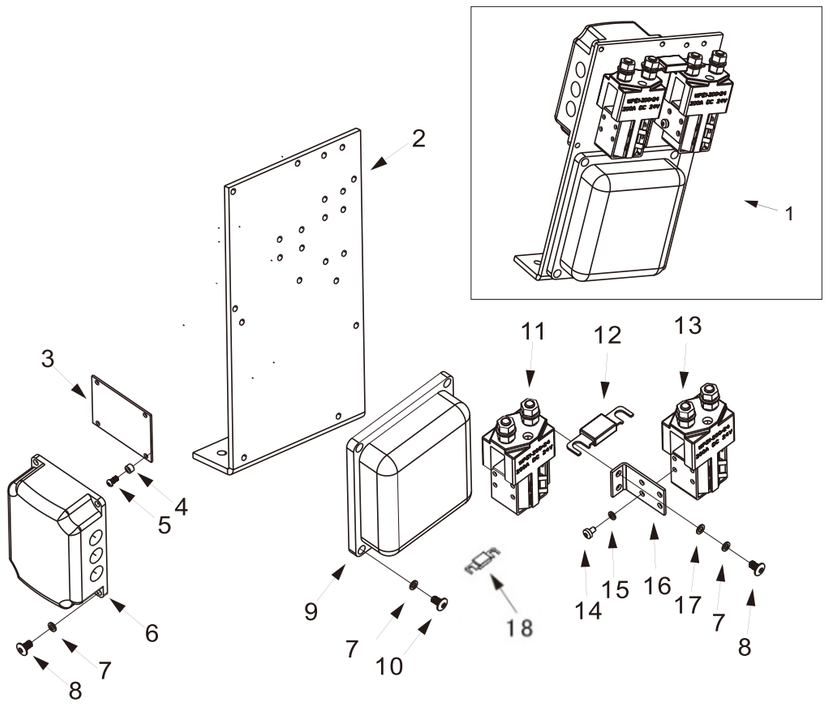


Fig.18 Fork frame

ITEM#	PART#	NAME	#FOR ASSY.
1	1501324001	Frame	1
2	0300902001	Set	1
3	0300902002	Pin	2
4	0300913001	Compound bearing	1
5	4701313001	Shaft	1
6	4000813002	Shaft	2
7	4701322001	Rod	2
8	4000813003	Pin	2
9	4000218002	Wheel fork	2
10	4000213001	Shaft	2
11	1000300004	Double wheel assembly	2

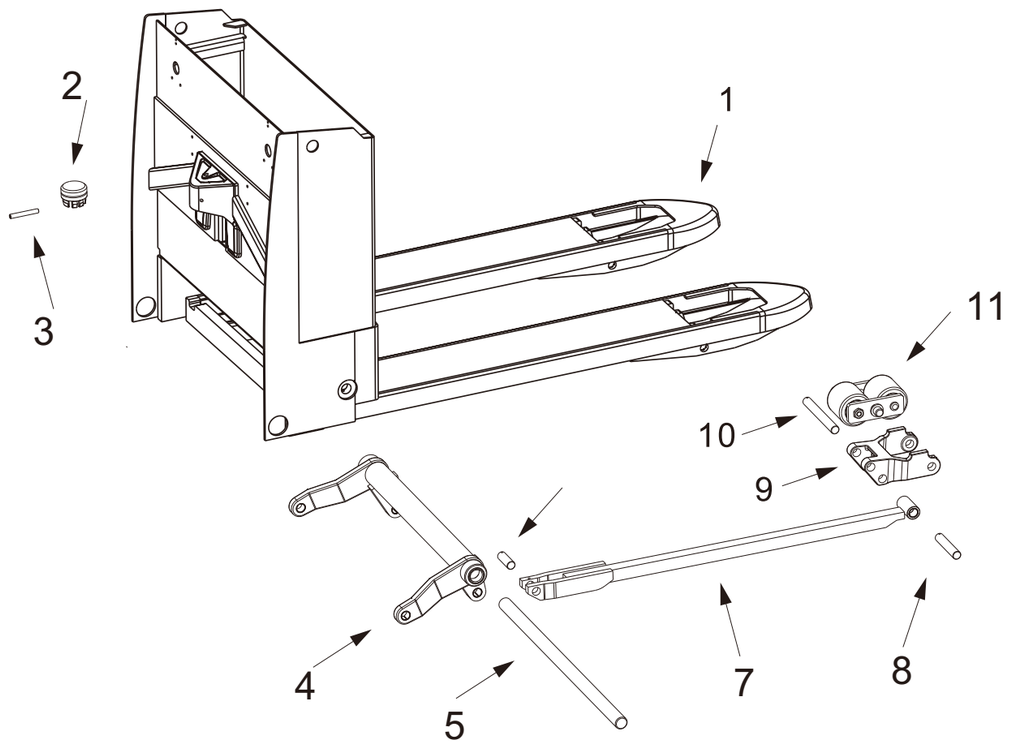


Fig.19 Electric panel assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	1000407006	Emergency stop button	1
2	2001116002	Battery indictor(No calculagraph)	1
3	2000507008	Key	1
4	1500908001	Veil	1
5	1500908002	Veil	1
6	4300934001	Gripe	1
7	1500908003	Veil	1
8	0300902001	Gemel	1
9	0300902002	Gemel	1

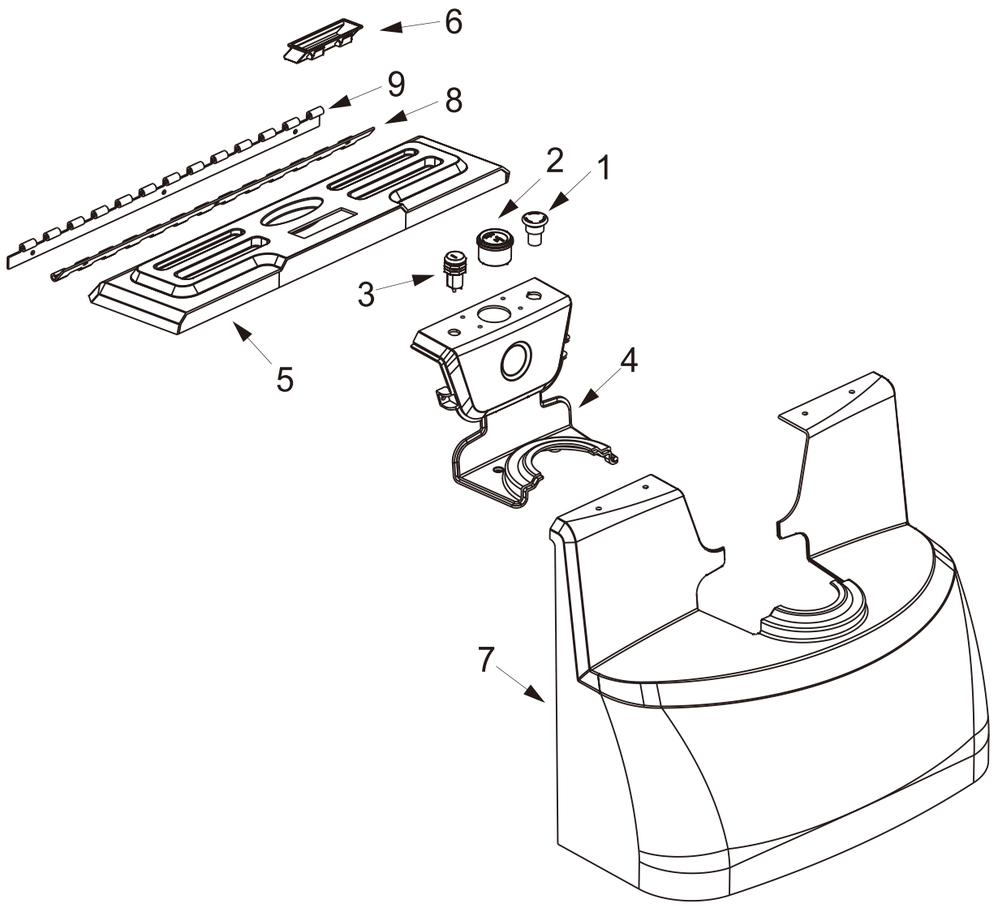


Fig.20 Battery assembly

ITEM#	PART#	NAME	#FOR ASSY.
1	2001100022	Charger(220V USA criterion)	1
	2001100023	Charger(220V Australia criterion)	1
	2001100024	Charger(220V Eng criterion)	1
	2001100021	Charger(220V Europe criterion)	1
	2001100026	Charger(110V USA criterion)	1
	2001100027	Charger(110V Australia criterion)	1
	2001100028	Charger(110V Eng criterion)	1
	2001100029	Charger(110V Europe criterion)	1
2	1002400001	Flying rings	1
3	1001100003	Battery(210Ah)	1
4	1000131001	Screw	2
5	2000537001	Washer	2
6	2000739002	Nut	2