



# OPERATIONMANUAL

## **400E** ELECTRIC WHEEL LOADER





# OVERVIEW

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Your 400E is an articulated alternating current battery electric wheel loader with a 400KG lift capacity, designed for light commercial use and small property landholders.

Your 400E has multiple attachments to suit various applications which are connected by an easy to use hydraulic quick hitch system. Charged by a standard 240 volt power point, your 400E will provide approximately four -five hours of run time. This manual is designed to inform 400E operators of the correct operating procedures. Please read it carefully so you can fully understand your 400E's systems and capabilities.

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GROSSMANN

## Safe Operating Procedure

### General Safety Instructions

- Complete pre-start checklist
- Read Manufacturers Operation Manual
- Do not wear loose clothing or jewellery
- Do not operate equipment near pedestrians or people
- Do not operate without the appropriate PPE as detailed
- Do not operate equipment under the influence of drugs alcohol

### Battery

Do not allow the battery charge to drop below 55 volts. Batteries are dangerous do not tamper with them in any way. Strong corrosive acids can cause burns.

### Top 4 Safety Rules

- Read and understand the Operation Manual.
- Ensure the load does not exceed 400Kg.
- Only Load and Unload trailer when it is connected to vehicle.
- Operating a loader on a hill is very dangerous only drive directly up and down slopes with bucket as low to ground as possible.

### Risk Assessment

- Assess the immediate work area for any hazards
- Control or eliminate all the risks associated with the hazards
- Hazards to check for that may require risk control-
  - Overhead power lines
  - Digging
  - Confined space
  - Traffic & moving machinery
  - Stored energy-air,hydraulic, electricity,pressure
  - Working at height
  - Falling objects
  - High Voltage

### Operating Safety Instructions

Always have the heavy end of the machine uphill. With a Full load the bucket end is heaviest, empty loads the rear of the machine is heaviest

Maintain proper tyre pressure–refer manufacturer specifications

Know where the ignition switch is located in case of emergency

Do not move the hydraulic levers harshly - use very soft and steady motions

Do not operate loader if you do not have vision as required by your standard

Drivers Licence

Please wear yours prior to operation

Avoid lifting attachments manually - use the fonder where possible

When loading or unloading on a trailer ensure the trailer is attached to vehicle and do not load or unload on a hill. If you can not unload or load on flat ground then the towing vehicle should be pointing downside and not be greater than 10 degrees.

When changing attachments always ensure that the locking pins are fully engaged prior to operation

Always carry the load as low to the ground as possible

Do not operate on or near embankments or ditches and beware of soft or damp ground that may give way

Do not operate on slopes greater than 10 degrees and only drive directly up and down slopes not across

Do not park on uneven ground

Never have more than one person operating or riding an machine

Never step off operating platform with load raised Never allow children to operate machine

Avoid sharp turns

Always remove the key when not in use

**04E SPECIFICATIONS**

IDENTIFICATION	1	BRAND		
	2	MODEL	400E	
	3	TOTAL WEIGHT	KG	1120
	4	RATED LOAD	KG	400
	5	BUCKET CAPACITY	m <sup>3</sup>	0.2
	6	FUEL TYPE		BATTERY
	7	MAX SPEED ON LOW STATION	Km/h	10
	8	MAX SPEED ON HIGH STATION	Km/h	18
	9	WHEEL QUANTITY	F/R	2/2
BATTERY	10	BATTERY MODEL	6-EVF-150	
	11	BATTERY TYPE	MAINTENANCE- FREE LEAD-ACID BATTERY	
	12	BATTERY QUANTITY	5	
	13	BATTERY CAPACITY	KW	9
	14	RAETD VOLTAGE	V	60
	15	WORKING TIME		6h
	16	CHARGE TIME		8h
	17	ELECTRICAL SYSTEM VOLTAGE	V	12
HYDRAULIC SYSTEM	18	Motor	YF100B30-60A	
	19	Power	W	3000
	20	DISPLACEMENT	ml/r	16
	21	ROTATING SPEED		Low 800 r/min High2000 r/min
	22	PRESSURE	mpa	16
STEERING SYSTEM	23	STEERING SYSTEM	HYDRAULIC	
	24	PRESSURE	mpa	14
WALKING SYSTEM	25	WALKING MOTOR	Y140B18-60A	
	26	POWER FORM	ALTERNATING CURRENT	
	27	VOLTAGE	V	60
	28	MOTOR QUANTITY		2
	29	POWER	W	1800*2
	30	TYRE		6.00-12 MOUNTAIN TIRE
	31	OPTIONAL TYRE		23X8.5-12
BRAKE SYSTEM	32	WORKING BRAKE	DRUM OIL BRAKE	
	33	PARKING BRAKE	mpa	DRUM HANDBRAKE

### Safe Operating Procedure

Simple by design, **400E** is an easy to operate machine with intuitive controls. cockpit is easy to navigate and with a little practice you will be able to complete tasks with ease.

Please take the time to familiarize yourself with each control before operating.

### Dashboard Instrument Cluster



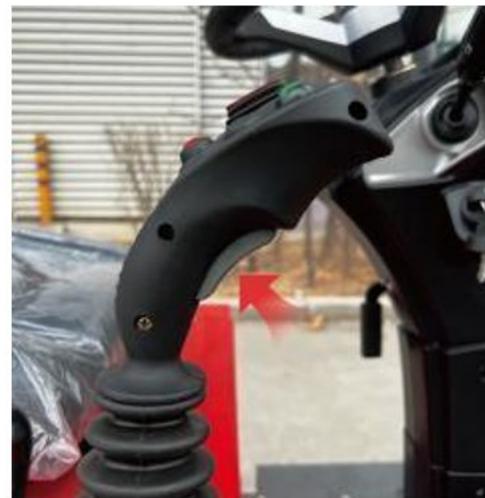
**1** Key Barrel



**2** Brake Fluid— access for topping up brake fluid (0.8L maximum capacity)



**3** Lights – Head light and indicator switches.



**4** Hydraulic Power Control—this switch is used to increase or decrease flow to the hydraulic system as required.

**5** Battery Voltage Indicator - do not allow to drop below 55 volts before recharging.

### Master Control Switch and Recharging socket



The main power control is located next to the seat, and the charging port is located on the lower seat panel. Easy spin to start.



The recharging port sits under the seat. You should familiarize yourself with the Battery System.

### Hydraulics



The hydraulic system is topped up from the cap adjacent to the accelerator pedal. The hydraulic tank capacity is 111 liters. And should be inspected regularly. A site gauge sits at the front of the tank.



Attachments requiring hydraulic power are connected via hoses into the two camlock couplings. A valve lever selects quick hitch or ancillary settings.

### Foot Pedals

The accelerator pedal is on the right and the brake is on the left hand side of the foot well. The brake also has a manual park brake, controlled by the black handle, on the left side of the seat.

( Special instructions: When switching between forward and backward directions, need to step on the brake pedal lightly. After activating the program, step the accelerator pedal to move . )

## Joystick Control

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Upward arrow " F " is selected to drive forward.  
Central position is neutral.  
Downward arrow " R " is selected for reverse.  
The yellow button control high and low speed  
The red button control high speed of oil pump

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Push the joystick forward to lower the lifting arm and the attachment.

Left hand movement tilts the attachment downwards.

Right hand movement tilts the attachment up.

raise the lifting arm and the attachment.

## Quick Hitch Handle

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400E uses a Quick Hitch system to connect attachments.

Attachment must be in an on-ground safe position before using the quick hitch control lever. Forward movement on the quick hitch handle will release the locking pins to enable removal of the attachment. Always return the quick hitch lever to its locked position. The hydraulic three way Valve lever needs to be in the Quick hitch position.

CAUTION-always ensure the locking pins are correctly in place before using any attachment.

### Storage

400E should be stored in a safe, dry, well ventilated, clean environment.

### Warranty Terms

The machine comes with a 12 month warranty.

The warranty is return to base (transport at customer cost) or parts only, and excludes:

- All Ground Engaging Tools(GET)
- Tyres
- Damage caused by operator or other
- Operator abuse

### About the Battery System

Battery Model:	6 – EVF-150A
Rated Capacity(3hr)	150Ah
Number of Battery Groups	5
RatedVoltage	60V
Usage Time	5HRS

- The working time of the rated (rated capacity) is 4 hours, and the longest working time is up to 6 hours.
- The battery contains 5 sets of battery packs, each with a battery capacity of 150Ah total capacity is 750Ah.
- The weight of each individual battery is 49.5kgs, (total weight of all 5 batteries is 247.5kgs).
- Use the voltage gauge to ensure voltage does not drop below 55 volts before recharging.
- Do not allow the battery to fully drain.
- Full charge should be attained within 10hrs. Stop charging if the charging indicator light does not turn green within a 10 hr period and refer to our after sales service team.
- Battery capacity is calculated at an ambient temperature of 25 ° colder temperatures will reduce battery capacity and 400E should not be used below -10°
- Like all batteries, 400E batteries are considered a consumable item. General use, charging and discharging the battery will gradually reduce its capacity. This is normal.
- The service life of the battery is 400 charge / discharge cycles within a three year period.
- The electrolytes in the battery are strong corrosive acids. Do not tamper with the batteries.
- Special charger detection prevents over-charging, and overheating and also detects damage and liquid leakage.
- Opening the battery case while charging is strictly prohibited.
- Only qualified auto electrical engineers are allowed to open the battery case.
- The charger will stop functioning if the grid voltage is fluctuating until normal stable power is detected.
- The charger can not be used to charge other machinery.
- The charger can repair the vulcanized battery of the polarplate and will not cause damage if left connected to 400E for extended periods of time. However it is recommended to unplug the charger when full charge is reached.
- Do not operate 400E while connected to the charger.
- Batteries should not be repaired or replaced while connected to the charger.

### Battery Warranty

The battery comes with a 12 month warranty, from date of purchase.

Battery warranty is made void if:

- 400E is not used for its intended purpose.
- Power loss because of loose terminals, excessive starting, end column pollution and excessive loads.
- Unauthorized modification and disassembly of the battery.
- Damage caused by collision.
- If a damaged charger is used to recharge .

### About the Hydraulic System

Do not drive through water deeper than 10cm

Do not exceed 3km/h while driving in shallow water less than 10cm deep.

Keep the system clean.

Resting the system after 1 h of continuous use will prolong the service life of the hydraulic motor.

Change the carbon brush regularly, inspect and change every twelve months. The specifications of the carbon brush replacement should match the original part so that the pressure of the brush spring is 39 Pa / cubic cm

Use of hydraulic fluid, L-HM46 for ambient temperature -10-40 degrees, L-HV32 for ambient temperature -10--30degrees.

Items that require regular maintenance are the hydraulic oil filter, the oil filter element and the replacement of hydraulic oil.

Normal service life of the pumps and valves is 3 – 5 years Warranty

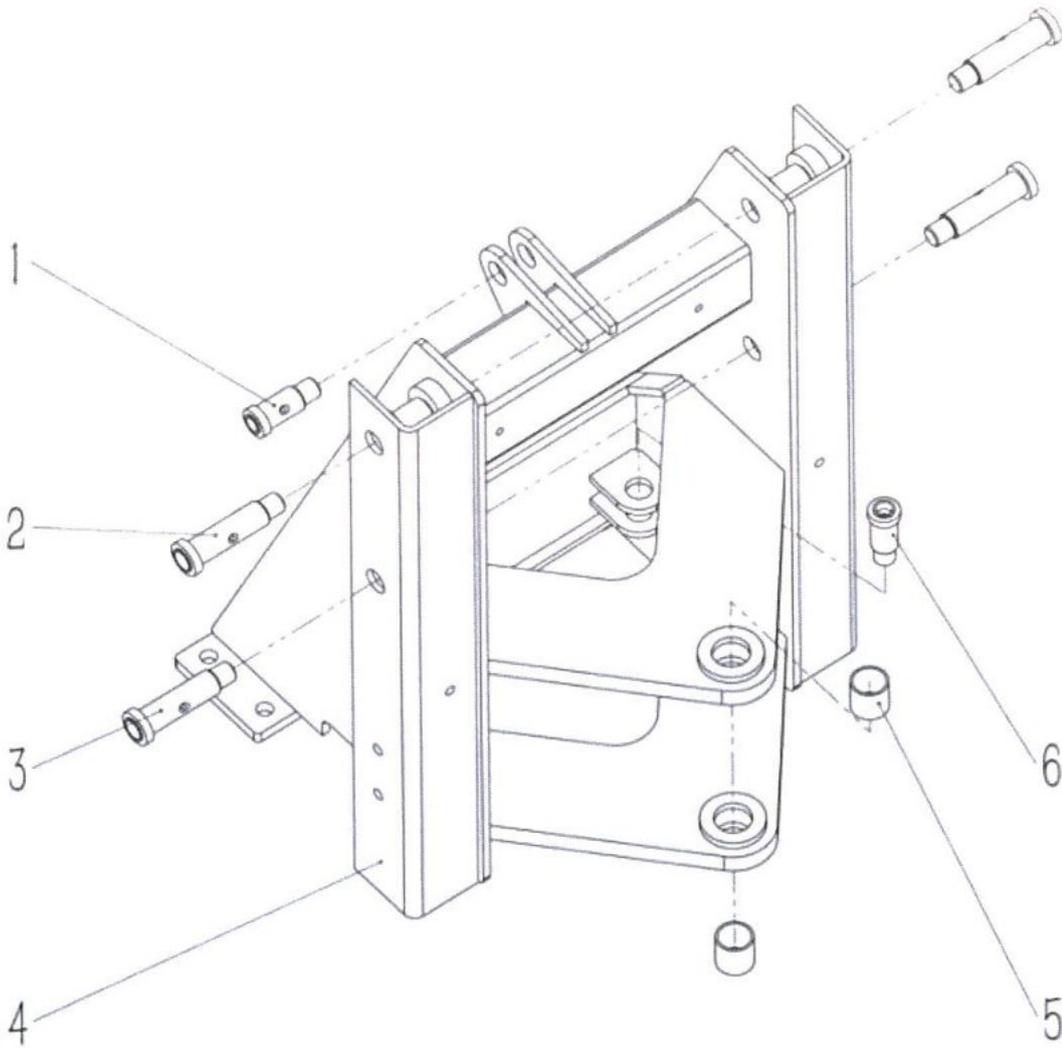
: Hydraulic system 12 months from date of purchase

### About the Motor Warranty

- The motor warranty is twelve months from purchase date.
- Unauthorized repair or tampering of the motor will void the warranty.
- Motor failure caused by improper use of the vehicle is not covered by the warranty.
- Damage caused by water ingress voids any warranty claim. Grease

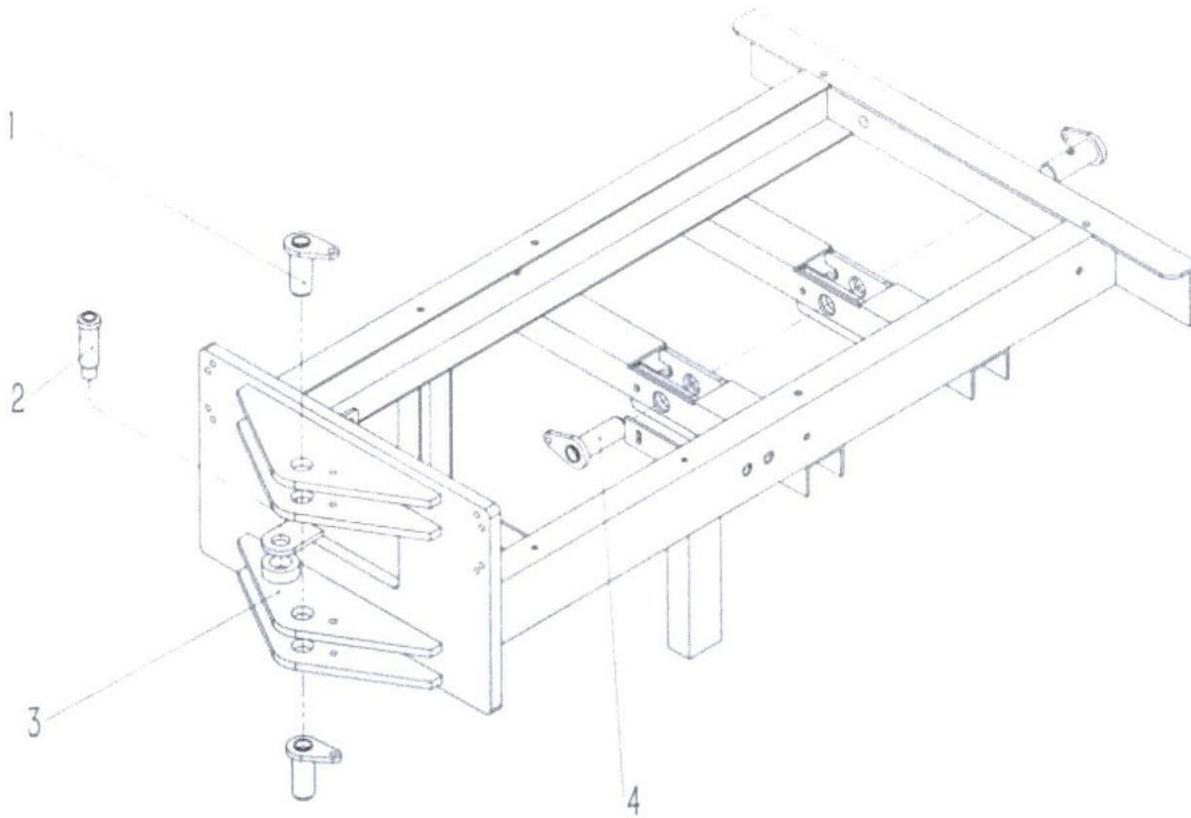
### Grease Point Lubrication

400E has moving parts that need grease for smooth movement and to help eliminate wear from heat and friction. Regularly inspect the lubricate the grease points.



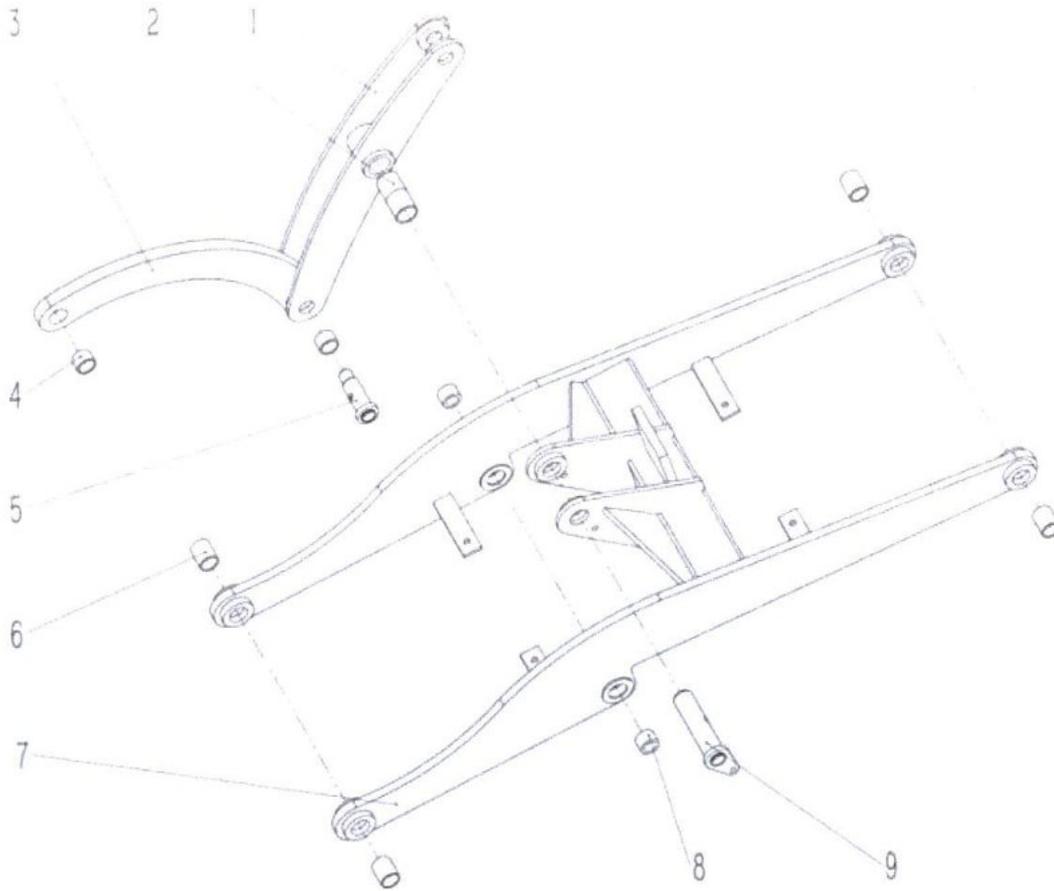
KEY	PART NO.	DESCRIPTION	QTY
1		TILTING CYLINDER PIN	1
2		BOOM PIN	2
3		LIFTING CYLINDER PIN	2
4		FRONT FRAME	1
5		CENTRE HINGEBUSHING	2
6		STEERING CYLINDER PIN	1

# REAR FRAMEASSEMBLY



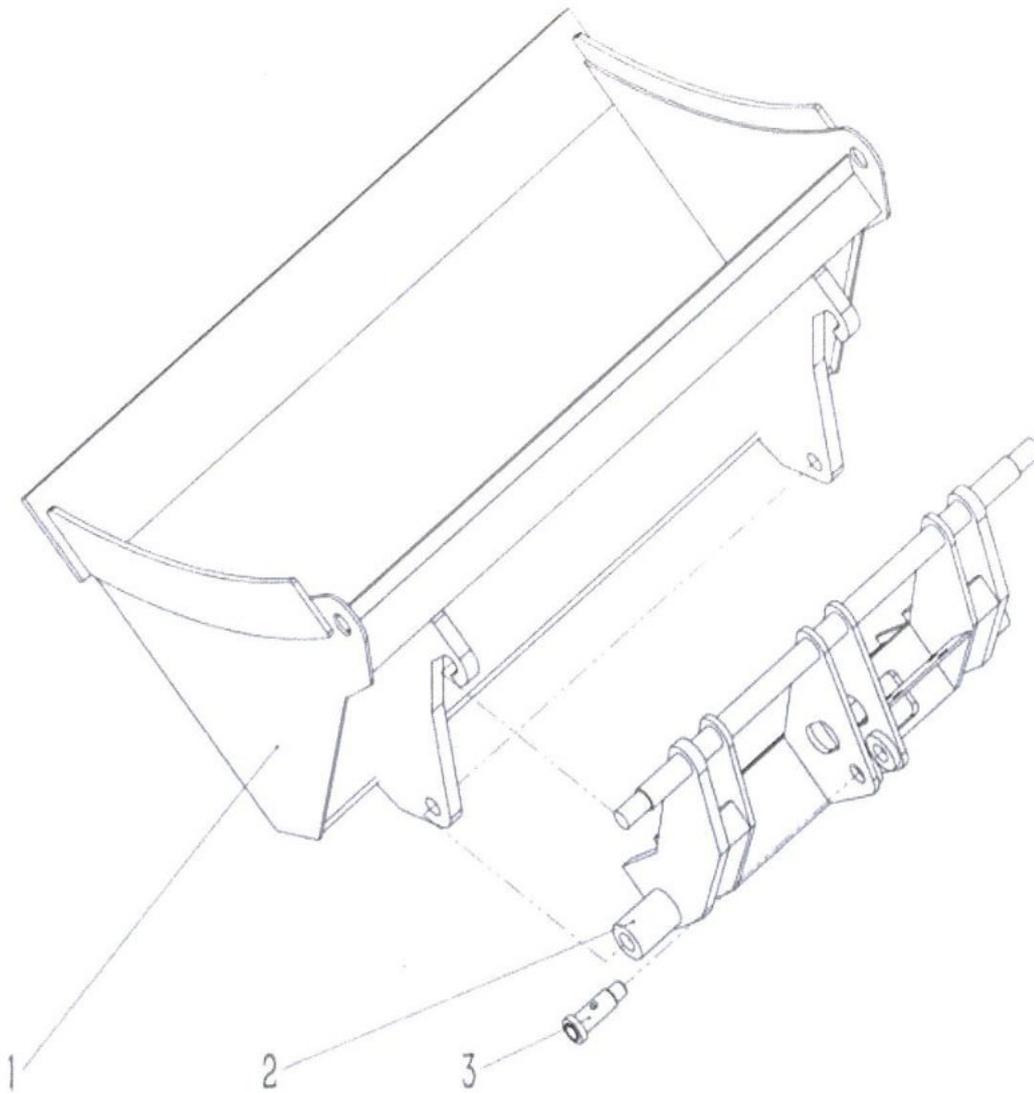
KEY	PARTNO.	DESCRIPTION	QTY
1		MAIN HINGE PIN	2
2		STEERING PIN	1
3		REAR FRAME	1
4		SWING FRAME PIN	2

# BOOM ASSEMBLY



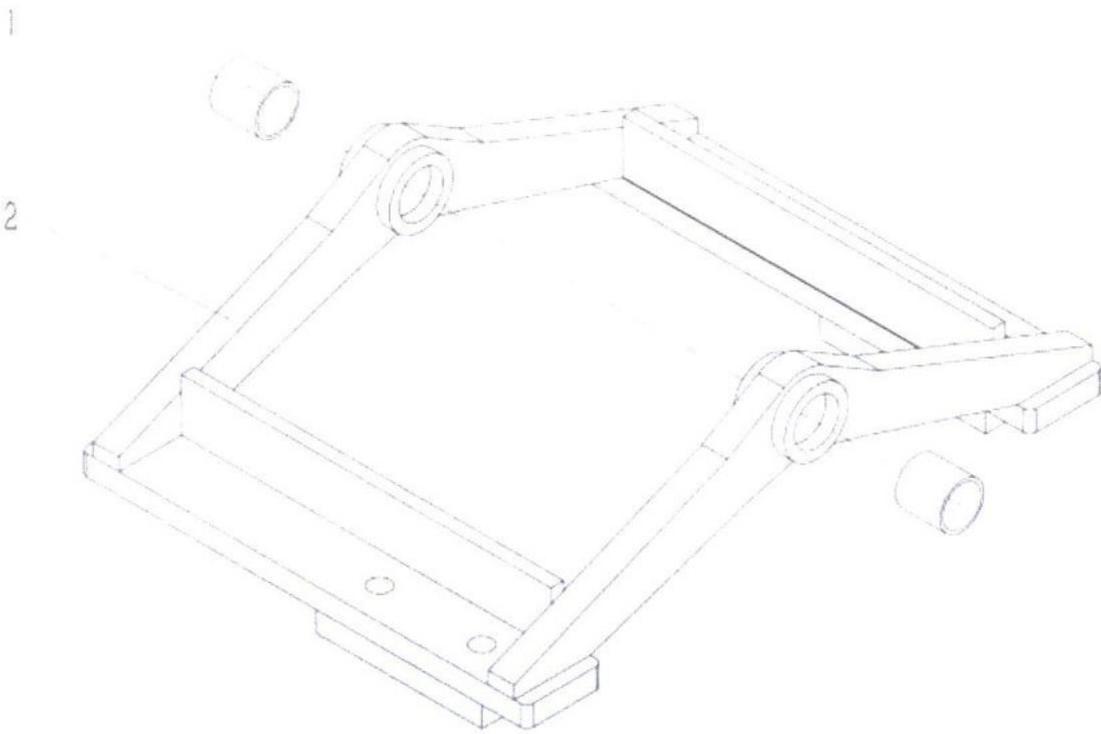
KEY	PARTNO.	DESCRIPTION	QTY
1		SWING ARM	1
2		SWING ARM SLEEVE	2
3		CONNECTING ROD	1
4		BUSHING FOR CONNECTING ROD	2
5		SWING ARM LEVER PIN	1
6		BOOM FRONT AND REAR BUSHING	4
7		BOOM	1
8		BOOM MIDDLE BUSHING	2
9		PIN FOR SWING ARM	1

# QUICKHITCHASSEMBLY



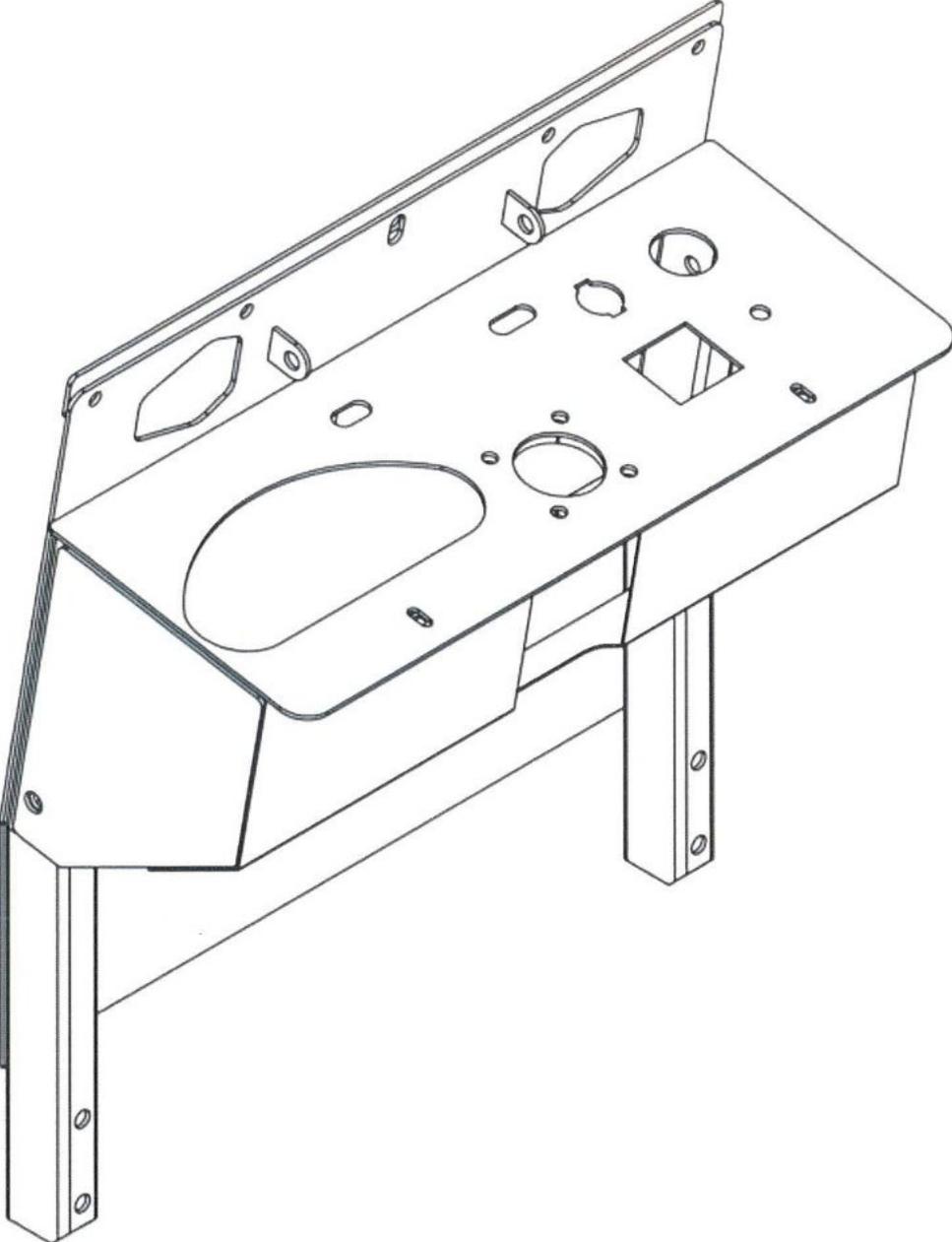
KEY	PARTNO.	DESCRIPTION	QTY
1		QUICK HITCH BUCKET	1
2		QUICK HITCH	1
3		QUICK HITCHPIN SHAFT	1

# SWING FRAME ASSEMBLY

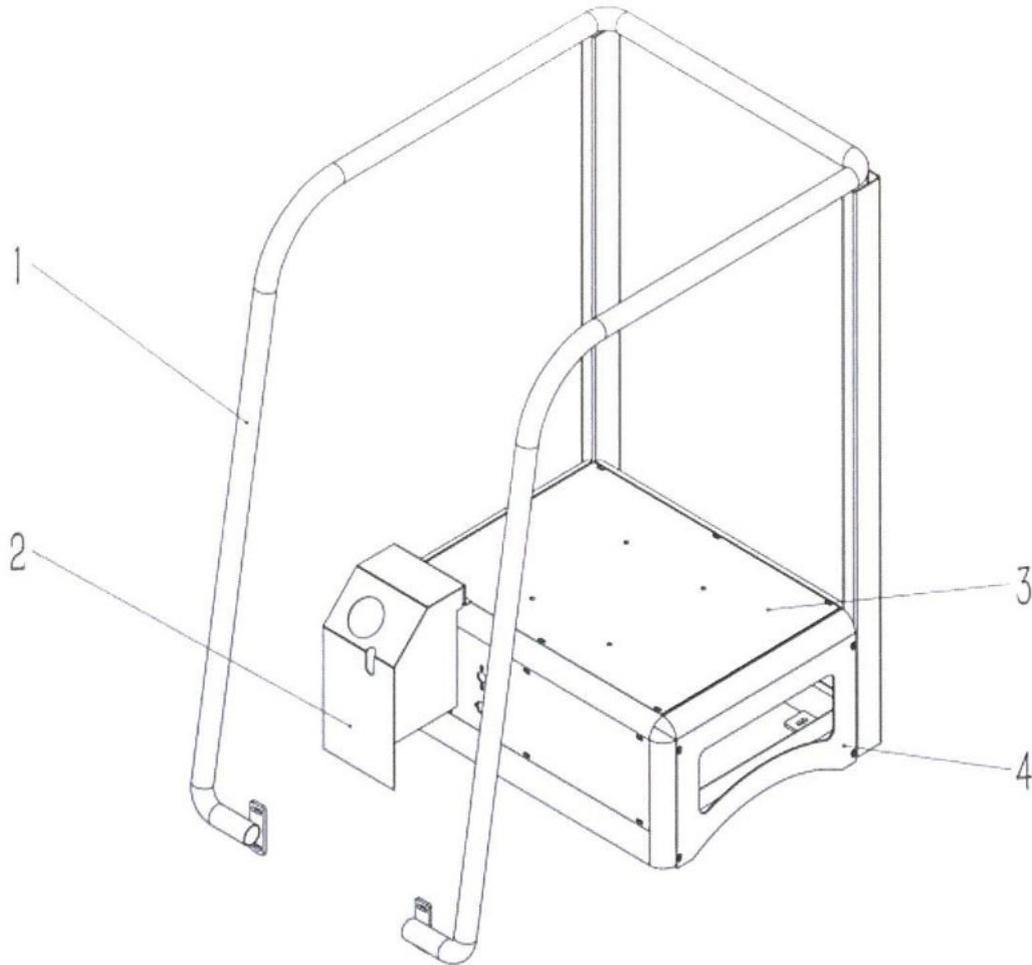


KEY	PARTNO.	DESCRIPTION	QTY
1		SWING FRAME	1
2		BUSHING	2

# DASHBOARD BRACKET

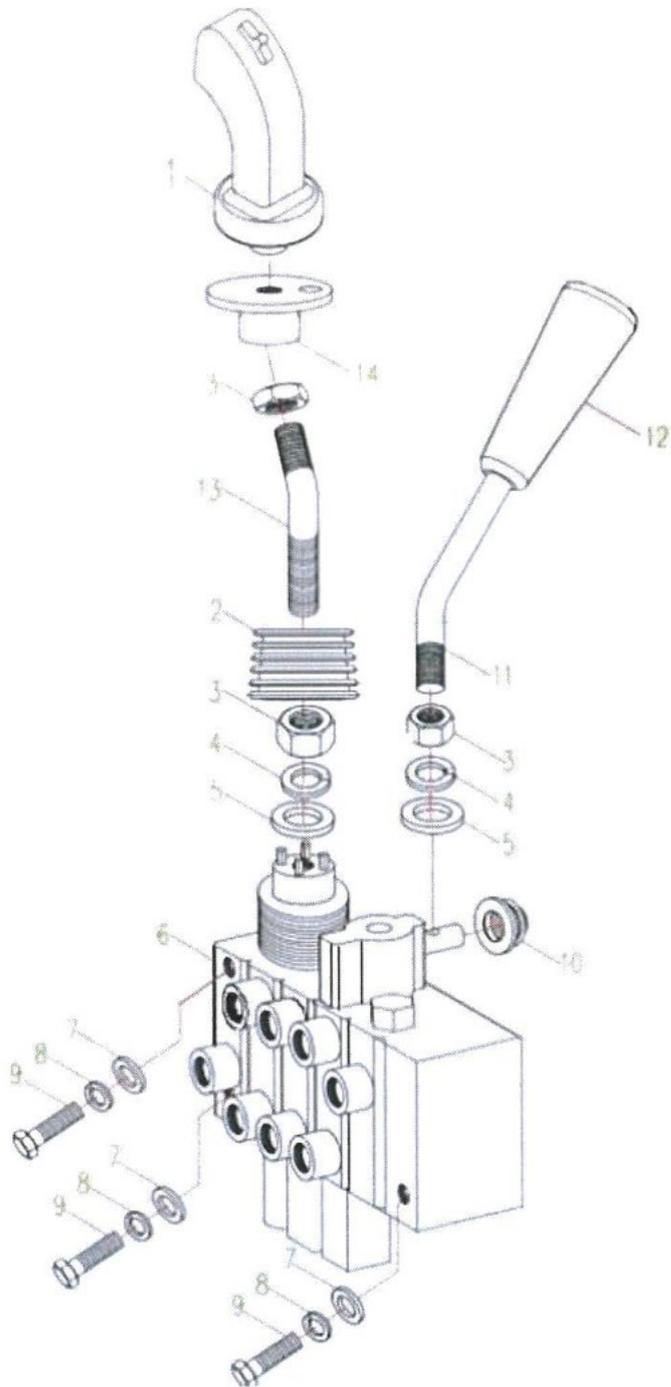


# BATTERY BOX



KEY	PARTNO.	DESCRIPTION	QTY
1		CABIN FRAME	1
2		BOOM OPERATING HANDLE BOX	1
3		SEAT PLATE	1
4		BATTERY BOX	1

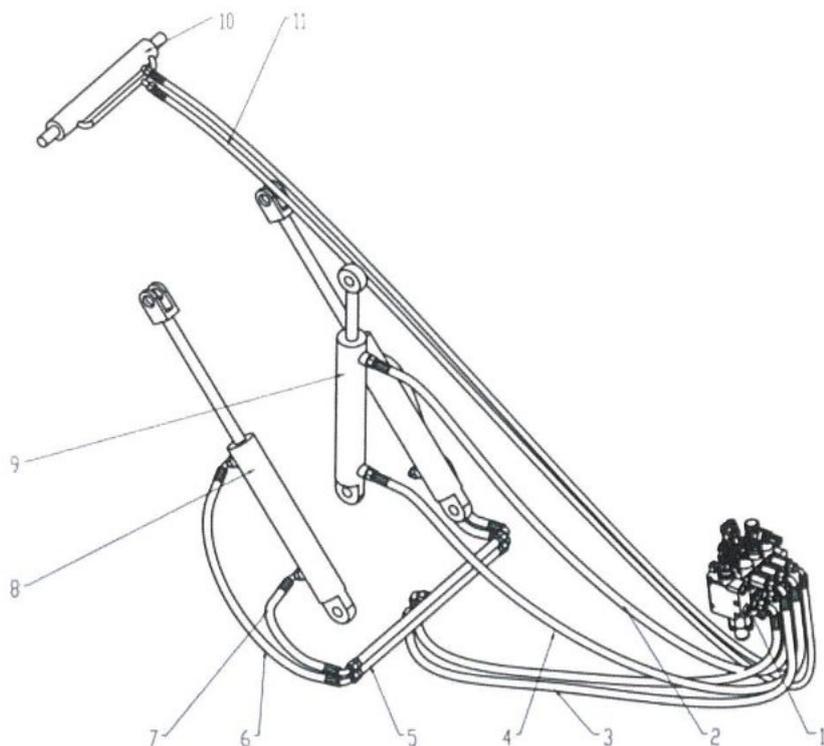
# HYDRAULIC DISTRIBUTION VALVE ASSEMBLY



# HYDRAULIC DISTRIBUTION VALVE ASSEMBLY

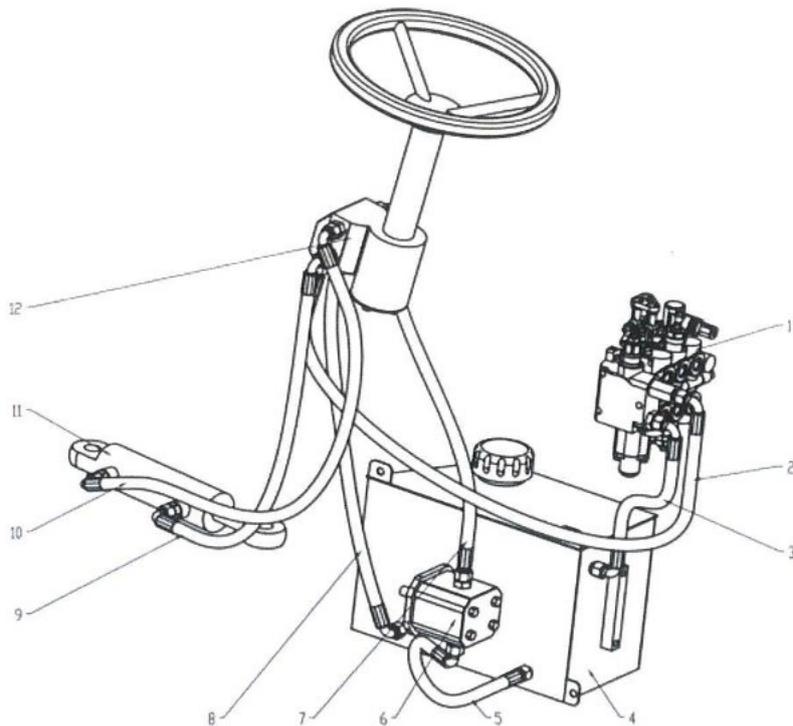
KEY	PART NO.	DESCRIPTION	QTY
1		JOYSTICK	1
2		RUBBER SHEATH	1
3		SCREWNUT M10	3
4		SPRING WASHER 10	2
5		WASHER 10	2
6		MULTI-WAY VALVE	2
7		WASHER 8	3
8		SPRING WASHER 8	3
9		BOLT M8*60	3
10		RUBBER SLEEVE	1
11		ATTACHMENT JOYSTICK	1
12		ATTACHMENT JOYSTICK RUBBER	1
13		JOYSTICK CONNECTING ROD	1
14		JOYSTICK SEAT	1

## HYDRAULIC WORKING SYSTEM



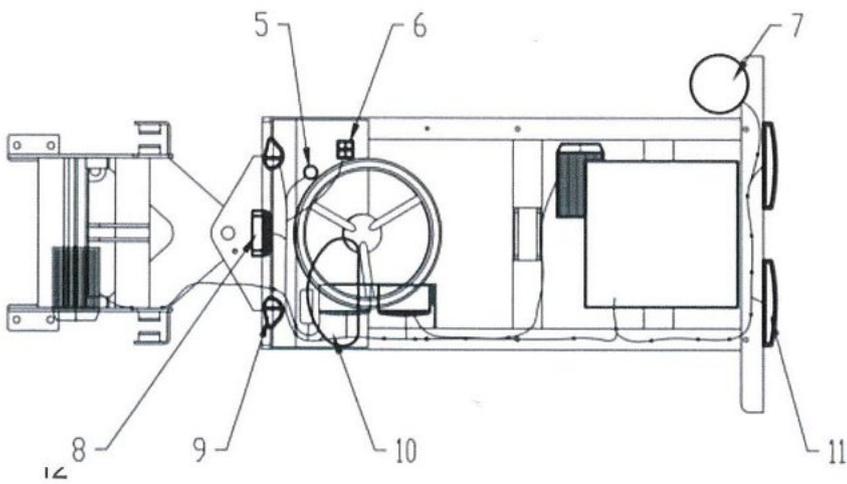
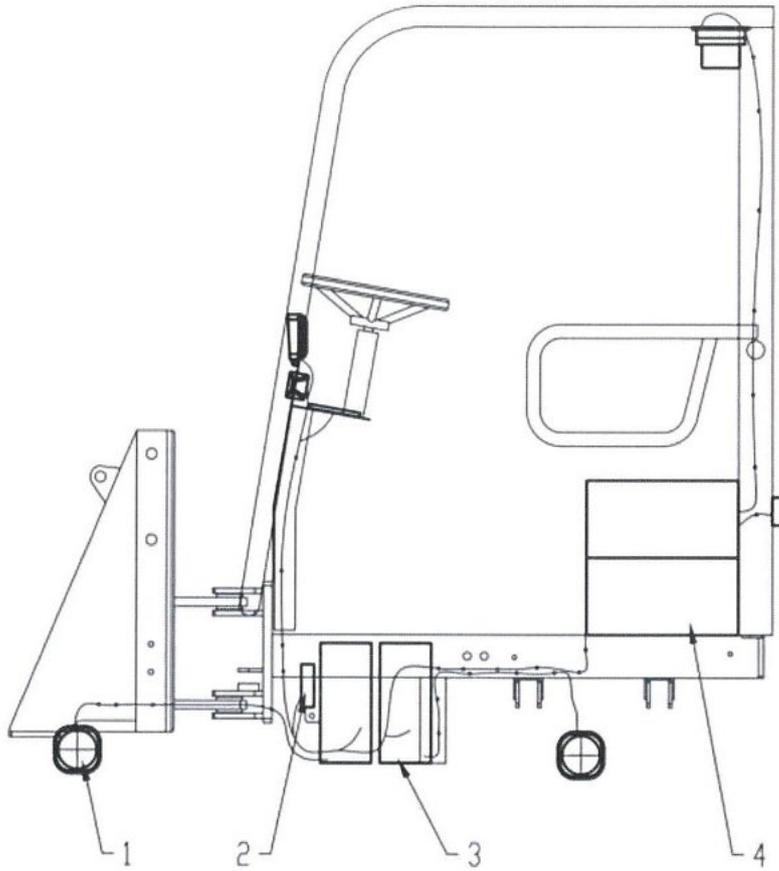
KEY	PART NO.	DESCRIPTION	QTY
1		MULTI-WAY VALVE	1
2		SMALL CAVITY HOSE FOR 1 TIPPING CYLINDER	1
3		LIFTING CYLINDER HOSE	2
4		LARGE CAVITY HOSE FOR 1 TIPPING CYLINDER	1
5		LIFTING CYLINDER IRON PIPE	2
6		SMALL CAVITY HOSE FOR 2 LIFTING CYLINDER	2
7		LARGE CAVITY HOSE FOR 2 LIFTING CYLINDER	2
8		LIFTING CYLINDER	2
9		TIPPING CYLINDER	1
10		QUICK HITCH CYLINDER	1
11		QUICK HITCH CYLINDER HOSE	2

# HYDRAULIC STEERING SYSTEM



KEY	PARTNO.	DESCRIPTION	QTY
1		MULTI-WAY VALVE	1
2		STEERING GEAR OIL INLET HOSE 1	
3		MULTI-WAY VALVE OIL INLET HOSE	1
4		HYDRAULIC TANK	1
5		GEAR PUMP OIL RETURN HOSE 1	
6		GEAR PUMP	1
7		GEAR PUMP OIL INLET HOSE	1
8		STEERING GEAR OIL RETURN HOSE	1
9		STEERING CYLINDER SMALL CAVITY	1
10		STEERING CYLINDER LARGE CAVITY	1
11		STEERING CYLINDER	1
12		STEERING GEAR	1

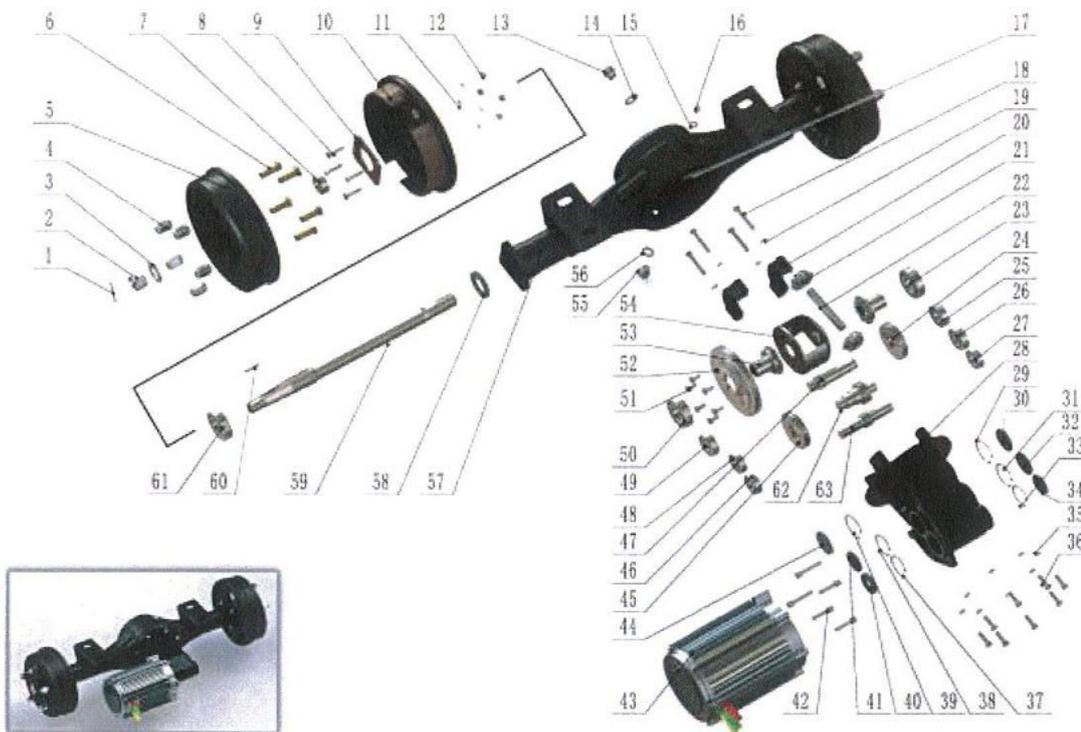
# ELECTRIC CONTROL SYSTEM



## ELECTRIC CONTROL SYSTEM

KEY	PART NO.	DESCRIPTION	QTY
1		MOTOR	2
2		CONTROLLER	1
3		WALKING CONTROLLER	1
4		BATTERY	5
5		ELECTRIC LOCK	1
6		SWITCH	1
7		WARNING LIGHT	1
8		HEADLIGHT	1
9		TURN SIGNAL	2
10		METER	1
11		REAR LIGHT	2

# AXLE ASSEMBLY



KEY	PART NO.	DESCRIPTION	QTY
1		PIN 4X50	2
2		NUT M22	2
3		WASHER 22	2
4		TYRE NUT M14	8
5		BRAKE DRUM	2
6		TYRE BOLD M14X45	10
7		BRAKE DRUM SPACER	2
8		BOLT M8X30	8
9		BEARING PRESSURE PLATE	2
10		BRAKE PAD	8
11		WASHER 8	8
12		NUT M8	8
13		OIL FILLING HOLE PLUG	1
14		OIL FILLING HOLE GASKET	1
15		VENT GASKET	1

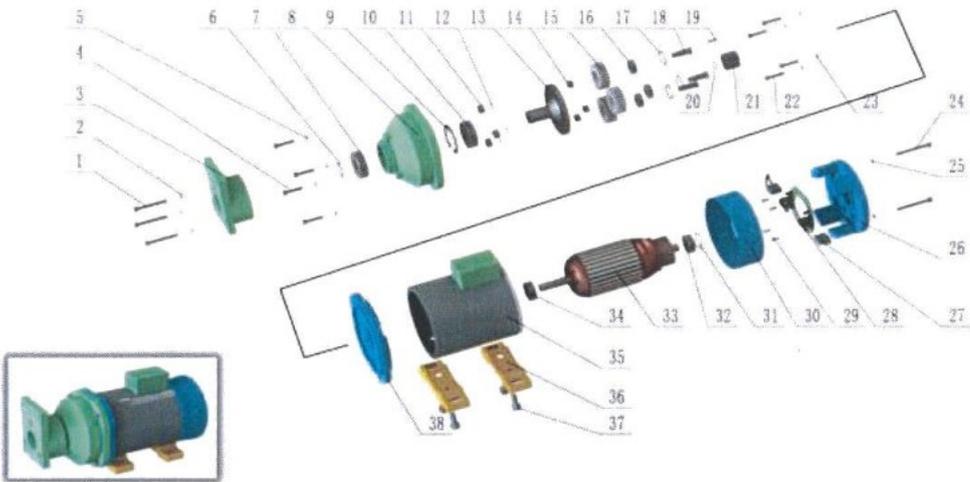
## AXLE ASSEMBLY

KEY	PART NO.	DESCRIPTION	QTY
16		EXHAUST CAP	1
17		SHORT HALFSHAFT	1
18		BOLT M8X50	4
19		WASHER 8	4
20		BEARING PRESSURE PAD	2
21		PLANETARY WHEEL	1
22		PLANETARY SHAFT	1
23		DEEP GROOVEBALL BEARING 6206	1
24		THREE-AXIS BIG GEAR M2,Z34	1
25		DEEP GROOVEBALL BEARING 6204	1
26		DEEP GROOVEBALL BEARING 6204	1
27		DEEPGROOVE BALL BEARING 6004	1
28		GEARBOX BODY	1
29		CIRCLIPS FOR HOLES 47	1
30		OIL BLOCKING 47	1
31		CIRCLIPS FOR HOLES 47	1
32		OIL BLOCKING 47	1
33		CIRCLIPS FOR HOLES 42	1
34		OIL BLOCKING 42	1
35		WASHER 8	8
36		BOLT M8X25	8
37		CIRCLIPS FOR HOLES 42	1
38		CIRCLIPS FOR HOLES 42	1
39		CIRCLIPS FOR HOLES 47	1
40		OIL SEAL 20X42X10	1
41		OIL BLOCKING 42	1
42		SOCKET HEAD CAP SCREWS M8X40	5
43		TRACTION MOTOR	1
44		OIL BLOCKING 47	1
45		TWO-AXIS BIGGEAR M2,Z34	1

## AXLE ASSEMBLY

KEY	PARTNO.	DESCRIPTION	QTY
46		DEEP GROOVEBALL BEARING 6204	1
47		THREE AXIS M2,Z11	1
48		DEEP GROOVE BALL BEARING 6004	1
49		DEEP GROOVEBALL BEARING 6204	1
50		DEEP GROOVE BALL BEARING 6206	1
51		BOLT M8X25	6
52		LARGE RING GEAR M2,Z67	1
53		SUN GEAR	2
54		DIFFERENTIAL CASER	1
55		OIL DRAIN HOLE PLUG	1
56		OIL DRAIN HOLE GASKET	1
57		AXLE HOUSING	2
58		HALF SHAFT OIL SEAL 32X55X8	1
59		SEMI-MAJOR AXIS	1
60		ORDINARY FLAT KEY 8X8X35	2
62		DEEP GROOVEBALLBEARING 6206	1
63		ONE AXIS M2,Z12	1

# ELECTRIC MOTOR ASSEMBLY



KEY	PARTNO.	DESCRIPTION	QTY
1		SOCKET HEADSCREW CAPS M6X50	3
2		SPRING WASHER 6	3
3		CONNECTING FLANGE	1
4		SOCKET HEAD CAPSCREWS M6X30	4
5		SPRING WASHER 6	4
6		CIRCLIP FOR SHAFT 25	1
7		DEEP GROOVE BALL BEARING 6205	1
8		GEAR RING HOUSING M2,Z63	1
9		CIRCLIPS FOR HOLES 52	1
10		DEEP GROOVE BALL BEARING 6205	1
11		HEX NUTS M10	3
12		SPRING WASHER 10	3
13		PLANET CARRIER	3
14		PLANETARY GEAR SPACER	3

# ELECTRIC MOTOR ASSEMBLY

KEY	PARTNO.	DESCRIPTION	QTY
15		PLANETARY WHEEL M2,Z24	3
16		PLANETARY GEAR BEARING 6001	3
17		CIRCLIPS FOR HOLES28	3
18		PLANETARY AXLE	3
19		ORDINARY FLAT KEY 4X4X20	1
20		CIRCLIP FOR SHAFT 14	1
21		SUN GEAR M2,Z15	1
22		SOCKET HEAD CAP SCREWS M6X30	4
23		ELASTIC WASHER 6	4
24		SOCKET HEAD CAP SCREWS M6X60	2
25		ELASTIC WASHER6	2
26		MOTOR REAR COVER	1
27		CARBON BRUSH	2
28		CARBON BRUSH HOLDER PLATE	1
29		PHILLIPS SCREW M4X12	4
30		CARBONBRUSHCOVER	1
31		WAVE SPRING 35	1
32		DEEP GROOVEBALLBEARING 6202	1
33		ROTOR	1
34		DEEP GROOVE BALL BEARING 6202	1
35		STATOR	1
36		FOOT	2
37		SOCKET HEAD CAP SCREWS M10X20	4
38		MOTOR FRONT COVER	1