

# OPERATION MANUAL

## EREL10

ELECTRIC LOADER



# OVERVIEW

The loader is an articulated AC battery electric wheel loader with a 1000kg lift capacity, designed for light commercial use and small property landholders.

We have 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, we will provide approximately four hours of run time.

This manual is designed to inform the operators of the correct operating procedures. Please read it carefully so you can fully understand your systems and capabilities.

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## OVERVIEW

## Safe Operating Procedure

### PPE Required



### Electric Loader

#### 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 or alcohol.

#### Battery

Do not allow the battery charge to drop below 55volts  
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 500Kg.
- Only Load and Unload trailer when it is connected to a vehicle
- Operating a Brumby 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 risk 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
  - ☐ Working at height
  - ☐ Falling objects
  - ☐ High voltage
  - ☐ Any stored energy.

#### Operating Safety Instructions

Always have the heavy end of the machine uphill. With a full load the bucket end is the heaviest, empty loads the rear of the machine is the heaviest	When changing attachments always ensure that the loading pins are fully engaged prior to operation
Maintain proper tyre pressure—refer manufacturer specifications	Always carry the load as low to the ground as possible
Know where the ignition switch is located in case of emergency	Do not operate on or near embankments or ditches and be ware of soft or damp ground that may give way
Do not move the hydraulic levers harshly—use very soft and steady motion	Do not operate on slopes greater than 10 degrees and only drive directly up and down slopes not across
Do not operate loader if you do not have vision as required by your standard drivers licence.	Do not park on uneven ground
Plan work area prior to operation	Never have more than one person operating or riding on machine
Avoid lifting attachment manually—use the loader where possible	Never step off operating platform with load raised
When loading or unloading on a trailer ensure the trailer is attached to a 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 downhill and not be greater than 10 degrees	Never allow children to operate machine
	Avoid sharp turns
	Always remove the key when not in use

# TECHNICAL SPECIFICATIONS

## Performance:

Rated Load	1000KG
Bucket Rated Capacity	0.26 cubic meters
Dumping Height @40°	1821mm
Lifting Height	3120mm
Dumping Reach	829MM
Max. Lifting Weight	1000KG
Max. Excavation Force	16KN
Max. Grade Ability	25
Max. Turning Angle	25° ± 1
Rear Axle Swing Degree	3

## Dimensions & Weight:

Overall Length	3672MM
(Bucket on ground position)	
Bucket Width (overall)	1200mm
Overall Height	2380mm
Wheel Base	1492MM
Min. Ground Clearance	210mm
Net Weight ( standard )	2150kg

## Battery:

Battery Model	No.3-EVF200A
Rated Capacity (3hr)	200Ah
No. Of Batters	12
Rated Voltage	72v
Working Hours	4HRS

## Transmission System:

AC	
Hydraulic System	
Motor Type	HL-72
Voltage	72v
Power	4000w
Displacement	15mL/r

## Oil Capacity:

Hydraulic Oil Tank	40L
Brake Fluid	0.8L

## Braking System:

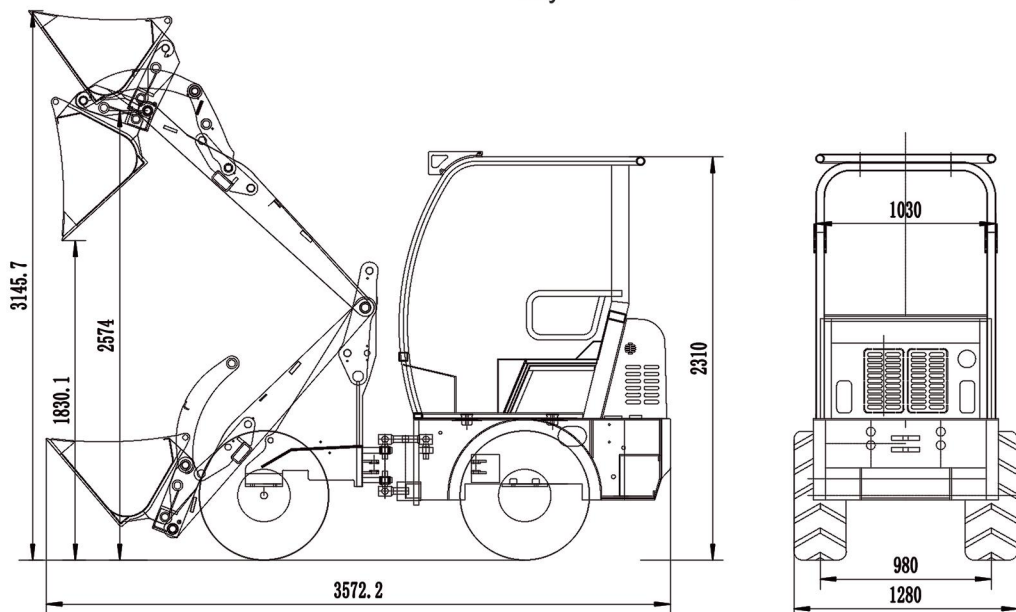
Service Brake	Drum Brake
Brake Drum	250mm
Parking break	Drum Brake
Distribution Valve	Model DL10
Type - Triple valve system	
Dumping Cylinder Bore	Ø80
Lifting Cylinder Bore	Ø90

## Steering System:

Full Hydraulic Steering System	
External Gear Pump	1pc
Steering Cylinder Bore	65mm
System Pressure	16mpa

## Rated Tyres:

Type	29*12.50-15
Working Pressure	0.03mpa
Qty	4



## SPECIFICATIONS



# CONTROLS

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

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

## Dashboard Instrument Cluster



### 1. Key Barrel

2. **Brakefluid**—access for topping up brake fluid. (0.8L maximum capacity)

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

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



### 5. DC Voltmeter

6. **Voltmeter**-- do not allow to drop below 63volts before recharging.

7. **Hours**- Total runtime.

## Master Control Switch / Emergency Stop and Recharging Port



The master power control and recharging port sits on the lower seat panel. The button requires considerable force to activate.

Pull the main power switch to activate and push the button for an Emergency Stop.



The recharging port sits under the emergency stop button. **You should familiarise yourself with the Battery System.**

## Hydraulics

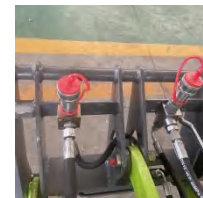
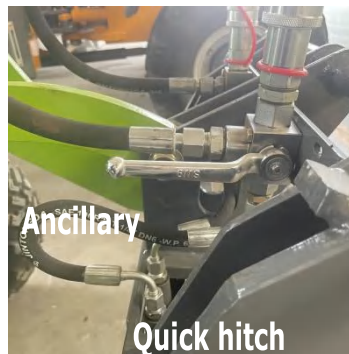


The hydraulics system is topped up from the cap adjacent to the accelerator pedal. The hydraulic tank capacity is 11 liters and should be inspected regularly. A site gauge sits at the rear of the tank.

## Foot Pedals



The accelerator pedal is on the right and the brake is on the left hand side of the dash board. The brake also has a manual park brake, controlled by the red handle.



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

## CONTROLS

## Joystick Control



Upward arrow is selected to drive forward.  
Central position is neutral.  
Downward arrow is selected for reverse.

Yellow button controls the high and low speed.

Pull the joystick back to raise the lifting arm and the attachment.



Push the joystick forward to lower the lifting arm and the attachment, pushing to the end is the float position

Left hand movement tilts the attachment downwards.



Right hand movement tilts the attachment up.

## Quick Hitch Handle



we 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 needstobe in the Quick hitch position. CAUTION-always ensure the locking pins are correctly in place before using any attachment.



## Storage

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

## Warranty Terms

The machine comes with a 12 month/1500 hour warranty, whichever is first. The warranty is return to base (transport at customer cost) or parts only, and excludes:

- All Ground Engaging Tools (GET)
- Tyres and tubes
- Damage caused by operator or other - Operator abuse
- Battery (as long as all battery units work well when driving the machine out of the container, we can conclude the battery is no problem).

## About the Battery System

Battery Model:	3-EVF200A
Rated Capacity (3hr)	200Ah
Number of Battery Groups	12
Rated Voltage	72V
Usage Time	4HRS

- The working time of the rated (rated capacity) is 3 hours, and the longest working time is up to 4 hours.
- The battery group contains 12 sets of battery packs, each with a battery capacity of 200Ah total capacity is 2400Ah.
- The weight of each individual battery is 35kgs, (total weight of all 12 batteries is 420kgs).
- Use the voltage gauge to ensure voltage does not drop below 63 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 the loader should not be used below -10°
- Like all batteries, the 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 polar plate and will not cause damage if left connected to us for extended periods of time. However it is recommended to unplug the charger when full charge is reached.
- Do not operate the loader while connected to the charger.
- Batteries should not be repaired or replaced while connected to the charger.

Matters needing attention:

- Precautions for use of battery:
  - The loader 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 it.

### About the Hydraulic System

- Do not drive through water deeper than 10cm
- Do not exceed 3 km/h while driving in shallow water less than 10cm deep.
- Keep the system clean.
- Resting the system after 1 hr 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--30 degrees.
- 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
  - o 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 Point Lubrication

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

# NOTES

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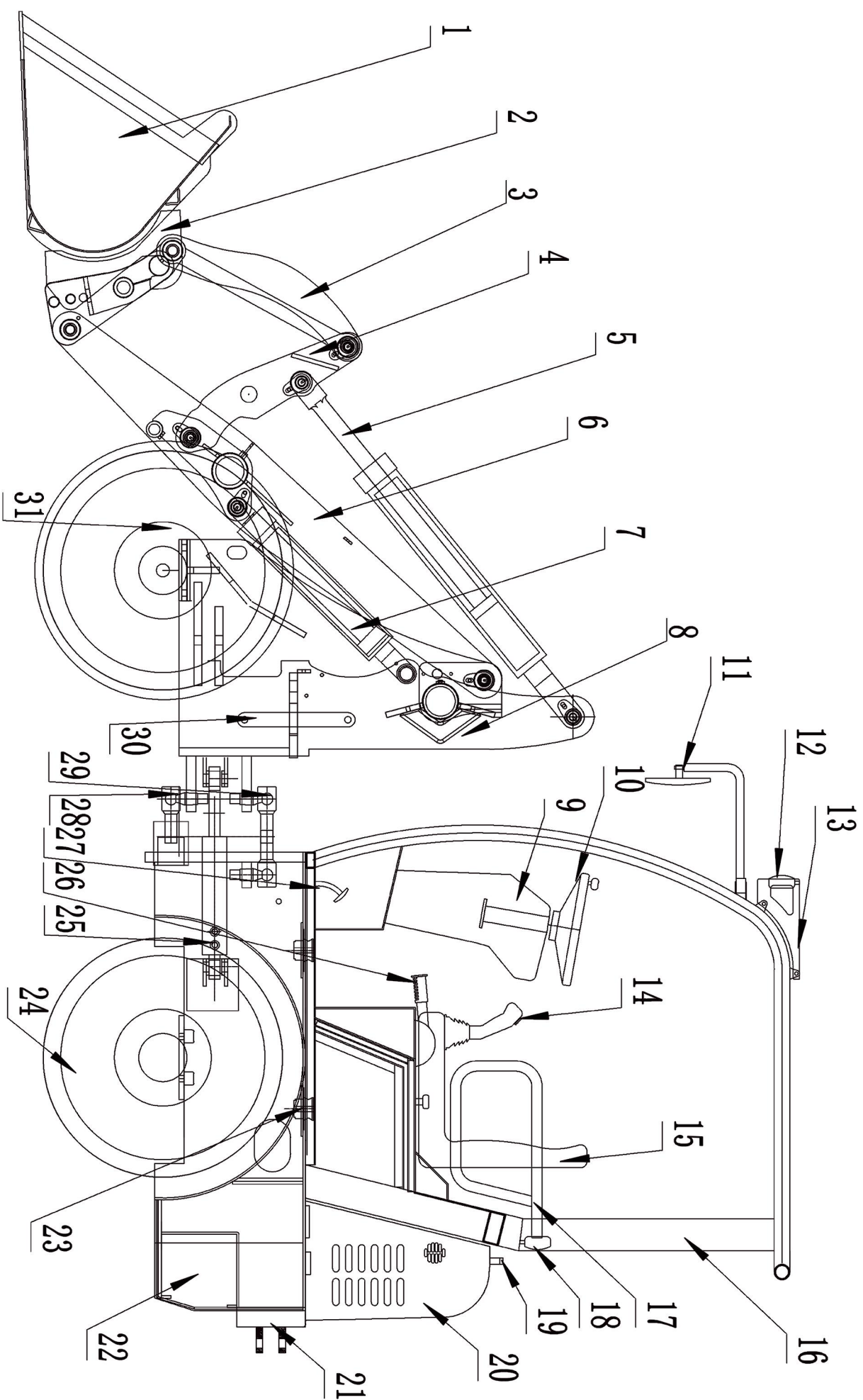
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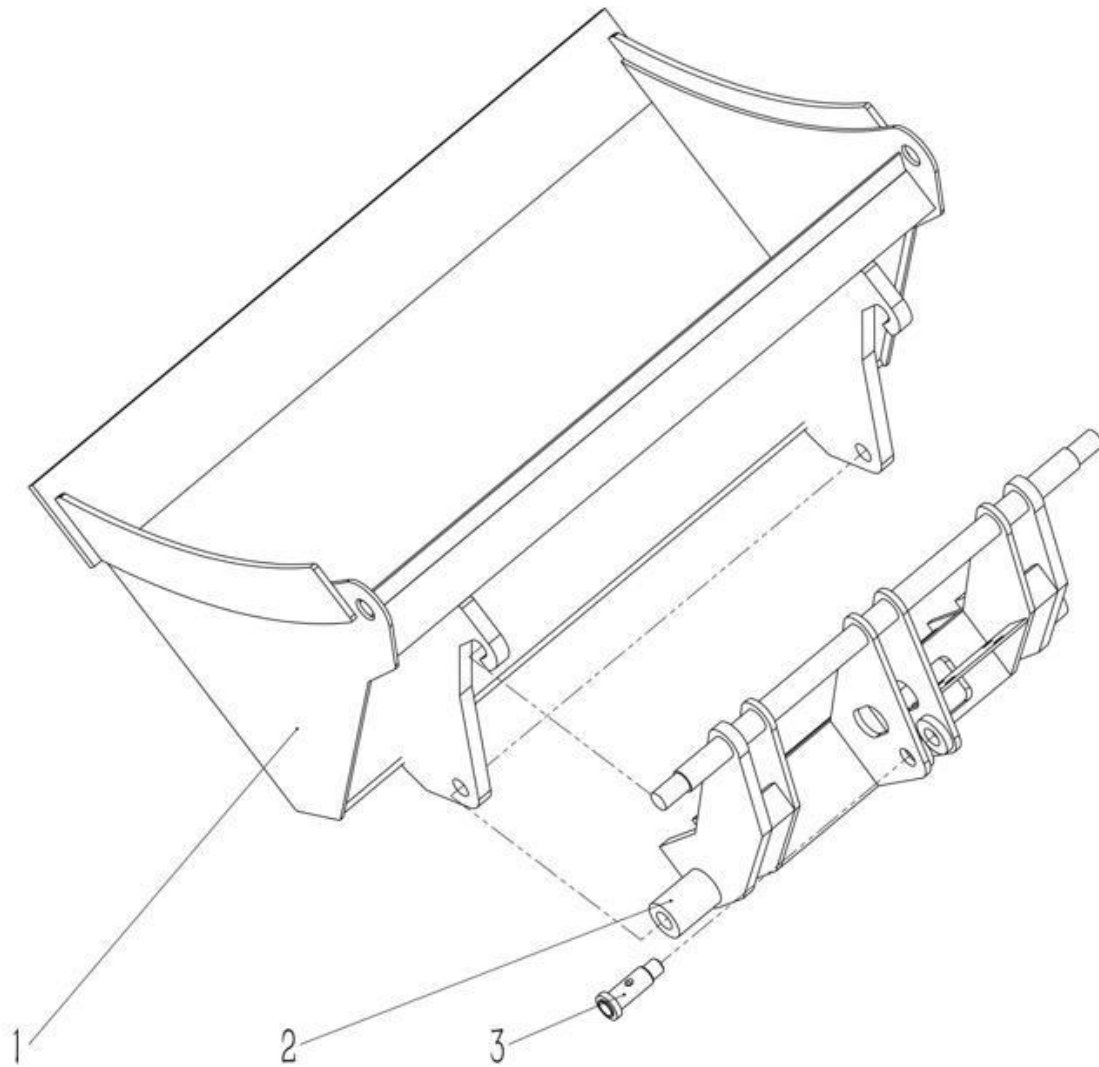
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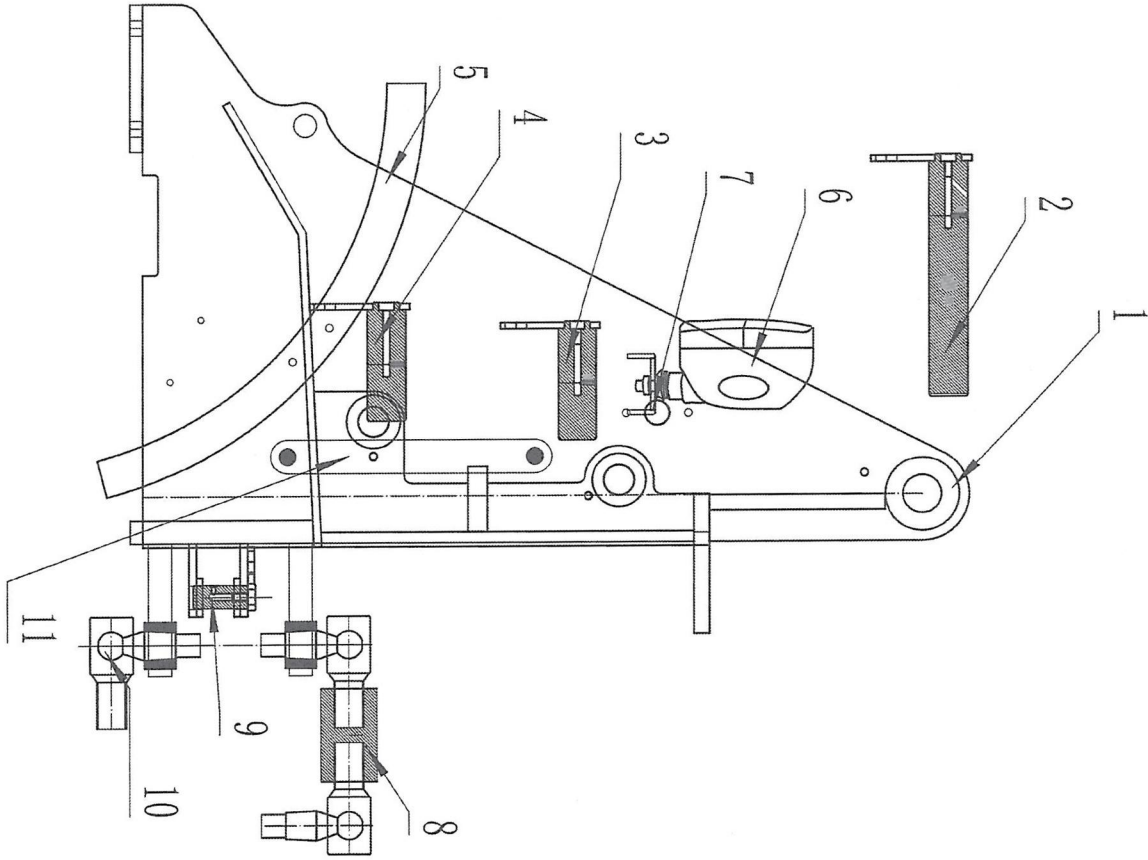


KEY	PARTNO.	DESCRIPTION	QTY
1		scraper bucket	1
2		Quick change assembly	1
3		pull rod	1
4		rocker arm	1
5		Tipper cylinder	1
6		Boom	1
7		Lifting cylinder	2
8		Front frame	1
9		Instrument assembly	1
10		Steering wheel	1
11		Rearview mirror	2
12		top light	2
13		Protective net	1
14		Joystick	1
15		chair	1
16		Simple shed assembly	1
17		Handrail	1
18		Rear lamp	1
19		handle	1
20		Rear hood	1
21		Rear counterweight	1
22		Battery	12
23		Damping pad	4
24		Tire assembly	4
25		Steering cylinder	2
26		Hand brake assembly	1
27		Brake pedal	1
28		Lower hinged ball joint	1
29		Upper hinge ball joint	1
30		Locking lever	1
31		Drive axle	1

# QUICK HITCH ASSEMBLY



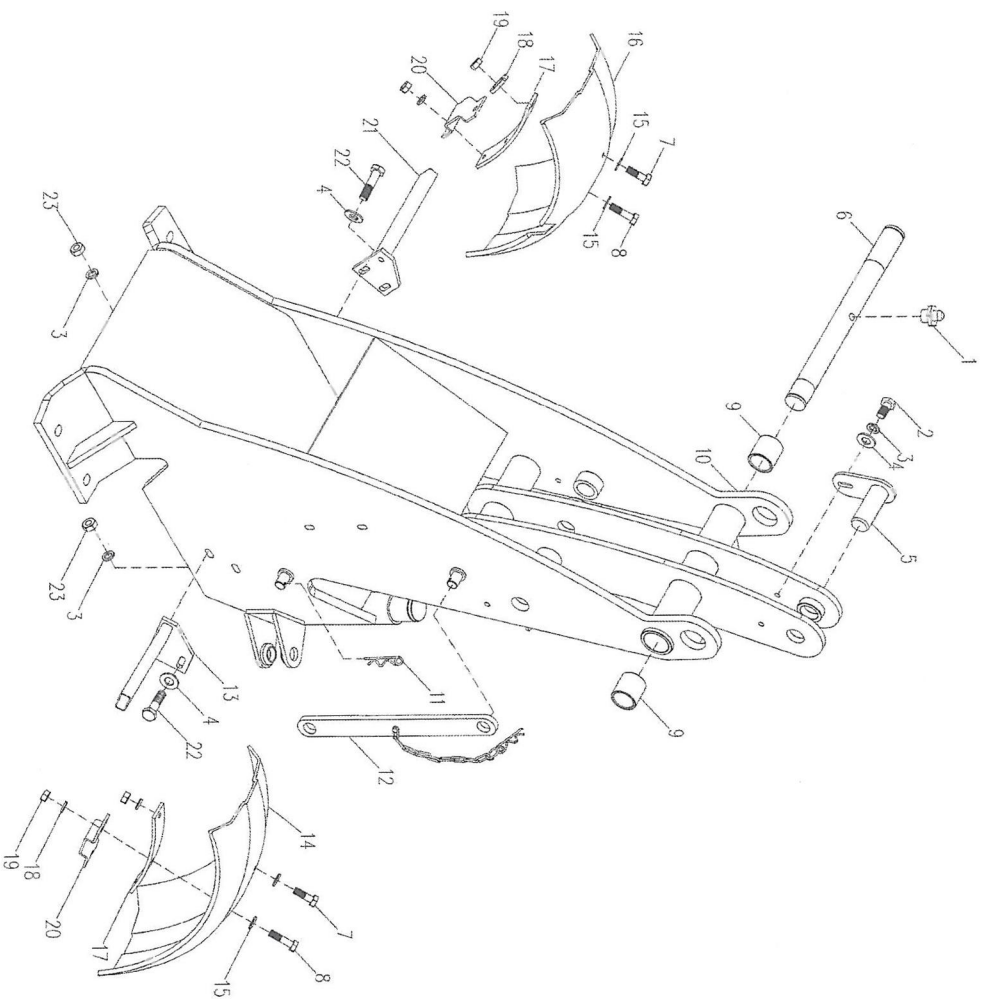
KEY	PARTNO.	DESCRIPTION	QTY
1		QUICK HITCH BUCKET	1
2		QUICK HITCH	1
3		QUICK HITCHPIN SHAFT	1



KEY	PARTNO.	DESCRIPTION	QTY
1		Front frame	1
2		pin shaft	1
3		pin shaft	1
4		pin shaft	1
5		Front mud tile	2
6		Headlights	2
7		Headlight bracket	2
8		Upper articulation	1
9		pin shaft	2
10		Lower articulation	1
11		Locking lever	1

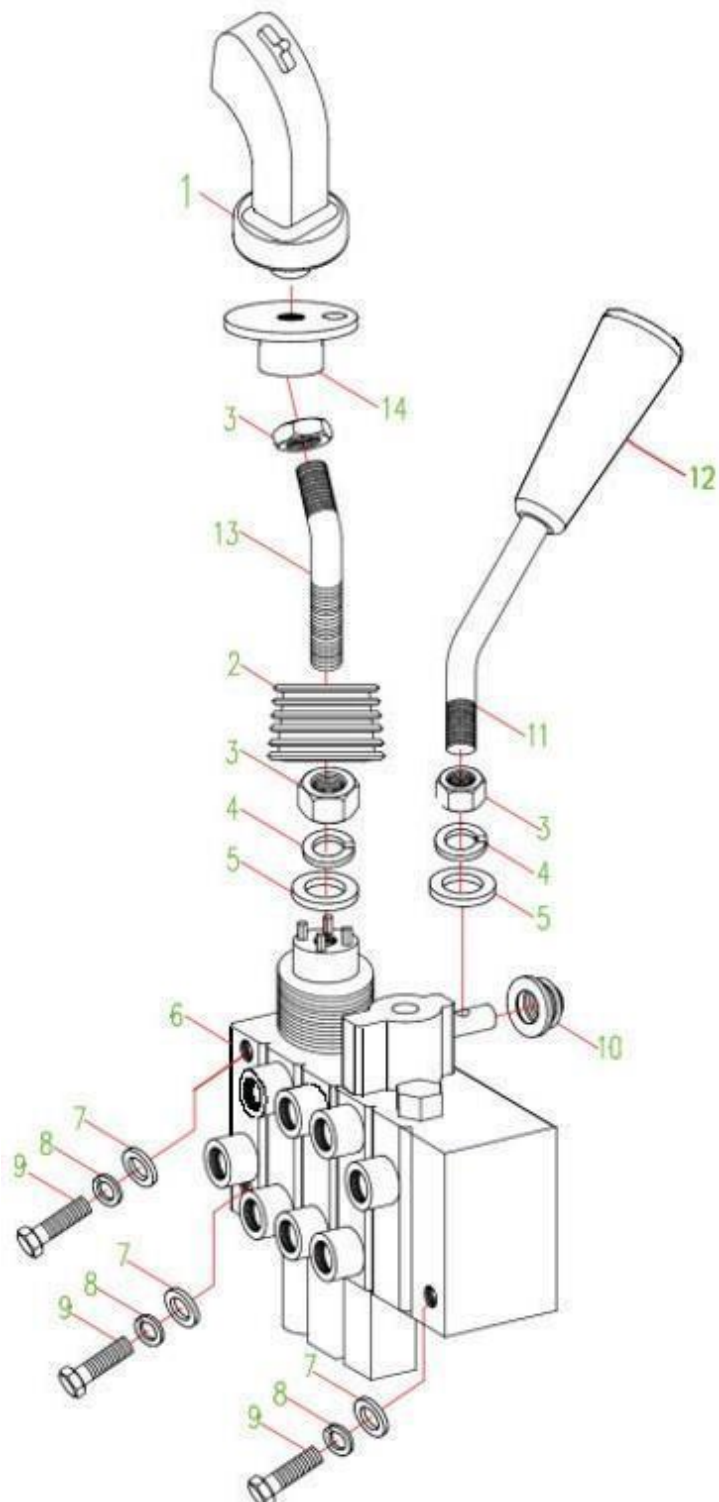


front chassis assembly



KEY	PARTNO.	DESCRIPTION	QTY
1		grease nipple	1
2		bolt	1
3		spring washer	5
4		washer	5
5		bolt	1
6		bolt	1
7		bolt	4
8		bolt	2
9		bearing	2
10		front chasis frame	1
11		spring pin	1
12		transport seacuring strip	1
13		left bracket	1
14		left mudguard	1
15		washer	6
16		right mudguard	1
17		bracket	2
18		spring washer	6
19		nut	6
20		bracket	2
21		right bracket	1
22		bolt	4
23		nut	4

# HYDRAULIC DISTRIBUTION VALVE ASSEMBLY

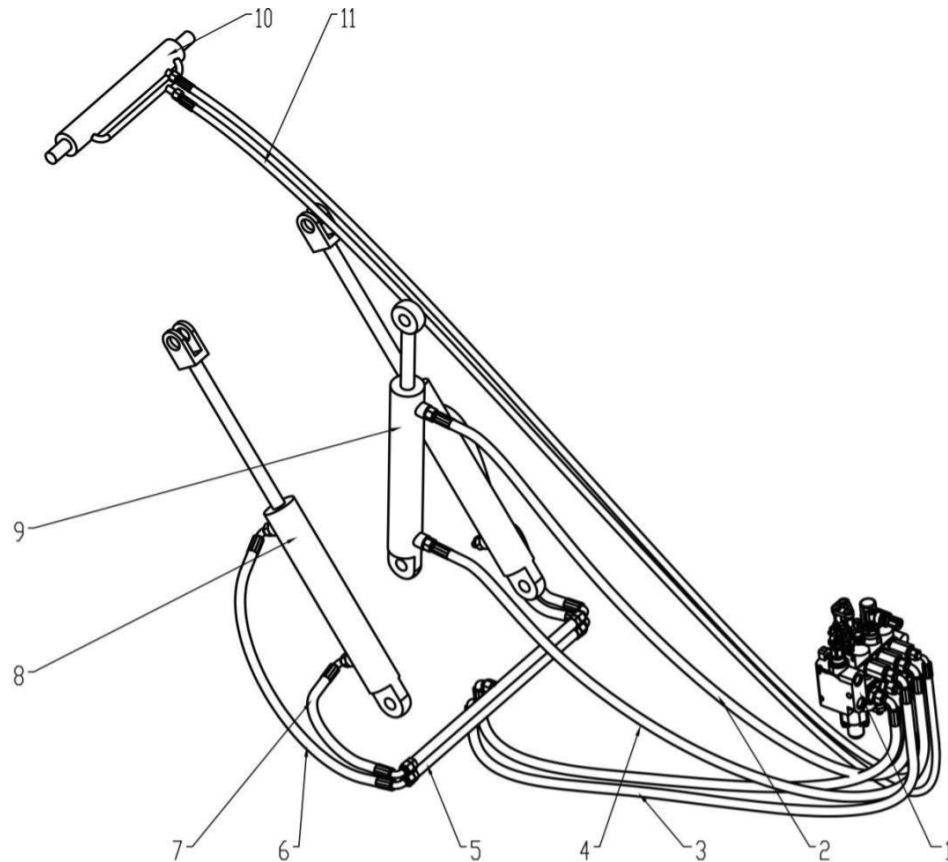


# HYDRAULIC DISTRIBUTION VALVE ASSEMBLY

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

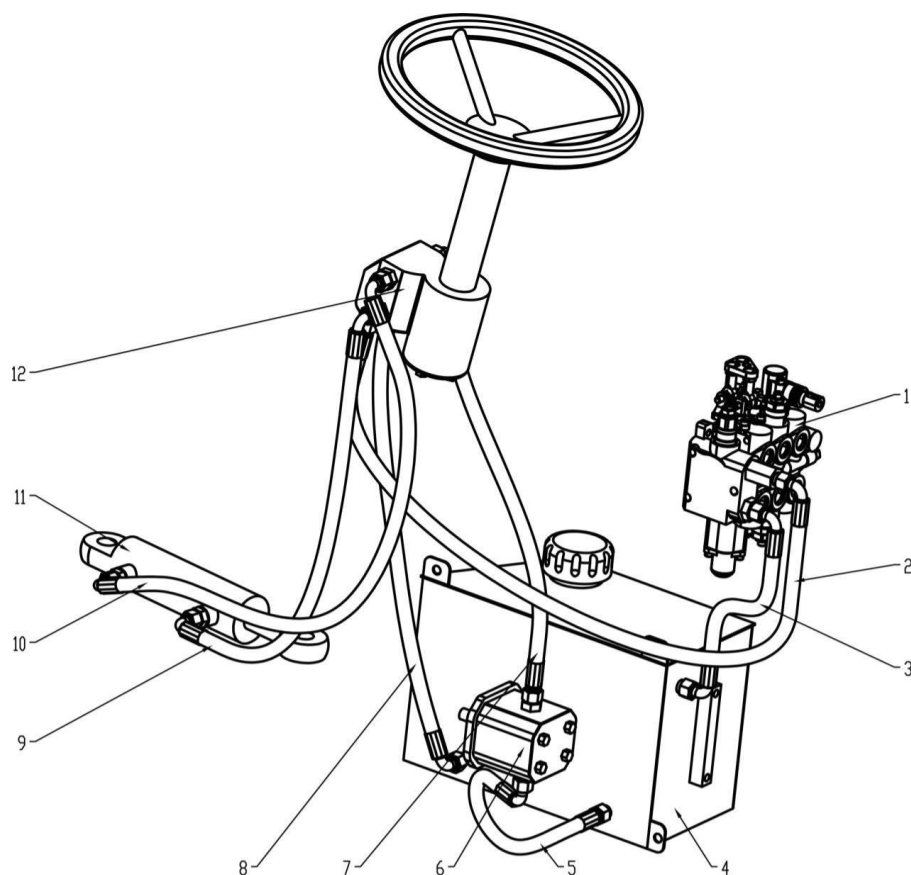


# HYDRAULIC WORKING SYSTEM

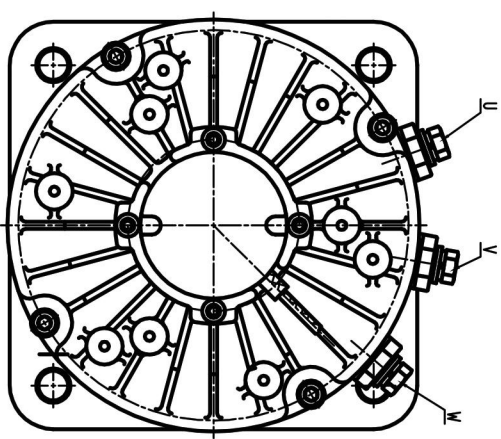
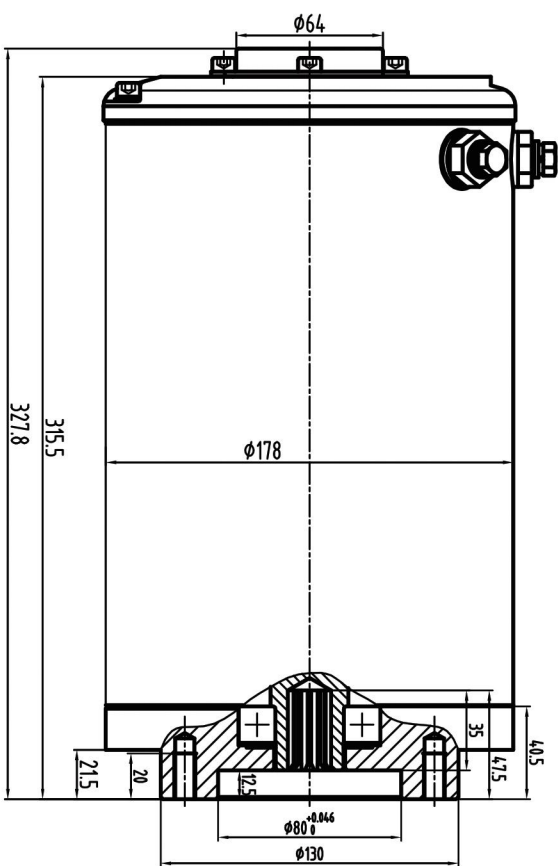
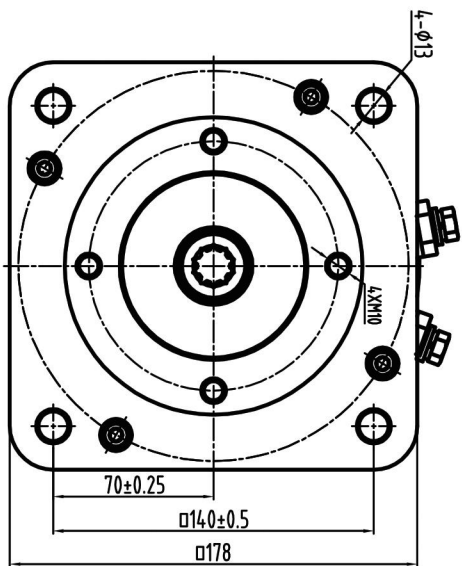


KEY	PART NO.	DESCRIPTION	QTY
1		MULTI-WAY VALVE	1
2		SMALL CAVITY HOSE FOR TIPPING CYLINDER	1
3		LIFTING CYLINDER HOSE	2
4		LARGE CAVITY HOSE FOR TIPPING CYLINDER	1
5		LIFTING CYLINDER IRON PIPE	2
6		SMALL CAVITY HOSE FOR LIFTING CYLINDER	2
7		LARGE CAVITY HOSE FOR LIFTING CYLINDER	2
8		LIFTING CYLINDER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

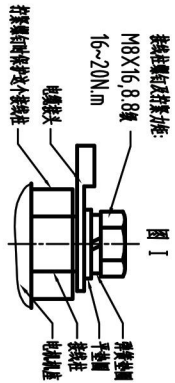
# HYDRAULIC STEERING SYSTEM



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

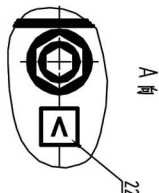
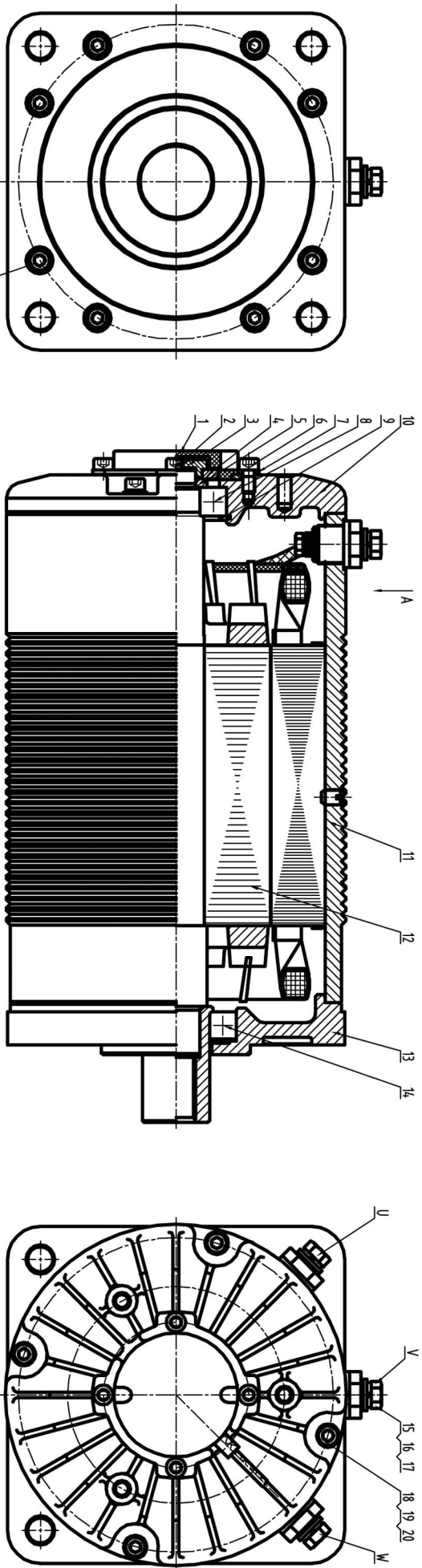


10线制开槽封装传感器		电气接口	
接口形式	H6-ANSI B92.1	黑色四芯端子插座示意图 (速度检测)	黑色2芯P端子插座示意图 (温度反馈_视客户要求)
表面粗糙度	Ra3.2		
安装方式	盲插式		
尺寸	DP 16/32		
数量	Z 10		
压力角 α	30°		
分度直径 D	φ15.875		
基面直径 D <sub>s</sub>	φ13.748		
螺纹直径 D <sub>s</sub>	φ10 <sup>+0.22</sup> <sub>0</sub>		
螺纹小径 D <sub>i</sub>	φ14.29 <sup>+0.11</sup> <sub>0</sub>		
密封线柱直径(内径) D <sub>fmin</sub>	φ17.564		
作用层厚度(外径) E <sub>min</sub>	2.694		
安装层厚度(外径) E <sub>max</sub>	2.586		
密封圈最小壁厚 R <sub>min</sub>	R0.238		
密封直径 D <sub>p</sub>	φ2.743		
材料	M 11.37 <sup>+0.240</sup> <sub>-0.097</sub>		



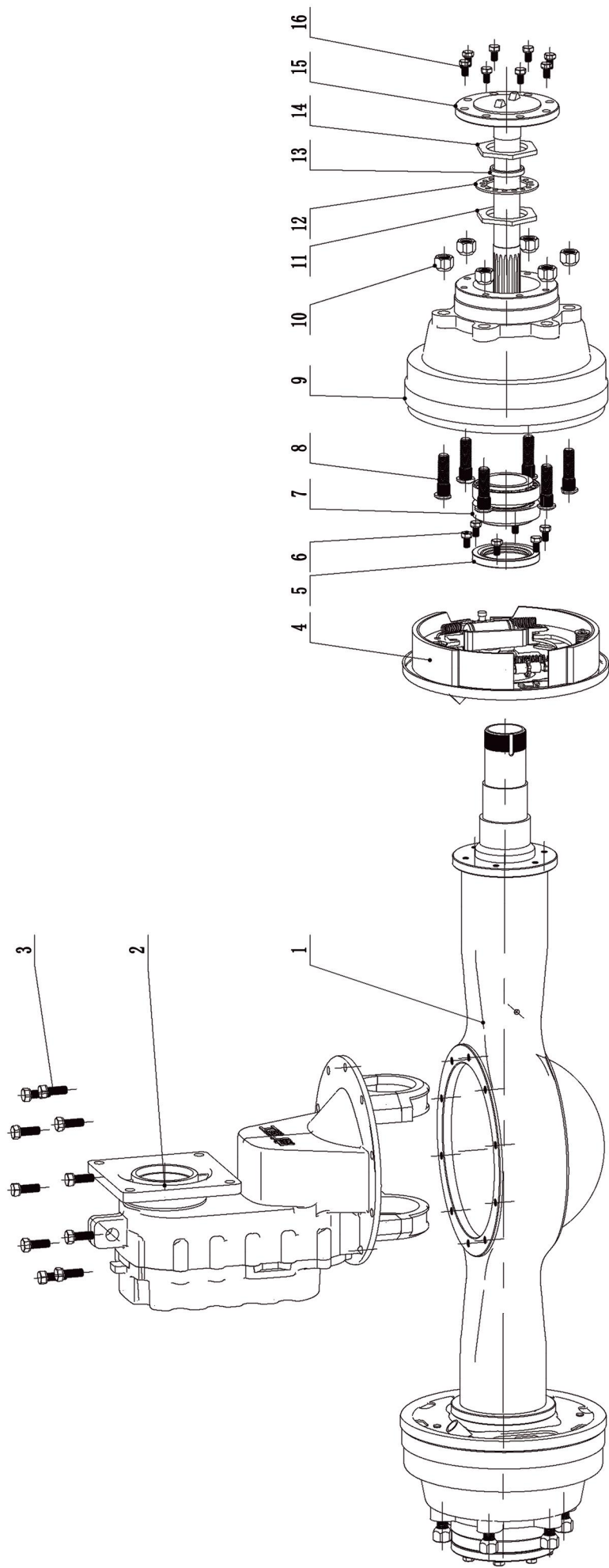
KEY	PARTNO.	DESCRIPTION	QTY
1		Motor express encoder	1
2		Countersunk screw	1
3		Pressure ring	1
4		Coder	1
5		Cheese head screw	4
6		Platen	2
7		6205Bearing	1
8		52Hole retainer	1
9		End cap	1
10		stator	1
11		rotor	1
12		Drive end cover	1
13		6206Bearing	1
14		Cheese head screw	4
15		Spring washer	4
16		Flat washer	4
17		Bolt	3
18		Spring washer	3
19		Flat washer	3
20		Nameplate	1
21		Terminal post label	3





滑环线内花键参数表				电气接口	
精度等级	JISD2001	黑色四芯端子插座示意图 (速度检测)		黑色2芯P端子插座示意图 (温度反馈 视客户要求)	
齿面粗糙度	Ra3.2				
定心方式	齿侧定心				
模数	m				
齿数	z				
压力角	$\alpha$				
变位系数	x				
分度圆直径	D	1 VCC		1 "+" 线 (红色)	
基圆直径	Db	2 接地		2 "-" 线 (黑白)	
花键大径	Da	3 信号A			
花键小径	Df	4 信号B			
量棒直径	dp	传感器型号: GM67-AVS15-250		传感器型号: KTY84-150	
跨棒距	M	传感器脉冲数: 每转输出64个脉冲		插头规格: 282104-1	
公法线长度		插头规格: 282106-1			
跨齿数					

KEY	PARTNO.	DESCRIPTION	QTY
1		Motor express encoder	1
2		Countersunk screw	1
3		Pressure ring	1
4		Coder	1
5		Pressure ring	1
6		Cheese head screw	4
7		Platen	2
8		6205Bearing	1
9		52Hole retainer	1
10		End cap	1
11		stator	1
12		rotor	1
13		Drive end cover	1
14		6007Bearing	1
15		Bolt	3
16		Spring washer	3
17		Flat washer	3
18		Cheese head screw	4
19		Spring washer	4
20		Flat washer	4
21		Nameplate	1
22		Terminal post label	1
23		Cheese head screw	6

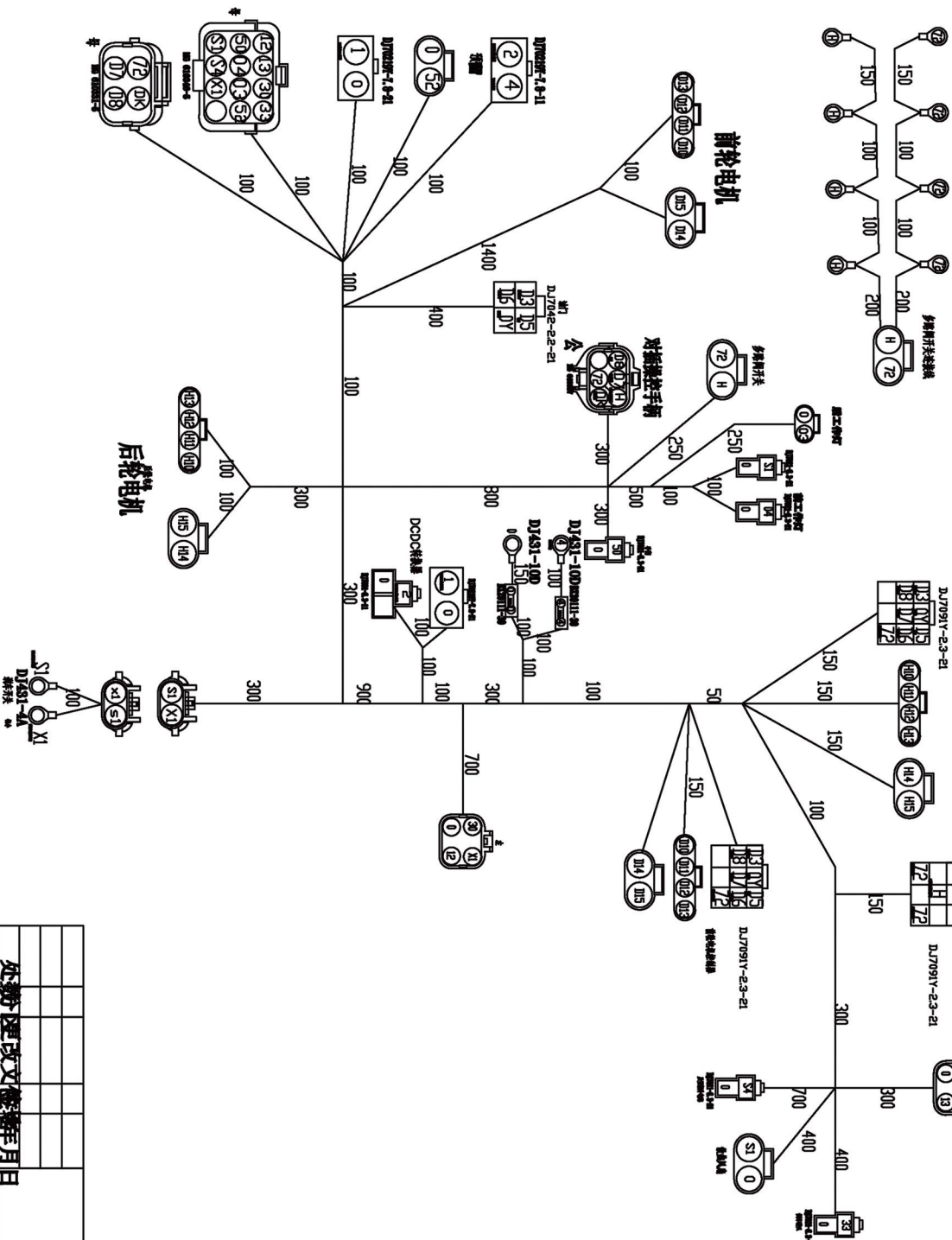


KEY	PARTNO.	DESCRIPTION	QTY
1		M10*25-Bolt	10
2		310-Gearbox	1
3		axle housing	1
4		250-Brake assembly	2
5		90*60*10-oil seal	2
6		M8*15-Bolt	12
7		32011-Bearing	2
8		M14Brake pot bolt	12
9		250Brake pot	2
10		M14hub nut	12
11		retatning nut	2
12		Backstop pad	2
13		46*36*7-oil seal	2
14		retatning nut	2
15		Halfshaft	2
16		M8*30-Bolt	16



## 72V车架线束

进线方向

[illegible]