# EMP204X

## Electric hydraulic pump station

# User Manual

Pingyuan Jingke Hydraulic Co., Ltd

# Catalogue



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## I. Features, performance and main technical parameters

1. EMP204X ultra-high pressure electric hydraulic pump station is an independent and complete hydraulic power unit composed of oil pump, control valve, oil tank, motor, air cooler, instrument, etc. It has the characteristics of small size, light weight, simple structure, convenient operation and high working pressure. The pump body of this pumping station adopts R series ultra-high pressure radial plunger pump, and is equipped with one-way valve and high pressure relief valve, which plays a role of safety and pressure control.

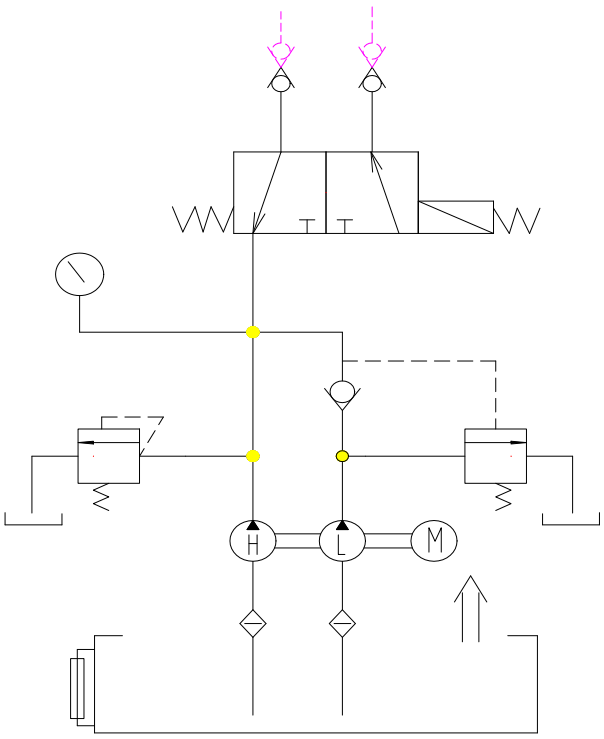
2. Main technical parameters

| Item / Model | EMP204X |
|---|---|
| Rated pressure (MPa) | 70 |
| Flow (L/min) | 4.5 / 1.1 |
| Oil tank (L) | 4 |
| Power (KW) | 1.5 |
| Power supply | 220V/50Hz |
| Reversing mode | Electromagnetic reversing |
| Dimensions (cm) | 39.5×30×42 |
| Weight (kg) | 24 |

## II. Use

This pump uses imported ultra-high pressure components, which is small and light; electromagnetic remote control, stable performance, safe and reliable; easy to operate; standard pressure regulating control (7-70 MPa), low pressure and large flow, high pressure automatic switching flow, ensuring high-speed movement of hydraulic tools and rated output shear force. The pump can also be installed in other mechanical equipment as a hydraulic power component.

## III. Hydraulic schematic




## IV. Operation

(1) Fill the pumping station with L-HM46# or L-HM32# hydraulic oil; if the pumping station is not operated with hydraulic oil, the pumping station will suck in air and cause the problem of no pressure increase.

(2) Turn on the pump station switch, press the "UP" button of the remote control switch, and the motor starts to run. If the remote control switch "UP" button is not pressed, the motor will not run at this time.

(3) Press the "UP" button of the remote control switch, the motor starts to run, and the piston pushes forward at the same time; when the piston is pushed to the limit position, observe the change of the pressure gauge pointer. If the pressure gauge pointer points to a pressure lower than the required pressure, slowly adjust the system high pressure relief valve (clockwise) until the pressure gauge pointer points to the required pressure; otherwise, adjust the high pressure relief valve counterclockwise; loosen the "UP" button of the remote switch, the piston retracts; repeat the operation several times, and then place the bolt on the bolt after no abnormal phenomenon

(4) This pumping station has no automatic shutdown function. If the pumping station is operated by no one or does not work for a long time, please press the remote control switch "DOWN" button; to make the pumping station work again, just press the remote UP" button.

**Warning: Overpressure work is strictly prohibited (≦70MPa)**

## V. Precautions for use and maintenance

1. The working medium of this pump is L-HM46# or L-HM32# hydraulic oil. It is not allowed to change to other brands of oil at will.

2. Keep the liquid level of the oil tank above the center of the oil mark to prevent the oil pump from being emptied. When refueling, use a 120-200 mesh filter to filter out the impurities in the new oil. In regular use, the oil filter is generally cleaned once every two months. Clean the oil tank once every six months and replace with new oil at the same time.

3. The normal working oil temperature is 10~70℃. When the oil temperature is too high, you need to take cooling measures or stop the pump until the oil is sufficiently cooled before it can be used; when the oil temperature is too low, the pump is not allowed to work directly, and heating measures must be taken. The oil temperature can be increased by external heating or low pressure operation.

4. Before starting the motor, in order to prevent the motor from being overloaded, the "high pressure relief valve" should be completely loosened. When refueling for the first time, in order to discharge the air in the pump body and the valve body, the motor can be operated several times.

5. The working pressure of the pump set at the factory should not be increased arbitrarily.

6. The hose has undergone a pressure test when it leaves the factory, and the test pressure is 1.25 times the rated pressure. However, when used for a long time, due to the aging of the rubber, various damages will cause the pressure strength of the hose to decrease. It should be checked regularly. For frequent use, inspections are generally performed every six months. During inspection, pressurize with a pressure test pump. When the withstand pressure is lower than 1.25 times of the rated pressure, leakage or explosion occurs, it must be replaced. When using the high-pressure hose, bends and sharp bends should be avoided, and the operator should be careful not to get too close to the hose in case that the hose is thrown up due to blasting and hurts people.

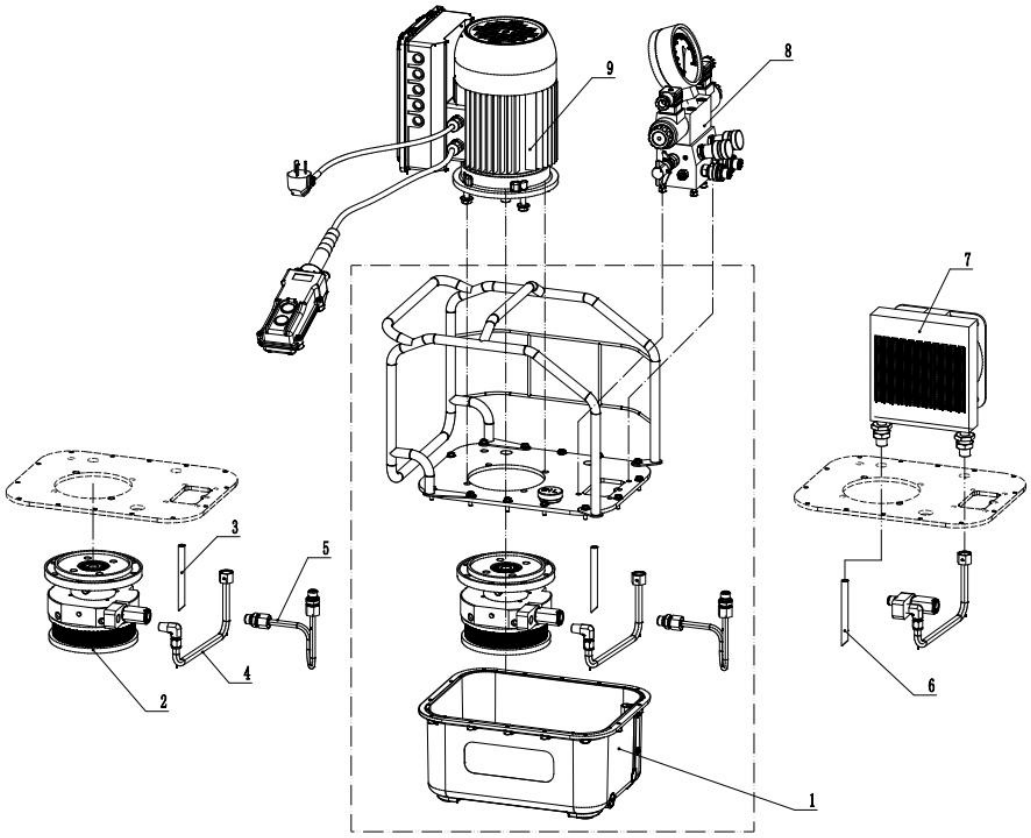
Note: before the wrench is connected (bearing load), that is, when it is sealed by the quick coupling (producing pressure), the oil pump cannot be pressed, otherwise the quick coupling will be damaged or even hurt.

## VI. Common faults and troubleshooting methods

| Faults | Main reason | Troubleshooting |
|---|---|---|
| Insufficient pressure | 1. The adjustment value of the safety valve is too low<br>2. The poppet valve of the safety valve is stuck<br>3. The rubber ring of the reversing valve is damaged<br>4. Leakage caused by loose joints or damaged seals<br>5. Pressure response distortion caused by pressure gauge failure or damping blockage | 1. Adjust the safety valve<br>2. Overhaul the cone valve or valve seat<br>3. Replace the rubber ring<br>4. Replace the steel ball or repair (level out) the valve seat<br>5. Check the pressure gauge and repair the pressure gauge seat |
| Insufficient flow | 1. The fit clearance of plunger couple is worn too much<br>2. The plunger or spring is broken<br>3. Insufficient flow caused by leakage everywhere<br>4. Too low oil temperature causes difficulty in oil absorption, and too high oil temperature causes volumetric efficiency to drop<br>5. The liquid level is too low and the oil pump is empty | 1. Generally, the plunger can be replaced, or the plunger sleeve can be replaced<br>2. Replace relevant parts<br>3. Fasten the joint and replace the seal<br>4. Control the oil temperature between 10 and 70°<br>5. refuel |

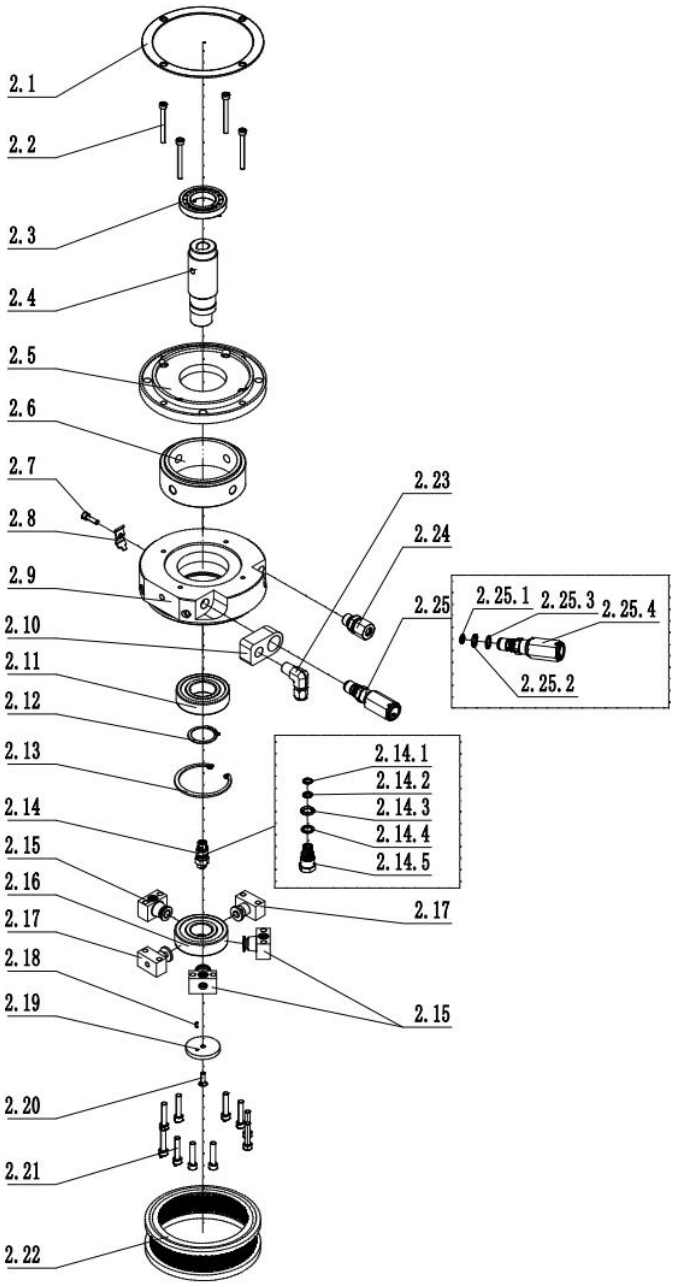
## VII. Explosive View

1. Electric pump explosive view



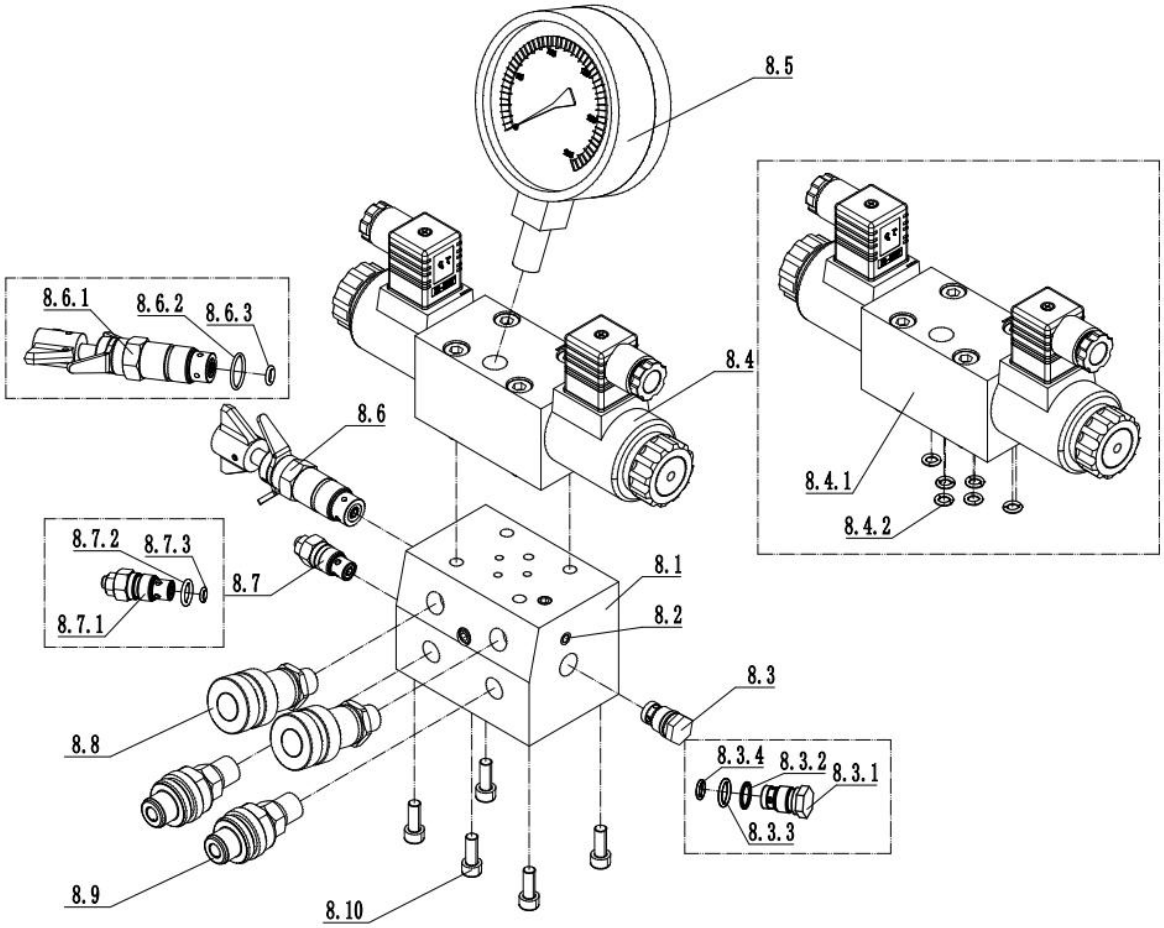

| No. | Description | No. | Description |
|---|---|---|---|
| 1 | Oil tank module | 7 | Cooler module |
| 2 | Pump module | 8 | Hydraulic control valves |
| 3 | Oil return pipe (1) | 9 | Electrical control valves |
| 4 | Oil feed pipe (1) | | |
| 5 | Oil feed pipe (2) | | |
| 6 | Oil return pipe (2) | | |

2. Pump module explosive view



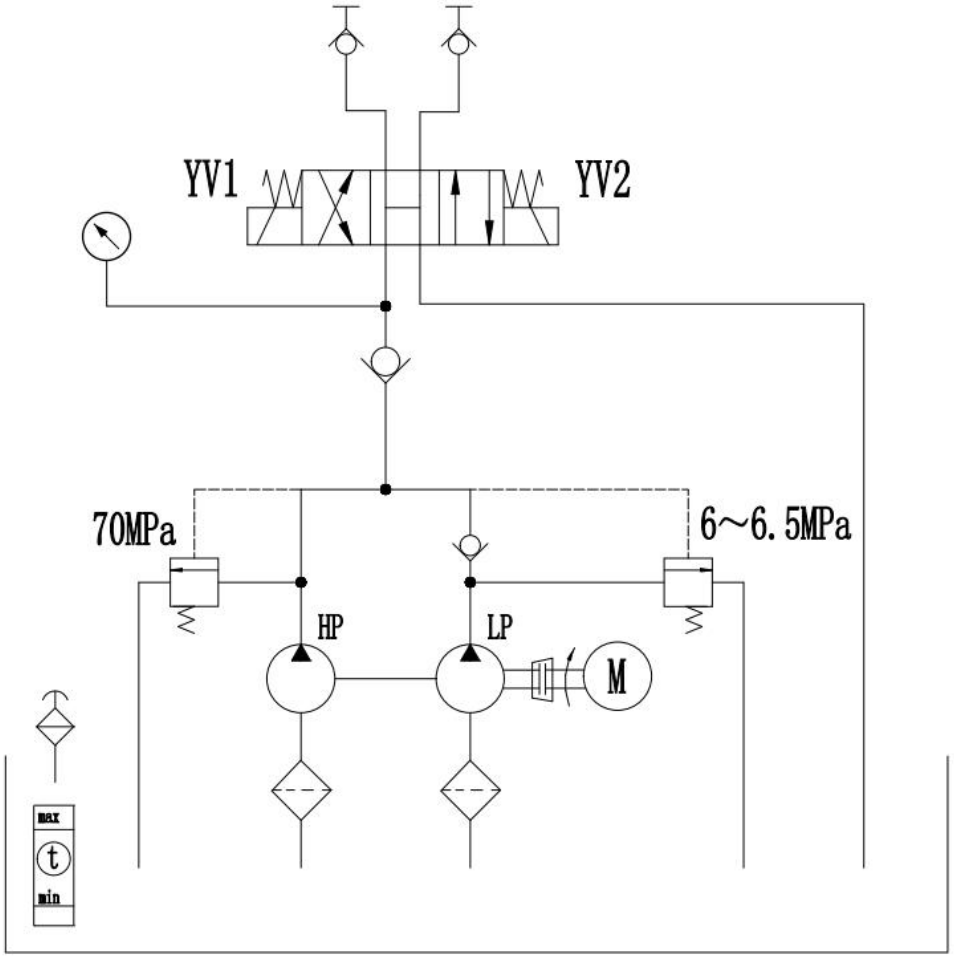

| No. | Name | Qty. |
|---|---|---|
| 2.1 | Seals | 1 |
| 2.2 | Bolt | 4 |
| 2.3 | Deep groove ball bearing | 1 |
| 2.4 | Pump shaft | 4 |
| 2.5 | Pump flange | 1 |
| 2.6 | Pump bushing | 1 |
| 2.7 | Bolt | 1 |
| 2.8 | Filter baffle | 1 |
| 2.9 | Separate pump body | 1 |
| 2.10 | Return oil connecting block (with O ring) | 1 |
| 2.11 | Deep groove ball bearing | 1 |
| 2.12 | Circlip for shaft | 1 |
| 2.13 | Circlip for hole | 1 |
| 2.14 | One-way valve | 1 |
| 2.14.1 | O ring | 1/1 |
| 2.14.2 | Check ring | 1/1 |
| 2.14.3 | O ring | 1/1 |
| 2.14.4 | Check ring | 1/1 |
| 2.14.5 | One-way valve body | 1/1 |
| 2.15 | Plunger pair 1 | 3 |
| 2.16 | Deep groove ball bearing | 1 |
| 2.17 | Plunger pair 2 | 2 |
| 2.18 | Round pin | 1 |
| 2.19 | Bearing block slice | 1 |
| 2.20 | Bolt | 1 |
| 2.21 | Bolt | 10 |
| 2.22 | Filter | 1 |
| 2.23 | Bite type straight connector | 1 |
| 2.24 | Bite type angle connector | 1 |
| 2.25 | Unloading valve | 1/1 |
| 2.25.1 | O ring | 1/1 |
| 2.25.2 | O ring | 1/1 |
| 2.25.3 | Check ring | 1/1 |
| 2.25.4 | Unloading valve body | 1/1 |

3. Valves module explosive view




| No. | Name | Qty. | No. | Name | Qty. |
|---|---|---|---|---|---|
| 8.1 | Connecting plate | 1 | 8.6 | Pressure regulating valve 1 | 2 |
| 8.2 | Cap | 8 | 8.6.1 | Pressure regulating valve body | 1 |
| 8.3 | Check valve | 1 | 8.6.2 | O ring | 2 |
| 8.3.1 | Check valve body | 1/1 | 8.6.3 | O ring | 1 |
| 8.3.2 | Check ring | 1/1 | 8.7 | Pressure regulating valve 2 | 1 |
| 8.3.3 | O ring | 1/1 | 8.7.1 | Pressure regulating valve body | 2 |
| 8.3.4 | O ring | 1/1 | 8.7.2 | O ring | 1 |
| 8.4 | Solenoid valve | 1 | 8.7.3 | O ring | 3 |
| 8.4.1 | Solenoid valve body | 1/1 | 8.8 | Female quick coupler | 1 |
| 8.4.2 | O ring | 6/1 | 8.9 | Male quick coupler | 1 |
| 8.5 | 100MPa pressure gauge | 1 | 8.10 | Bolt | 1 |

4. Hydraulic principle diagram



## VIII. After-sales service

1. The product enjoys a one-year warranty after being sold. During the warranty period, if the product is damaged due to quality reasons, we provide free replacement and repair services.

2. In addition, we are not responsible for any losses caused by natural disasters and accidents, as well as damages caused by unauthorized dismantling of equipment, repairing equipment, and supplementing consumables.

3. The warranty is limited to the products we sell.

4. The following problems are not covered by the warranty:

(1) The hydraulic pump is not installed in accordance with the instructions.

(2) The use of the pump does not follow the instructions.

(3) There is a problem with the connection between the hydraulic pump and other equipment.

(4) Problems caused by the user modifying the hydraulic pump without authorization.

(5) Problems caused by repairs by other manufacturers instead of authorized ones.

(6) Problems caused by improper customer maintenance management.

(7) Problems caused by not following the instructions when operating the equipment.

(8) Hazards caused by earthquakes, fires, floods, tsunamis, gas leaks, or any irresistible human force.

(9) The problem of secondary damage to the hydraulic pump station caused by user’s equipment.

(10) The equipment has problems due to the customer's use of self-equipped parts.

5. All damages caused outside the scope of our responsibility.

**Note: Please read this manual carefully before asking our after-sales service department to repair this pump. Please do not repair this pump by yourself without the approval of our authoritative department.**