rexroth cast iron gear pump

In industrial hydraulic systems, the Rexroth cast iron gear pump, with its simple and reliable structure and efficient and stable performance, has become the preferred power component for medium- to high-pressure conditions. As a professional service provider focusing on hydraulic technology, Runhe breaks down its core working principles, key components, and core parameters from a user-friendly perspective, allowing everyone to clearly understand the advantages of this gear pump, while also providing comprehensive technical support to help users fully leverage its application value.

The core working principle of the Rexroth cast iron gear pump revolves around three key aspects: gear meshing, volumetric changes, and the suction and discharge of oil. It has a simple structure and operates reliably, capable of providing stable power output without complex operation. Its working process can be simply broken down into three steps: First, gear meshing. A pair of precision gears inside the pump mesh with each other, with the driving gear driven by a motor, causing the driven gear to rotate in the opposite direction. Second, volumetric changes. As the gears rotate, the spaces between the meshing teeth form sealed chambers. With the rotation of the gears, the volume of these chambers continuously changes – on the side where the gears separate, the chamber volume increases, creating a vacuum; on the meshing side, the chamber volume decreases, generating high pressure. Third, the suction and discharge of oil. The vacuum side draws hydraulic oil in through the inlet port, while the high-pressure side pushes hydraulic oil out through the outlet port, completing a continuous suction and discharge cycle that provides stable power for the hydraulic system. This is also the core principle behind its efficient power transmission.

To achieve stable oil suction and discharge as well as power transmission, the coordinated action of key components is indispensable. The core components of the Rexroth cast iron gear pump have clear roles and reliable quality. Runhe also provides professional adaptation and maintenance services for these components:

Pump body: Made of high-strength cast iron, it is hard, pressure-resistant, and wear-resistant, capable of withstanding high-pressure conditions. It also has excellent sealing performance to prevent oil leakage. Runhe can provide OEM specification pump body parts and maintenance services to ensure the stability of the pump body structure;

Gears: Manufactured with precision processing, the gear teeth are accurate, and the meshing clearance is uniform, reducing operational wear and noise. They are the core to ensure precise volumetric changes and smooth oil suction and discharge. Runhe can provide gear clearance inspection and adjustment services;

Shafts and bearings: The drive shaft transmits power, paired with heavy-duty bearings to reduce rotational friction, enhance operational stability, and extend service life. Runhe can provide bearing replacement, shaft maintenance, and other services;

Seals: Made of high-temperature resistant and anti-aging materials, the seals are reliable, preventing oil leakage under high-pressure conditions. Runhe stocks sufficient original factory seals to quickly respond to replacement requirements.

Core parameters directly determine the compatibility and operational performance of Rexroth cast iron gear pumps. The following five key parameters are precisely matched by Runhe according to user operating conditions to allow the product to achieve optimal performance:

Displacement: Refers to the volume of oil discharged per rotation of the gear, determining the pump's output capacity. Rexroth offers various displacement specifications, and Runhe can accurately select and match them according to user equipment requirements;

Pressure: Includes rated pressure and peak pressure. Rexroth cast iron gear pumps have a rated pressure of up to 280 bar and a peak pressure of 350 bar, suitable for medium to high-pressure conditions. Runhe can provide pressure tuning services to ensure it meets equipment operating requirements;

Speed: Refers to the rotation speed of the gears and directly affects flow output. Rexroth gear pumps accommodate a wide range of speeds. Runhe can optimize speed matching according to system needs to improve operational efficiency;

Flow pulsation: Refers to the fluctuation level of output flow. Rexroth reduces flow pulsation to a minimum through precise gear design, decreasing system vibration and noise. Runhe can further improve operational stability through pipeline optimization;

Volumetric efficiency: Refers to the ratio of actual output flow to theoretical flow. Rexroth gear pumps can achieve volumetric efficiency above 95%, resulting in lower energy consumption. Runhe can provide daily maintenance guidance to help users maintain efficient operation.

Runhe has been deeply engaged in the technical service of Rexroth cast iron gear pumps for many years, establishing a one-stop service system from selection, installation, and maintenance to fault repair. The professional technical team can accurately select models based on user operating conditions and core parameters, provide services such as component inspection and parameter adjustment, and maintain a sufficient stock of original factory-level parts to respond quickly to needs, minimizing downtime. Choosing Runhe allows you to receive professional support and comprehensive protection for Rexroth cast iron gear pumps, helping enterprises achieve efficient and stable operation of hydraulic systems, reduce costs, and enhance efficiency for mutual benefit.

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