

## **The Art of Precision Craftsmanship: A Comprehensive Overview of Runhe Hydraulic Gear Pump Catalog**

Within the vast landscape of modern industry, hydraulic technology remains indispensable as the core component of power transmission. Since its inception, Runhe Hydraulic Technology Co., Ltd. has dedicated itself to the field of hydraulic transmission, committed to providing global customers with high-performance, highly reliable gear pump products and comprehensive fluid power solutions. We understand that every gear pump is the cornerstone of stable equipment operation. The Runhe Hydraulic [Gear Pump Catalogue](#) clearly demonstrates that each gear pump serves as the cornerstone for stable equipment operation. Consequently, the company consistently prioritizes technological innovation and quality control, ensuring every stage—from production lines to application sites—meets exacting standards of excellence.

### **1. Company Profile and Technical Heritage**

Runhe Hydraulic Technology Co., Ltd. operates modern production facilities and R&D centers. We have assembled a team of experienced technical experts in hydraulics, equipped with advanced precision machining equipment and testing instruments. This enables us to establish a comprehensive quality management system, from raw material selection to finished product shipment. We not only master core gear pump design and manufacturing technologies but also prioritize product iteration and innovation based on market shifts and customer demands. This commitment has earned the Runhe brand a strong reputation in intense market competition, with products exported to numerous countries and regions worldwide.

### **2. Gear Pumps: The Power Source for Industrial Equipment**

As the power element of hydraulic systems, the performance of gear pumps directly impacts the overall efficiency and reliability of the entire system. RUNHE Hydraulics understands this principle well. Our gear pumps utilize premium alloy steel gears and high-strength cast iron pump bodies, precision-machined and heat-treated to ensure stable performance output under diverse operating conditions. The working principle of gear pumps relies on the changing and moving working volume formed between the pump cylinder and meshing gears to convey fluid or increase its pressure. This simple rotary pump design consists of two gears, a pump body, and front/rear covers forming two sealed chambers. As the gears rotate, the volume in the disengaged side chamber increases from small to large, creating a vacuum that draws in fluid. Simultaneously, the volume in the meshed side chamber decreases from large to small, forcing fluid into the pipeline. Compared to other hydraulic pump types, gear pumps offer significant advantages: simple and compact structure, small size, light weight, good manufacturability, low cost, strong self-priming capability, insensitivity to oil contamination, wide speed range, and ability to withstand shock loads. Naturally, they also exhibit inherent characteristics such as unbalanced radial forces, significant flow pulsation, high noise levels, and relatively low efficiency. Runcheng Hydraulic's engineering team addresses these characteristics through continuous innovation and optimized design, striving to maintain advantages while overcoming limitations wherever possible.

### **3. Detailed Overview of Runcheng Hydraulic Gear Pump Product Series**

Runcheng Hydraulic offers a diverse gear pump product line covering extensive application needs from low to high pressure and small to large displacement. Our product series include: The Standard Gear Pump Series forms Runhe Hydraulic's foundational product line, featuring classic involute gear design with displacement ranges from 4 cm<sup>3</sup> to 22.5 cm<sup>3</sup>. This series offers compact structure, lightweight construction, easy installation, and a maximum rated working

pressure of 280 bar. The RH-CB16 model achieves a flow rate of 16 L/min at 1450 r/min, with volumetric efficiency exceeding 94% and noise levels controlled below 68 dB(A). It is particularly suitable for noise-sensitive applications such as machine tool hydraulic systems, lubrication systems, and cooling circulation systems.

The high-pressure gear pump series is developed by Runhe Hydraulic to address demanding operating conditions. This series employs unique axial and radial compensation technologies to effectively reduce internal leakage and enhance volumetric efficiency. Maximum operating pressure reaches 315 bar, with continuous operation maintained above 250 bar. Taking the RH-GP50 model as an example, its displacement is 50 cm<sup>3</sup>, delivering a flow rate of 90 L/min at 1800 r/min. It maintains high efficiency even under maximum pressure conditions. This series is particularly suited for high-pressure, heavy-duty applications such as construction machinery, mining equipment, and die-casting machines.

The High-Flow Gear Pump Series is specifically designed for applications requiring substantial flow rates, with displacement options ranging from 100 cm<sup>3</sup> to 250 cm<sup>3</sup>. The RH-HL100 model delivers up to 150 L/min at 1500 rpm, featuring optimized flow path design to effectively reduce pressure pulsation and noise. This series is widely used in metallurgical equipment, petrochemical plants, and marine machinery.

The Low-Noise Gear Pump Series is a specialized offering from Runhe Hydraulic for applications with stringent environmental noise requirements. By employing high-precision gears, special composite side plates, and advanced tooth profiling technology, this series achieves noise levels 5-8 dB(A) lower than conventional gear pumps under identical operating conditions. For example, the RH-LN25 model operates at no more than 62 dB(A) under rated conditions, making it ideal for indoor machinery, medical equipment, and office appliances.

Beyond the standard series, Runhe Hydraulic offers customized gear pump solutions tailored to specific client requirements, including special mounting interfaces, specific performance parameters, and unique material selections. Our engineering team collaborates closely with customers from the design phase to ensure the final product fully meets application demands.

#### 4. Technological Innovation and Quality Assurance

Runhe Hydraulic consistently regards technological innovation as the core driver of corporate development. Our R&D team continuously monitors industry trends, actively incorporating advanced design concepts and manufacturing techniques from both domestic and international sources. In recent years, we have successfully developed proprietary “dual-mode pressure compensation” technology. This innovation integrates a pressure compensation mechanism within the gear pump, effectively balancing radial forces and significantly enhancing pump longevity and reliability under high-pressure conditions.

In manufacturing processes, Runhe Hydraulic has invested heavily in advanced CNC machine tools and automated production lines to ensure precision and consistency in every component. Our gears undergo precision grinding, with tooth profile errors controlled within 3μm and surface roughness Ra values not exceeding 0.4μm, fundamentally guaranteeing the efficient and smooth operation of gear pumps.

Quality is the lifeline of our enterprise. Runhe Hydraulic has established a comprehensive quality assurance system spanning raw material inspection, production process control, and final performance testing. Every gear pump undergoes rigorous performance evaluations before shipment, including pressure testing, flow rate testing, efficiency testing, and endurance testing.

Test benches utilize computerized data acquisition systems to record real-time test data, ensuring each pump meets design specifications and corporate standards.

Notably, Runhe Hydraulic gear pumps utilize fluorocarbon rubber (FKM) for critical seals. This material offers excellent oil resistance, high-temperature tolerance, and anti-aging properties, ensuring reliable sealing across a wide temperature range. Additionally, our products support multiple hydraulic fluids, including HLP, HLPD, HVLP, HVLPD, HETG, HEES, HEPG, HFDU, and HFDR, meeting diverse industry application needs.

Renowned for their dependable performance and outstanding cost-effectiveness, Runhe hydraulic gear pumps have found extensive application across multiple industrial sectors. In the construction machinery industry, our gear pumps deliver reliable hydraulic power for excavators, loaders, cranes, and similar equipment. Within the machine tool sector, Runhe gear pumps ensure machining precision and equipment stability through their low-noise operation and steady flow output. In metallurgical equipment, our high-flow, high-pressure gear pumps deliver outstanding performance in continuous casting machines and rolling mills. Within the petrochemical industry, Runhe gear pumps serve critical functions in oil transfer and lubrication systems. In shipbuilding, our gear pumps withstand the rigors of marine environments, providing power support for diverse vessel systems.

Runhe Hydraulic firmly believes that exceptional after-sales service is an integral part of product value. You can browse our [Gear Pump Catalogue](#) to select your desired products. We have also established a comprehensive customer service system, offering full technical support from selection consultation and installation guidance to maintenance and servicing. Our company maintains a dedicated technical service team capable of swiftly responding to customer needs, delivering timely technical support and solutions. To facilitate product selection and usage, Runhe Hydraulic provides detailed technical manuals containing essential information such as performance curves, installation dimensions, and usage precautions. Additionally, we operate a 24-hour technical consultation hotline, ensuring customers receive professional guidance and solutions for any issues encountered during operation.

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