

Gear Pump Catalog

Hydraulic systems transmit power and control motion using fluid as a medium, forming the foundation for modern mechanical equipment operation. Within this complex system, the performance and reliability of a single component often determines the entire system's performance. It is responsible for converting rotational mechanical energy into fluid hydraulic energy, providing the initial energy source for all subsequent actions. This component is the gear pump. Runhe Hydraulic Co., Ltd. has long focused on this fundamental yet critical field. Our gear pump product line embodies continuous technological exploration and accumulated expertise, aiming to provide robust, durable, and efficient hydraulic power solutions for diverse industrial equipment. It meets varying demands from routine operations to demanding conditions.

The gear pump's operating principle is based on precision mechanical meshing and volumetric displacement. At its core are a pair of gears continuously rotating within a sealed chamber. As the gear teeth engage and disengage, the space between them periodically expands and contracts. This creates the ability to draw in and expel fluid, generating a directed and continuous oil flow. This direct mechanical pumping action endows gear pumps with notable characteristics: robust construction, direct responsiveness, and relatively broad tolerance for working fluid cleanliness. Their reliability and cost-effectiveness make them a common choice for numerous hydraulic systems, particularly in medium-to-low pressure applications. Building upon a deep understanding of these fundamental principles, Runhe Hydraulics is committed to enhancing the overall performance of gear pumps through continuous engineering optimization. We invest substantial R&D resources into gear tooth profile design, material pairing, machining precision, and internal flow path optimization. Our goal is to maintain inherent advantages while expanding operating pressure limits, increasing volumetric efficiency, reducing operational noise and pulsation, and ultimately extending the service life of entire hydraulic systems.

Runhe Hydraulic's [Gear Pump Catalog](#) is built around two mature technical approaches to address diverse application priorities. Our external gear pumps represent one flagship series, featuring a classic parallel-shaft design with intuitive structure and proven manufacturing processes. By applying computer-simulation-aided tooth profile modification and advanced heat treatment techniques, we significantly enhance gear load capacity and wear resistance while minimizing meshing impact and noise. This series demonstrates remarkable adaptability and cost-effectiveness, finding widespread use in construction machinery, agricultural equipment, material handling systems, and general industrial hydraulic power units. For applications demanding compact space utilization, smooth operation, and low noise, our internal gear pump series delivers an excellent solution. The unique meshing configuration between its inner rotor and star wheel or gear ring enables smooth flow output within compact spaces while maintaining superior noise control. Commonly found in vehicle power steering systems, auxiliary power units for precision machine tools, and various mobile or stationary equipment sensitive to installation dimensions and noise levels, these products exemplify sophisticated and efficient design.

We recognize that standard, off-the-shelf products sometimes fall short of meeting specific customer requirements. Therefore, Runhe Hydraulics' [Gear Pump Catalog](#) not only showcases a range of standardized, proven models but also demonstrates our capability to deliver tailored solutions. Our standard product line offers extensive displacement options and multiple interfaces and mounting configurations compliant with international mainstream specifications, facilitating direct selection and rapid integration for customers. Simultaneously, for special operating

challenges—such as higher continuous working pressures, broader operating temperature ranges, specific hydraulic fluid compatibility, or stricter contamination resistance requirements—our engineering team leverages a modular design platform. Through specialized adjustments in material selection, sealing technology, bearing configurations, and pressure balancing designs, we develop customized products meeting specific performance parameters. This ensures optimal performance matching and coordinated operation between gear pumps and host equipment. Exceptional design ultimately requires precision manufacturing for realization. Runhe Hydraulic possesses a complete industrial chain spanning from raw casting and precision machining to heat treatment and final assembly testing. We employ high-precision CNC machining centers and automated production lines to enforce strict tolerance control and process inspection on critical components affecting pump performance, such as gears, pump bodies, and side plates. Every gear pump undergoes comprehensive performance testing covering pressure, flow rate, efficiency, noise, and durability to ensure compliance with design standards and delivery commitments.

As a specialized enterprise focused on the R&D and manufacturing of core hydraulic components, Runhe Hydraulic Co., Ltd. consistently regards technological innovation and quality stability as the cornerstones of its development. The company not only equips itself with advanced R&D testing equipment and manufacturing platforms but also assembles an experienced team of engineers dedicated to applied research in new materials, new processes, and energy-saving technologies. We maintain long-term, close cooperative relationships with numerous domestic and international research institutions and leading OEM manufacturers, ensuring our technological direction aligns with market demands. We firmly believe that as an indispensable foundation component in industrial transmission systems, every refinement in gear pumps enhances the value of end-use equipment. Runhe Hydraulic is committed not only to delivering high-performance gear pump products but also to becoming a trusted partner for our customers, offering comprehensive support from product selection and technical consultation to after-sales service. We look forward to collaborating with partners across industries, leveraging our robust and reliable transmission technology to jointly advance progress and development in the industrial equipment sector.

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