THE SECOND GENERATION RADIAL PISTON PUMP (RKP-II).

ADVANCED.
QUIET.
DURABLE.

Moog has manufactured radial piston pumps since 2001 and is one of the leading suppliers of variable displacement piston pumps used in injection molding machines and other industrial applications. The RKP-II's design has been optimized to meet industry demands for long-life and lower noise, and continues to offer the same high performance and flexible options that our product is known for in the marketplace.

The optimized pump housing design now has nine instead of seven pistons, which improves fluid delivery and reduces hydraulic flow pulsation. Other improvements include more robust suction behavior and redesigned stroke rings. The result is one of the quietest pumps in the marketplace with proven performance and a long lifespan.

The RKP-II is ideal for integrating in all machines and installations including tool production, plastic and metal forming technology, injection and pressure casting, testing construction and mining, as well as rubber processing.

The Benefits

- Significantly reduced sound level for noise critical applications and to help machine builders with implementation of the European Union's (EU) noise guideline (2003/10/EC)
- Improved durability, low maintenance requirements and long pump life help to significantly reduce maintenance costs and encourage more uptime
- Increased stability, even under unfavorable operating conditions
- Simplified connection for easy set-up and commissioning
- High energy efficiency to save on operating costs
- High flexibility in design due to a large number of sizes, control types and mounting flanges, as well as approved versions for a variety of operating liquids
- Explosion-proof versions available
- Quick repair service available

The Moog Solution

The Moog RKP-II is ideal for every noise-sensitive application in stationary hydraulics. The advanced design that now includes nine pistons, a special cup design, and an optimized flow design of the suction path has many advantages over other pumps in the marketplace. All parts associated with fluid flow dynamics are hardened in the RKP-II, thereby eliminating the pitting often caused by cavitation.

Low output pressure pulsation and a virtually unlimited storage lifetime are further enhancements of the new RKP-II. It's radial piston drive shaft bearing is not subject to transverse forces so therefore it runs virtually stress-free. An added benefit is that it is subject to less of the typical piston wear and the common problem of detaching slipper pads. Finally, maximum flexibility is ensured by the availability of a variety of control types, size and mounting options as well as versions for special fluids and explosion-proof environments.

Long lifetime due to optimum design

The rotation of the stroke ring at certain operational stages has been completely eliminated by a totally new design. The (normally) round stroke ring has been replaced by a sliding, flattened version, which has a sliding surface on the outer side. This supports the ring inside the housing.

The new design has significantly reduced wear on the entire actuating system, while increasing the pump's stability and durability, especially under unfavorable operating conditions, (e.g. very low operating pressure). As a result, we offer an optional extension of the standard operating warranty. (Note that this warranty applies only when the pump is used as intended.)

Reduced noise level

We have reduced both primary and secondary noise levels of the RKP-II, delivering overall noise optimization for the entire machine. The number of pistons has been increased from seven to nine and the resulting reduction in piston diameter has reduced the affect of dynamic transverse forces on the housing. Volume, flow and pressure pulsations on the high pressure side are noticeably lower.

Lowering the hydraulic inductance has led to much reduced pressure pulsation in the suction channel and in turn has reduced the airborne noise footprint and mechanical transmission of impact noise. With the RKP-II, all of the machines components are now subject to much less vibration and the overall noise level is noticeably lower.

Supports the implementation of the EU noise emission directive

As part of the design objectives, many improvements were made in the RKP to reduce noise emissions. Stringent EU noise emission standards can be more easily met with the RKP-II, as the noise intensity for sizes 63 and 80 generally does not exceed <70dB, even in demanding operating conditions. The RKP-II also has significantly lower pulsation amplitudes, which help to reduce the noise emitted by the complete installation or machine.
Thus the RKP-II helps machine and equipment manufacturers in implementing the EU noise emission directive (2003/10/EC).

Optimized suction flow

Another improvement in the standard design of the RKP-II is more robust suction behavior, optimum intake, and less pressure loss along the suction path, due to a larger intake connection (SAE 2" standard series, 3000 psi). The optimized intake channel in the housing and control journal has reduced the incidence of cavitation in the housing, control journal and drive unit. Flow noise is reduced at the same time.

New control port

The introduction of a G $^{1}/_{4}$" control port on the RKP-II's hydro mechanical control, eliminates the need for a reducer between pipe fitting and recommended pilot supply hose (nominal width 10) . That saves assembly time and integration costs significantly.

Expertise users can rely on

Moog designs and manufactures high performance motion control solutions combining electric, hydraulic, and hybrid technologies with expert consultative support in a range of applications including plastics, metal forming, textiles, power generation, and simulation. We help performance-driven companies design and develop their next-generation machines. Our customers benefit from our extensive knowledge of machine integration and system design challenges and we provide global support and repair services.

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