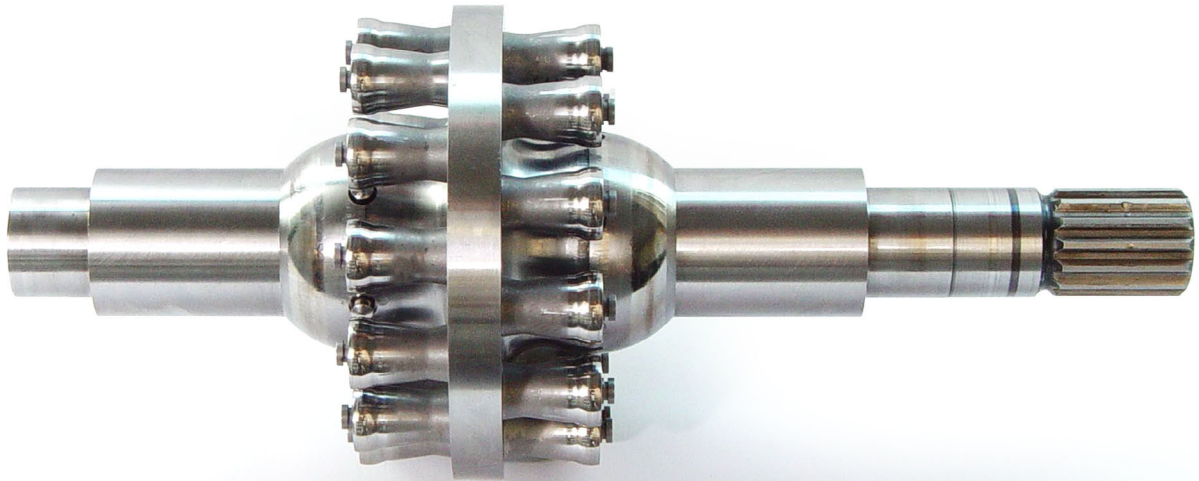


THE MULTI PISTON FLOATING CUP



There are many advantages to a high number of pistons. It offers new opportunities for noise reduction, the pressure and flow pulsations are decimated, and the shaft torque is becoming almost constant. Floating cup pumps and motors typically have around 24 pistons, much more than the regular 7 or 9 pistons of other piston pumps and motors. They are

arranged in two rings, positioned back-to-back on a rotor. The design is compact and strongly reduces the load on the roller bearings. Floating cup pumps are much less prone to cavitation than conventional axial piston pumps. They can be operated at high operating speeds, even at self priming conditions.

INHERENT SMOOTHNESS

MANY PISTONS

The floating cup principle is a compact, multi piston design. It is possible to use only one side of the pump, but then the rotor would not be balanced and the load on the bearings would strongly increase. Floating cup pumps and motors typically have 24 pistons, although the number can be varied between 20 and 30 pistons without affecting the power density significantly.

SHORT STROKE

The design is characterized by a short stroke. This reduces the velocity and acceleration of the oil flowing in and out of the cups. It results in lower flow losses and a reduced risk for cavitation.

LARGE FLOW AREA

Having 24 pistons, there are also 24 barrel ports to get the oil in and out of the cups. The flow area is much larger than of conventional piston pumps and motors.

LOW RISK FOR CAVITATION

The large flow area and the short stroke reduce the risk for cavitation. As a result the pump can be operated at higher rotational speeds without pre-charging the supply side of the pump.

LOW NOISE, LOW PULSATIONS, SMOOTH TORQUE

Hydraulic pumps and motors are a major source of high noise levels. The pumps and motors produce strong pressure pulsations which are spread through the hydraulic system and cause additional noise, durability and control problems. Hydraulic motors are jerky and rough, which is again caused by the limited number of pistons of current motors. The only fundamental way to reduce noise and pulsation levels is to strongly increase the number of pistons. It is also the only way to create a smooth shaft torque.

More information about Innas and the floating cup technology can be found at www.innas.com



I N N A S
Nikkelstraat 15
4823AE Breda
The Netherlands
© +31 76 5424080
www.innas.com

