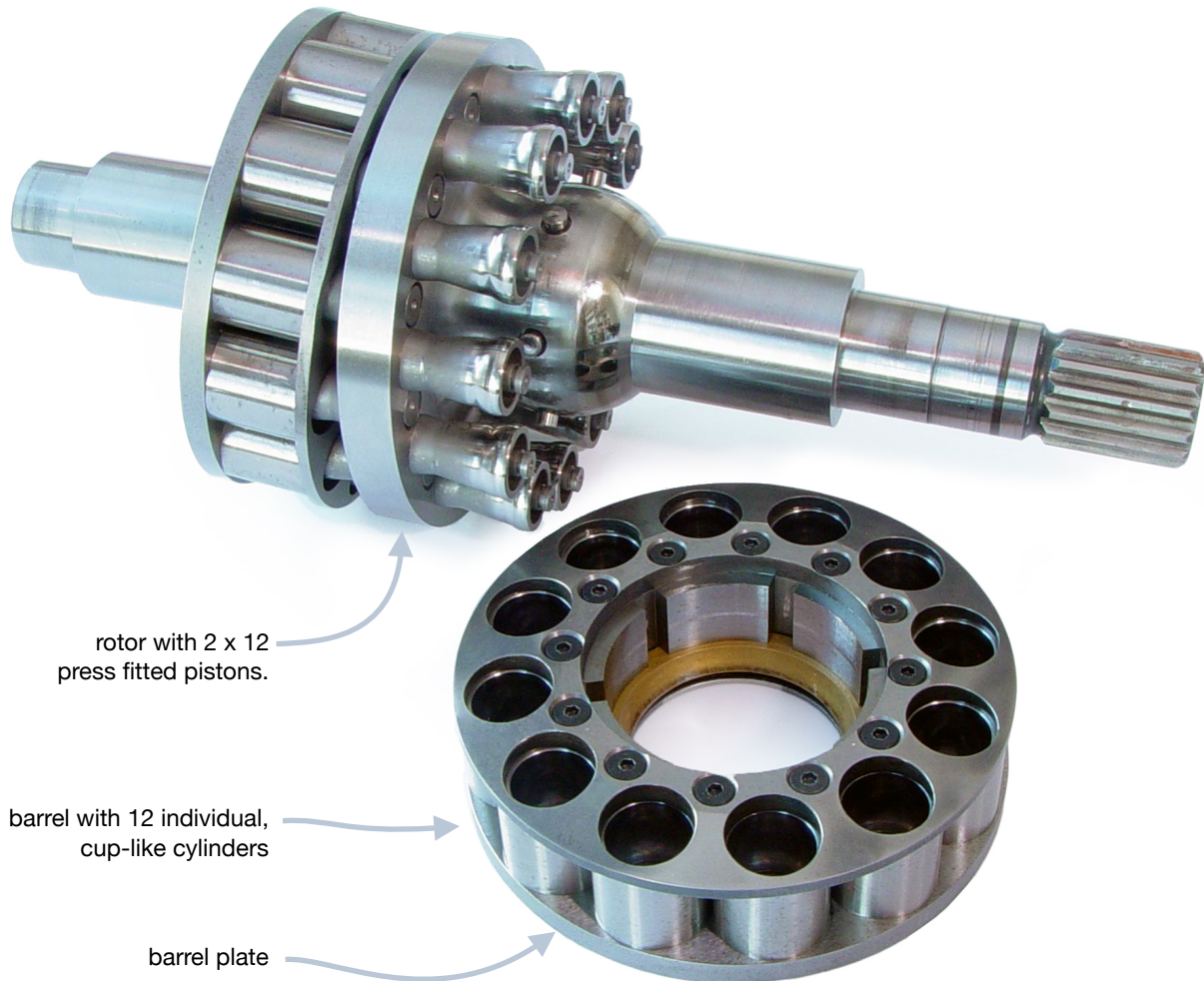


THE FLOATING CUP



rotor with 2 x 12
press fitted pistons.

barrel with 12 individual,
cup-like cylinders

barrel plate



In 'floating cup' pumps and motors, each piston has its own, cup-like cylinder. These 'cups' are free to move on top of the barrel plate, which separates the cups from the port plate. Between the cups and the barrel plate is an oil film, which makes the cups 'floating'. Whereas the cups are free to move, the pistons are not: they are press

fitted into the rotor. The pressure forces, which are acting on the pistons, are directly transferred to the rotor, without any linkage. This eliminates friction losses and wear. The floating cup principle is inherently a multi-piston design, having about three times as much pistons as other piston pumps and motors.

MOST IMPORTANT CHARACTERISTICS

A GENERAL PRINCIPLE

The floating cup principle is a general principle, which can be used in constant and variable displacement pumps and motors. It is a heavy duty principle, fit for pressures of 500 bar and higher. Floating cup pumps and motors have an excellent performance at low operating speeds, but can also be used at high rotational speeds.

MULTI PISTON

The floating cup principle is a true multi piston principle. Floating cup pumps and motors typically have around 24 pistons. This is about three times as much as conventional axial piston machines. The high number of pistons fundamentally reduces noise and pulsation levels, and creates an extremely smooth shaft torque.

BALANCED DESIGN

The pistons are arranged in two rings, one on each side of the rotor. This almost completely eliminates the axial load on the roller bearings of the shaft.

PHASE SHIFT

The pistons on one side of the rotor are positioned in between the pistons on the other side. This creates a phase shift in the commutation between the two sides of the machine. The phase shift is necessary to utilize the full advantage of having 24 pistons.

THROUGH DRIVE

Floating cup pumps and motors have a through drive. The large number of pistons creates abundant space in the middle for having a strong shaft through the entire machine.

MULTIPLE INNOVATIONS

The design is the result of over 10 years of development and testing. The combination of several new inventions have resulted in a very efficient and robust design. The design is protected by several patents worldwide.



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



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