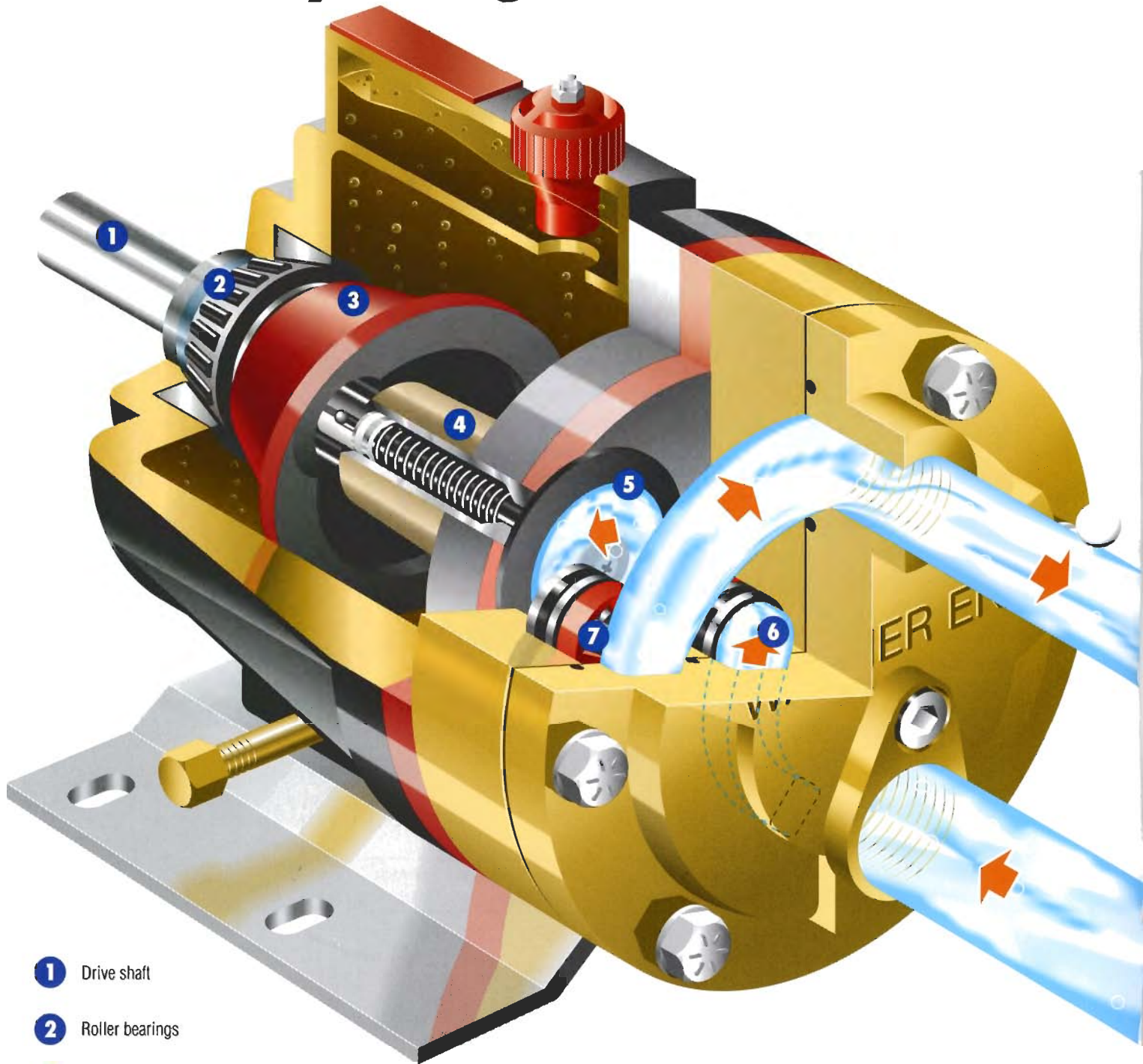


The Hydra-Cell[®] pump... inherently designed to last



- 1** Drive shaft
- 2** Roller bearings
- 3** Fixed-angle cam
- 4** Oil filled pistons
- 5** Diaphragm
- 6** Inlet valve assembly
- 7** Outlet valve assembly
- 8** Pressure regulating valve

How the Hydra-Cell[®] Works.

The Hydra-Cell[®] positive displacement pumps unique operating principle offers numerous inherent performance advantages.

The drive shaft (1) is rigidly held in the pump housing by a large tapered roller bearing (2) at the rear of the shaft and a smaller bearing at the front of the shaft. Sandwiched between another pair of large bearings is a fixed-angle cam or wobble plate (3).

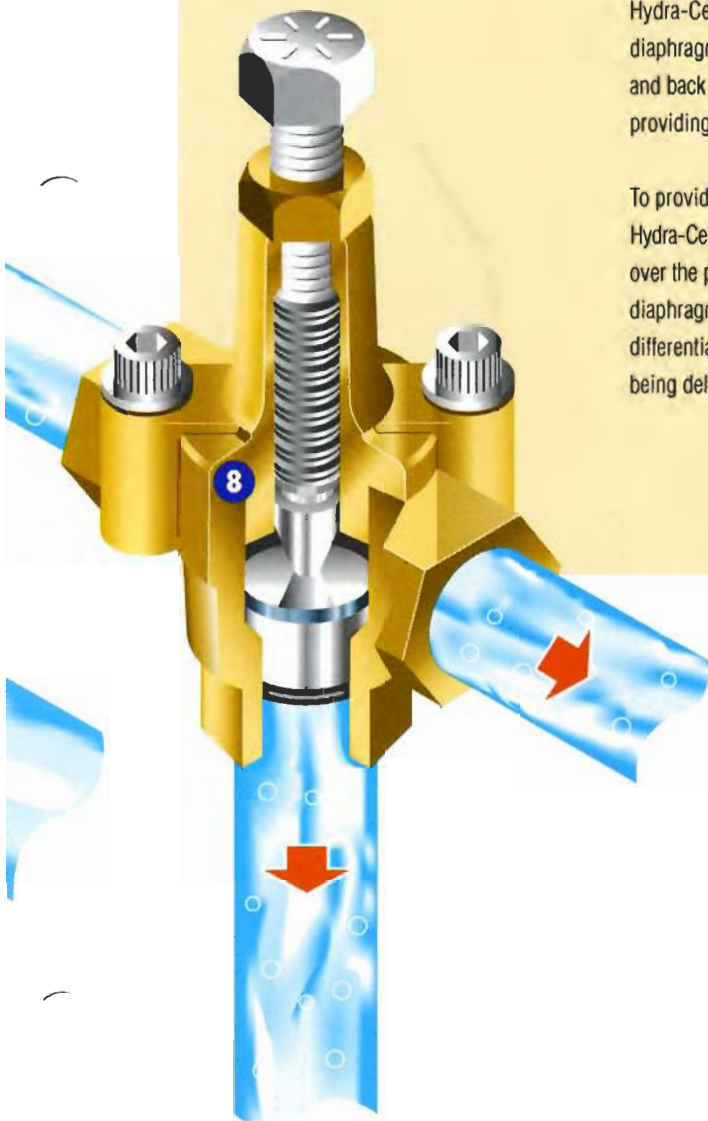
As the drive shaft turns, the wobble plate moves, oscillating forward and back (converting axial motion into linear motion). This complete pumping mechanism is submerged in a lubricating oil bath.

The Hydra-Cell pistons (4) are moved sequentially by the wobble plate. The pistons are filled with oil on their rearward stroke. A ball check valve in the bottom of the piston ensures that the Hydra-Cells remain full of oil on their forward stroke. The oil held in the Hydra-Cell balances the back side of the diaphragms (5) and causes them to flex forward and back as the wobble plate moves, thus providing the pumping action.

To provide long, trouble-free diaphragm life, the Hydra-Cell hydraulically balances the diaphragm over the pump's complete pressure range. The diaphragm actually faces only a 2 psi pressure differential no matter what pressure the fluid is being delivered, even up to 2500 psi!

Each diaphragm has its own pumping chamber which contains an inlet and outlet self-aligning check valve assembly (6). As the diaphragms move back, fluid enters the pump through a common inlet and passes through one of the inlet check valves. On the forward stroke, the diaphragm forces this fluid out the discharge check valve (7), and through the manifold common outlet. The diaphragms, equally spaced from one another, operate sequentially to provide constant, low-pulse flow. A Hydra-Cell pressure regulating valve (8) is typically installed on the outlet side of the pump to regulate the pressure of down stream processes or equipment.

The pumps are very efficient (typical operation is at or above 80% efficiency), and can be driven (belt, gear or direct) by electric, air or hydraulic motors. This allows system designers ultimate flexibility in selecting drives. The high efficiency offers substantial energy savings to users over comparable pumps. The pumps are available in flow rates from 0.2 to 37 gpm (1 to 140 l/min) at discharge pressures from 30 to 2500 psi (2 to 172 bar).



No matter what the application, the Hydra-Cell pump is built tough to get the job done without the constant worry about pump failure and costly repairs.