A LatchTool Advisory

Breakthroughs & Paradigms

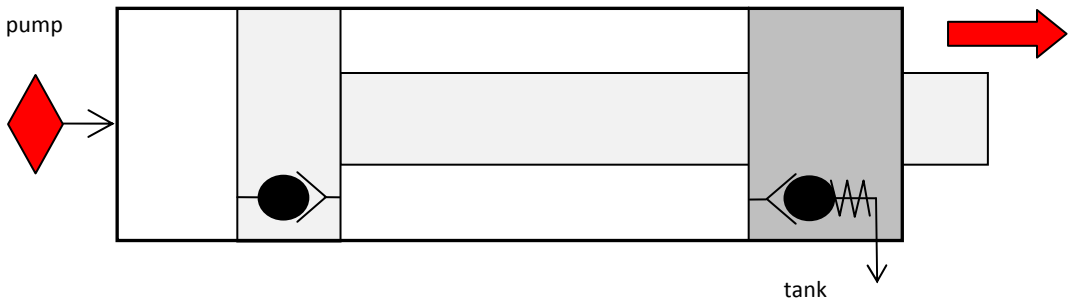
May 1, 2009 - - - We demonstrated our compact hydraulic circuitry by building prototypes for different applications that demonstrated incredible power densities. All because O-ring seals are made to double as a floating seal valves. Gone are check valves, spool valves and the real estate to accommodate a regenerative circuit. The economics are compelling.

I always assumed that technicians were mystified by our Annular Floating Seal Valves. We filed a provisional patent this April that shores up our last vulnerability. But with disclosure, something else came to light...

Most mechanical engineers have only a dim notion of a *regenerative hydraulic circuit*. Linked references (1), (2) and (3) deal with this obscure circuit; one whose dynamics are determined by the relative size of a cylinder's components.

A regenerative circuit made with our fluidic valves is why compact hydraulic systems are possible without complexity and little fluid.

Figure 1 : Ram cylinder with embedded regenerative circuitry using customary notations.



See: Elementary FastFlow® Hydraulic Circuit on page 4 of the Introductory Disclosure Package.

During regeneration, the ram is delivering a force equal to system pressure times the cross-sectional area of the ramrod. Regeneration stops when system pressure overcomes the spring-loaded check valve. Fluid is then diverted to the tank.

In practice, while check valves can be embedded within a cylinder the spatial requirements and flow restrictions are too great.

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