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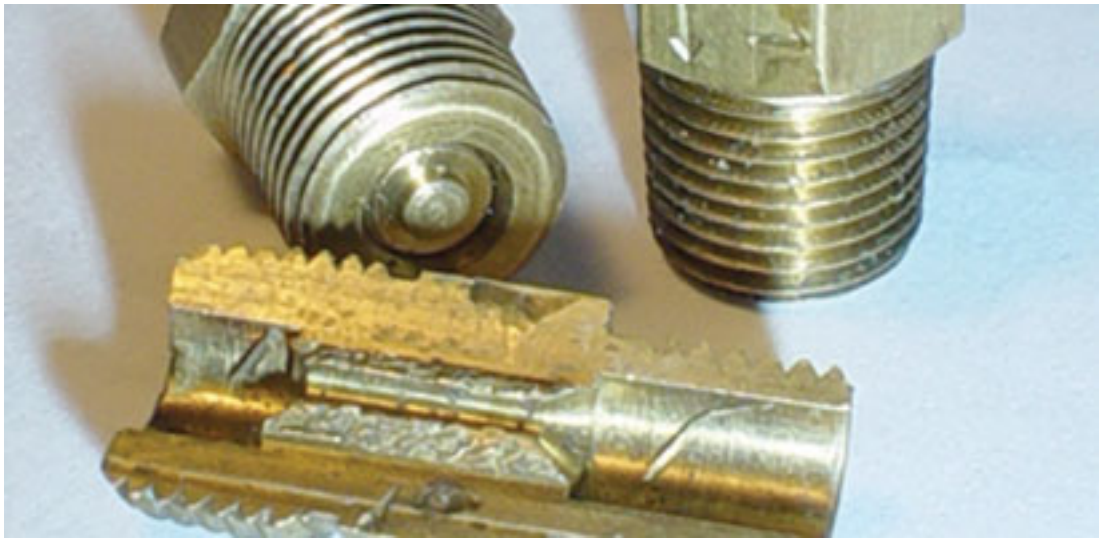

The grandfather of all centralized lubrication systems, the Single Line Resistance (SLR) type is a fully engineered system designed to pump oil manually in a single-shot (total loss) method, in an automated cyclical (total loss) manner or in a continuous (recirculative) manner.

This low-pressure design delivers an apportioned amount of lubricant to every bearing point when the pump is operated, and can be engineered to accommodate up to 200 delivery points in a single pump system.

Today, the SLR is one of the most widely available lube systems in the marketplace. Originally developed for automotive applications, it was adapted for small to medium machine tools and manufacturing equipment. Introduced to industry in 1923, the system was a U.S. design from Joseph Bijur of the Bijur Lubricating Corp. (now Bijur-Delimon).

How This System Works

- In a total-loss single-shot or cyclic SLR system, a piston pump delivers lubricant through a 5/32” or 3/16” diameter line at a pressure of approximately 60 psi. Each lube point is

proportion-controlled by individual metering devices connected in series. Pressured lubricant is forced through the metering unit's check valve and flows into the bearing point. As the system pressure subsides, the check valve closes and the pump resets itself ready for the next operation, the dormant system retaining a residual system line pressure of between 2-5 psi.

- In a recirculative SLR system, a gear pump delivers continuous oil flow through a flow-proportioning device known as a control unit.

- Meter and control units look identical from the outside, but differ considerably in how they are constructed.

- A meter unit contains a metering pin of a controlled diameter that floats in an accurately reamed cylindrical passage producing an annular orifice of known flow rate. The clearance between the pin and the cylinder wall determines the meter-unit flow-rate designation.

- A control unit used in continuous systems has no check valve and uses a helical screw to meter the flow.

The Pros & Cons

On one hand, the SLR system is a simple, inexpensive, engineered lubrication solution designed for small- to medium-sized machinery. On the other hand, these types of systems are only good for use with oil—*and they do not produce control signals.*

Because the SLR system's metering units are piped in series (hence the single-line designation), care must be taken to ensure all fittings are leakproof/don't leak and that meter or control units are never allowed to be "drilled" out to increase the rate of flow, which would have the same effect as a broken line. In such a situation, oil takes the path of least resistance and effectively "starves" all bearings simultaneously.

The pros and cons of a Single Line Resistance lubrication delivery system boil down to this: With basic care and understanding, your SLRs will provide excellent bearing lifecycle management at a minimal cost.

Coming Up

In the next issue, we'll feature Positive Displacement Injector (PDI) centralized lubrication delivery systems. **LMT**

For more details on centralized lubrication systems, see Ken Bannister's book, Lubrication For Industry, published by Industrial Press, or contact him directly. Telephone: (519) 469-9173; e-mail: kbannister@engtechindustries.com .

Single Line Resistance (SLR) Systems:

Originally developed by Bijur (Bijur-Delimon)
Also offered by Lube, Chiba, Dropsa, Tecalamit, Beka and Trico

For more information on these suppliers, enter 01 at www.LMTfreeinfo.com
or visit www.mt-online.com/clsinfo.html