

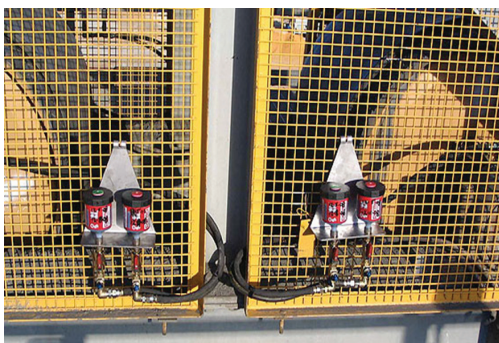


GREASE LINES

By Blaine Ballentine

Sometimes even the most useful equipment is less than easy to maintain. Bearings and other lubrication points can be in locations that are difficult to reach or dangerous to access. The obvious solution is to remove the grease zerk, thread in a line or hose going to a more convenient location, and then put the zerk on the end of the hose. These extensions can be used to supply grease to fittings that are difficult to reach or dangerously close to rotating machinery.

Centralized multi-point greasing systems and grease banks are variations on the idea. Centralized systems have a single grease reservoir that distributes grease to all the lubrication points on a piece of equipment. Grease banks are just



rows of zerk connected to lubrication points by lines, making the task of greasing easier.

The grease can be pumped automatically or by hand in centralized systems, depending on the system. Give a worker an electric grease gun for a grease bank, and you have a semi-automated system. The common factor is the grease has

to travel through a line before reaching the lubrication point, and that is the focus of this article.



Strength

Greasing extensions and centralized greasing systems offer a great way to get Cen-Pe-Co greases to where they are needed. They not only make the greaser's job safer and easier, in a shop situation it can make the difference between a fitting getting grease or failing due to starvation.

A worker may just neglect to grease a fitting if it is difficult to get to, or does not want to take grease. It does not happen to the owner operator who does his own work and has to pay for the parts and repair, but it happens in fleets and to owner operators that do not perform their own maintenance. Even conscientious workers may be unaware of a hidden grease zerk and not grease it. Either way, a lubricant starvation failure follows. Greasing extensions or centralized systems

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can eliminate these failures.

Weakness

However, it is important to remember that the systems using lines or extensions, like any other system, need to be maintained to function properly. If the line plugs, the bearing or fitting does not get grease, and eventually it fails. Instead of spending his time greasing, the worker spends his time making sure every line is flowing grease. Whether greasing by hand or with an automated greasing system, there is no substitute for a conscientious worker.

Grease is a mixture of oil and thickener. These two parts can separate with time, temperature, and/or pressure. So here is what happens. The line comes down into a bearing, for example. The heat from the bearing causes the oil to bleed from the grease, making what remains in the line much thicker. At the next greasing, a smaller-than-normal amount of thicker-than-normal grease is forced into the bearing. After a few

Greasing Cycle

Automated greasing systems seem to go in waves in the trucking industry. The guys in the shop miss a zerk or two for whatever reason, and it produces failures. Management decides to fix the problem and begins specifying trucks with automated greasing systems. They work well for a while, but then lines plug and failures return. Management decides they should pay their mechanics to grease the trucks, instead of maintaining a system that greases trucks, and they begin specifying trucks without automated greasing systems. The cycle starts all over again.

cycles, the line is plugged, no grease makes it to the bearing, and the bearing fails.

If the line enters the bearing from below or horizontally, separation is less of a problem. Another thing to consider is the length of the line relative to its greasing interval. How long does it take for the grease you pump in today to reach the bearing or fitting? If you give a zerk three strokes of grease every at oil change, but your

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Case Study

Several years ago we received an 18-inch grease gun hose from a customer with a cement truck. He had permanently attached the hose to his truck to relocate the zerk so that he would not have to crawl under the truck to grease one of the bearings. He located the zerk much higher than before for easier access, but that also meant the grease flowed down into the bearing. Heat from the bearing caused some of the oil to bleed from the grease. Predictably, he complained when the hose plugged.

We cut through the rubber hose to examine the grease inside. The grease at the zerk end of the hose looked normal. The other end was another story. We pulled out a few inches of what looked like shoestring licorice. It may not have tasted as good, but it was just as hard.

Fortunately the customer had been paying attention and investigated when the zerk did not take grease. The grease from the previous greasing and the oil that bled out of the line was enough to adequately lubricate the bearing.



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line is three feet long, the grease forced into the bearing may have been in the line for months. Depending on the temperatures and line configuration, the properties of the grease going into the



The grease zerk, sometimes called an Alemite fitting, got its name from its inventor. Oscar Zerk patented the zerk fitting for the Alemite Manufacturing Company in 1929.

bearing may be very different than the grease coming out of the grease gun.

Practical Advise

So, what should we do? Be aware of how grease lines are configured. If they go down into the lubrication point or are long, grease more often. Pump until you see grease come out, if you can do so without damage to seals or other complications.

Use a lithium complex grease, such as Cen-Pe-Co Double Duty or Cen-Pe-Co HTLD, instead of a lithium grease. These complex greases have a tighter soap structure that holds the oil better than ordinary lithium greases. This is not always an advantage, but the greater stability is an advantage when the grease sits in a line for an extended period of time before doing its job. Mega moly is a lithium complex grease, but whether right or wrong, moly greases are rumored to “clay up” in some

applications. If there is a problem due to the line configuration, it is sure to be blamed on a moly grease if that is what was used.

Particularly in an automated greasing system, cold temperature flow is a consideration. Multi-purpose greases are NLGI #2, but some of these systems call for a thin grease, like Cen-Pe-Co Quick Flo Pressure Lube (NLGI 00) or Cen-Pe-Co Winter Syntho (NLGI 1). If it calls for NLGI 2, Cen-Pe-Co HTLD will flow better than Double Duty, particularly in cold weather, because it is not tacky and it is made with a much thinner oil.

Conclusion

Greasing extensions and centralized greasing systems, when properly configured and maintained, can greatly enhance worker safety and machine reliability. Just be aware that they must be checked to ensure grease is reaching its intended destination. Depending on the application, use Cen-Pe-Co Double Duty, Cen-Pe-Co HTLD, Cen-Pe-Co Winter Syntho, or Cen-Pe-Co Quick Flow Pressure Lube to get the most out of the machinery.

References

“Using Hose Extensions to Grease Bearings” Noria Corporation 6/12/15 www.machinerylubrication.com/articles/print/29630

Grease Fitting 2/5/15 https://en.wikipedia.org/wiki/grease_fitting



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Working the Cen-Pe-Co booth at the 2015 Empire Farm Days are: (L to R) Ed Jacobs - NY, Dave Jahhannason - NY, Andy Batty - NY, Herb Cox - NY, Bert Batty - NY, and Erich Haesche - NY.



Left: The Silver Bullet finishes the second of two spectacular passes to earn a win on Saturday afternoon at the National Tractor Pulling Championships in Bowling Green, OH.

Below: The Silver Bullet / Cen-Pe-Co compound at Bowling Green, OH

