

Automatic Grease Lubricators: What You Need to Know



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Noria Corporation

There are two primary reasons to select automatic application: improved quality of lubrication and/or reducing man-hour requirements for grease application. Like most other lubrication methods, the successful use of single-point grease applicators requires some knowledge of lubrication fundamentals; many common mistakes are made. In order to get positive results from such devices, you must select the right type of applicator for a given application, install the device correctly and determine the optimum application rate.

Comparing Methods

There are certainly advantages to automatic application when compared to manual application. Theoretically, it is preferable to apply small amounts of grease at short intervals rather than large amounts of grease at long intervals.

With manual application, the trick is to apply as much grease as possible without causing harm due to over-greasing, thereby maximizing the relubrication interval. While this is fine for most grease-lubricated components, there are many applications that may benefit from more frequent application or could be harmed by large application volumes. Of course, you could choose to simply lubricate these components very frequently, but the associated labor cost would likely make the option of automatic lubricators attractive.

To accurately determine which lubricated components would be good candidates for automatic applicators, you must understand the factors that cause a need for frequent relubrication, such as excessive temperature, high speeds and contamination.

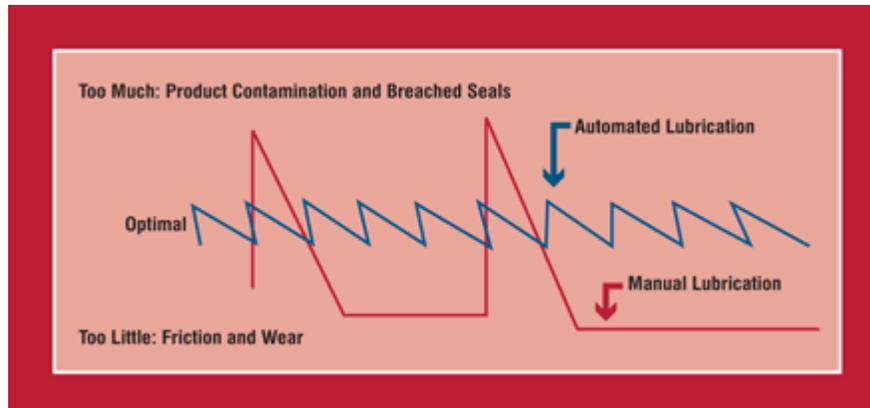


Figure 1. A Simple Comparison Between Manual and Automated Lubrication

Temperature is a perfect example. In high-temperature applications, such as those commonly found in steel mills, some bearings may need to be lubricated every day or even every few hours. While this is an extreme example, it's easy to see that it would require a veritable army of technicians to perform manual relubrication on hundreds of bearings every day, thus making automatic application the preferred method. Some high-speed applications not only require frequent application, but they also may be damaged by the addition of large volumes of grease, causing overheating or skidding of bearing elements. In many cases, the largest contributing factor to grease reapplication requirements is contamination. Any application can require very frequent application when contamination is severe, regardless of other factors. These are just some of the primary factors to consider; there may be others such as inaccessibility and limited manpower for lubrication activities.

Advantages of Single-Point

For systems with many lubrication points, such as the steel mill example, centralized automatic systems are often ideal. But for many others, including systems with just a few lube points or with long distances separating the lube points, single-point lubricators offer many of the same benefits at a small fraction of the cost.

Consider an incline conveyor with bearings that require frequent lubrication due to contamination ingress. In such an application, a centralized system would require extensive plumbing to lubricate only a few points, making single-point applicators a great fit. Grease-lubricated pump bearings, fan bearings and grease-lubricated packing seals are all good examples where such devices would likely provide significant value.

Typical Issues with Single-Point

There are several issues to keep in mind when using single-point lubricators that may lead to improper grease application. These issues include insufficient pressure to deliver

the grease, improper dispense rates and probably the biggest issue of all - a failure to properly inspect the device for proper operation.

The issue of insufficient pressure isn't a problem with the applicator, but rather a problem with selection. Depending on the delivery method, some of these devices only generate approximately 50 to 75 psi. It is important to ensure that the system pressure will be sufficient for a given application and installation method. This can be determined by first manually applying grease to the component using a grease gun fitted with a pressure gauge. This issue also should be considered when installing the unit. Take steps to minimize the amount of back pressure on the device by using as few fittings as possible and keeping the length of any tubing or piping to a minimum. Whatever the requirements are, you should be able to select a device that provides ample pressure.

While there are factors that can affect dispensation rates, such as temperature and grease consistency, the most common problem is simply selecting the wrong setting. Before installing the unit, determine the appropriate application rate by using valid lubrication engineering methods. Many problems can arise from over- or under-lubricating a component, including overheating, excessive wear or simply wasting grease and making an unnecessary mess.

Of course, the biggest pitfall is a failure to routinely inspect single-point lubricators for proper function. Installing an automatic lubricator doesn't ensure that you will have a properly lubricated component. They must be inspected just like anything else. In fact, a proper inspection process should identify and allow for correction of the previously mentioned issues. Determine the frequency of inspection based on the unit's application rate and the component's sensitivity of over- or under-lubrication. A good idea for such inspections is to record the installation date on the unit and make marks at each inspection denoting the date and reservoir level. Based on the desired application rate and reservoir size, you should be able to determine if the unit is operating normally. Inspect the lubricated component as well to check for an indication that the grease application rate is optimum. You may want to include condition monitoring such as acoustic energy measurements or high-frequency vibration to monitor the condition of lubrication.

Education Before Selection

Most industrial facilities have at least some applications that may benefit from automatic grease application; and for many of those, single-point lubricators may be the best option. Those considering the addition of single-point lubricators to their lubrication program should educate themselves on the different types of systems available, as well as the pros and cons of each.

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About PLI, LLC

PLI, LLC is a company with over 35 years of experience in the self-contained automatic lubrication business. As one of the early manufacturer / distributors to introduce these products to the United States market, we have been working in manufacturing plants of all types and know intimately the equipment and problems our customers encounter.

PLI, LLC has been helping manufacturers and municipalities reduce maintenance costs and increase machine life for years with reliable lubrication systems and outstanding customer service.

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