Centralized Lubrication: Is it worth systematizing?

Centralized lubrication, which is widely used in mining, is a system that may help decrease machinery downtime, optimize lubricant usage and simplify maintenance work on numerous equipment.

Surprisingly, despite the fact that it provides all of these benefits (and many more), some individuals continue to oppose the centralized lubrication system. Typically, this is because they are unaware of how it works or perceive it to be prohibitively expensive or untrustworthy due to hearsay.

To address your concerns and to further explain the benefits and primary applications of centralized lubrication, we spoke with Eliezer Vasconcelos de Abreu, mechanical engineer and technical adviser at PETRONAS. Take a look at what we discovered below!

What is centralized lubrication?

Also known as an automatic lubrication system, centralized lubrication refers to a special equipment that distributes lubricants to numerous specialized equipment in an automated manner. As a consequence, lubrication accuracy is improved, and the possibility of over or under lubrication is almost always avoided.

The centralized lubrication also facilitates the predictability of spending with oils and greases, besides reducing the human resources used in the machinery maintenance. "Centralized lubrication is recommended in locations where the lubricator's life may be endangered. It is critical if there is a requirement for increased equipment availability.", Eliezer states.

Because of this, mining is one of the areas that makes the most use of centralized lubrication. After all, except for the low mobility of equipment such as conveyor belts and backhoe loaders, mine operations are often non-stop.

With automatic lubrication, there is no need to stop equipment operations for lubrication.

What are the primary advantages of central lubrication?

The primary advantage of centralized lubrication is that it enables continuous operation of the equipment without the need for lubrication downtime. In this case, according to Eliezer, "You do not need to interrupt the operation of the equipment to lubricate it. Manual lubrication will almost certainly require that you shut down the equipment."

Another key advantage is the accuracy with which lubricants are applied.

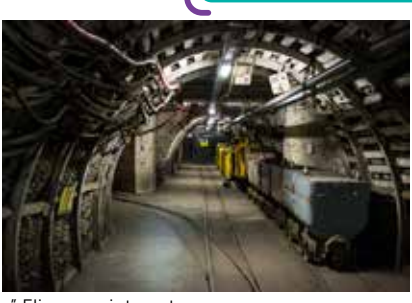
Once everything is mechanized, consumption is kept to a minimum, with no excesses or waste. Optimizing lubricant consumption also benefits procurement, which can more accurately forecast the need for oils and greases for centralized lubrication-equipped equipment.

The system's efficacy is also a significant benefit, since there is no danger of a human error impairing the machine's performance. "You will extend the life of your equipment by lubricating it optimally and with the proper amount of lubricant at the proper time," Eliezer says.

Even dangers of work accidents are reduced when human engagement in the task is reduced. In this scenario, human error as a factor in lubrication is virtually removed, which ensures a better and more predictable operation of the equipment. Because no one applies the lubricant manually, this risk element also vanishes.

It is worth mentioning that minimizing the demand for lubricating staff has an influence on the company's expenditures. This lubrication methodology allows to move human resources to other obligations without having to devote as many hours of maintenance employees to this activity. Keep in mind, however, that you should always have someone there to set up and oversee the performance of the centralized lubrication system!

What are the implementation requirements?



There are no general guidelines for implementing centralized lubrication. However, most of the time, it is recommended for all machinery that needs to operate without breaks, whether it is stationary or moving very little.

In general, centralized lubrication is conducted in accordance with an implementation design, aiming to meet the needs of each organization and its equipment. "Above all, it is critical to assess the type of lubricant required by the equipment for automated and manual lubrication," Eliezer points out.

The equipment manufacturer may recommend a less viscous lubricant for manual lubrication. In automated lubrication, however, the manufacturer often buys a little more fluid grease because it will have to travel a longer distance in the pipe.

In most cases, the lubricant to be used is specified by the equipment manufacturer, whether for manual or automated lubrication. Furthermore, some equipment already has a standardized system that makes centralized lubrication deployment easier. This is more typical in sectors like mining.

What precautions should be followed when using centralized lubrication?

Despite the fact that equipment lubrication reduces the need for manual labor, the deployment of this system does not justify the elimination of the company's maintenance staff. After all, monitoring and configuring centralized lubrication requires experts in the field.

"Someone must confirm the reservoir level, whether it is oil or grease. Such a reservoir must always be filled with the correct lubricant and cleaned to avoid contamination of the lubricant. The reservoirs must be in great working order so that the lubricant does not become contaminated," Eliezer recommends.

Moreover, it is also vital that maintenance of the electrical and electronic equipment is always up to date. The piping must be clearly labeled so that everyone understands that lubricant is running through it. As a result, in the event of a leak, remedial maintenance must be performed as soon as possible.

Finally, the periodical analysis of lubrication points is recommended because despite the fact that this is an automated system, failures can still occur. "It is usually a good idea to verify if a certain lubrication point is being properly lubricated, examining the consumption of bearings and bearings to determine whether or not this lubrication is effcient," Eliezer recommends.

How can the equipment's availability be ensured?

It is critical to use the correct lubricant for the proper functioning of centralized lubrication. "Always use the lubricant recommended by the equipment manufacturer. It is critical to assess the storage conditions of this lubricant in order to avoid contamination," Eliezer explains.

Compared to manual lubrication, centralized lubrication systems need far less orientation. As a result, using a lubricant with inappropriate viscosity or a grease with an insu cient consistency might be severely detrimental to the equipment.

Centralized lubrication might be a concern if input management is not done effectively.

Now that you understand how centralized lubrication works and why it is worthwhile to invest in this model, why not contact PETRONAS to ensure that lubricants are available to appropriately feed your industry's system?