

Understanding the importance of hydraulic oil for industrial plants

SHARE    

Discover how we can help your business achieve its true potential! [Talk to Us](#)



Hydraulic oil is a type of fluid whose primary purpose is to transfer power to the machine. However, other functions are required for the good operation of the machine, including protecting its components from wear.

Hydraulic oils are responsible for lubricating machines and equipment, as well as helping internal parts moving with greater force. That is why relying on predictive and preventive maintenance is a fantastic strategy to ensure the integrity of this system and extend its useful life.

But, that's not enough! Additionally, you must understand the importance of this item and how to select the ideal oil for your business. We developed this article specifically to clarify this subject. Continue reading to learn more!



The importance of using the proper hydraulic oil

The correct selection of hydraulic oil is associated with two critical factors for any operation:

➤ **greater useful life of equipment**

➤ **the asset's performance**

Discover how we can help your business achieve its true potential! [Talk to Us](#)

The use of common oil without anti-wear additives and prioritizing lower cost over quality when buying are two common examples that end up affecting performance, leading to machine issues such as constant leakage.

This type of failure can be caused by a product that does not perform as expected due to material incompatibility. It could also be due to the lubricant losing too much viscosity and becoming overly fluid at high temperatures. In such instances, it is best to use an HVLP lubricant with a higher viscosity index.



Hydraulic oil features

Discover how we can help your business achieve its true potential! [Talk to Us](#)

Mineral oils and synthetic or semi-synthetic oils are available on the market. Next, we will describe the distinctions between them, highlighting the primary aspects of each.

Mineral-based oils

Most of hydraulic oils are mineral. However, depending on the degree of saturation, there are many differences even in these circumstances. A highly saturated base oil provides better performance and oxidation resistance as well as other benefits that confer greater quality to the final lubricant.

Thus, when comparing a product made with Group I mineral to another made with Group II mineral, the equipment will function differently, depending to the degree of saturation of the base oil.

Even among the same set of base oils, this variation can exist. When comparing two Group I products, one with a saturation degree of 67% and the other with a saturation degree of 88%, the latter will perform better due to its greater stability.



Synthetic and semi-synthetic base oils

While most oils are mineral, some high-performance formulations can be semi-synthetic or synthetic. Synthetic bases have been widely used in new technologies, such as energy-saving devices.

Besides this base, there are also attrition-modifying additives that lower the fluid's friction. Therefore, there is an increase in energy and/or fuel savings.

Another use for synthetics in the hydraulic line is in fire-resistant items for hydraulic systems that work near blast furnaces and other sites where fire is a constant threat.



Additives applied to hydraulic oil

Discover how we can help your business achieve its true potential! [Talk to Us](#)

Corrosion and rust inhibitors

These inhibitors work to prevent corrosion by protecting metal surfaces. Corrosion reduction can help to extend the useful life of the equipment.

Antioxidants

Antioxidants prevent oxidation caused by high temperatures and lubricant aging. Hydraulic oils must be oxidation-resistant in order to work under harsh conditions for an extended period.

A well-refined and treated base oil delays oxidation and allows the hydraulic system to operate without deposit development.

Anti-wear

To eliminate contact between the metals of the moving parts, the anti-wear additive generates a protective coating.

Defoamers

Defoamers function by preventing the production of air bubbles or foam in the lubricant, hence minimizing aeration.

Emulgators

Demulsification is the oil's ability to separate from water, which can be a pollutant in some hydraulic systems. The faster and more effective such separation is, the better it is for the system. This is how emulgators function.

Viscosity Index (VI) Improvers

These additives work to decrease viscosity variations caused by temperature fluctuations. When this type of ingredient is present in a product, the lubricant can operate over a wide temperature range without causing viscosity variations.

Assessment, quality and storage

Discover how we can help your business achieve its true potential! [Talk to Us](#)

What factors should we consider before selecting the best oil?

First of all, it is critical to understand the specifications provided by the equipment's manufacturer. The following are some of the most important factors to consider:

- the lubricant's viscosity
- industry standards, the main one being DIN 51524 part 1 (HL), part 2 (HLP) and part 3 (HVLP)
- specifications from the Original Equipment Manufacturer (OEM), requiring the lubricant to meet the most rigorous conditions of use

What precautions should be followed during handling, usage, and storage?

The primary concern in handling hydraulic oil is avoiding contamination. Storage is similar to that of other lubricants; simply store it in a ventilated and enclosed area, away from external contaminants such as water and dust.

What sectors depend the most on hydraulic oils?

Discover how we can help your business achieve its true potential! [Talk to Us](#)

Industrial plants of all sizes and segments, such as:

- **paper and cellulose**
- **mining**
- **iron and steel metallurgy**
- **sugar and alcohol**
- **cement**
- **power**
- **automotive**
- **metallurgy**

Hydraulic oil is essential for the maintenance of machinery and equipment in industry. The right decision has a favorable impact on the functioning of these assets and can help reduce stoppages due to leaks and other faults.

Therefore, it is worth considering the cost benefit ratio when acquiring these items.

What did you think about this content? Do you have any doubt about hydraulic oils? Do you want to learn how to make the best choice?

Contact us right now to resolve these (and any other) concerns!



SHARE    



To learn more, click here or scan the QR code