

Lubrication: A Vital Cog

Pulkit Khemka, Vice President, Pensol Industries, explains the importance of proper lubrication in the maintenance of equipment.

Lubricants are the lifeblood of engine and machinery. The purpose of lubrication is to prevent contact between the rolling elements or between the shaft and bearing. Lubricants are necessary, and are composed of the proper additives with defined viscosity. The correct lubricants to be used are determined by the speed and load carried.

For oils, viscosity is the prime determination in the selection of lubricants. High or low temperature and speed determine the required viscosity. Lubricants form a thin film between the races and the rolling elements. Insufficient viscosity will allow the two surfaces to make contact, generating heat, wear and surface degradation.

Importance of proper grease and oil

Engineers typically use grease to lubricate bearings because it is easy to handle and offers protective sealing capabilities for the system. Another lubrication option is oil, which flows freely and carries away heat, making it suitable for high speed or high temperature operations.



Pulkit Khemka,
Vice President, Pensol Industries.

When applied properly, lubricants can:

- Reduce the friction and abrasions caused by direct metal-to-metal contact;
- Transport heat generated by friction;
- Prolong overall engine and machinery service life;
- Prevent harmful rust and corrosion;
- Prevent foreign objects and contamination from interfering with the rolling elements.

Engineers must consider this factor

and diligently re-apply lubrication to sustain proper engine and machinery function. When done effectively, lubrication enhances engine and machinery reliability and increases overall service life.

Lubrication is a crucial part of engine and machinery success, but it's important to be mindful of some potential pitfalls:

- Selecting the wrong lubricant type — Grease and oil each have their own purpose, depending on the specific application;
- Using too much or too little grease/oil — Too much grease can cause bearing temperature to rise, especially when operating at high speeds, while too little grease results in damage due to metal-to-metal contact;
- Mixing grease and oil — Each type of lubricant provides different benefits, but they should always be used separately;
- Contaminating the grease/oil with objects or water — The lubricant's primary function should be to seal the contact surface and prevent the entrance of media or water.



Different types of lubricants

Category	Description	Pensol Products
Engine oil	Engine oil helps to protect and extend the life of engine. It is used in diesel engines and heavy-duty equipment.	DIAMOND EX 36000 Plus DIAMOND EX 36000 PLATINUM EX Plus PLATINUM EX Turbo
Grease	Grease is developed for wide range of bearing applications in automotive, industrial and construction applications.	AP-LR GEL Grease, AP-LR 30000 Grease AP-LR RED Grease, AP3 Grease
Coolant	Coolant is developed for non-amine, anti-freeze, anti-corrosive concentrate which meets the vigorous demand of all types of cooling systems of latest technology liquid cool engines.	A.C. Coolant Real Cool
Brake fluid	Hydraulic brake fluid is used in automotive discs, drum and anti-skid brake systems and clutch systems.	HDBF Crimson DOT 3 HDBF Crimson DOT 4
Gear oil	Gear is made for heavy-duty commercial transmissions, axles, and final drives where extreme pressure and shock loading are expected.	Gear Regular 90, Gear Regular 140 Gear DX, Gear TX, TQX