

# GREASE EXPLAINED

## BASE OIL

Base oil represents the foundation of every lubricant and it's worth mentioning that its type determines the overall performance of the grease in question. Three main types of base oils are mineral, synthetic, and vegetable oils. Synthetic oils are considered to offer the best results in terms of protection, performance, temperature and weather resistance, followed by good shear stability.

## ADDITIVES

Additives are used to enhance the features and qualities of each grease and boost its performance. The most common additives are extreme pressure additives, oxidation, rust, and corrosion inhibitors, polymers used to increase adhesiveness, insoluble solids, and additives that provide increased wear and tear protection. Also, certain dyes and pigments are added to each grease.

## THICKENER

Thickeners are used to enable all grease components to bond better, which increases the overall efficiency of every grease. Types of thickeners that are commonly used are simple and complex soaps, which are based on lithium, calcium, aluminium, sodium, and barium compounds. In addition, certain non-soap thickeners, such as those based on clay and polyurea, can be used to give the grease its consistency.

## CONSISTENCY

Consistency is a property defined by the National Lubricating Grease Institute (NLGI) used to determine the level of softness or hardness of every grease. Every grease is assigned a specific NLGI number that goes from 000 to 6. These NLGI grades are then used to express the level of consistency each grease has. So, for instance, NLGI grade 000 grease is completely fluid, NLGI grade 0 grease is described as very soft, NLGI 1 grease is soft, NLGI 2 grease is considered normal, NLGI 3 grease is firm, while NLGI 6 grease is defined as very hard.

## VISCOSITY

Grease viscosity determines its ability to remain stable and offer effective protection against friction. Higher viscosity provides greater stability when grease is exposed to heavy, slow loads, while lower viscosity is ideal for high-speed applications.

## LITHIUM GREASE

Lithium grease is a multipurpose grease known for its durability, high viscosity, and stability. It is designed to provide long-lasting protection against oxidation, corrosion, extreme temperatures, and wear and tear. Lithium and lithium complex greases are also characterised by their excellent lubrication, good water resistance, and the ability to withstand high pressure and shock loads. They are suitable for a variety of



applications, including automotive, gardening, industrial, household, and demanding metal-to-metal applications

## TO SUM UP

As you can see, the type of grease you decide to use matters a lot.

Each lubricant has a different set of characteristics that determine its consistency, viscosity, ability to prevent friction, reduce wear and tear, protect against rust, corrosion, and oxidation, maintain mobility, and stop water and other contaminants from coming into contact with the equipment.