



Grease

The purpose of grease is to replace dry friction with either thin-film or fluid-film friction. Choose the correct grease by assessing load, speed, or intermittent action of the moving part.

Grease is for use in applications where oil will not collect, such as open bearings or gears. Operating conditions affect grease selection for each application. Conditions include ambient and operating temperature, ambient or water resistance, oxidation stability, etc. The performance characteristics of the grease also need to be understood, including the thickener type, the grease grade (consistency), and the viscosity of the base oil.

Grease lubricants are semisolid and have several important advantages: They resist squeezing out, they are useful under heavy load conditions, and they provide sustained lubrication into areas that are difficult to access.

DID YOU KNOW?

A lubricant, either grease or oil, by itself is not an enduring substance. It has a service life requiring replacement to allow bearings to reach their highest potential life span.

Grease must perform several different functions simultaneously. The product must:

- Lubricate moving parts to prevent wear.
- Protect components from corrosion.
- Flow under all temperatures to protect moving parts.
- Remain intact and in place under severe pressures or shock loads.
- Help seal and keep foreign contaminants out of lubrication points.
- Remain in place and continue to lubricate when exposed to water.
- Pumpable in automated lubrication systems at a wide temperature range.

John Deere grease is specially formulated to meet the demanding lubricating needs of tough off- and on-road conditions. High-quality John Deere grease could help you save money through longer equipment life, reduced downtime, and decreased labor and equipment-operation costs.

Proper lubrication is essential to reliable equipment operation. If lubrication is absent, contaminated, or insufficient, metal-on-metal contact occurs between anti-friction bearing rollers and raceways. When this happens, the components will fatigue prematurely and likely fail quickly.

Threats from water, heat, bearing load, and dust put even the best lubrication products and procedures to the test. John Deere grease has you covered. It is designed to handle the harshest conditions. The most common greases used in normal bearing, bushing, and universal joint applications are NLGI no. 2.

The most efficient and cost-effective machinery-maintenance program is one that allows for the application of the ideal amount of lubrication at the proper operating intervals.

John Deere greases are typically described with up to three qualifying terms: application, thickener, and NLGI grade. Examples include:

SD Polyurea no. 2:

- SD means Severe-Duty
- Polyurea thickener
- NLGI no. 2 grade “thick”

HD Lithium Complex no. 2:

- HD means Heavy-Duty
- Lithium Complex thickener
- NLGI no. 2 grade “thick”

Special-Purpose Corn Head Grease no. 0:

- Corn Head Grease
- Polyurea thickener
- NLGI no. 0 grade “extra soft” or “soft”

The application may be broad coverage or special purpose, and the manufacturer may choose to describe the expected use in the name.

The thickener provides a grease-like consistency and maintains the specified consistency during shearing in the application. It is also jointly responsible for the application temperature range that can be covered. Other important performance items like water resistance are also significantly defined by the thickener type used.

There are several other classifications applied to grease presented as physical properties and test results. Dropping point, additive treatments, and other terms may be included when describing grease products. Be sure to read the Operator’s Manual when selecting service grease.

DID YOU KNOW?

The NLGI grade is the measure of the consistency the thickener provides; it tells the user the thickness or stiffness of the grease. The NLGI grading scale begins with 000, 00, 0, or 1, and goes up to 6. The grade 000, pronounced “triple aught,” refers to very fluid grease, one much closer to regular oil. The very common no. 2 grease has a consistency similar to paste car wax or cake frosting. The thickest grade of grease is no. 6 and resembles a solid, non-pumpable material like a crisp apple. The lower the number, the thinner the grease.



Looking for more information? See the questions and answers section on page 87.

Multi-Purpose Severe-Duty (SD) Polyurea Grease



Applications:

- Ideal in rolling contact applications.
- Best performance temperature range: –26 to 193 °C (–15 to 380 °F).
- For high-temperature, extreme-pressure conditions.
- Used for initial lubrication in U-joints and axle bearings at the factory.
- Excellent protection in corrosive and wet conditions.
- Compatible with most other types of grease.
- For all-purpose applications, especially those requiring a severe-duty grease.
- Factory-fill grease for most AG equipment.

Service ratings:

ISO designation	ISO-L-X-CEHB 2
NLGI (National Lubricating Grease Institute)	Grade 2
JDM	J13E1, J13E4, and J13E5
NLGI	GC-LB

Meets equipment manufacturers' extended-service intervals.

General properties:

- Green color (emerald).
- Polyurea thickened.
- Paraffinic-base oil with extreme-pressure and anti-rust additives.

Performance properties:

- Oxidation stability, 100h (ASTM D942): 35 kPa (5 psi) max.
- Dropping point (ASTM D2265): 260 °C (500 °F) min.
- Weld point (ASTM D2596): 315 kg (395 lb./min.)
- Water washout, 80 °C (176 °F) (ASTM D1264): 5% max.
- EMCOR rust test, rating (ASTM D6135): 1 max.

Multi-Purpose Heavy-Duty (HD) Lithium Complex Grease



Applications:

- For high-temperature and extreme-pressure conditions.
- Best performance temperature range: –26 to 177 °C (–15 to 350 °F).
- Heavy-duty, long-lasting grease.
- High-quality performance in heavy-duty applications.
- For use in applications where lithium greases are preferred or recommended.
- For wheel bearings, universal joints, suspension systems, ball joints, and anti-friction plain bearings.

Service ratings:

ISO designation	ISO-L-X-CDHB 2
NLGI	Grade 2
JDM	J13C3, J13C3A, and J13C6
NLGI	GC-LB

Meets equipment manufacturers' extended-service intervals.

General properties:

- Amber color.
- Lithium-complex thickened.
- Formulated to prevent corrosion and water washout.
- Paraffinic-base oil with extreme-pressure and anti-rust additives.

Performance properties:

- Oxidation stability, 100h (ASTM D942): 35 kPa (5 psi) max.
- Dropping point (ASTM D2265): 250 °C (480 °F) min.
- Weld point (ASTM D2596): 315 kg (395 lb./min.)
- Water washout, 80 °C (176 °F) (ASTM D1264): 10% max.
- EMCOR rust test, rating (ASTM D6135): 1 max.

Multi-Purpose Extreme-Duty Synthetic Grease



Applications:

- For use in and around food-processing areas; incidental food contact is acceptable (H1).
- Best performance temperature range: –42.7 to 232 °C (–45 to 450 °F).
- For high- and low-temperature applications.
- Multi-purpose, extreme-duty grease.

Service ratings:

ISO designation	ISO-L-X-DGHB 2
NLGI	Grade 2
NLGI	GC-LB
Food Grade	NSF H-1 registered

General properties:

- Translucent white color.
- Will not run or drip, melt, or separate.
- High dielectric strength.
- Prevents wear, corrosion, and rust in dry, dusty, humid, or wet conditions.

Performance properties:

- Oxidation stability, 100h (ASTM D942): 35 kPa (5 psi) max.
- Dropping point (ASTM D2265): 260 °C (500 °F) min.
- Weld point (ASTM D2596): 315 kg (395 lb./min.)
- Water washout, 80 °C (176 °F) (ASTM D1264): 5% max.
- EMCOR rust test, rating (ASTM D6135): 0 max.

Multi-Purpose Lithium Grease



Applications:

- Ideal for all-season, general-purpose lubrication applications.
- Best performance temperature range: –34 to 143 °C (–30 to 290 °F).
- For light- to medium-duty wheel bearings and U-joints.
- Excellent performance in medium- to light-duty applications.

Service ratings:

ISO designation	ISO-L-X-CCHB 2
NLGI	Grade 2
JDM	J13C3 and J13C3A

General properties:

- Reddish brown.
- Lithium thickened.

Performance properties:

- Oxidation stability, 100h (ASTM D942): 50 kPa (7 psi) max.
- Dropping point (ASTM D2265): 170 °C (340 °F) min.
- Weld point (ASTM D2596): 250 kg (550 lb./min.)
- Water washout, 80 °C (176 °F) (ASTM D1264): 15% max.
- EMCOR rust test, rating (ASTM D6135): 2 max.