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Choosing the Right Electric Motor Grease

Important Grease Characteristics for Electric Motor Bearings

The following criteria may be used as typical indicators of good electric motor grease:

- **Base Oil Viscosity:** Oil viscosity should be appropriate for the load and speed of the application at operating temperature. This will help to insure maximum protection and component life. The typical mineral oil viscosity in electric motor grease is in the range of 500 to 600 SUS at 100°F (or ISO VG 32 to 100, maximum ISO 150 or more specifically 90 to 120 cSt at 40°C.)

Termalene Ball & Roller Bearing Grease: is *ISO VG 68/100 or 85 cSt at 40 °C* base oil

- **Consistency:** Grease's consistency is one of its most visible characteristics. Grease's consistency or firmness is stated in terms of its NLGI (National Lubricating Grease Institute) grade, which ranges from 000 to 6. The consistency of grease should be appropriate to the application, as it affects pumpability and ability to reach the areas to be lubricated. NLGI 2 grade grease is the most commonly used in electric motor applications.

Termalene Ball & Roller Bearing Grease: is *NLGI 2.5 grade* grease.

- **Oxidation Resistance:** Electric motor greases should have outstanding resistance to oxidation. This extends the life of bearings running at high speeds and high temperatures. ASTM D3336 High Temperature Grease Life test results give a good indication when operating under extreme conditions. Choose grease with a high ASTM D3336 oxidation life.

Termalene Ball & Roller Bearing Grease: got *525 hrs to failure* of MRC-TRW Grease Testing Unit.

- **Anti-Wear:** Unless a motor is mounted so there is a thrust load on the bearings, it is generally advisable to use grease without Extreme Pressure (EP) additives. EP additives can shorten the life of the grease and should not be recommended where they are not needed. On the other hand, bearings designed to handle heavy thrust loads may require grease with an EP additive.

Termalene Ball & Roller Bearing Grease: got *0.47 mm, Scar Diameter, 4-Ball Wear Test. **Not EP** additive*

- **Dropping Point:** The dropping point gives an indication of the temperature at which the grease will melt or the oil will separate from the thickener. Due to the high temperatures that can be reached in an electric motor bearing, grease with a high dropping point is frequently desirable. Sodium complex and Lithium Complex-thickened greases both have dropping points of approximately 500°F or higher.

Termalene Ball & Roller Bearing Grease: have combined *Sodium complex and Aluminium Complex providing dropping point over 260 degree C. **Not tackifier*** because the tackifier also contributes to trapped heat around the bearing.

- **Shear Stability:** ASTM D217 Cone Penetration of Lubricating Grease test measures the consistency of the grease after it has been worked 100,000 strokes. An electric motor bearing grease should soften no more than 1 to 1.5 NLGI grades in this test. An electric motor bearing grease that softens more than that may leak out of the bearing with age.

Termalene Ball & Roller Bearing Grease: got *260 mm/10* of Penetration, worked (60 strokes), ASTM D217