Use an Oil or Grease?

Tip of the Week

When to Use Oil/Grease for Bearing Lubrication
The decision between using an oil or grease for bearing lubrication should be made only after carefully considering several factors:

When to lubricate with oil:
Generally, in systems that consistently operate at high temperatures, using oil is preferable to grease, as one can install circulation systems to help cool the units. Additionally, in some instances, oil lubrication may prove superior to grease as a result of mechanical factors, such as applications that can be lubricated by way of a centralized oil supply used to lubricate other parts of the machine.
Most lubrication systems for fluid film bearings are circulation systems that reuse oil many times over long periods. These systems are subject to contamination from moisture. In such conditions, the oil selected to lubricate the system should:

-Demonstrate chemical stability to resist oxidation and deposit formation
-Protect against rust and corrosion
-Readily separate from water
-Maintain viscosity control in applications in which dilution can occur
-Resist foaming

When to lubricate with grease:
Grease is generally preferable to oil lubrication in bearing applications that operate at moderate speeds in which temperatures are not excessively high. Examples of typical grease applications include:

-Conveyors, where shock loading often occurs
-Applications where a centralized oil reserve would be difficult to manage
-Applications where adhesion and cohesion are important

Additionally, grease can provide protection from contaminant ingress, so grease lubricants are preferable in applications that require additional protection from dirt or fumes. Finally, grease is preferable to oil lubrication in systems that require extended operation without maintenance activity.

Just as when oil is selected for lubrication, certain characteristics should be kept in mind when choosing grease for lubrication. When lubricating fluid film bearings with grease, the selected grease should:

-Be of sufficient viscosity to permit the formation of fluid films at the shear rates prevailing, but not so high that friction losses will be excessive
-Have good low temperature properties, particularly if the bearings must be lubricated at low ambient temperatures

What if either can be used:

Use oil because remember that it is the oil in the grease that does the primary job of lubrication anyway.

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