



Long-Lasting Grease for Satellite Reaction Wheels

Application: Precision Bearing

Location: USA

Challenge

Space applications require some of the most technically sophisticated lubricants. Once launched, mechanisms within these applications are almost impossible to service, which makes selecting the correct lubricant a critical task for design engineers. The wrong lubricant could cause failures, contaminate the component, evaporate and fail to lubricate the mechanism for the life of the application. A leader in the design and manufacture of rockets and spacecraft, approached us in search of a grease for their reaction wheel bearings. The reaction wheels in this satellite design would spin continuously for a minimum of five years and require a reliable, long-lasting lubricant that prevents wear under vacuum conditions.

- Can we provide a low outgassing grease with excellent vacuum stability?
- Can we provide a grease that will last for, or beyond, the life of the satellite system?

Solution

RHEOLUBE® 2000

A sodium complex soap thickened, medium viscosity, multiply-alkylated cyclopentane grease

- Ultrafiltered to remove trace particulates that can cause bearing failure.
- Exclusive long-lasting formulation with a heritage inflight life of over 25 years in reaction wheels
- Low outgassing and vapor pressure

Results

Our engineers worked with the customer to discuss possible solutions including custom formulations as well as our existing line of space lubricants. Using test results gathered by engineers in our Vacuum Aerospace and Semiconductor Test Laboratory, we were able to provide the customer with pre-validation data including outgassing, vapor pressure, and particle generation results. The customer ultimately selected RHEOLUBE® 2000 as it exceeded their vacuum stability and life requirements, and they remain satisfied with its performance.

Advantages

Low outgassing

Long-lasting

Ultrafiltered