



Reducing Frictional Torque for Linear Guide Rails

Application: Semiconductor Processing Equipment
Location: Linear Guide Rail

Challenge

A company that manufactures semiconductor processing equipment approached us about lubricating the rail in a linear guide system. The company wanted to reduce wear in the sliding application. The environmental conditions were high vacuum, and typical operating temperatures ranged between 25°C - 150°C. To prevent contamination and premature failure of the system, the company required a lubricant with low outgassing, excellent friction and wear properties, and low particle generation.

- Can the lubricant reduce wear under sliding conditions?

Solution

NYETORR® 5200

A soft, PTFE thickened, medium viscosity cyclopentane grease.

- Extremely low particle generation
- Low outgassing and vapor pressure
- Reduces frictional torque on sliding surfaces
- Excellent vacuum stability

Results

Our Applications Development and Validation Testing Lab ran Vacuum Stability, Dynamic Particle Generation, Knudsen Vapor Pressure, and Coefficient of Friction & Wear testing on several NYETORR® products. The customer decided to move forward with NYETORR® 5200 as the lubricant for this linear guide after it proved to reduce frictional torque on sliding surfaces by approximately 33%.

Advantages

Extremely low particle generation

Low outgassing and vapor pressure

Reduces frictional torque