

What Is Class 6 Cleanroom Bearing Relubrication, and When Do You Need It

Samantha Scroggins | June 9, 2026



In precision-driven industries, bearing cleanliness directly impacts performance consistency and long-term equipment reliability. Even microscopic contamination can affect lubrication performance, increase wear, reduce bearing life, and introduce variability into highly sensitive systems used in aerospace, medical, semiconductor, robotics, and advanced manufacturing applications.

Class 6 cleanroom bearing relubrication is designed to support these environments by allowing bearings to be cleaned, inspected, relubricated, and packaged within a controlled environment that minimizes airborne particulate contamination while supporting strict handling and quality requirements.

IBSCO has specialized in bearing relubrication for more than 40 years, supported by more than 80 years of combined team expertise. Our cleanroom services support customers requiring controlled lubrication procedures, traceability documentation, contamination-conscious handling, and dependable turnaround for critical applications. IBSCO is ISO9001:2015, AS9100:2016, and AS9120:2016 certified and factory-authorized by leading bearing manufacturers, including NMB, NHBB, Myonic, and RBC.

What Is Class 6 Cleanroom Bearing Relubrication?

Class 6 cleanroom bearing relubrication is the process of servicing bearings within a controlled cleanroom environment designed to limit airborne particulate contamination during cleaning, lubrication, inspection, and packaging procedures.

An ISO 14644-1:2015 Class 6 certified cleanroom maintains controlled particle levels, airflow, temperature, and environmental conditions to support sensitive bearing applications. IBSCO's capabilities also extend to MIL-DTL-197 and Class 5 bench-level standards.

During the relubrication process, bearings are:

- Cleaned and inspected
- Evaluated for condition and performance
- Relubricated with application-specific grease or oil
- Handled using contamination-controlled procedures
- Packaged for protected storage or shipment

This process supports lubrication consistency and cleanliness standards across applications where contamination control directly affects long-term equipment performance.

Why Bearing Lubrication Matters

Lubrication plays a critical role in bearing performance, operating life, and overall equipment reliability. The right lubricant helps reduce friction, manage heat, protect against corrosion, support smooth operation, and minimize wear between rolling surfaces.

In high-speed and precision applications, lubrication consistency directly influences vibration levels, rotational performance, and bearing life. Contamination, moisture exposure, or inconsistent lubricant application can affect lubrication stability, operating temperatures, wear patterns, corrosion protection, and long-term equipment consistency.

Controlled relubrication procedures help maintain lubrication quality while reducing the introduction of airborne particles, debris, and handling-related contamination during servicing.

Industries That Commonly Require Cleanroom Relubrication

Class 6 cleanroom relubrication is commonly used in industries where precision, contamination control, and lubrication consistency are critical to equipment performance.

Aerospace

Aerospace systems operate under demanding environmental conditions where cleanliness, lubrication performance, and traceability support long-term operational reliability and regulatory compliance.

Medical Devices

Medical and dental equipment frequently relies on precision bearings operating at high speeds within highly sensitive environments where controlled lubrication procedures support consistent motion performance and dependable operation.

Precision Manufacturing

Precision manufacturing equipment operates within tight tolerances, where contamination control and lubrication consistency directly contribute to process stability and equipment performance.

The Importance of Lubricant Selection

Selecting the right lubricant is an important part of supporting bearing performance and operating reliability.

Operating speed, temperature range, load conditions, environmental exposure, moisture resistance, and application requirements all influence lubricant selection. Different grease formulations and oil types are designed for specific operating conditions and performance expectations.

Cleanroom relubrication allows bearings to be serviced with application-specific lubricants while maintaining controlled handling conditions throughout the process.

This is especially valuable for applications requiring:

- High-speed performance
- Low torque operation
- Corrosion resistance
- Moisture protection
- Low outgassing
- Specialized grease formulations
- Extended operating intervals

Matching the lubricant to the operating environment supports long-term bearing performance, lubrication stability, and service life.

Why Controlled Handling Procedures Matter

The relubrication process involves more than applying new grease.

Controlled handling and packaging procedures help maintain bearing cleanliness throughout cleaning, inspection, lubrication, packaging, and shipment preparation. In aerospace, medical, and other regulated industries, traceability and documentation also play an important role in supporting quality requirements and operational compliance.

Working with a qualified, factory-authorized bearing distributor supports controlled processing procedures, product integrity, and dependable sourcing throughout the relubrication process.

Common Reasons Customers Request Relubrication Services

Customers request cleanroom relubrication services for several operational and application-specific requirements.

Common reasons include:

- Updating lubricant specifications
- Supporting aerospace or medical requirements
- Preparing bearings for clean manufacturing environments
- Supporting traceability requirements
- Improving contamination-control procedures
- Maintaining lubrication consistency across production runs
- Supporting OEM and MRO applications
- Extending storage readiness

In many cases, relubrication services also simplify procurement and inventory management by ensuring bearings arrive ready for assembly and installation.

Cleanroom and Lubrication Support from IBSCO

IBSCO provides ISO Class 6 cleanroom bearing relubrication services for customers operating in aerospace, medical, semiconductor, robotics, industrial, and precision manufacturing environments.

Our cleanroom capabilities support controlled bearing handling, application-specific lubrication requirements, contamination-conscious processing procedures, and complete traceability documentation for critical applications.

Bearing Types Supported

IBSCO's relubrication services support miniature bearings, ball bearings, roller bearings, airframe control bearings, rod ends, needle bearings, cam followers, thin section bearings, and many additional bearing types, across a wide range of applications.

Comprehensive Lubrication Options

With more than 800 lubricants in stock, IBSCO offers oils, greases, synthetics, food-grade lubricants, dry film options, protective coatings, electrically conductive greases, and lube-for-life solutions, allowing bearings to be serviced with application-specific lubricants and precise fill amounts down to 1 milligram.

In addition to relubrication services, IBSCO supports customers with lubrication guidance, custom lubrication options, packaging support, sourcing assistance, and dependable delivery programs aligned with OEM production and MRO requirements, including next-day service for critical needs.

Whether the goal is updating lubricant specifications, meeting regulatory requirements, or preparing bearings for sensitive manufacturing environments, IBSCO's cleanroom capabilities help bearings arrive ready for reliable, long-term performance.

Looking for cleanroom bearing relubrication services for your application?

Connect with IBSCO's team to discuss lubrication requirements, contamination-control considerations, traceability needs, and application specifications.