

Aerospace Bearings: AS9100, Cleanroom & Traceability Requirements



[Aerospace bearings](#) operate in applications where precision, reliability, and documented quality are essential. From flight control systems and landing gear mechanisms to instrumentation, actuators, and rotorcraft assemblies, the bearing must be selected and prepared for the conditions it will encounter.

For aerospace OEMs and MRO organizations, that makes sourcing about more than identifying the correct part number. Quality management standards, product traceability, lubrication, contamination control, documentation, and manufacturer specifications can all influence whether an aerospace bearing is appropriate for the application.

Understanding these requirements early helps engineering and procurement teams evaluate suppliers, establish the necessary documentation, and source components that align with program specifications.

[IBSCO](#) supports aerospace customers with factory-authorized bearing distribution, an AS9100-registered quality management system, ISO Class 6 cleanroom capabilities, certified relubrication services, and documented traceability.

What Are Aerospace Bearings?

[Aerospace bearings](#) are designed for the specialized operating conditions and quality requirements found across aircraft, rotorcraft, UAVs, defense platforms, and related systems.

The appropriate bearing depends on where and how the component will be used. Aerospace applications can involve high loads, vibration, temperature extremes, precise motion, restricted installation space, or demanding environmental conditions.

IBSCO supplies bearing solutions for applications including primary flight controls, rotorcraft systems, landing gear mechanisms, flap and slat systems, aerospace instrumentation, UAVs, and other aircraft assemblies. Available products include airframe control bearings, spherical bearings, rod ends, track rollers, ball bearings, and other specialized configurations.

Because operating conditions vary considerably across an aircraft, there is no single set of characteristics that defines the right aerospace bearing for every application. Selection begins with the technical specifications of the system and the quality requirements associated with the program.

Why Aerospace Bearing Requirements Extend Beyond the Part Number

Two bearings with similar dimensions are not necessarily interchangeable in an aerospace application.

Material, internal geometry, lubrication, tolerances, liners, closures, coatings, and other characteristics can affect how a bearing performs. Program specifications may also establish requirements for documentation, traceability, packaging, or approved sources.

This makes supplier qualification an important part of aerospace procurement. Buyers need to understand not only whether a component is available, but also whether the supplier can provide the records and processing capabilities required for the order.

Three areas are particularly important when evaluating an aerospace bearing source: [AS9100](#) quality management, controlled cleanroom processing, and traceability.

What Does AS9100 Mean for Aerospace Bearing Sourcing?

[AS9100](#) is a quality management standard developed for the aviation, space, and defense industries. For aerospace buyers, a supplier operating under an AS9100 quality management system provides an independently assessed framework for managing quality processes relevant to these markets.

It is important to distinguish the supplier's quality management registration from the qualification of an individual bearing. AS9100 registration does not mean that every product a company sells is automatically approved for every aerospace application. The component must still meet the applicable drawing, OEM, customer, or program specifications.

IBSCO is registered to AS9100:2016, along with ISO 9001:2015 and AS9120:2016. IBSCO's current quality resources also identify OEM relubrication approvals and its ISO 14644-1:2015 cleanroom certification as part of its quality capabilities.

For purchasing teams, reviewing the supplier’s quality registrations alongside the product specifications provides a more complete understanding of the source behind the component.

Why Cleanroom Processing Matters for Aerospace Bearings

Not every aerospace bearing requires cleanroom processing, but contamination control can be critical for applications with strict cleanliness or lubrication specifications.

Particles introduced during cleaning, relubrication, inspection, handling, or packaging can compromise the condition of a precision component. A controlled environment reduces exposure during these processes and allows the bearing to be prepared according to established procedures.

IBSCO operates an ISO 14644-1:2015 [Class 6 certified cleanroom](#) with Class 5 bench capabilities. Its cleanroom services include precision cleaning and inspection, customer-specified relubrication, controlled handling, and specialized packaging. IBSCO’s current cleanroom certification identifies its production area as ISO Class 6.

This capability is particularly valuable when an aerospace program calls for a lubricant, fill quantity, packaging configuration, or contamination-control process beyond the bearing’s standard configuration.

Precision Relubrication

[Lubrication](#) requirements can vary significantly between aerospace applications.

Speed, load, temperature, environment, and equipment design can all influence lubricant selection and fill requirements. A bearing supplied with a standard lubricant may therefore require a different specification before entering an aerospace assembly.

IBSCO provides precision relubrication within its controlled cleanroom environment and supports customer-specified greases, oils, and specialty lubricants. The company is also identified by its current resources as a certified relubrication facility for manufacturers including NHBB, NMB, RBC, and Myonic.

Manufacturer approval is especially relevant when servicing an OEM bearing because the relubrication process must preserve the product specifications and controls associated with the component.

Controlled Packaging

Clean processing does not end when lubrication is complete.

Packaging helps protect the prepared component through storage, transportation, and delivery to the customer. IBSCO's [cleanroom capabilities](#) include individual pill-strip packaging, high-volume vial packing, and custom packaging options based on customer needs.

For OEM and MRO environments, these options allow bearings to be packaged according to specific production, maintenance, or delivery requirements.

Why Full Traceability Matters in Aerospace Procurement

Aerospace buyers often need to establish where a component came from and retain records associated with that product.

Traceability creates a documented path connecting the bearing to its source and applicable records. This becomes particularly important when organizations must demonstrate conformity with customer, OEM, quality system, or program specifications.

Supporting records can include certificates of conformance (CoC), first article inspection (FAI) documentation, and material certifications. [IBSCO identifies](#) these records as part of its full traceability capabilities for aerospace applications.

Documentation needs should be established during the sourcing process rather than after components arrive. Requirements can vary by manufacturer, part number, customer, and program, so confirming what must accompany an order gives the supplier an opportunity to verify availability before purchase.

Key Requirements to Review When Sourcing Aerospace Bearings

AS9100, cleanroom processing, and traceability are major considerations, but they are part of a larger sourcing decision.

Application Specifications

The process starts with the application itself.

Load, speed, temperature, motion, available space, environmental exposure, and other operating conditions influence bearing selection. Aerospace programs may also identify required materials, dimensional tolerances, liners, lubricants, coatings, or industry specifications.

IBSCO supplies [airframe control products](#) in accordance with SAE, NAS, OEM, and other aerospace specifications across applications such as flight controls, landing gear, rotorcraft systems, and actuation mechanisms.

When a standard catalog bearing does not meet the application, IBSCO can also work with OEM partners to support modified or custom configurations.

Manufacturer and Source

The manufacturer behind an aerospace bearing is another important consideration.

IBSCO works with aerospace bearing manufacturers including NHBB, RBC Bearings, Aurora Bearing Company, Timken Aerospace, Pacamor Kubar Bearings, NMB, and Schaeffler Group brands such as INA, FAG, and Barden.

Working through established OEM relationships can give buyers access to manufacturer information and additional coordination when a component involves specialized specifications.

Lubrication and Processing

Buyers should determine whether the bearing can be installed in its supplied condition or requires additional preparation.

Questions about lubricant type, fill quantity, cleaning, relubrication, closures, packaging, and contamination control should be addressed as part of the original specification. This is particularly important when the bearing will operate under vacuum, temperature extremes, high speeds, or other specialized conditions.

Documentation

The documentation package should be defined before the order is placed.

Rather than assuming every aerospace bearing includes the same records, buyers should identify exactly what their organization or customer requires and confirm availability for the selected product.

This approach helps prevent documentation gaps after components have already entered the purchasing process.

What Should Aerospace OEMs and MROs Ask a Bearing Supplier?

A qualified supplier should be able to discuss both the component and the purchasing requirements surrounding it.

Before sourcing aerospace bearings, consider asking:

- Is the supplier registered to the quality standards required by the program?
- Is the bearing sourced through an established OEM relationship?
- What traceability is available for the selected part?
- Which certificates or supporting records can accompany the order?
- Does the bearing require a particular lubricant or fill quantity?
- Is controlled cleanroom processing necessary for the application?
- Is the supplier approved to relubricate products from the specified manufacturer?
- Are specialized packaging or labeling procedures required?
- Does the component need to meet an SAE, NAS, MIL, OEM, drawing, or customer-specific specification?
- Can the supplier coordinate with the manufacturer if a standard product does not meet the application?

Answering these questions early gives engineering, quality, and purchasing teams a clearer picture of what will be delivered and how the component will be prepared.

How IBSCO Supports Aerospace Bearing Requirements

[IBSCO](#) supports both aerospace OEM production and MRO supply chains with bearing distribution, application guidance, controlled processing, and inventory services.

Its aerospace capabilities include airframe control bearings and other precision products for commercial aircraft, military platforms, rotorcraft, UAVs, instrumentation, and related systems. IBSCO also works with OEM partners when customers require specialized materials, lubrication, configurations, or other non-standard characteristics.

Quality and value-added capabilities include:

- AS9100:2016, AS9120:2016, and ISO 9001:2015 registered quality management systems
- ISO 14644-1:2015 Class 6 certified cleanroom
- Class 5 bench capabilities
- OEM-approved relubrication capabilities
- Precision cleaning, inspection, and relubrication
- Specialized packaging
- Documented traceability
- Certificates of conformance, FAI documentation, and material certifications where applicable
- Application guidance for standard, modified, and custom bearing solutions

These capabilities allow aerospace customers to address sourcing, quality documentation, component preparation, and supply requirements through an experienced bearing distributor.

Aerospace Bearing Quality Starts Before Installation

Aerospace bearing performance begins well before a component enters an aircraft or assembly.

[Selecting the appropriate bearing](#) is the first step, but sourcing practices, quality systems, lubrication, controlled handling, traceability, and documentation all contribute to making sure the component arrives prepared for its intended use.

For aerospace OEMs and MROs, evaluating these areas early can make supplier qualification more effective and reduce uncertainty throughout the purchasing process.

IBSCO combines factory-authorized manufacturer relationships with AS9100-registered quality processes, certified cleanroom capabilities, aerospace relubrication expertise, and documented traceability to support demanding aircraft and aviation applications.

If your team is sourcing aerospace bearings or needs support with lubrication, cleanroom processing, traceability, or specialized configurations, contact IBSCO to discuss your application.