Fisher Barton

Aerospace Industry

Advanced Wear Solutions for Extreme Environments

Fisher Barton is a proven innovation partner with deep expertise in high-performance wear components, bringing decades of experience in materials science, metallurgy, precision machining, and advanced surface engineering.

Our engineering capabilities are well aligned with the demands of aerospace applications that require reliability in extreme operating environments, including high loads, temperature variation, abrasion, and fatigue-driven wear. Through metallurgy-driven design and surface optimization, we are equipped to engineer components that meet stringent performance expectations.

Fisher Barton operates ITAR-registered facilities, providing the infrastructure, security controls, and compliant manufacturing workflows required to support future programs in defense, commercial aviation, and space-related systems.

Manufacturing Processes

Precision Machining

- Tight tolerance CNC machining for complex geometries
- 4 and 5 axis machining for housings, actuators, linkages, and wear interfaces
- Capability to support large, lightweight components using aluminum, titanium, stainless steels, nickel alloys, and advanced engineered materials

Forming & Fabrication

- Laser cutting and waterjet cutting for thin wall and lightweight structures
- Stamping and forming for high strength alloys
- Robotic and laser welding for repeatable aerospace grade fusion

Tooling & Process Control

- In house tool design and maintenance
- Automated inspection, CMM validation, and statistical process control
- Full lot traceability for aerospace compliance

Metallurgy & Materials Science at the Core of Reliability

Every aerospace component we engineer begins with a science driven understanding of:

- Wear mechanisms—abrasion, erosion, fretting, galling, and thermal fatigue
- Material behavior under high stress, high temperature, and dynamic loading
- Microstructure engineering to achieve highly specific hardness, ductility, or fatigue resistance
- Heat treatment optimization for strength to weight performance
- Failure analysis using advanced microscopy and testing protocols

Our Technology Center supports aerospace OEMs with detailed material selection, performance modeling, and validation testing to ensure compliance with aerospace standards and long term functional integrity.

Surface Engineering & Engineered Coating Solutions

Aerospace components demand surfaces engineered for longevity, friction reduction, corrosion resistance, and thermal stability. Fisher Barton provides:

Laser Cladding & Advanced Overlays

- Metallurgically bonded surfaces for high impact, high stress areas
- Ideal for shafts, bearing surfaces, linkage points, and actuation components

Thermal Spray Coatings

- HVOF for ultra dense, bond strong wear surfaces
- Plasma spray for high temperature environments
- Electric arc and flame spray for diffusion friendly coatings
- Coatings tailored to combat erosion, fretting, and corrosive exposure in flight systems

Proprietary Processes

- Enhanced fusing and diffusion methods for superior porosity control and bond strength
- Coating systems engineered for weight sensitive aerospace requirements

These engineered surfaces significantly extend component life and reduce maintenance intervals—critical for fleet reliability and cost control.

Applications Across Aerospace Platforms

Fisher Barton supports wear critical components in:

- Flight control systems: pivots, linkages, and actuator wear surfaces
- Propulsion systems: high temperature wear components, shafts, and housings
- Fuel, hydraulic, and pneumatic systems: valves, seals, rods, and wear sleeves
- Landing gear and braking systems: high impact and corrosion resistant parts
- Space and high altitude systems: components requiring extreme temperature stability
- Lightweight structural assemblies: optimized for strength to weight performance

Engineering Wear Performance for Flight Critical Systems

Aerospace components face some of the harshest mechanical and environmental stresses of any industry, including:

- High cycle fatigue from constant vibration and load changes
- Extreme temperature fluctuations from cryogenic to high heat environments
- Abrasion from particulate exposure, fuel contaminants, and airflow erosion
- Corrosion from humidity, salt, and chemical exposure
- Weight sensitive design requirements demanding optimized materials and geometries

Fisher Barton combines precise manufacturing with deep metallurgical expertise to mitigate these failure modes and deliver long lasting performance across flight, propulsion, actuation, and motion control systems.

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Why Aerospace OEMs Choose Fisher Barton

- ITAR registered, secure, compliant operations
- Metallurgy forward engineering that improves component life and reliability
- Surface engineering expertise to solve complex wear challenges
- Precision machining for lightweight and large format aerospace components
- Vertically integrated manufacturing for consistent quality and responsive production
- Proven expertise supporting high performance industries for over 50 years

Fisher Barton is more than a supplier—we are your engineering partner, delivering advanced materials, coatings, and manufacturing solutions that help aerospace systems perform under the most extreme conditions.

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