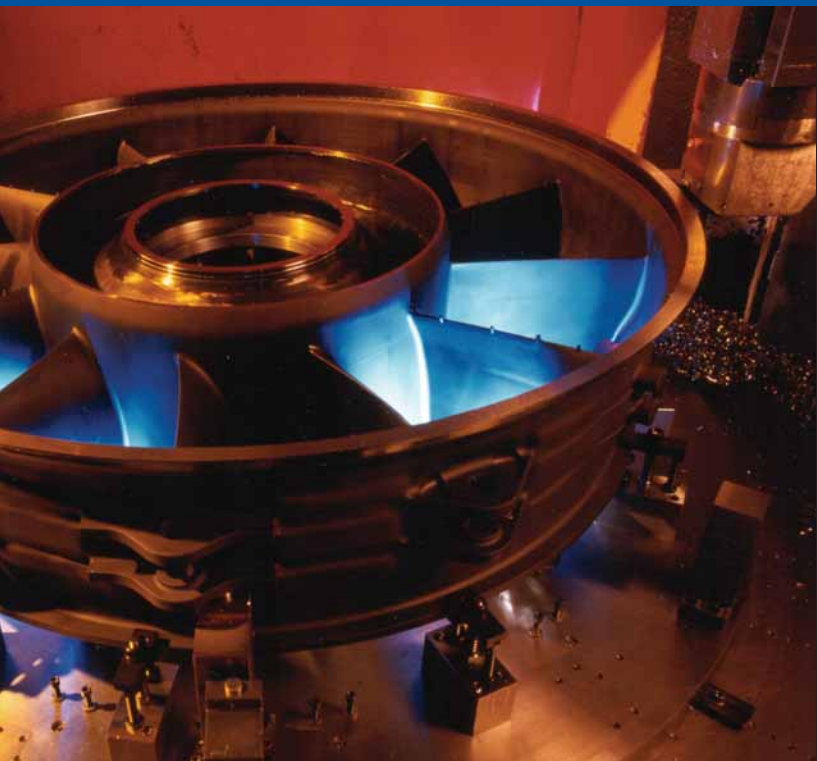




EXCEEDING CUSTOMER **EXPECTATIONS**

FOR MORE THAN 50 YEARS, BARNES AEROSPACE has been a global supplier of highly engineered machined and fabricated components and assemblies for aircraft engine and airframe manufacturers, and land-based industrial gas turbines. Barnes Aerospace Windsor Airmotive Division is an industry leader in the repair and overhaul of turbine engine components for the world's major turbine engine manufacturers, commercial airlines, and the military.



CUSTOMER FOCUSED

Barnes Aerospace Windsor Airmotive Division, a specialist in turbine engine component repair, is committed to maintaining its position as one of the world's foremost repair sources by providing extensive and economical repair services.

It's the Barnes Aerospace difference.



INSIDE BARNES AEROSPACE

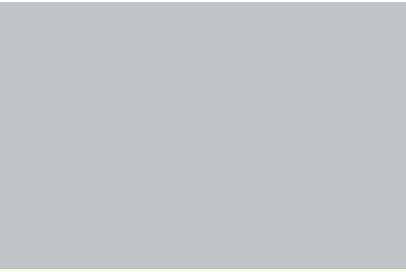
BARNES AEROSPACE is a business unit of Barnes Group Inc., a diversified international manufacturer of precision metal parts and distributor of industrial supplies, serving a wide range of markets and customers.

Founded in 1857 and head-quartered in Bristol, Conn., Barnes Group consists of three businesses:

- **Barnes Distribution** – an international, full-service distributor of maintenance, repair, operating, and production supplies
- **Barnes Industrial** – one of the world's largest manufacturers of precision mechanical and nitrogen gas products and a global supplier of retaining rings, reed valves, shock disks, and injection-molded plastic components
- **Barnes Aerospace** – a manufacturer and repairer of highly engineered assemblies and components for aircraft engines, airframes, and land-based industrial gas turbines

Over 6,600 dedicated employees at more than 65 locations worldwide contribute to Barnes Group's success. The legacy shared between Barnes Group Inc. and Barnes Aerospace is one of innovation, commitment, and expertise.





GLOBAL SUPPLIER

With in-house capabilities to meet the most critical industry specifications, Barnes Aerospace Windsor Airmotive Division delivers the highest quality and most cost-effective service solutions to our customers.

Barnes Aerospace Windsor Airmotive Division is an industry leader in turbine engine component repair, overhaul, and modification services with FAA and EASA certified repair stations in the following locations:

- East Granby, Connecticut
FAA Certified Repair Station #KC1R265K
- West Chester, Ohio
FAA Certified Repair Station #KKWR148K
- Singapore
FAA Certified Repair Station #ZWDY470L

Customer Service

Complete customer satisfaction is achieved by understanding customer requirements and delivering superior quality and industry leading turn-times.

At Barnes Aerospace Windsor Airmotive, we continually seek to significantly reduce the cost of ownership by developing and implementing unique repair techniques and processes. We have implemented cellular manufacturing at each of our facilities and employ the latest lean manufacturing techniques in order to streamline processes and to improve turn-times.

Engines Supported

Barnes Aerospace Windsor Airmotive performs repairs on engine components from all of the major engine manufacturers. Repair services are provided for the commercial, military, and industrial gas turbine markets, and include the following engines:

Commercial

V2500	CF6	JT9D
RB211	CFM56	PW2000
Tay	GE90	PW4000
Trent	JT8D	

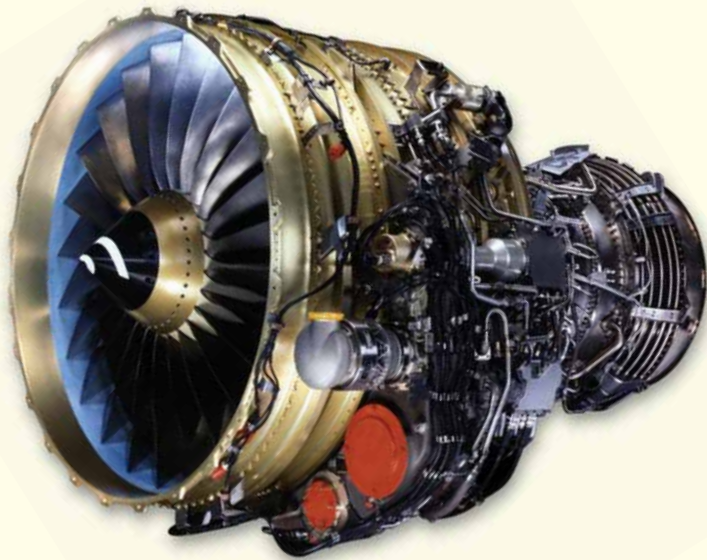
Military

F100
F117
TF34

Industrial

LM2500
LM5000
LM6000

By employing state-of-the-art processes, including electron beam welding and plasma coating, Barnes Aerospace Windsor Airmotive delivers quality repairs and industry leading turn-times to support the demand of the aerospace industry.





SETTING THE STANDARD

Barnes Aerospace has set the industry standard by offering a comprehensive range of in-house support and capabilities. By developing a culture where continuous improvement, lean thinking and Six Sigma are practiced across all divisions and throughout the organization, Barnes Aerospace ensures superior customer service, reduction in turn-times, and competitive prices.

Our long-standing and valued customers depend on Barnes Aerospace to provide manufacturing research, testing, and evaluation, as well as provide expert design capabilities of components and assemblies.



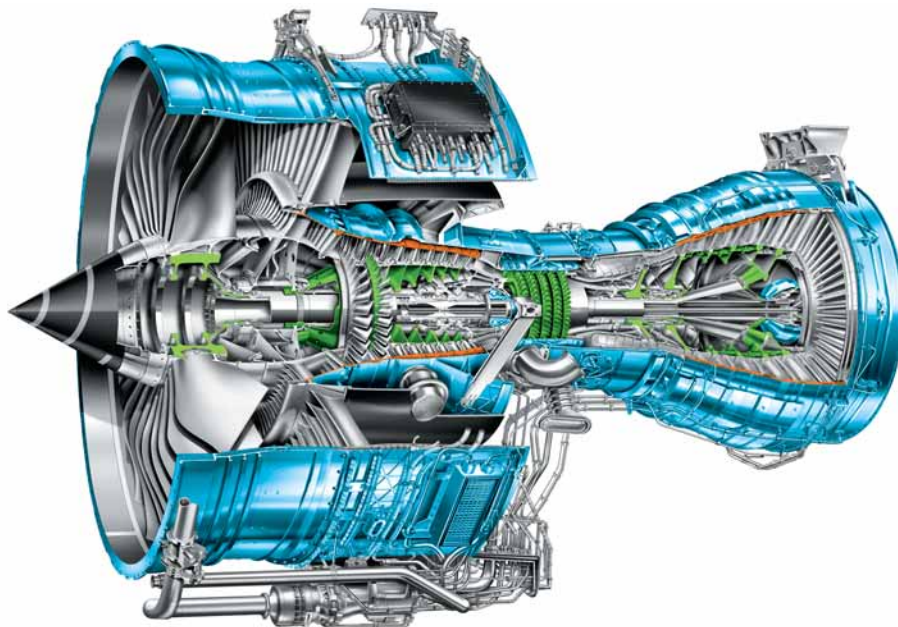
THE BARNES AEROSPACE DIFFERENCE

With Barnes Aerospace, the difference is in quality. Working to AS 9100 and ISO 9001:2000 standards, Barnes Aerospace Windsor Airmotive Division provides critical maintenance, repair, and overhaul services to these major product types:

- Rotating components
- Stationary seals
- Casings & frames

QUALITY – ON TIME, EVERY TIME

ENGINE COMPONENTS OVERHAULED



By delivering high quality and cost-effective solutions to our customers, Barnes Aerospace Windsor Airmotive has earned numerous OEM Source Demonstration Repair Approvals. The in-house capabilities that Barnes Aerospace Windsor Airmotive has developed to speed turn-times has positioned the company among the elite repair sources. Primary in-house capabilities include:

- Electron beam welding and automatic TIG welding
- High-pressure water jet stripping
- CNC milling, turning, and grinding
- Plasma and wire arc coating
- Heat treat and thermal processing
- Vacuum brazing
- X-ray and nondestructive testing
- Shot peening
- Corrosion resistant painting
- Advanced HF cleaning process
- 5-axis laser machining

Rotating Components

LPC Front Hub
LPC Drum Rotors/Spools
LPC Seals
HPC Seals
HPC Drum Rotors/Spools
HPC Rotor Hubs
Stub Shafts
HP Turbine Disks
LPT Seals
LPT Disks

Stationary Seals

LPC Honeycomb Segments
HPC Honeycomb Segments
HPC Retainer Seals
CDP Air Seals
HPT Shroud Segments
HPT Honeycomb Segments
HPT Duct Supports
LPT Honeycomb Segments

Casings & Frames

Front Fan Case
Rear Fan Case
Intermediate Case
HPC Front Case
HPC Outer Case
HPC Inner Rear Case
Diffuser Case
Bearing Housings
TOBI Duct
Combustor Case
Forward Inner/Outer Nozzle Support
HPT Case
Turbine Supports
HP/IP Case
LPT Case
Turbine Exhaust Case
Turbine Exhaust Duct



TURBINE ENGINE COMPONENT REPAIR SPECIALISTS

Rotating Components

Rotating components are a specific area of expertise. These engine components are repaired and overhauled in accordance with critical OEM requirements. Our reputation for quality can be measured by approvals from every major engine manufacturer and the world's leading airlines.

Barnes Aerospace Windsor Airmotive maintains certifications from the FAA, EASA, as well as other regulatory authorities, and to AS 9100 and ISO 9001:2000 standards.

Our rotating component repair expertise lies in the refurbishment of knife-edges, utilizing our specialized machining, and welding capabilities. Plasma spraying, shot peening, hard coating, and specialized painting processes are used to ensure tight tolerances, fatigue resistance, reduced part wear, and corrosion protection. Major rotating components serviced include the following:

- Seals
- Drum rotors and spools
- Hubs
- Shafts
- Discs

Stationary Seal Components

Barnes Aerospace Windsor Airmotive has established itself as a leader in turn-time performance for the repair of stationary seal components available to the industry today. We provide extensive seal repair services including advanced HF cleaning and laser hole drilling of high pressure turbine shrouds, and brazing of sinter filled and non-filled honeycomb, utilizing high temperature brazing technologies. These seals are located throughout the engine and play a significant role in engine performance. Stationary seal products include the following:

- Honeycomb segments and rings
- Air seals
- Shroud segments
- Duct supports
- Hangers
- Turbine shrouds

Casings & Frames

Barnes Aerospace Windsor Airmotive repairs, overhauls, and modifies turbine engine casings for the world's airlines and engine overhaul facilities. Our expertise for providing unique, quality repairs of casings is recognized throughout the industry.

Featured in our wide range of case repairs is our extensive welding expertise including electron beam welding and automatic TIG welding. We have particular specialization in the area of full section replacements including both standard and extended flanges. Additional key case repairs include the replacement of struts, bowls, bosses, heat shields, and stator vanes. Major casings and frames serviced include the following:

- Compressor case
- Diffuser case
- Turbine support case
- Turbine case
- Turbine exhaust case
- Combustor case



www.barnesaero.com



Barnes Aerospace  **BARNES**[®]
GROUP INC

EXCEEDING CUSTOMER EXPECTATIONS

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