



INVESTOR INSIGHTS

FORGED FOR GROWTH





ALLOYS TO ADVANCE

World-class solutions for high-value markets

Advanced manufacturers have trusted Carpenter Technology to develop and produce highly specialized alloys since 1889.

We solve industry's most complex materials challenges.

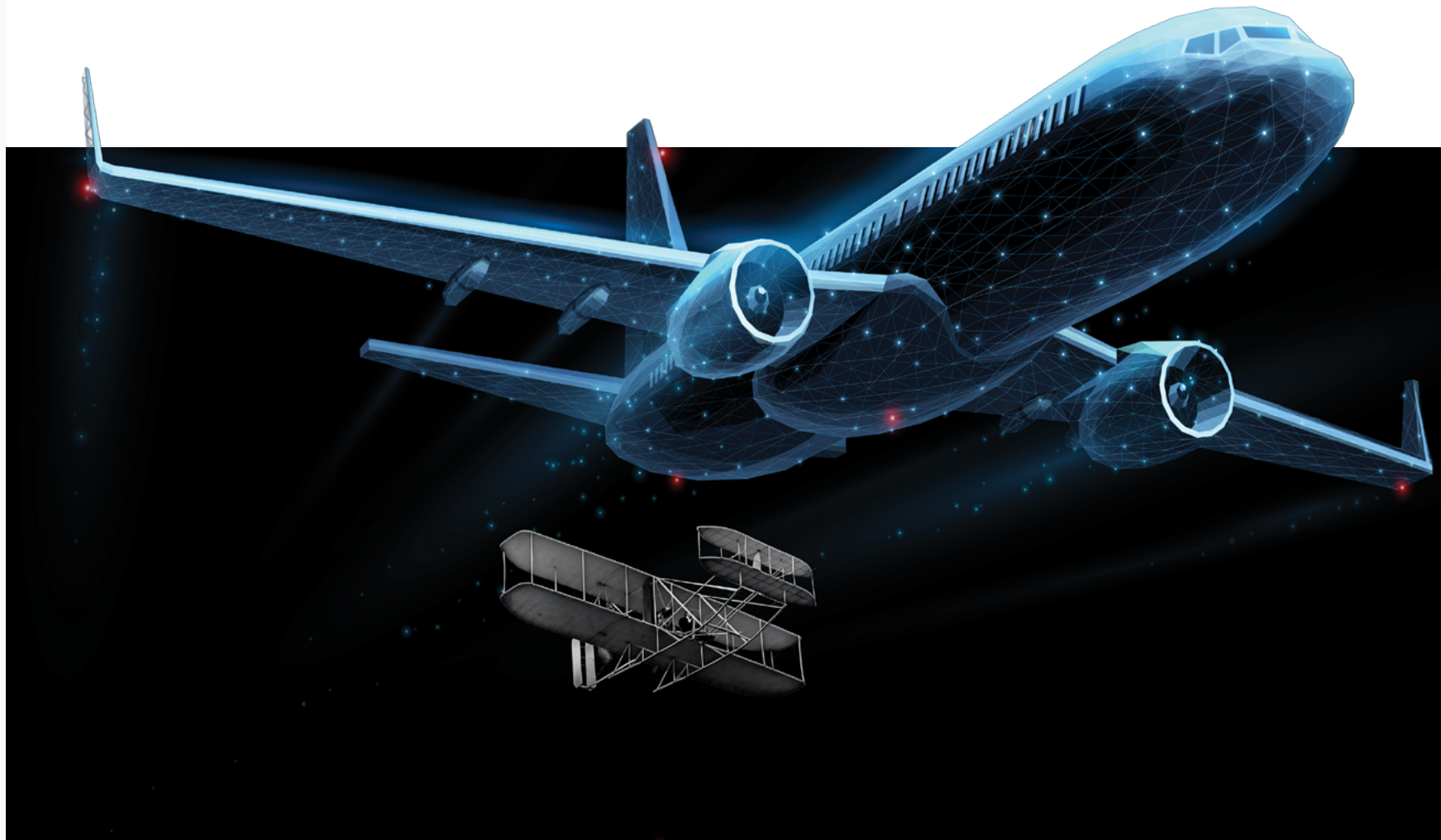
INTRODUCTION

AEROSPACE

DEFENSE

MEDICAL

ENERGY





Difficult-to-replicate capabilities

500+ SPECIALIZED ALLOYS

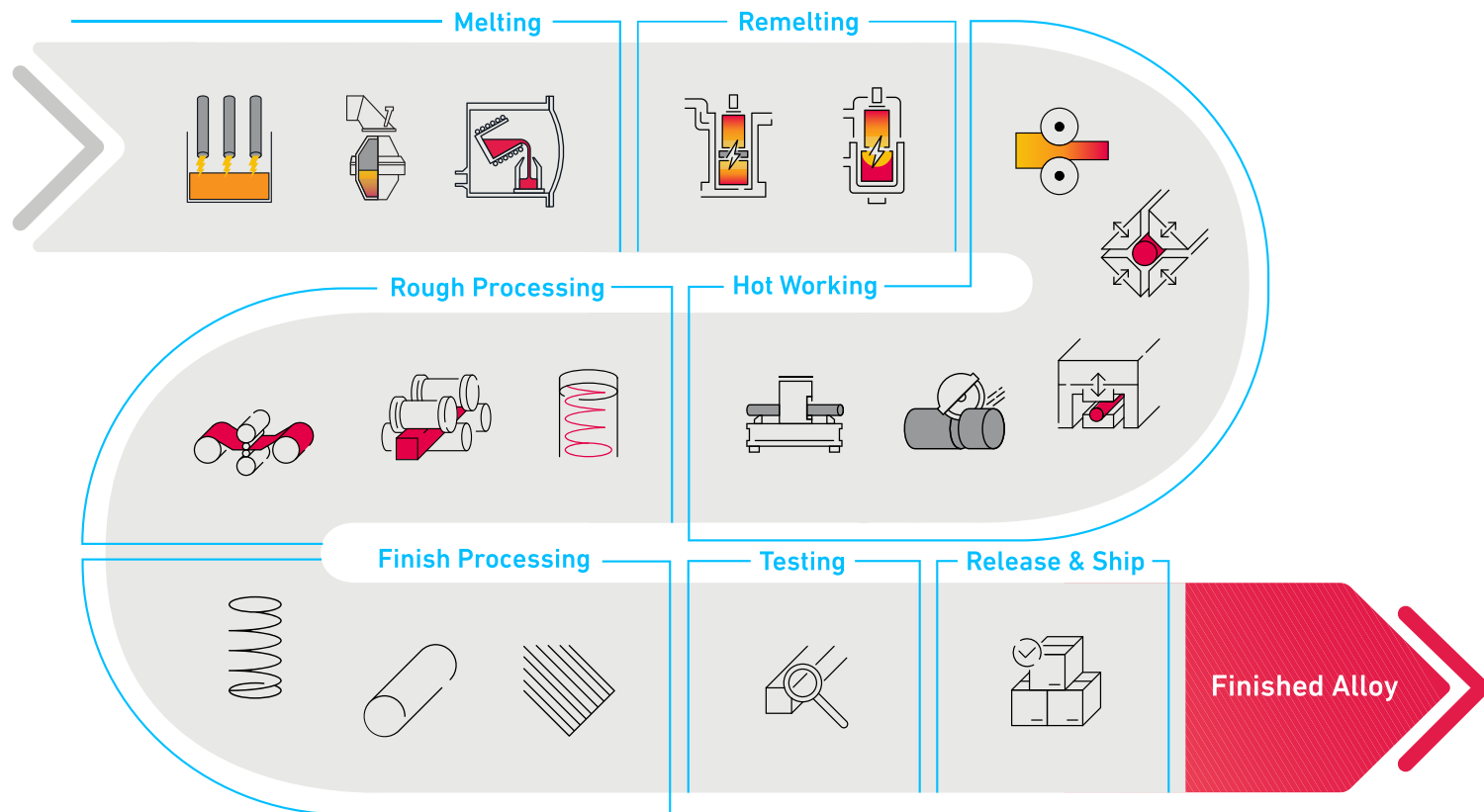
generating more than 15k SKUs of made-to-spec products

WORLD-CLASS MANUFACTURING ASSETS

designed and qualified for producing advanced alloys

ADVANCED PLANNING AND PROCESS KNOWLEDGE

to coordinate each unique process flow



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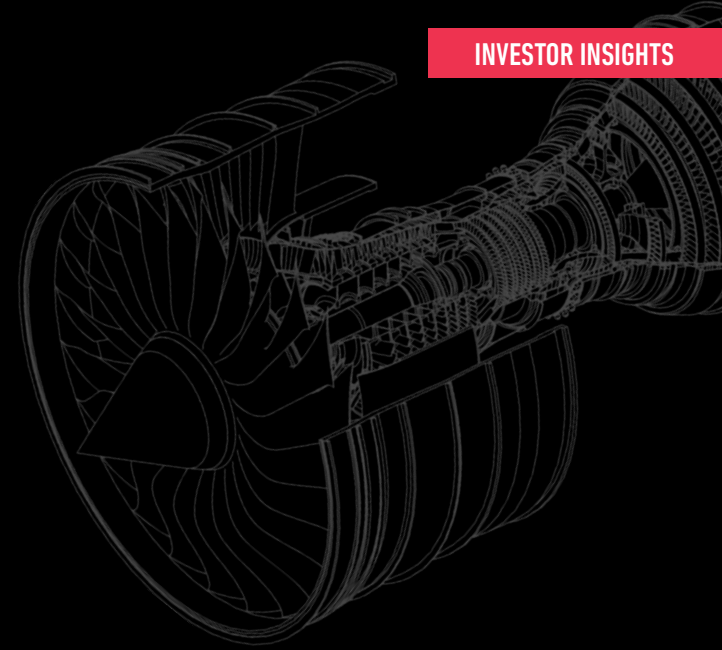
ENERGY



WHERE INNOVATION TAKES FLIGHT

Target airplane build rates are 30–35% higher than the pre-COVID high, driven by soaring global air traffic and 14k+ plane backlogs at Boeing and Airbus. MRO activity is also at an all-time high with an aging fleet.

For both original equipment manufacturing and ongoing MRO support, Carpenter Technology delivers high-performance alloys to build and maintain the aircraft of today AND tomorrow.



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Qualified materials

on 100% of aircraft in flight



Broadest portfolio

of aerospace alloys



Industry-leading

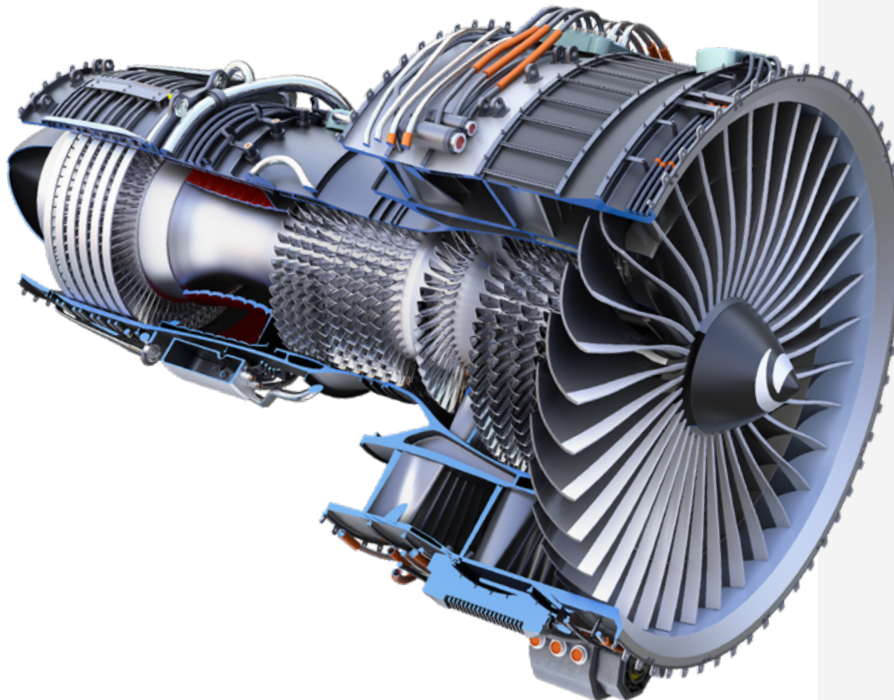
material quality and reliability



START YOUR ENGINES

Today's aero space engines are larger and run at higher temperatures than ever before, demanding more of the advanced alloys we are known for.

Our materials are essential to powering platforms like LEAP and GTF, and the engines of the future will continue to depend on the performance, durability, and innovation only Carpenter Technology alloys can deliver.



Engines

Strength at high temperatures and pressures, plus superior fatigue, wear, and corrosion resistance

- Discs and shafts: [718](#) and [Waspaloy](#)
- Rings and cases: [718](#), [Waspaloy](#), [CTX-909](#), and [C-263](#)
- Bearings: [M-50](#), [CBS-50 NiL](#), [52100](#), [330](#), [440C](#), [BG-42](#), and [CBS-600](#)
- Gearboxes and transmissions: [Pyrowear® 53 alloy](#), [Pyrowear® 675 alloy](#), [Nitalloy](#), [9310](#), and [CBS-600](#)
- Combustors: [Waspaloy](#) and [C-263](#)
- Fuel nozzles: [PowderRange® CCM® alloy](#)

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FUTURE GENERATION OF ENGINES

Aerospace engines will continue to evolve in response to growing demands for:

- Greater efficiency
- Uncompromising quality and reliability
- Resilience to extreme temperature environments
- Enhanced strength-to-weight performance

At the same time, new propulsion technologies and the shift towards sustainable aviation fuels are reshaping the landscape of future engine design.

Carpenter Technology is addressing tomorrow's engine challenges with our deep metallurgical expertise, unique set of capabilities, and relentless pursuit of innovation.

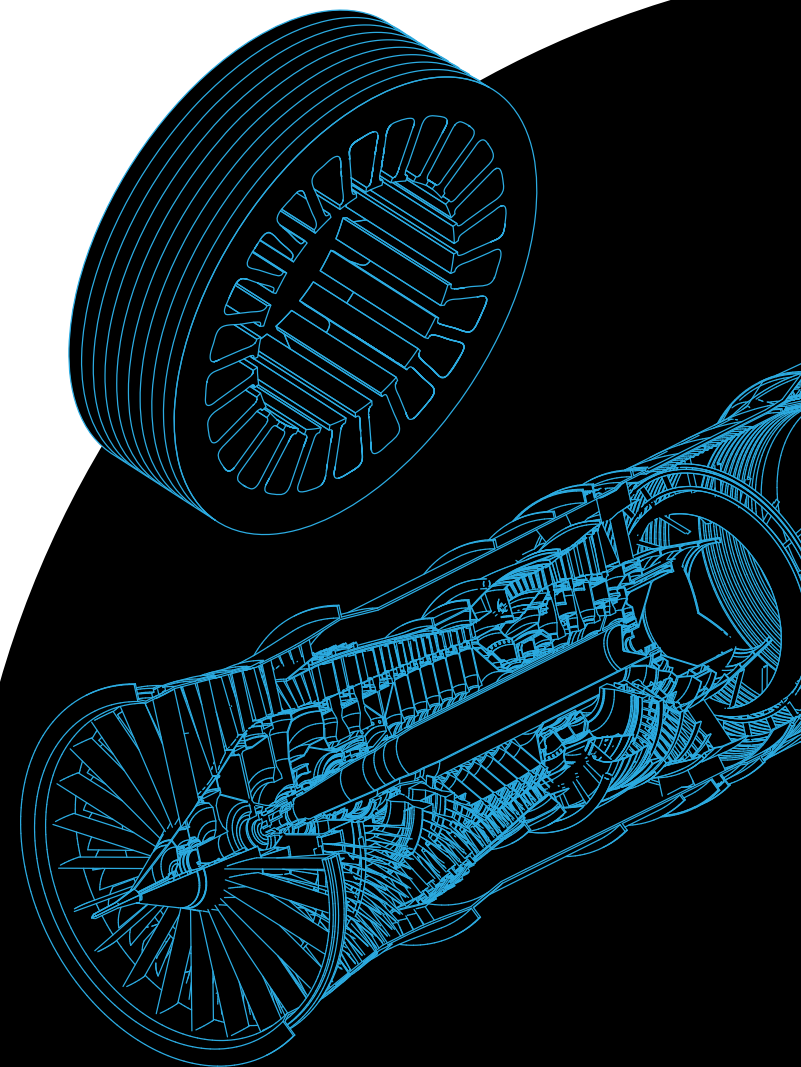
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TIP TO TAIL

Carpenter Technology supports **all major platforms and supply chain activity** — Boeing and Airbus, narrow body and wide body, OE and MRO, engines and beyond.



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Structural

High-strength, wear-resistant, and corrosion-resistant alloys to withstand extreme stresses

- Landing gear: [AerMet® 100 alloy](#) and [Custom 465® alloy](#)
- Thrust links: [15Cr-5Ni](#)
- Slat/flap tracks: [Custom 465® alloy](#) and [NiMark® 250 alloy](#)
- Other high-torque, high-stress applications: [Custom 465® alloy](#)

Fasteners

Optimal strength-to-weight ratio to hold fast

- Engine fasteners for high temperatures, corrosion resistance, and strength: [Waspaloy](#), [718](#), and [MP35N¹ alloy](#)
- Structural fasteners for strength and weight performance: [Ti 6Al-4V](#) and [A-286](#)

Avionics

High-performance soft magnetic alloys for efficient power conversion, signal integrity, and electromagnetic shielding

- Electrical motor performance: [Hiperc® 50 alloy](#)
- Magnetic and tape cores: [Hiperc® 50A alloy](#)
- Shielding applications for flight controls: [HyMu 80 alloy](#)

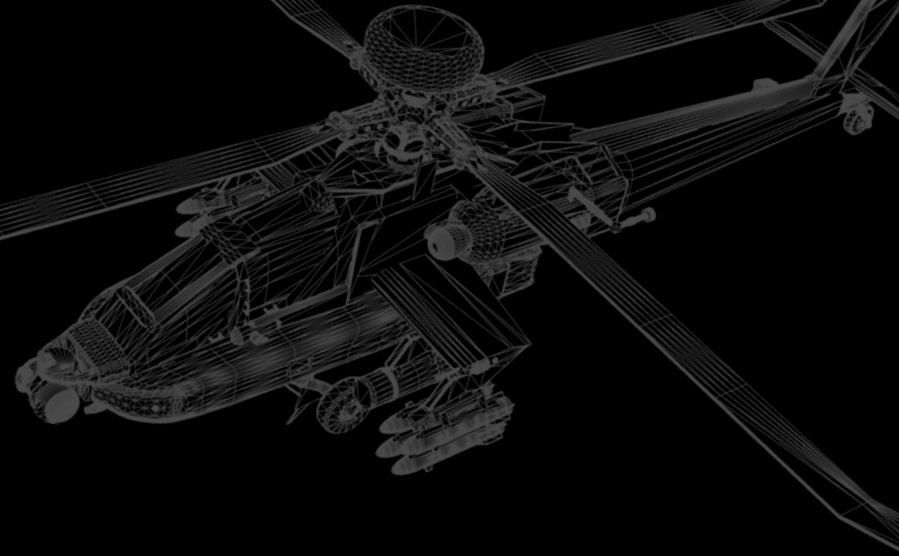
¹ Registered trademark of SPS Technologies, Inc.



MISSION-CRITICAL MATERIALS

Advanced alloys give defense engineers a strategic advantage: the strength, corrosion resistance, and high-temperature performance needed to design lighter components that can endure more operating hours with less field failures.

Carpenter Technology delivers next-generation metallurgy for protecting today's warfighters on land and sea, in air and space.



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Critical supplier

to the U.S. Department of
Defense and OEMs



U.S. made

for peak performance and
supply chain security



Quality first,

lab-tested and battle-proven
in the most extreme conditions



DEPLOYED ASSETS

Carpenter Technology metallurgists, research scientists, and engineers **work closely with the defense industry's best to continually define and redefine the leading edge of materials technology.**

We are uniquely qualified to create the alloys needed for stronger, faster, lighter, and enhanced life cycle equipment.



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Armor

Engineered for long-term performance and strength under fire

- Structural: [HP 9-4-30](#), [300M](#), [4340](#), [Custom 465[®] alloy](#), [AerMet[®] 100 alloy](#), and [D6AC](#)

Fixed wing aircraft

The fatigue strength, toughness, power, and corrosion resistance to soar

- Structural: [300M](#), [4340](#), [Custom 465[®] alloy](#), [AerMet[®] 100 alloy](#), and [AerMet[®] 310 alloy](#)
- Afterburners: [Pyromet[®] 41 alloy](#), [Waspaloy](#), and [Ferrium[®] M54^{®1} alloy](#)
- Tailhooks: [Ferrium[®] M54^{®1} alloy](#) and [AerMet[®] 100 alloy](#)

Unmanned aerial vehicles

Soft magnetic alloys for faster, more resilient eyes in the sky

- Power-dense motors: [Hiperco[®] 50A alloy](#)

Marine

Tougher, more powerful metallurgy for naval applications

- Structural components: [AerMet[®] 100 alloy](#), [HY-180](#), and [Ferrium[®] M54^{®1} alloy](#)
- Motors and generators: [Hiperco[®] 50A alloy](#), [Hiperco[®] 27 alloy](#), and [Hypocore[®] alloy](#)

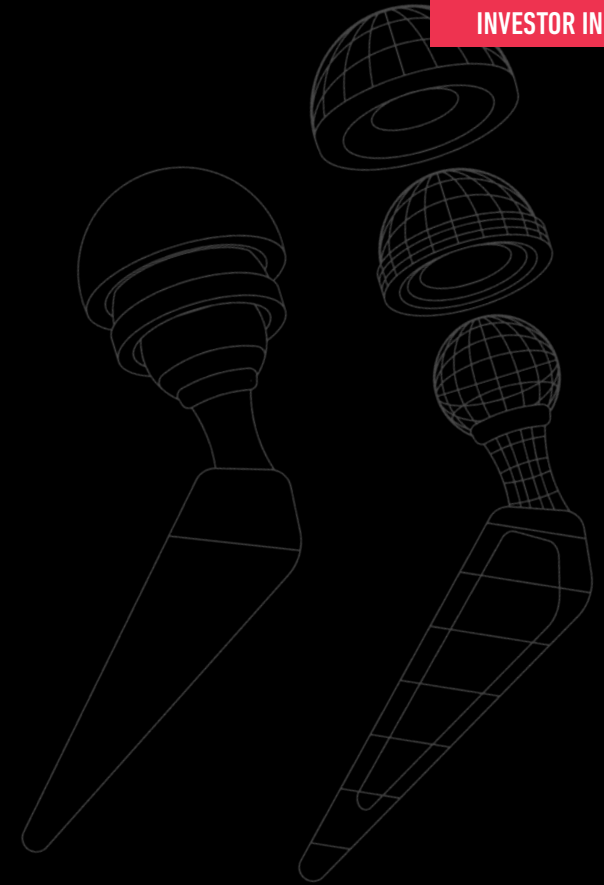
¹ Ferrium is manufactured and sold under license from QuesTek Innovations LLC.



LIFE-CHANGING INNOVATION

According to the World Health Organization, 1 in 6 people worldwide will be over age 60 by 2030, fueling demand for implants, cardiovascular devices, and medical instruments.

Carpenter Technology leads the industry in high-performance, biocompatible materials for better patient outcomes.



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Tailored portfolio
of medical-grade alloys



Ultra-clean
microstructure and alloy purity



Long-lasting performance
for superior treatment outcomes



FULL-BODY IMPACT

Materials play a critical role in advancing medicine to improve patient outcomes, reduce procedural costs, meet the demands of new regulatory frameworks, and support an aging population.

Our products and innovations empower less invasive surgeries, longer lasting implants, fewer complications, and faster recoveries.

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Orthopedics

Critical materials for patients with nickel sensitivities

- Trauma, spinal fixation, and bone plates: [BioDur® 108 alloy](#)
- Joint replacement and fracture fixation: [Micro-Melt® BioDur® CCM Low Nickel alloy](#)

Cardiology

Structured heart components

- Stents: [MP35N¹ alloy](#), [L-605](#), and [Conichrome® alloy](#)
- Catheter and lead wires: [MP35N¹ alloy](#), [L-605](#), and [BioDur® 316LS alloy](#)

¹ Registered trademark of SPS Technologies, Inc.

Instrumentation

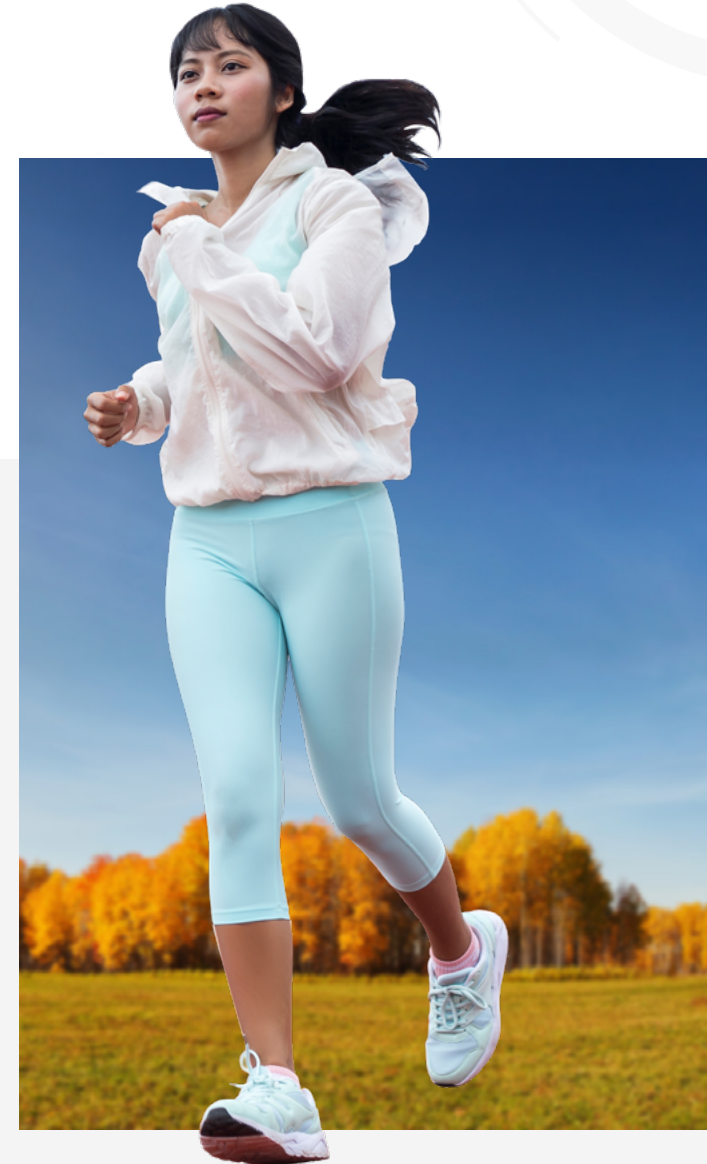
Setting the standard in medical instrumentation

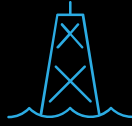
- Surgical, orthopedic, orthodontic, and dental instruments: [Custom 465® alloy](#)

Dental

High strength and stability for smaller implants

- Dental implants with excellent osseointegration: [Carpenter Ti-Zr alloy](#)

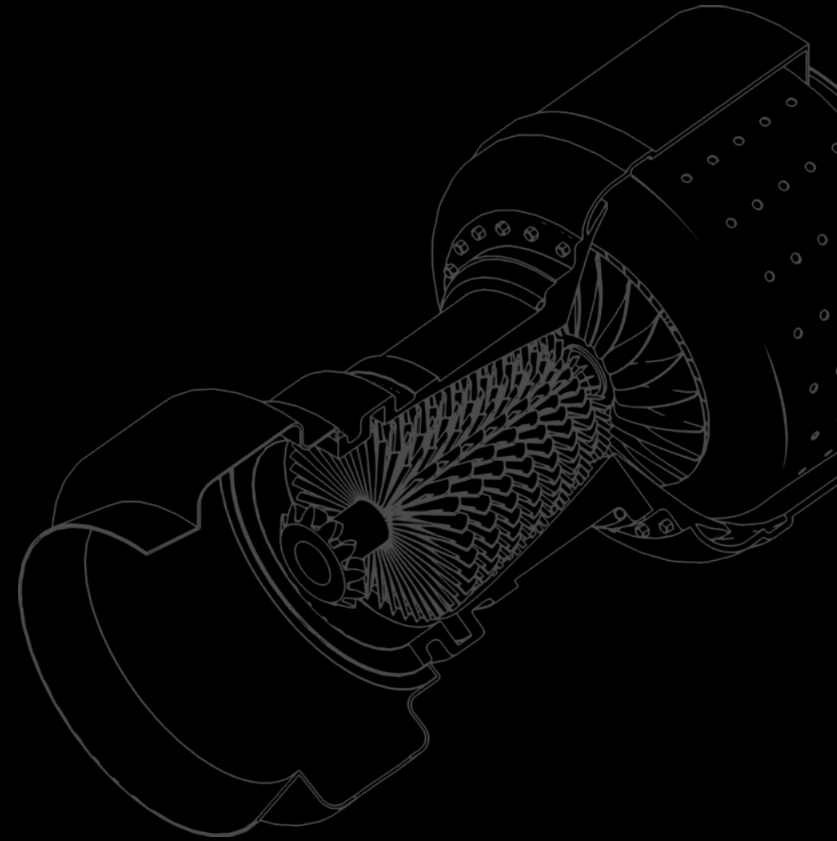




ALLOYS TO POWER THE FUTURE

As digital infrastructure expands and artificial intelligence becomes more deeply integrated into every industry, the global demand for energy is rising at an unprecedented pace.

Carpenter Technology delivers critical engineered materials for industrial gas turbine builds and MRO activity to meet the need.



Trusted supplier

to power system designers since 1889



Highly specialized alloys

for traditional and additive manufacturing



Surging demand

in a margin-rich environment

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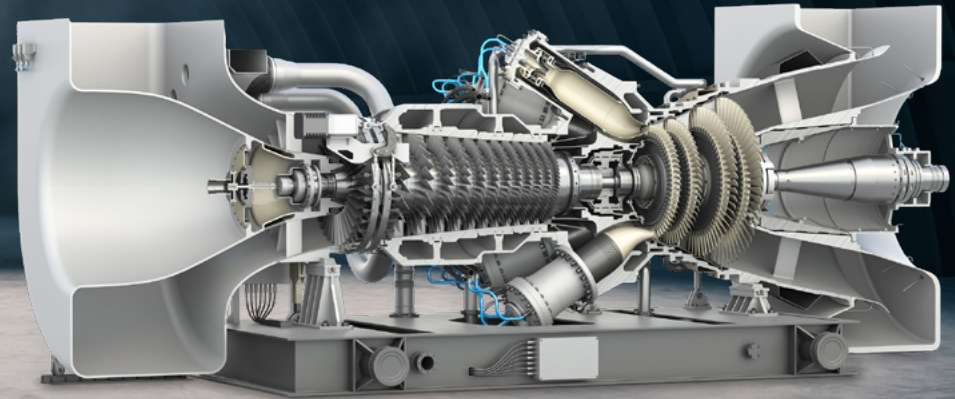
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HARNESSING ENERGY

The turbines that generate power are every bit as complex and demanding as jet engines, requiring precision-engineered materials. **Our alloys advance the efficiency and potential of power systems for breakthrough performance.**



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Turbines

Designed to maximize performance in high-temperature environments

- Shafts: [718](#)
- Wheels and spacers: [706](#)
- Disks and rings: [718](#) and [Waspaloy](#)
- Blades and vanes: [901](#) and [355](#)

Fasteners

Optimal strength-to-weight ratio to hold fast

- Critical bolting and fastening: [718](#)

Complex components

Metal powder optimized for high-temperature strength and printability in additively manufactured complex parts

- Fuel nozzles, heat shields, and burners: [PowderRange® CCM® -MC alloy](#) and [PowderRange® X alloy](#)



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