

WHEN PERFORMANCE IS EVERYTHING

ADVANCED SOLUTIONS FOR AEROSPACE FASTENERS

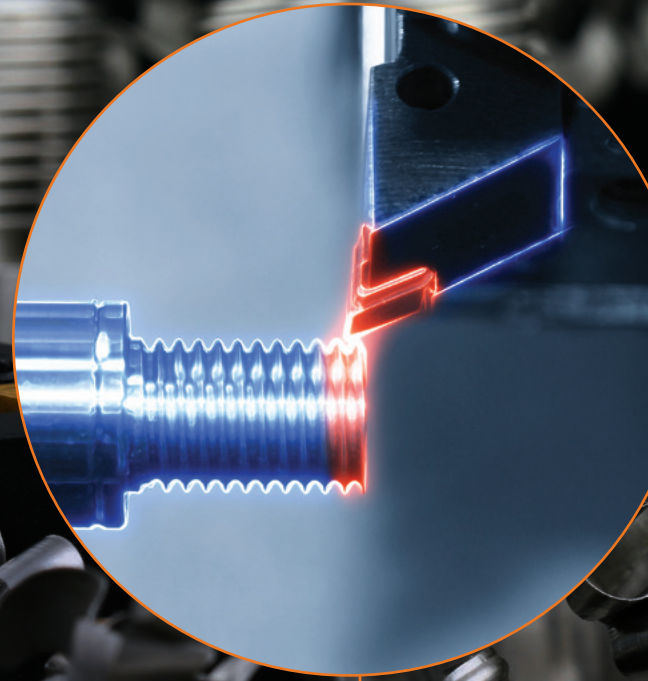
The demand for next-generation airplanes and maintenance of existing fleets is rising – amplifying the need for specialty metal fasteners that ensure the planes' structural integrity.

The reduction of processing costs for fastener production requires efficient materials and a strong supply partner. Materials selection and availability is more important than ever.

Your Solutions Partner

You'll find our fasteners on virtually every aircraft in the sky. Carpenter Technology Corporation provides an extensive alloy portfolio in virtually all the key and premium grades, forms, and dimensions to supply your fastener needs.

- Dynamet Titanium SmartCoil[®] provides greater processing efficiency compared to other materials, reducing scrap waste by approximately 20% or more.
- Broad portfolio of alloys in a range of shapes & sizes made to order and in stock.
- Leading producer of stainless heading wire and rod, and a variety of coatings for forming operations, including the most severe upsets and/or extrusions.



The future of aerospace demands continuous innovation. Decades of materials development and manufacturing experience allow us to help you compete consistently in a changing world.

Production capacity, material selection, research and development, quality, and expertise are crucial for mission-critical performance. With Carpenter, you have:

- The world's most advanced, integrated mill system, with increased wrought and powder capacity
- Access to highly trained materials experts, metallurgists, research scientists, and engineers
- Superior quality, ultra-premium alloys, powders, titanium, and engineered materials

Bring your materials challenges to Carpenter.

Let's go farther together.



Carpenter produces hundreds of alloy grades. Those listed here are some of our most requested grades. Customized compositions can be developed to your specifications.

ALLOYS FOR AEROSPACE FASTENERS	HIGH TEMPERATURE (>1200°F)	CORROSION RESISTANT	HIGH STRENGTH (>250 KSI)	HIGH STRENGTH TO WEIGHT RATIO	HIGH WEAR RESISTANCE/ FATIGUE STRENGTH
CarTech AerMet® 100			✓	✓	✓
CarTech AerMet 310			✓	✓	✓
CarTech A-286	✓	✓			
CarTech Custom 455®	✓	✓	✓		
CarTech Custom 465®		✓	✓	✓	
CarTech Custom 475®		✓	✓		
CarTech CustomFlo 302HQ		✓			
CarTech 440C		✓			
CarTech 625	✓	✓	✓		✓
CarTech 718	✓	✓	✓		
CarTech 80A	✓	✓			✓
CarTech 882					
CarTech Greek Ascology	✓	✓	✓		
CarTech MP35N ¹		✓	✓		
CarTech Ni-Cu 400		✓			
CarTech Ni-Cu 405		✓			
CarTech Pyrowear® 53			✓		
CarTech Waspaloy	✓	✓	✓		
CarTech 15Cr-5Ni		✓	✓		
CarTech 13Cr-8Ni		✓	✓		
CarTech 159	✓	✓	✓		

¹ Registered trademark of SPS Technologies

DYNAMET TITANIUM WIRE	SEAM FREE COIL	DYNALUBE COIL	SMART COIL®	SPECIFICATIONS		
				AMS	ASTM	SHIPPED CONDITION
Ti 6Al-4V	✓	✓	✓	4928	B348 Gr 5	Annealed
Ti 6Al-4V	✓	✓	✓	4967**	N/A	Annealed, Heat Treatable
Ti 6Al-4V	✓	✓	✓	4963**	N/A	Annealed, Heat Treatable
Ti 6Al-4V ELI	✓	✓	✓	4930	F-136, B348, Gr 23	Annealed
Ti 6Al-6V-2Sn	✓	✓	✓	4971**	N/A	Annealed, Heat Treatable
Ti 6Al-7Nb	✓	✓	✓	N/A	F-1295	Annealed
Ti Commercially Pure (CP) Grade 1	✓	✓	✓	N/A	B348 Gr 1 F67 Gr 1	Annealed or Cold Worked
Ti CP Gr 2	✓	✓	✓	N/A	B348 Gr 2 F67 Gr 2	Annealed or Cold Worked
Ti CP Gr 3	✓	✓	✓	N/A	B348 Gr 3 F67 Gr 3	Annealed or Cold Worked
Ti CP Gr 4	✓	✓	✓	4921	B348 Gr 4 F67 Gr 4	Annealed or Cold Worked
Ti-3Al-8V-6Cr-4Mo-4Zr (Beta C)	✓	✓	✓	4957	N/A	Type I CG, Type II As Drawn
Ti-3Al-8V-6Cr-4Mo-4Zr	✓	✓	✓	4958	B348 Gr 19	Solution Heat Treated
Ti 3Al-2.5V	✓	✓	✓	Chem 4943	B348 Gr 9	Annealed, Cold Worked
Ti Cb	✓	✓	✓	4982	N/A	Type I Annealed, Type II As Drawn

* ASTM F67, ASTM F1295 and ASTM F136 for medical implants ** Properties dependent on size

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