

Aerospace Heat Exchanger Tubing

Viant has a deep heritage in aerospace, providing a variety of tubing and tubular components into the industry for over 30 years, starting with the Uniform Tubes and UTI brands. In the last decade, Viant has had a particularly strong focus on the production of fabricated tubing and components for aerospace heat exchangers. These include heat exchanger made from inconels, stainless steels, titanium and newer alloys such as Haynes 282.®



Tubing Families | Materials

Aero HEX | Standard heat exchanger tubes for cooling hot liquids with ambient air or liquid.

Turbo HEX | Fabricated tubing with beading or dimpling to produce turbulent liquid flow.

Micro HEX | Very small diameter tubes for lightweight high flux applications.

Titan HEX | Lightweight and corrosion resistant titanium tubing for challenging environments

Power HEX | Extreme temperature tubes for gas to gas heat exchanger applications.

FAMILY	Stainless Steel			Hi Temp Nickel Alloys			Titaniums		Fabrication
	304	321	347	Inconel 625	Inconel 718	Haynes 282	Ti Grade 2	Ti Grade 9	
	AMS 5560/63 AMS 5564/65	AMS 5557/59 AMS 5570/76	AMS 5556/58 AMS 5559/71	AMS 5581	AMS 5589/90	AMS 5951	ASTM B338		Beaded or Dimpled
Aero HEX General service	■	■	■						
Turbo HEX Turbulent flow	■	■	■						■
Micro HEX Lightweight / high flux	■	■	■	■	■	■			
Titan HEX Lightweight / corrosion							■	■	
Power HEX Extreme temperature				■	■	■			

AMS and ASTM callouts are the governing material specifications for each grade. Titanium grades 2 and 9 both fall under ASTM B338.

- | All product families are available in straight lengths, cut blanks, or with U bends, S bends or complex bends.
- | Additional alloys are available upon request.
- | Fabricated components are available in kits.

MATERIALS EXPERTISE

Viant works with a wide array of metals and alloys; below is a sample of some of the most common materials of the over 100 we have worked with in the past.

Alloys

- Stainless 304, 321, and 347
- Inconel™ 625, 718 and X750
- Haynes™ 282
- Titanium CP Grade 2 and Grade 9
- Other alloys are available upon request

All materials are DFARS compliant.

Tubing Types

- Seamless
- Welded and Drawn for specific alloys

DIMENSIONAL REQUIREMENTS

OD and Wall Thickness

Tubes will be made to customer specified sizes and tolerances.

Lengths

Tubing will be provided in one of the following length conditions:

- Random straight lengths from 5 to 20 feet long.
- Tubes can be cut to specific blank lengths ready for fabrication by the customer.

Dimensions

Tubing can be provided in a wide range of custom sizes.

- Standard heat exchangers OD 0.075" to 0.250", Wall Thickness 0.004" to 0.020".
- Micro tube heat exchangers – OD less than 0.050," Wall thickness 0.001" min

MECHANICAL PROPERTIES

Tubes will be provided meeting the customer mechanical property requirements or the appropriate AMS specification.

Mechanical properties and dimensions are uniform from tube to tube and order to order. This ensures uniform fabrication performance – reducing bending, beading and dimpling variability.

FABRICATION

Tubes can be provided with one or more of the following fabricated forms:

Cut Blanks | Precisely ECM cut lengths of tube for subsequent fabrication by the customer. Tube ends are burr free.

Bent Tubes | Tube lengths bent to customer configuration including U bends, S bends and complex out of plane bends.

Beaded Tubes | Full 360 degree groove around the tube repeated at periodic locations along the tube length.

Dimpled Tubes | Localized depressions in a pattern around the tube circumference repeating along the tube length.

Fabricated component tube ends can be tapered or pointed to aid in heat exchanger assembly.

TESTING AND INSPECTION

Viant performs all tensile, hardness and metallurgical testing in-house

Viant will 100% pressure test tubes at up to 10,000 PSI in-house.

Viant will manage 100% Fluorescent Dye Penetrant Inspection of finished components.



TUBING CENTER OF EXCELLENCE



Viant Collegeville provides tubing expertise and infrastructure to support development through production with repeatable results and verification.

- AS 9100 and ITAR Certified
- Fully equipped lab with advanced inspection methods
- In-house metrology / metallurgy expertise to verify tubing meets defined specifications
- Prototype tubes delivered in as little as 4 weeks
- 85+ years of manufacturing experience

CONTACT OUR EXPERTS FOR MORE INFORMATION

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ViantMedical.com/capabilities/industrial-tubing/