

Top Quality One-Stop Shop Aerospace Parts

Janicki Industries (Janicki) manufactures top-quality aerospace parts and prototypes for commercial and military programs, specializing in advanced composite materials and exotic metals. Janicki has developed components for leading aerospace companies around the world. Janicki is well known for large aerospace machining with carbon composites, aluminum, Invar and steel. Our years of tooling experience combined with our team of experts enable us to deliver custom parts specific to your requirements.



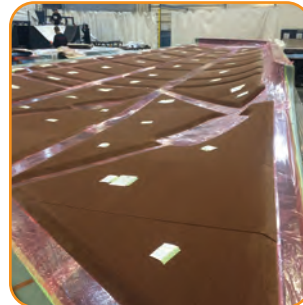
Composite Lower Fuselage Skin



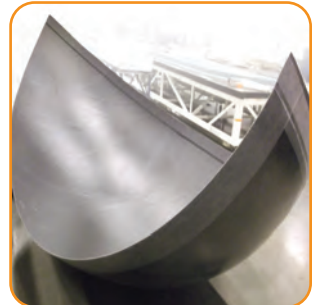
Engine Inlet Lip



Carbon/Epoxy Parts



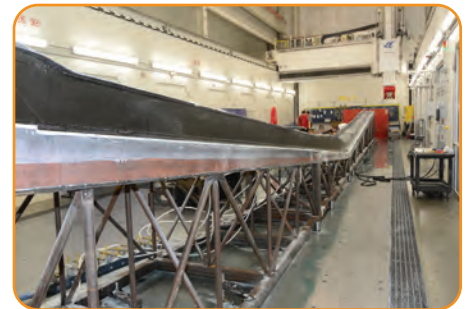
Parts with core



Flyaway Parts

Capabilities & Expertise

- ▶ Advanced Composite Materials
- ▶ Autoclave 12' x 50'
- ▶ Out-of-Autoclave for very large parts
- ▶ Large-Scale Capabilities, Facilities & Equipment
- ▶ Accurate, Complex Shapes
- ▶ 5-Axis NC Milling tolerance $\pm 0.003"$
- ▶ Real-time metrology for increased part accuracy
- ▶ Design/Build firm for cost & schedule advantages
- ▶ Project Management discipline for real-time status
- ▶ Engineering Design & Analysis
- ▶ R&D Lab; Material Testing
- ▶ Pre-preg Lay-up
- ▶ Controlled Contamination Areas



Spar Part & Tool

Part/Tool Integration

Our design/build integration provides the following advantages:

- ▶ Shortest delivery time
- ▶ Accurate part-to-tool integration
- ▶ Quick turns on changes
- ▶ Fabrication & Assembly of components



Nadcap AC7118 CERTIFIED

AS9100C CERTIFIED

BAC 5578 & BAC 5317 Approved

Boeing Digital Product Definition
Approved Supplier

Boeing approved processor to
D1-4426 requirements

Let us deliver your parts.

Proven Track Record

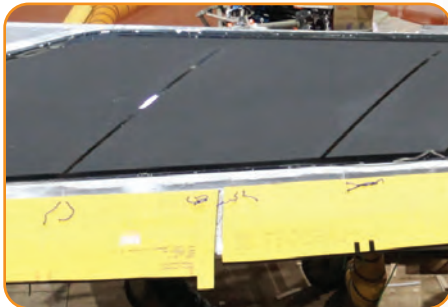
Parts | Materials | Processes

We are innovative, creative and persistent. Our goal is to provide exceptional and personalized customer service. We are committed to honesty and high ethical standards. Our customers are confident that their requirements and schedule demands will be met with quality parts that fit the budget.

MATERIALS

Janicki has delivered aerospace parts made of advanced composite materials for commercial, space, and military applications.

- ▶ Carbon fiber/epoxy
- ▶ Fiberglass/epoxy
- ▶ Kevlar/epoxy
- ▶ Aluminum, Invar, Steel
- ▶ Core (integrated or separate):
 - Rohacell
 - Polyurethane
 - Honeycomb (Fiberglass, Kevlar, Al.)
- ▶ BMI, Vinyl Ester, Phenolic Resins



Wing Skins

Janicki has designed, fabricated and installed aircraft wing skins. Skins are made of epoxy carbon fiber pre-preg materials with foam-core sandwich laminate. Skins are cured in or out-of-autoclave.

Large Aerospace Flyaway Parts

- ▶ Complex machining
- ▶ Inspection of local alignments
- ▶ Machined hard-to-reach features
- ▶ Rate to meet requirements
- ▶ Positive feedback from customers
- ▶ Flying on airlines worldwide



Trim & Drill

Janicki has extensive trim and drill experience on both composite and metallic parts.

- ▶ Performed Drill and Trim on over 4,000 composite wing parts with 99% on time delivery and 99% zero-defect rate.

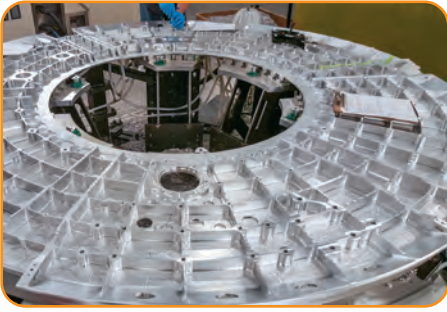
- ▶ Proprietary machining software combined with real-time health monitoring allow for certainty that parts will be machined within the tight tolerances of today's high-performance aerospace world
- ▶ Janicki Industries has automated these processes, eliminating human error, allowing for unparalleled precision and repeatability.

"Janicki routinely delivers our parts on-time with exceptional quality. They are like an extension of our own company where trust and integrity make a good partnership."

Program Manager
NASA Langley

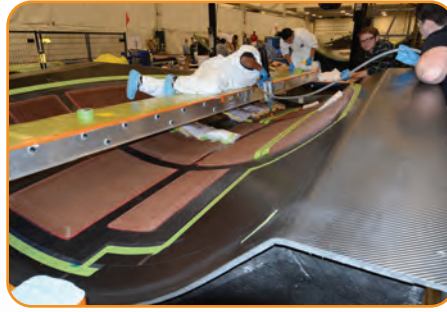


Customer Projects



Orion FWD Bulkhead

Janicki Industries Utah Division machined the Orion Forward (FWD) Bulkhead for the Exploration Mission-1 vehicle. This Janicki part required 8 weeks of machining, creating a 246 pound part from a 5,100 pound plate of Aluminum. With immense schedule pressure and tolerances on many features being ± 0.002 ", it was a tremendous achievement when Janicki was able to be the first supplier to successfully deliver a large pressure vessel component to the Orion Assembly Facility.



Stratolaunch Program

Janicki enabled a large airplane program with the fabrication of thousands of pounds of carbon composite flight hardware. The program is the largest airplane ever built and Janicki Industries has been a key supplier providing parts and tools. For most parts, Janicki also designed and produced the tooling. Many parts are carbon fiber epoxy, incorporating metallic and nomex core.



Mass Volume Isolator (MVI)

Janicki Industries fabricated both the tooling and the fly-away part for NASA. The MVI was designed by NASA Langley. It is a large diaphragm made of carbon composite and cured out-of-autoclave. It is 16.5 feet in diameter and weights 340 lbs. This is the largest flight hardware ever built for NASA with carbon composites out-of-autoclave.



SAJ Panels - NASA

Janicki fabricated structural SAJ (Spacecraft Adapter Jettison) panels for the Orion Spacecraft. These surrounded the service module and flew on the first flight of Orion Exploration Flight Test 1, December 2014.



Transportation

Janicki has experience designing and implementing complicated, tolerance critical transportation plans. Shipping your large part is not a problem.

Facilities Optimized for Aerospace Parts & Prototypes

Our newest facility is optimized for parts production. With over 380,000 sq. ft. of plant space, Janicki is equipped to build your largest and most complex project. Plants have multiple utility stations equipped with all the necessities: gas, air, electricity, high-speed network cables. Our newest dual 5-axis mills can fit parts up to 100' long.

5-Axis CNC Milling

Janicki's mills are unsurpassed in precision and scale with repeatable tolerance of $\pm 0.003''$ and envelope up to 100' x 20' x 8'. Our proprietary, CNC software uses custom volumetric error compensation algorithms that provide unprecedented accuracy.



Controlled Contamination Area

Clean Room

Facilities include a 9,300 sq. ft. Clean Room with 16' ceilings.

- ▶ Dedicated to Aero Parts Production
- ▶ Certified Technicians
- ▶ Access Controlled for Sensitive Projects

Meets requirements for:

- ▶ ISO Class 8 (Upgradeable to 5)
- ▶ BAC5317, BAC5578
- ▶ D012Z062-001

Engineering

Engineering Services support fabrication of aerospace parts from one-off conceptual prototypes to serialized build-to-print flight hardware.

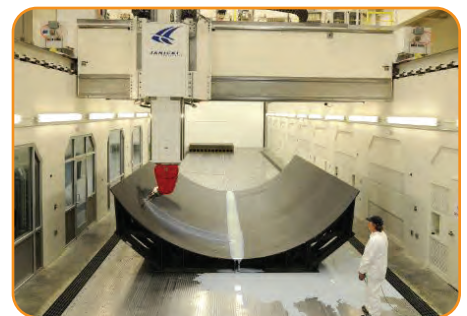
- ▶ Concurrently develop part & tooling
- ▶ Expert in optimization for manufacturability
- ▶ CATIA Composite Design workbench to analyze designs and create ply kits and laser projection files
- ▶ Rapidly incorporate revisions
- ▶ Manage configuration with SAP-PLM

Equipment

- ▶ 9 Large 5-Axis CNC Mills (100' x 20')
- ▶ Machine Shop (4 & 5-Axis Mills & Lathes)
- ▶ Oven (100' x 24' x 14') w/ Automated Controls
- ▶ Weld Shop (Certified Welders)
- ▶ Waterjet & Plasma Cutter (14' x 42')
- ▶ Autoclave (12' x 50')
- ▶ Annealing Furnace (24' x 72')
- ▶ 25 Ton Overhead Cranes
- ▶ Grit Blasting & Paint Booth (60' x 16' x 10')
- ▶ 1,100 Ton Forming Press
- ▶ 45' Eastman Ply Cutter
- ▶ Gerber Ply Cutter



Engineering Design



5-Axis CNC Milling: Large Scale & Precise



12' x 50' Autoclave

our
quality promise

- ▶ Dedicated Continuous Improvement
- ▶ Deliver Quality Products
- ▶ Exceed Customers' Requirements

Sedro-Woolley, WA

160,000 ft²

325
Employees

Hamilton, WA

254,000 ft²

361
Employees

Layton, UT

100,000 ft²

100+
Employees



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