

# *Company Presentation*

**TWIGG**  
AEROSPACE COMPONENTS



### *Exotic Alloy Components:*



Twigg Corporation was founded in 1971 with a quest to manufacture precision exotic metal alloy components. Over the last five decades our parts have proliferated across the United States defense and OEM industries.

Our company has a long-standing history with mission-critical customers that demand the highest standards in reliability and performance. This experience offers us the capacity to produce a wide-range of quality parts.



### *Our Projects:*



In the late 1970s Twigg was contracted to make components for the **GE F404** engine program used in the **Lockheed F-117 Nighthawk** and the **F-18 Hornet** combat fighter.

Twigg components help power **Rolls Royce (Allison) T56** engines used on the **Lockheed C-130H Hercules** & the **Northrop Grumman E-2 Hawkeye**



Twigg vane assemblies are used in the **GE F110** turbofan engine, powering the:  
**General Dynamics F-16 Falcon**,  
the **Gruman F-14D Super Tomcat**  
& **Boeing F-15EX Advanced Eagle** tactical fighter.



### *Our Projects:*



Twigg Corp. supplied the vane assemblies for the **GE F118** turbofan engine that was specially developed for the **Northrop B-2 Spirit stealth bomber**.

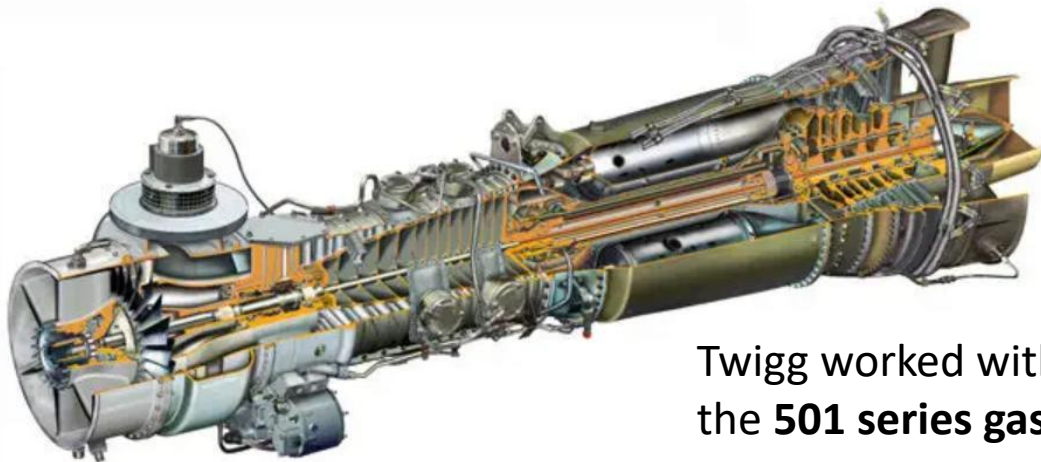
We supplied **Rolls Royce** with **T406 (AE 1107)** engine components that power the **Bell Boeing V-22 Osprey** tiltrotor aircraft.



Twigg aerospace components are also used in rotor wing aircraft. Our vane and stator assembly components power the **Honeywell T55** engine used on the **CH-47 Chinook** and the **Bell 309 KingCobra**.

### *Our Projects:*

We supply components for marine vessel propulsion. Our compressor components are used in the **Vericor ETF40B** turbine engine that powers the **U.S. Navy LCAC fleet**.



Twigg worked with Rolls Royce in developing various versions of the **501 series gas turbine engine** used for power generation.



### Market Segments:



### Defense

Aerospace, Land and Marine



### Energy

Gas Turbine Power Generation



### Commercial

Aerospace Applications



### MRO

Turbine Engine Component Overhaul

### *Quality has no finish line:*

Inspired by the Kaizen philosophy of continual improvement, our organization continues to identify and evaluate processes in an ongoing engagement with quality and customer service.



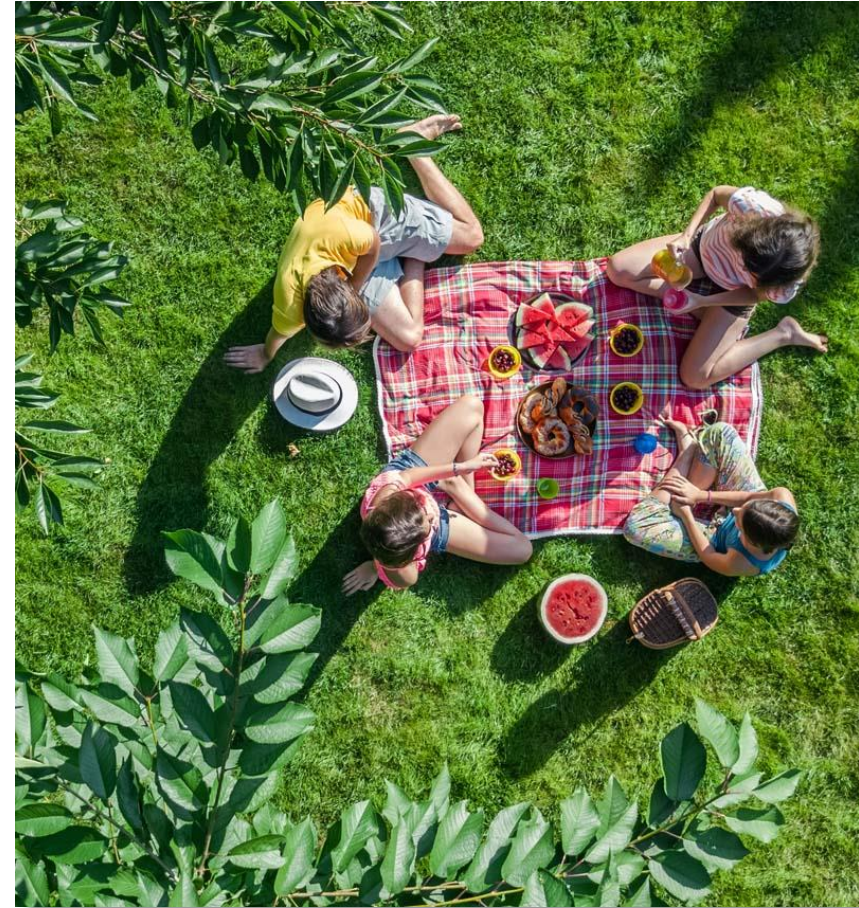
Our mission is to be good stewards for our community and the environment. We value saving material resources by providing MRO services to extend the life of current gas turbine engine components.

*Sustainability:*

Twigg Corporation is committed to environmental sustainability.

We made a substantial investment by transitioning our entire manufacturing campus in Martinsville, Indiana to geothermal energy.

We also support environmental remediation by researching and investing in the removal of soil contaminants that were left behind by other businesses. This effort will help protect human health and restore the environment.







### Five Accreditations

- Heat Treatment
- Welding
- Nonconventional Machining
- Chemical Processing
- Non-Destructive Testing (NDT)



Auto Processor FND 9000



**Federal Aviation  
Administration**  
*FAA # MX5R057N*

**NIST**  
National Institute of  
Standards and Technology



*Core Products:*

Air Seal Bands

Build - Module

Casings - Fab Casings - Mach.

Combustor Liners & Cylinders

Compressor Stators

Cowl Support Assembly

Dynamic Balancing

Exit Guide Vane Assembly

Fabrications - Large and Small

Flameholder

Honeycomb Seals

Hot Section Turbine Stator

HP Turbine Nozzle

HPT Seals



LPT Seals

Nozzle Guide Vanes

Overhaul

Pressure Balance Seals

Seals

Slip Rings

Snap Rings

Stator Vane Assembly

Turbine Cases

Tool Design

Tool Manufacture

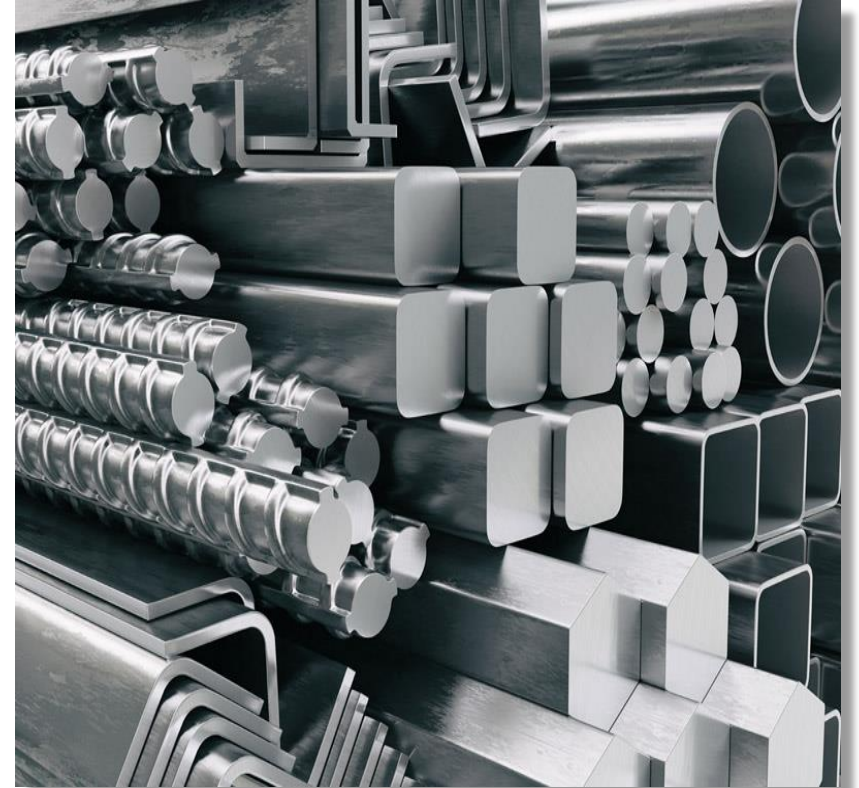
Vane Assembly

Vane Sectors



*Raw Material:*

- Aluminum
- Cobalt
- Haynes 188
- Hastelloy
- Inconel
- L605
- Custom 450
- PH Stainless
- René
- Stainless
- Titanium
- Waspaloy



### *Processes:*

Our capabilities are always expanding as we continue to invest in advanced CNC machining centers and customized lean processes to create unique products at our customer's request.

**Special Processes:** Heat Treating, Soldering, Torch Brazing, Welding, Chemical Processing, Non-Conventional Machining, Non-Destructive Testing (NDT), Honeycomb Application

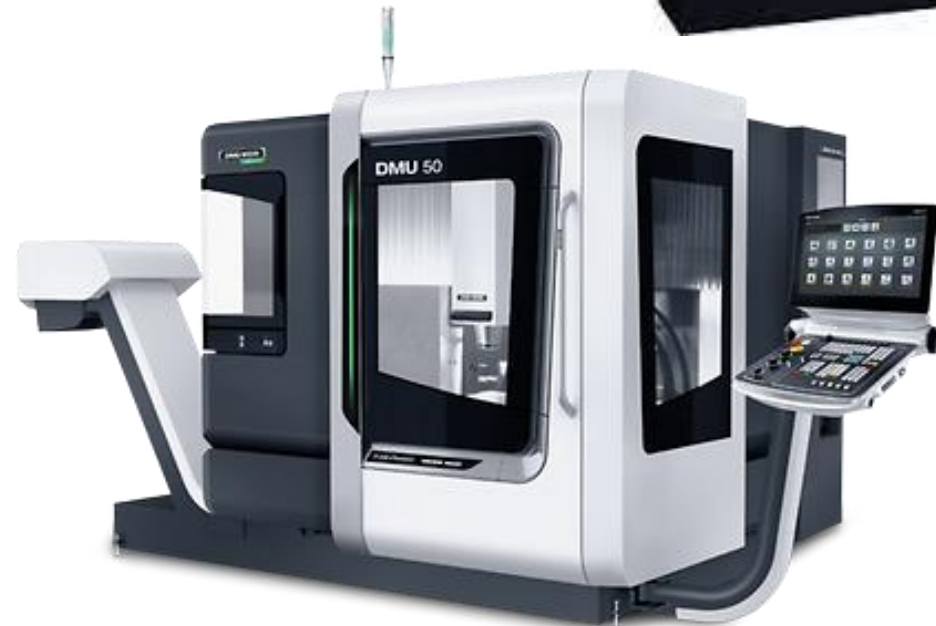
**Spot Operations:** If our customers have a specific process that they can't perform, we can provide spot operations to help complete their manufacturing project requirements.





### *Machining:*

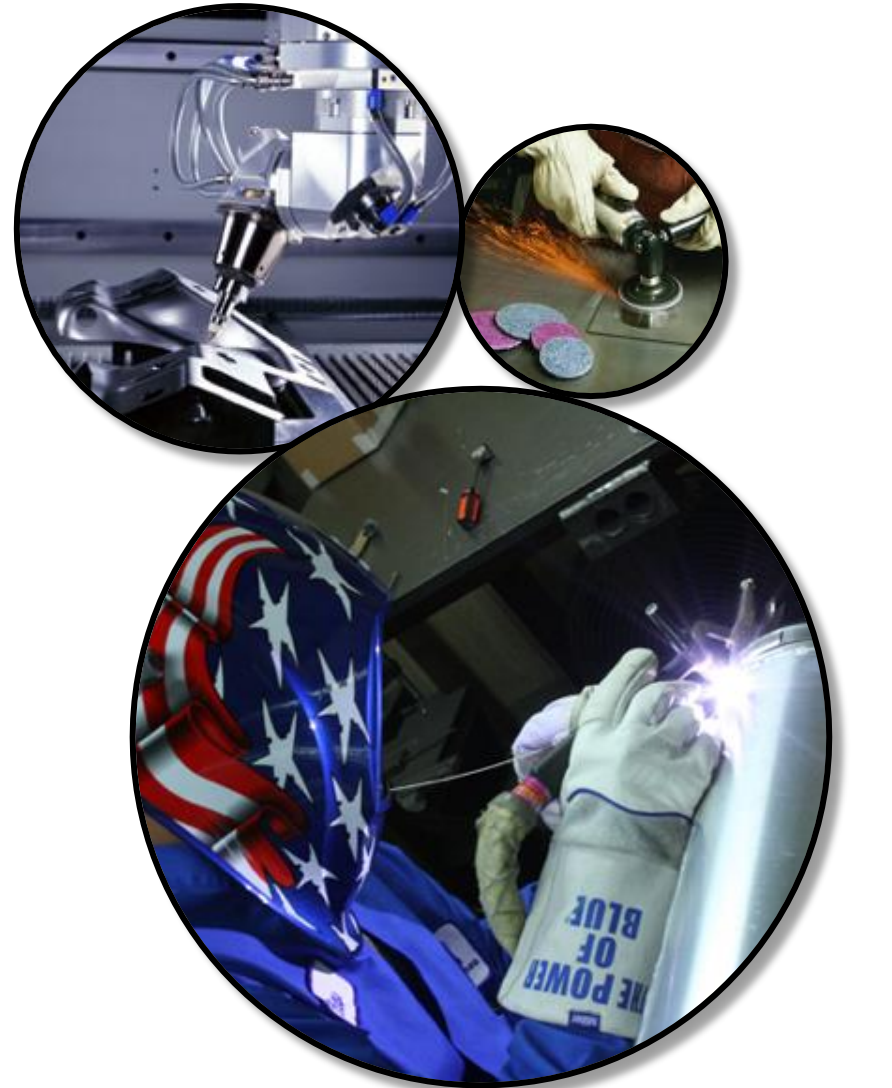
- Electro Chemical Grinding 52"
- Vertical TL 52"
- Horizontal CNC 30"
- Vent Bore 62"
- Milling 72"x46"x30"
- Grinding
- Boring
- Drilling
- EDM Wire/Drill/Sinker
- 5-Axis Laser
- Polishing
- Tapping
- Thread Rolling
- Two 5 Axis Machining Centers  
25.5x20x18.7



### *Fabrication:*

We recruit and grow the very best in sheet metal fabrication, machining, and heat treat technicians.

- Welding
- Benching
- Blanking/Pressing
- Sizing
- Roll
- Cold Form
- Press
- Rivet
- Shear
- Solder
- Torch Braze
- Hydroforming





*Dimensions:*

At Twigg Corporation we are defining the future with a commitment to innovation and quality. We look forward to the challenge of developing unique components critical to your projects.

**Milling 72"x46"x30"**

**5 Axis Machining 25.5"x20.4"x18.7**

**5 Axis Laser 118"x59"x23"**

**Electro chemical grinding 52", Vertical TL 52"**

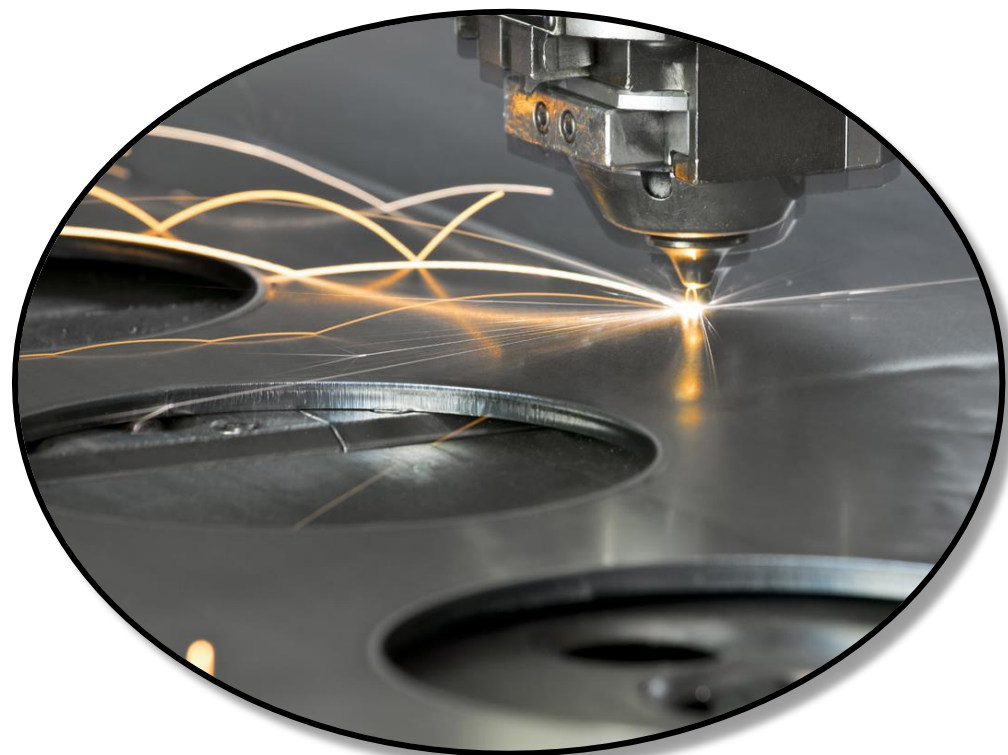
**Horizontal CNC 30"**

**Boring Mill 62"**

**Vacuum Furnace up to 50"x34"x72"**

**Hydroforming 20"blank 6"draw**

**Spinning 52" diameter**



*Heat Treat:*

Three Vacuum Furnaces

NEW

- 63x48x24-80
- 35x23x18-D
- 34x22x15-C



*Nondestructive Testing (NDT):*

Nondestructive testing (NDT) is a profession that blends quality assurance and materials science. NDT is used to inspect and evaluate materials, components, or assemblies without destroying their serviceability.

Our customers have the quality assurance that all components ship after thorough Florescent Penetrant Inspection (FPI) and/or Radiographic Testing (RT) nondestructive testing.





### *Engineering:*

Twigg Corporation has a dedicated team of engineers that are individually assigned to projects based on each customer's needs. Whether your organization desires newly manufactured components, MRO services, or consultation, our engineers are ready to listen and find the solutions that will exceed your expectations.

### **Engineering solutions:**

- Manufacturing
- Fabrication
- Component Overhaul
- Consultation
- CMM Services
- Spot Operations
- Heat Treating
- Chemical Processing
- Reverse Engineering





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