



*Blades and Vanes*



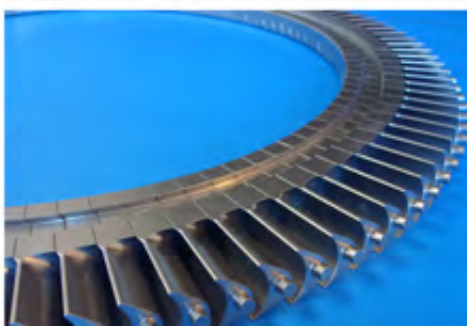
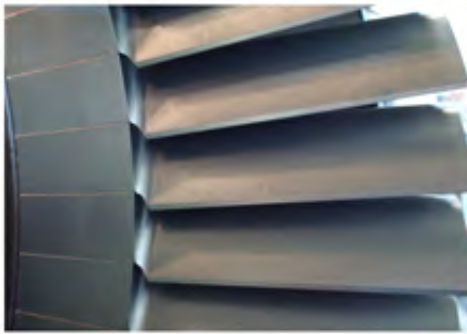
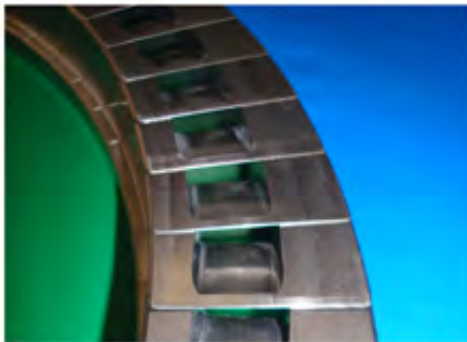
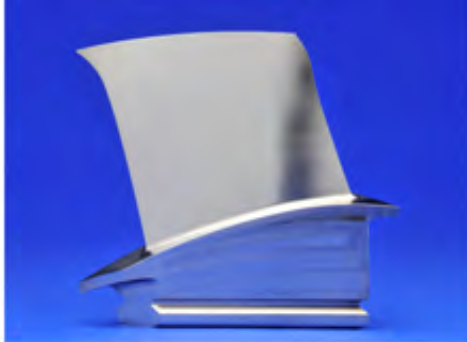
TURBOCAM brings over

**25 years of 5-axis machining experience**

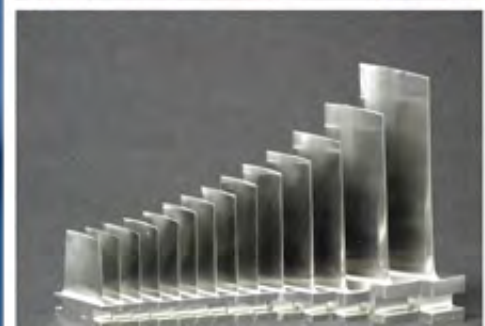
in aeroengine compressor blisks and rocket turbopumps to the world of blades and vanes. The skills developed making these demanding shapes, and producing over 500,000 compressor impellers and turbine nozzles a year are now being applied to make blades for the rotors and stators of large steam and gas turbines.

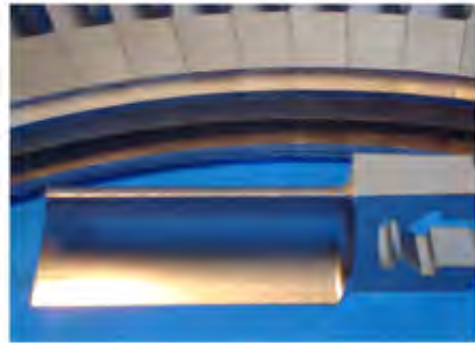
While TURBOCAM has often been thought of as an impeller manufacturer, it has been producing nozzles, blades and vanes for several leading OEMs and aftermarket companies for over 10 years.

- Steam and gas turbine blades and vanes
- Variable inlet guide vanes (VIGV, IGV)
- Axial compressor blades
- Gas expander blades
- Aero-derivative gas turbine compressor blades
- Turbocharger blades



TURBOCAM has earned a reputation as a trustworthy company with world-class quality. As we continue our expansion into new and replacement blade manufacturing, our state-of-the-art engineering, manufacturing, and repair capabilities can be vital to the success and lifespan of your plant. Whether you are dealing with planned shutdown or a forced outage, TURBOCAM will get you back on-line quickly.





With over 130 state-of-the-art 3-axis, 4-axis, or 5-axis milling centers at 11 locations in 9 countries, TURBOCAM's expansive global network can address your needs with local market knowledge and in your language. Our ISO certified and modern plants can manufacture airfoils up to 750mm (30") and are prepared to fully address your requirements with end-to-end manufacturing processes and solutions.

#### TURBOCAM offers:

- Experience with **one-off batches**, **automated volume production**, and in **cost reduction programs** for large blade orders.
- Full **reverse engineering**, **modeling**, **metal analysis** and **CMM capabilities**.
- TURBOCAM has designed its process to achieve maximum efficiency ensuring customers of **rapid delivery**. We are also able to leverage our international capacity to further **improve lead times**.
- **Statistical Process Control (SPC)** and superior quality management. TURBOCAM has a proven track record in the automotive industry of achieving process control as demonstrated by Cpk values of 2 or better and PPMs well below industry standards.
- Surface finishes can be achieved in-house by manual **polishing**, **tumbling with abrasive media**, or by **electrochemical machining (ECM)**.
- **In-house NDT capabilities** by FPI and MPI.
- A wide variety of raw **material in stock**, including the most common blade materials (such as X22CrMoV12.1 and X20Cr13), to be able to respond quickly to your needs.
- **Lower-cost manufacturing solutions** at facilities in India and Romania.
- Extensive experience in the manufacture of impellers, integrally bladed rotors, and many **other complex bladed parts**.

# TURBOCAM



Netherlands

## Sales & Engineering

South Africa



# Worldwide Blades Facilities

Manufacturing, Sales & Engineering



United Kingdom



India



Romania



U.S.A.



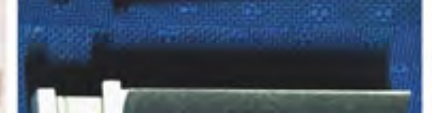
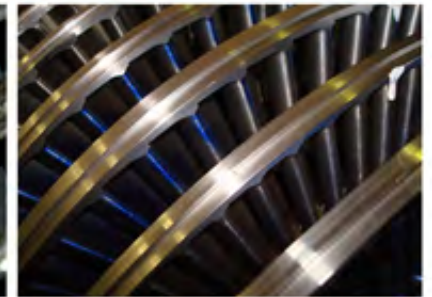
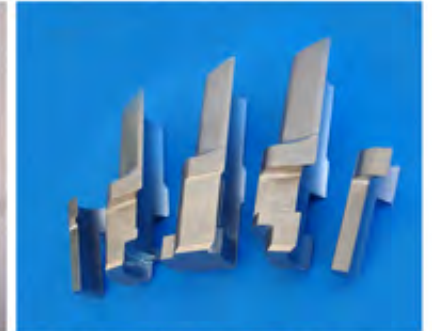


Rapid turn-around  
and world-class  
technical support,  
engineering, and  
manufacturing

These are completely new blades reverse-engineered  
to replace worn or damaged components.

BEFORE

AFTER



TURBOCAM takes pride in providing rapid turn-around and world-class technical support, engineering, and manufacturing. Working from sample parts, prints & specifications, or your own custom design changes & recommendations, our engineering team in the field or at home can provide valuable metallurgical and geometrical analysis.

When TURBOCAM performs reverse engineering, our goal is to achieve or exceed equivalence in form, fit and function to the original design intent. TURBOCAM's knowledge of the theory of turbomachinery and industry best practices enables us to understand the application design intent. Our experience in the manufacture of components for many of the world's leading turbomachinery companies ensures that this design intent is specified and achieved in manufacture.





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