Use Our Turbine Expertise

Aerospace product design and engineering has never been more demanding. Get more power from a smaller package. Make it safer. Make it cheaper. And get it to market faster.

At TDI, optimizing turbine performance and the reliability of high speed rotating devices is our core business. Since 1958 we have been a significant player in the design, testing and manufacturing of turbine-related machinery and components for the world’s most sophisticated aircraft. And we still are today.

Our talented designers, engineers and manufacturing specialists provide valuable understanding and assistance with turbine design concepts, material selection, performance and quality testing, as well as help you with precision fabrication.

Whether you’re working with cold air or hot air components, or looking for volume OEM products and parts, TDI’s multi-disciplined expertise provides a rich resource for getting the most from turbine technology.

PRODUCTS
- Turbine propulsion
- Simulators & support systems
- Ejectors
- Turbine air motors
- Turbine components
- Tip turbine fans
- Gas turbine starters
- Magnetic bearings
- Air cycle machines
- Wind tunnel models

SERVICES
- Turbine product design & development
- Model design & development
- Turbine components design & development (proprietary capability)
- Fabrication
- Assembly
- Test

CUSTOMERS
- NASA
- B.F. Goodrich
- Boeing
- Airbus
- Lockheed-Martin
- Allison
- Pratt & Whitney
- Sundstrand
- General Electric
- Solar

Specialists In Turbine Technology.
Our Services

Helping You Maximize Turbine Performance In Aerospace Applications.

Turbine Design and Development

Design and Development of Turbine Systems and Products
In addition to turbine design, TDI has been very successful in helping aerospace firms design and develop specific turbine-related products and systems. Cooling systems, fans, ejectors, wind tunnel simulators and anything involving air movement fit into our core technology competency.

Flight Hardware Design and Development
Since 1968 TDI has worked with aerospace manufacturers in the design and development of custom turbine air motor assemblies, starter assemblies, fans, and other specialized aircraft hardware to meet specific performance objectives.

Precision Four and Five Axis Machining
TDI’s state-of-the-art four and five axis CNC machining is organized into highly productive manufacturing work cells. Skilled CNC programmers and technicians achieve precision machining of turbine blades and components ranging from complex turbine vanes to intricate, large diameter bladed disks.

Our Products

Turbine Propulsion Simulators
Since its first simulator in 1965 used in the development of the CSA transport aircraft, TDI has been a leading supplier of systems that produce both scaled flows and thrust of high bypass ratio aircraft engines for wind tunnel testing. Used by almost every major commercial aircraft manufacturer, these systems help study high speed drag interference phenomenon, power effects on high and low speed stability, high lift parameters, thrust reverser aerodynamics and more.

Air Cycle Machines
TDI’s Air Cycle Machines are the technology leader for cabin and electronics cooling on aircraft. This is the latest extension of turbomachinery technology through the incorporation of magnetic bearings.

Magnetic Bearing Technology
TDI’s magnetic bearing technology provides continual levitation of the rotors, eliminating mechanical friction common to air and ball bearings, resulting in longer life and greater reliability. This core technology provides a new solution-base for future TDI products and custom engineering.

Turbine Air Motors
TDI Turbine Air Motors are used in a wide variety of applications from OEM parts that drive helicopter and aircraft propellers in R&D scale models to spin pit drives and rotor drives. More than 15 standard models provide from 2 hp to 700 hp with operating speeds from 2000 RPM to 100,000 RPM.

Turbine Air Starters
TDI is a leading supplier of turbine air starters for ground-based gas turbine engines. TDI starters provide power, flexibility, and substantial savings as an OEM or replacement starter.