Passionate and Dedicated to your Needs

TAT Technologies Group
TAT – Key Facts

- 7 Decades within the A&D Industry
- > 500 customers, LTA worth $220M
- +100 M$ Annual Turnover in 2017
- 600 Employees
- 5 Production Sites
TAT Technologies Group

TAT Technologies Group is a strategic global partner to leading players in the aerospace industry, specializing in innovative commercial, defense, OEM and MRO solutions. Established in 1969, TAT provides design, development, manufacturing and service in 2 main areas:

» Thermal Management Solutions
» Power & Actuation Services

Our services are customized, cost effective and delivered within a short turnaround time. Some of the world’s leading OEMs, airlines, air forces and defense organizations rely on us to ensure effective operation of their fleets and mission critical systems.
New Strategy & Growth Drivers

**OEM**
Expand existing relationships

**MRO Capabilities**

**Military**
- Support SLAP program
- OEM partnerships

**Expansion**
Global Service Centers Network, Close to Customers

**Business Model**
Creating long-term partnerships with leading customers

**M&A**

**Global Synergies to maximize Efficiency**

Transition from 4 companies operating independently, to one global operation company
Thermal Management
Products and Service Samples

Design, manufacturing and MRO services for Thermal Management solutions

Heat Exchangers
Oil Coolers
Fuel submerged HX
Electronic devices cooling system
ECU
Thermal Management Solutions

Hydraulic System:
- Fuel Submerged Oil Coolers
- Fuel-cooled Oil Coolers

Environmental Control System:
- Heat Exchangers
- Condensers
- Reheaters

APU:
- Air-cooled Oil Coolers
- Conformal Air-cooled Oil Coolers

Galley:
- Air Chillers

Power Electronics:
- Cold Plates (PAO)
- Liquid-Cooled Heat Exchangers

Bleed Air System:
- Precoolers
- Ozone Converters

Power Plant:
- Air-cooled Oil Coolers
- Fuel-Oil Heat Exchangers
- Conformal Air-cooled Oil Coolers

Fuel Inerting System:
- Air-cooled Air Coolers
- Ozone Converters
TAT Limco is a wholly owned by the public traded company TAT Technologies Group.

TAT Limco located in Tulsa OK, is recognized as a world leader in the Thermal Management Solution business with primary focus on the Aerospace Industry. We are uniquely poised as a total solution provider, BOTH a premier manufacturer of original designs for Military, Regional, and Commercial applications and an FAA/EASA/CAAC approved repair station for Maintenance, Repair, and Overhaul (MRO) of Heat Transfer Equipment.

7
Decades within the A&D Industry

35
$M Annual Turnover

175
Employees
We Keep Our Clients Flying
Products and Service Samples

Design, manufacturing and MRO services for Thermal Management solutions

Heat Exchangers
Oil Coolers
Ozone Converters
Electronic devices cooling system
ECU
Quality System:

» AS9100:2009, Rev. D
» ISO 9001:2008
» AS9110, Rev. C

Quality System:

» NADCAP
» Nondestructive Testing
» Welding
Manufacturing Solutions

**Capabilities:**
- Full range of in-house Design, Manufacturing, finishing and Testing capabilities

**Types of Solutions:**
- Complete range of Manufacturing services:
  - Design to Envelope and Specifications
  - Build to Print
MRO Solutions

**Capabilities:**
- Full range of in-house Engineering, Servicing and Testing capabilities

**Types of Solutions:**
- Complete range of MRO services:
  - Clean & Test
  - Repair
  - Overhaul
  - Re-Core
Differentiation

- Engineering Capabilities
- Service Station
- Strategic Partnership
- Fast Turn-Around Time
- Global Presence
- One-Stop-Shop for Thermal Management Needs
TAT Gedera

TAT Gedera is a wholly owned by the public traded company TAT Technologies Group.

TAT Gedera is a diversified technology-based engineering and industrial company specializing in design, development and manufacture of Heat Exchangers, Cooling Systems, Cold Plates, Vapor-Cycle Air Conditioning Systems (for both land and airborne applications) flow accessories, etc. Another facet of our activities is manufacture and overhaul of Secondary and Emergency Power Systems for F16, Jet Fuel Starters for F16, Fuel Controls, Turbines and Valves etc. We also design and manufacture Air Conditioning and NBC Systems for military and civil applications such as communication shelters, armored vehicles in various configurations for custom applications.

- **5** Decades within the A&D Industry
- **32** $M Annual Turnover
- **180** Employees
We Keep Our Clients Flying
Thermal Management Products and Service Samples

Design, manufacturing and MRO services for Thermal Management solutions

- Heat Exchangers
- Oil Coolers
- Fuel submerged HX
- Electronic devices cooling system
- ECU
- Cold Plates & Antennas
Heat Exchangers

Legacy of 45 years in Heat Management solutions

Replacing tubular technology:
Tubular HXs in traditional applications, such as engine HXs, are increasingly replaced by plate-and-fin to save weight and size

Enhanced Heat Exchanger performance:
Driven by higher requirements to operating temperatures, pressures and media flows

Compactness and low weight:
Driven by layout and system constraints

Reliability:
More cycles and lifetime
Cold Plates and Antennas

TAT’s cold plates are used for power electronics cooling in both military and civil aerospace applications.

Our cold plates can be manufactured in virtually any shape to any precision and contain one and sometimes more finned layers as dictated by optimized thermal design.

TAT’s cold plates are custom-built flat enclosed heat sinks of flexible and complex configurations designed to accommodate electronic components and reject their heat by means of air or liquid coolant.

silent partner in the pods world

Made of Aluminum alloys by vacuum brazing, cold plates offer superior performance and reliability.

TAT can manufacture cold plates up to 2.35 m long. Some cold plates are part of airframe structure.
Environmental Control Units

TAT Technologies designs and manufactures a comprehensive line of Environmental Control Units for any application where heat removal is essential.

TAT is well known due to its:

» Simplicity - Integration, Installation & Maintenance
» Excellent Performance
» High Reliability
» Cost Effective

Our Systems are typically installed on Military Shelters (C4I, Communication, Power, UAV), Military Tents, Armored Vehicles, Radar, Launchers and other Special Platform.
Platforms

Marine

Land
Power & Actuation
Products and Service Samples

Design, manufacturing and MRO services for Power & Actuation solutions

Fuel System Accessories
ECS Accessories
Cooling Systems Accessories
Solenoid Unit Assy & Valve
Turbine Power Unit
Pumps
Fuel System Accessories

Some valve examples
Built-To-Spec Capabilities
Differentiation

Thermal Management Global Market Leader

Technology Leadership & Innovation

Privet Label Mass Production

5 Decades of Experience, Combined with Flexibility According to Customer Needs

Cost Effective & Competitive Offering

Highly Experienced Team of Professionals 24/7
Power & Actuation
Products and Service Samples

Design, manufacturing and MRO services for Power & Actuation solutions

- APU
- Landing Gear
- Feel System Accessories
- Engine Components
- Pumps
- ECS Accessories
- Cooling Systems Accessories
TAT Piedmont located in Greensboro, North Carolina, USA is a wholly owned subsidiary of TAT.

TAT Piedmont Component Services offers extensive component maintenance and overhaul capability for the commercial, regional, corporate, military and general aviation industry. TAT Piedmont is a FAA and EASA Part 145 Repair Station with nearly 60 years of experience in landing gear overhauls, and over 20 years of experience in Honeywell auxiliary power units (APU) and related component overhauls. TAT Piedmont also has extensive machining and metal plating capabilities to serve a wide range of products and components. TAT Piedmont's Aviation Parts Services Division maintains a full complement of items, including Line Replaceable Units (LRU), Components and Piece Parts for Commercial, Regional, Corporate and General Aviation aircraft.

6 Decades within the A&D Industry
33 $M Annual Turnover
130 Employees
We Keep Our Clients Flying

Providing MRO solutions for Power & Actuation
APU - Service Samples

Clean, Repair, Overhaul & Test

**GTCP36 Series**
- CRJ100/200
- Fokker 70/100
- BAE 146
- EMB 120
- Black Hawk

**GTCP85 and GTCP95 Series**
- 737 “Classics”
- MD-80
- C-130

**GTCP331-200/250 Series**
- Boeing 757
- Boeing 767
- A310
- A300

**APS2300**
- Emb170
- Emb190
Landing Gear - Service Samples

Main & Nose Landing Gear and Accessories

Repair & Overhaul Services

- Embraer E-170/190
- ATR 42
- ATR 72
- CRJ-100/-200
- Lockheed P3
Machining & Grinding - Service Samples

- HAAS CNC VF3 Machining Center
- HAAS CNC SL-30 Lathe
- Bridgeport CNC V10000
- Bridgeport CNC Grinder
- Coordinate Measuring Machine
- Automated Shot Peen Machine
- Manual Milling Machines
- Manuals Lathes
- OD Grinders
- Surface Grinders
- Norton CNC Gap Bed Grinder (48” swing)
Differentiation

- Strategic Partnership
- Highly Experienced Team of Professionals 24/7
- Deep Market Expertise
- Reputable Customer Base
TAT Turbochrome

TAT Turbochrome is wholly owned by the public traded company TAT-Technologies Group.

TAT Turbochrome is a leading jet engine component overhaul repair shop. The company in the Aviation Industry since 1969, serving commercial and military aviation, as well as industrial gas turbine customers to the highest quality standards. TAT Turbochrome is a FAA and EASA Part 145 Repair Station.

Amongst the company's customers are prime MRO contractors, airlines, air forces and energy companies. TAT Turbochrome has a wide range of advanced technologies and capabilities needed for repair processes that apply to many different components and industries.
We Keep Our Clients Flying
Capabilities

» NDT: X-Ray; FPI; Ultrasonic; Eddy Current and XRF
» Metallographic and Chemical Analysis
» Dimensional Inspection (3-axis computerized CMM)
» EB Weld and TIG welding
» Vacuum Brazing and Heat Treatments in Argon and Hydrogen
» Plasma and HVOF coatings
» Electro-less coating of Nickel-Boron Thallium
» Cubic Boron Nitride Coating (CBN)
» Diffusion coating (resist high temperature corrosion and erosion)
» Electro-Discharge Machining (EDM)
» CNC Machining and Grinding
Service Samples

Providing MRO solutions for jet engine components

- Fan Blades
- HPT Vanes Airfoil Replacement
- HPT Blade
- Compressor Blade
- LPT Vane
- Nickel Boron Thallium Coating
Typical Repair Samples

PW2037 Fan Blades:

As Received with FOD Damage  After Insert Installation  Repair Completion
Typical Repair Samples

HPT Vanes Airfoil Replacement:

As Received  Repair Completion
Typical Repair Samples

Compressor Rotor Blades Coating:

Plasma Coating Root Replacement

CBN Coating Tip Replacement
Differentiation

- Strategic Partnership
- Cost Effective & Competitive Offering
- One Stop-Shop for Engine Components MRO
- Fast Turn-Around Time
- Technology Leadership & Innovation
- Reputable Customer Base
Thank You