



# ETG AEROSPACE MANUFACTURING SECTOR



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## ETG ARE YOUR AEROSPACE SUPPLY CHAIN PARTNER

Precision, safety, and reliability are all key components of excellent aerospace manufacturing. As a leading aerospace machining supplier, ETG provides an extensive range of carefully crafted machine tools and manufacturing solutions that have been developed specifically for the world's most safety-critical industry. Our technical partners have spent decades developing aerospace CNC machine tools and overcoming all of the challenges – so that you don't have to.





## CHIRON GROUP

Chiron is world-renowned for its turnkey solutions in a variety of sectors. Chiron delivers industry-leading productivity enhancements that have perfection, maximum safety, quality, and durability set as the benchmark.

In an industry that is facing profound structural changes and the pressure to decrease costs, the Chiron Group provides manufacturing solutions that streamline the operation and production processes for maximum efficiency. To operate effectively in this difficult field, aerospace manufacturing companies need production concepts that are future-proof.

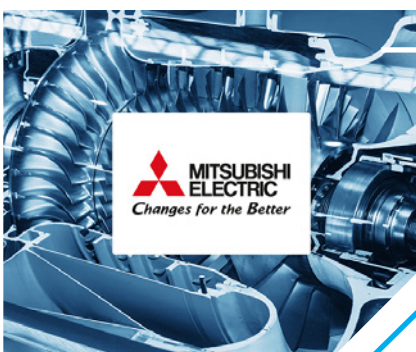
To ensure that an aircraft takes off safely and on time, there are structural requirements that must be met, and various procedures that must be carried out seamlessly in sequence.



## NAKAMURA TOME

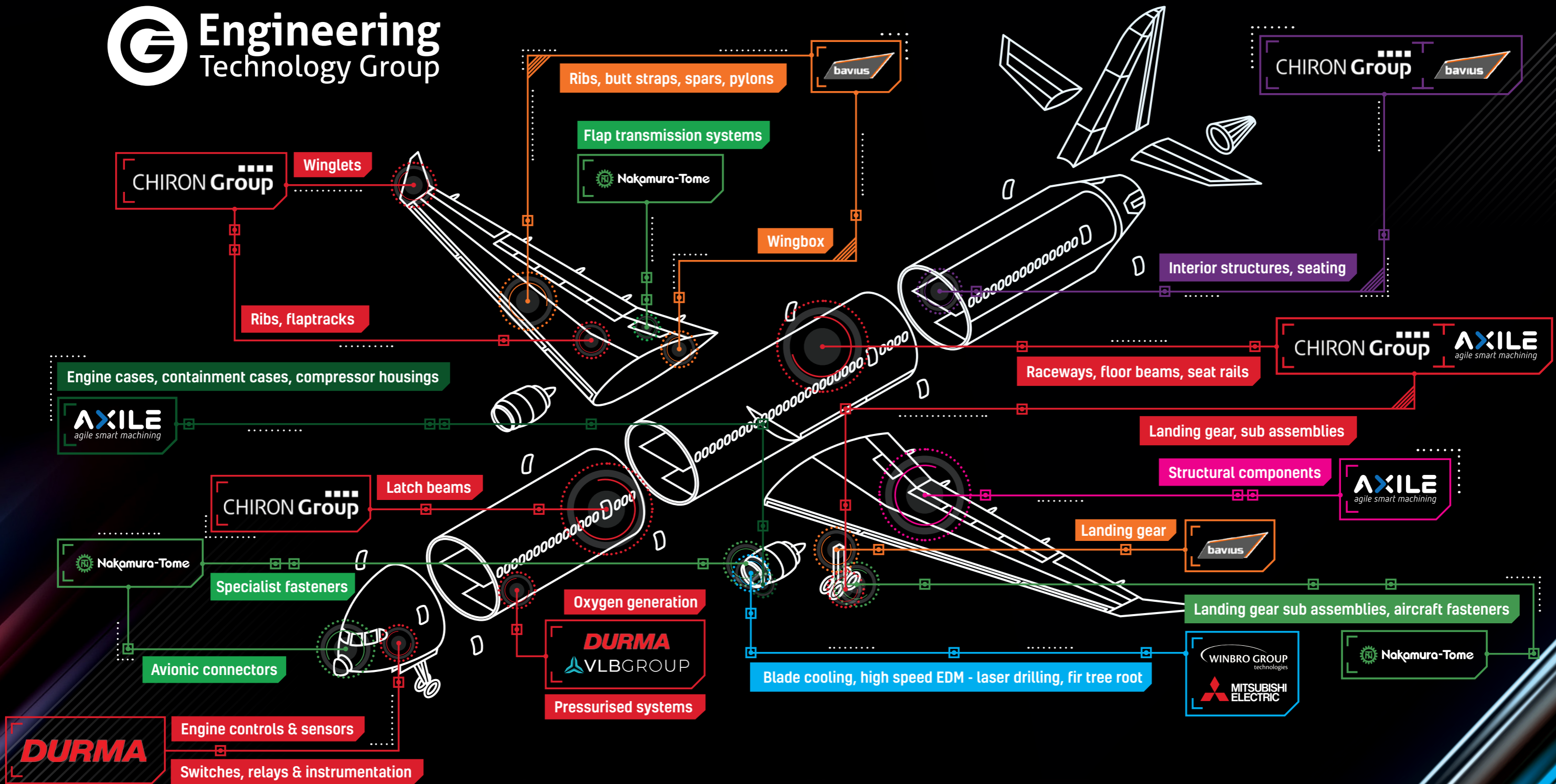
Established as a world leader in the field of multi-tasking mill/turning machines for the aerospace industry, Nakamura-Tome CNC turning centres and machining centres are applied worldwide. In the aerospace manufacturing sector, Nakamura turning centres are widely used by OEMs and the supply chain as the go-to solution for producing flap transmission systems for the wings, connectors, and safety-critical components for the avionics, specialist fasteners and parts for the engines and casing, sub-assemblies and fasteners for the landing gear, and so much more.

The Nakamura-Tome machines demonstrate a combination of world-class kinematics, industry-leading CNC control systems, and automation technology that is the envy of machine tool manufacturers worldwide – but it's far much more than this. Nakamura-Tome is also known for its rigid and robust platform that enables the automation, clever Industry 4.0 enabled software, and kinematics to work in harmony; delivering uncompromising stability, repeatability, flexibility, and above all, the guarantee of productivity and quality when machining the most challenging materials known to the industry. This is why the CNC Machining aerospace industry, like so many other sectors, depends on Nakamura.

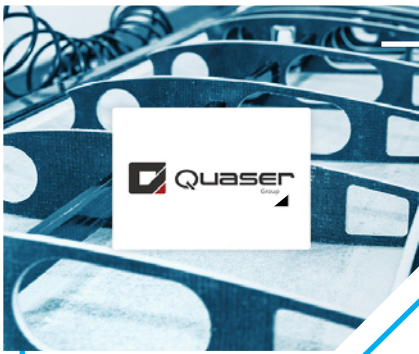


## MITSUBISHI ELECTRIC

Mitsubishi EDM technology is synonymous with the production of complex components and exceptionally durable materials; this is why the brand is so frequently seen in the aerospace supply chain. Mitsubishi's Electric Die-sinking EDMs, Wire-cut EDMs, and fine-hole EDMs available from ETG enhance productivity with high-speed accuracy that makes work easier for both the first-timer and long-term users of this technology, handling everything from simple to complicated shapes. Mitsubishi EDM machines can be found throughout the aerospace industry and as the world continues to move toward the next generation of ultra-strong lightweight aircraft, the application of Mitsubishi EDM technology is destined to lead the way in this industry.



# AEROSPACE PRODUCTION



## QUASER

Quaser is a brand with a complete range of 3 to 5-axis vertical machining centres, pallet-loaded machining centres, horizontal machining centres, and automation cells that are extremely powerful, precise, robust and highly productive machine tools. The Quaser line-up excels in the aerospace industry; a sector that demands stability, rigidity, performance and power.

If you invest in Quaser machine tools from ETG, you will experience endless productivity benefits; improved production, surface finishes, and excellent component quality derived from a machine tool range that is the epitome of this standard.



## PIETRO CARNAGHI

Pietro Carnaghi is the 'go-to' name for the machining of jet engine components, and has been supplying its machine tools to the leading aerospace manufacturers for decades. The company's vertical lathes are involved in the production components related to the most sophisticated aeronautical projects known to the industry.

Pietro Carnaghi manufactures critical aero-engine components such as disks, casings, drums, containment cases, compressor housings, and rings that require turning, milling, drilling and grinding on materials such as inconel and titanium.



## BALANCE SYSTEMS

Balance Systems is a world leader in balancing machines for rotating components and process control systems. This technology partner caters for every facet of the aerospace industry; with high-performance balancing machines for electric motors, shafts, propellers, couplings, and a host of other safety-critical components and assemblies.

Why Balance? In electrical assemblies and systems, rotor balancing is often necessary. Even a slight unbalance may cause high vibration and damage to components. In the case of rotors; balancing reduces noise, vibration, and energy consumption – within a sector that has a laser-like focus on safety, lightweight materials, and energy efficiency- balance is critical.



## WINBRO GROUP TECHNOLOGIES

Founded in the 1980s, the Winbro Group quickly established itself in the aerospace sector by applying its advanced EDM machine systems to drill cooling holes in turbine blades, vanes, and combustors. The company has proven itself as the global technology leader in the sector and offers its unrivalled technology through ETG.

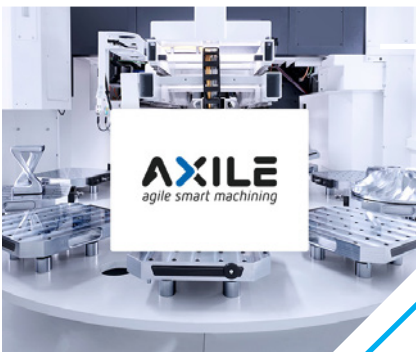
The Winbro machines are unique in their capabilities and are extensively utilised by the world's leading aerospace original equipment manufacturers (OEMs), to generate complex cooling holes and forms in the most challenging applications and materials.



## BAVIUS

With horizontal, profile, gantry, and universal machining centres that are all dynamic machine tools for the simple to complex 5-axis machining of large components, bavius is a brand that you will see throughout the aerospace supply chain.

Whether you are machining small components or if you need a table that can accommodate aerospace structural parts to 47m long with widths of 7m on the Gantry SD – bavius is the name you need. For larger components in the aerospace industry, bavius is a household name. In the production of aerospace wings, bavius machines are excellent at producing ribs, butt straps, spars, pylons, and wing boxes.



## AXILE

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## VLB Group

Aircraft rely heavily on high-quality ultra-precise tubes and piping for the delivery of everything from fuel and oil to air and water. In the aerospace industry, tubes and pipes are critical components – and that is why the VLB Group is such a major contributor to this sector.

VLB Group designs and manufactures a wide range of CNC tube bending machines and plate forming solutions, available exclusively in the UK and Ireland through their partnership with ETG.



## DURMA

Aerospace manufacturers that provide pressed, punched or formed sheet metal parts will be delighted to know that the Durma brand has arrived. The product range stretches from servo, hydraulic and electric press brakes, laser and fibre laser cutting, bending centres, plasma cutting, guillotine shears, tube bending, punch presses and automated loading/unloading technology for lights-out production. All of this can be enhanced further with solutions to integrate multiple machines into a production line with sheet stacking, rotary tables, part ejection and pick to pallet, ERP and production planning integration, Industry 4.0 and Cloud solutions and real-time production analysis.



# Making Engineers Champions...

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