



ADVANCED CHEMICAL ETCHING LTD

AEROSPACE



AEROSPACE, DEFENCE AND SPACE

Quality, speed, precision and innovation are four of the key drivers that make ACE such an instrumental partner to the Aerospace and Defence sector, delivering bespoke components for a range of industry applications.

Our growing reputation has seen us working jointly with major players within the industry, developing major projects with emphasis on emerging technologies. An increasing move to miniaturisation of parts, alternative material usage and greater supply chain management all represent significant opportunities for growth in the coming years.

PERFECT PARTS

ACE are highly proficient in producing safety critical etched components in the majority of compliant aerospace grade materials, including Beryllium Copper, Phosphor Bronze, Inconel®, Nimonic®, Incoloy®, Stainless Steel, Aluminium, Aluminium Bronzes, Titanium and Molybdenum. Unlike other metal profiling processes, ACE's chemical etching solution produces parts with zero heat-stress, distortion, burrs or surface imperfections. Every component we produce is of the same consistent quality – from the first etching to the last.

The ACE etch process can produce complex features and geometries in sheets up to **600mm x 1500mm** and **thicknesses** ranging from **0.005mm to 2.5mm**, at **tolerances** of **> ±0.025mm**. Chemical etching is ideal for intricate microetched channels for heat exchanger shims/plates to maximise heat transfer and laminar flow and complex shapes of heater elements, to fit aircraft fuselage. Also capable of producing **flat burr free** shims, washers and gaskets. With **no expensive hard tooling**

ACE has the **flexibility** to produce between **ones and millions** of consistent parts time after time with a process that doesn't cost more for **highly complex profiles**.

ACE can provide a single source, component, supply solution and offer a number of value added processes such as inhouse forming, finishing and plating in a variety of metals.

Every component we produce goes through our rigorous inspection and quality assurance process. XRF (X-ray fluorescence) can be used to validate incoming metals to certify to customer specification. ACE uses XRF to validate and certify our process chemistries to ensure consistent etching and full process control. We work closely with engineers and designers to ensure that all parts conform to exact specification, every time.

*Contact ACE today on **+44 (0)1952 416 666** to find out what we could produce for you – whether it's 1s or millions.*



TYPICAL ETCHED COMPONENTS

- » Heat exchanger plates
- » Precision shims & gaskets
- » Intake grilles
- » Meshes & filters
- » Instrument panels
- » Contacts/terminals
- » Control gear components
- » Laminations
- » Interior lighting components
- » RFI shielding
- » Diaphragm springs
- » Fuel cell plates
- » Busbars for power components

METALS

- » Steel (all grades and hardness's)
- » Stainless steel (all grades and hardness's)
- » Aluminium alloys
- » Copper alloys
- » Nickel
- » Nickel alloys
- » Titanium alloys

A PROCESS OF INNOVATION

ACE CORE CAPABILITIES OVERVIEW

Photo Chemical Etching (net shape)	Technical Information
<ul style="list-style-type: none"> ⬢ Low-cost digital tooling, (no hard tooling for etched parts) ⬢ Burr-and stress-free, flat etched parts ⬢ Unlimited complexity (etching is not a profiling process, so complexity doesn't equal high cost) ⬢ Lead-times in days 	<p>Metals Almost all Metals</p> <p>Thickness 0.005mm – 2.5mm</p> <p>Component size..... 575mm x 1475mm (max)</p> <p>Tolerances > ±0.025mm</p> <p>Volumes One to Millions</p> <p>Min feature >0.07mm</p> <p>Forming, machining & assembly In House</p>

Aluminium Etching (net shape)	Technical Information
<ul style="list-style-type: none"> ⬢ Proprietary process for etching aluminium ⬢ Clean, smooth edges ⬢ No expensive hard tooling ⬢ Low-cost design iterations – fast turnaround ⬢ Burr-and stress-free – metal properties unaffected ⬢ 100% tighter tolerances than the industry standard ⬢ Serial production capacity 	<p>Metals All grades</p> <p>Thickness 0.025mm – 2.5mm</p> <p>Component size..... 575mm x 1475mm (max)</p> <p>Tolerances > ±0.025mm</p> <p>Volumes One to Millions</p> <p>Min feature >0.07mm</p> <p>Forming, machining & assembly In House</p>

Titanium Etching (net shape)	Technical Information
<ul style="list-style-type: none"> ⬢ Lead-times in days ⬢ Unlimited complexity (pay for the first hole only) ⬢ No hard tooling ⬢ Low-cost set up and design iterations ⬢ Burr-and stress-free components ⬢ Accuracy to ±25 microns ⬢ Fine lines as low as 70 microns 	<p>Metals..... All grades</p> <p>Thickness..... 0.025mm – 1.0mm</p> <p>Component size 300mm x 500mm (max)</p> <p>Tolerances > ±0.025mm</p> <p>Volumes..... One to Millions</p> <p>Min feature >0.07mm</p> <p>Forming, machining & assembly..... In House</p>