

Plating Services Geared to the Aerospace Industry



The plating department at All Metals is housed in its own 12,000 square foot building and has consistently provided the highest quality of expertise in the industry, with many key employees having over 25 years of experience. This building maintains 75 plating tanks and four ovens to keep up with our customers' plating demands.

Our plating department has collaborated with many prime contractors to develop special processes to meet a specific need. The department's capabilities range from titanium cadmium plating to precious metal plating such as silver. Our quality in this department is unmatched in the metal finishing industry.

CAD PLATING

Thin but mighty, cadmium plating is widely appreciated for its compatibility with aluminum and steel, and its resistance to corrosion, even in extreme environments. Additional benefits include strength, malleability, lubricity, solderability and softness; it is also frequently used as a base for primer and paint.

TITANIUM CAD

Ti-Cad plating significantly improves the corrosion resistance above cadmium plating alone. The titanium molecules allow hydrogen gas to escape easier and thus reducing the effect of hydrogen embrittlement. AMP produces one of only 3 Boeing approved Titanium Pastes (Ti-Plate 504).

ELECTROLESS NICKEL

Electroless nickel plating yields uniform, precision coatings to ID and OD surfaces of complex shapes. This nickel-phosphorous coating offers superior corrosion resistance, hardness, and wear resistance. AMP offers both mid-phosphorus and high-phosphorus electroless nickel coatings for various substrates.

COPPER

Copper is one of the most diversely used plating processes. It can be applied as an undercoat, a strike between substrates, or as a final finish. Copper plating provides benefits including corrosion resistance, solderability, conductivity, shielding, and cosmetics.

TIN

Tin plating is a common, electrolytic plating process. By applying a coating of tin to the substrate, the part acquires a conductive and solderable finish. Tin plating is often used in the aerospace industry to protect items made from base metals like copper, nickel and other non-ferrous metals.

SILVER

Silver plating is an electrolytic plating process used to create an effective layer of protection to a base metal. The coating alters the surface properties to improve conductivity and solderability while standing up to time. Silver plating is popular for specialty fasteners and electronics.

ELECTROPOLISH

Electropolish, or electrolytic polishing, is an electro-chemical process. On stainless steel and nickel based alloys electropolish can be used to remove a small amount of material, exposing a shinier more passive surface which may be used to enhance cosmetics, prepare for NDT, or to prepare for subsequent processes, as necessary.

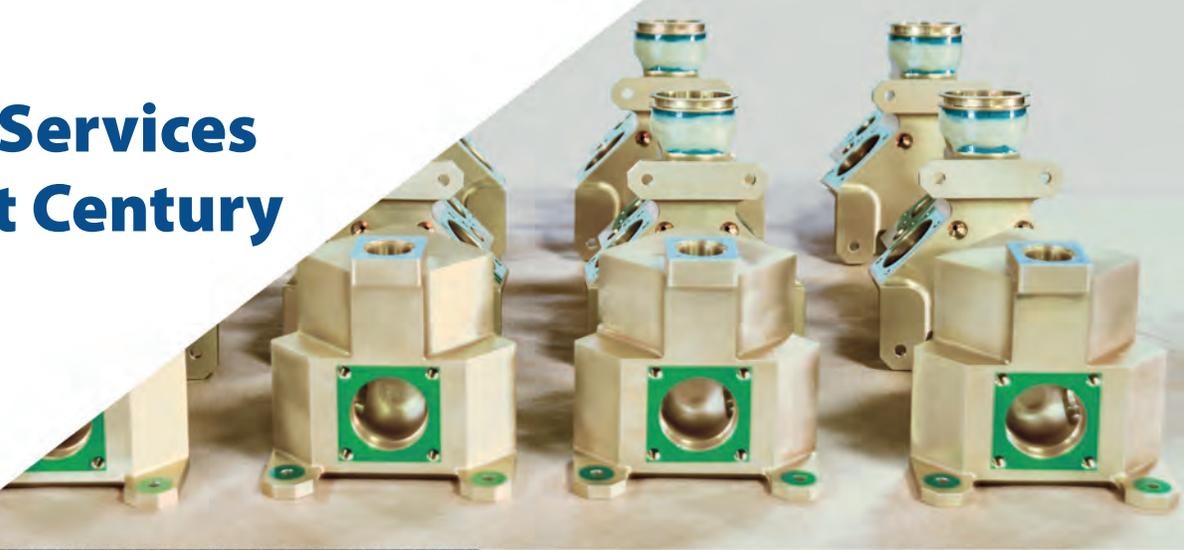


All Metals Processing
of Orange County, LLC

(714) 828-8238



Anodizing Services for the 21st Century



Our Anodize Department is capable of processing small parts and fasteners as well as large structural components and parts up to 12 feet in length.

The processes we offer consist of chem film, chromic acid anodize, boric-sulfuric acid anodize, sulfuric acid anodize, and hard anodize. Anodized parts can also be colored using a variety of prepared and ready organic dyes or left natural.

The Anodize Department is located in a 12,000 square foot stand-alone building incorporating forty two (42) 12' tanks with an overhead crane line and the Department's own masking and racking areas. This Department provides the highest quality and efficiency of anodizing services available on the market.

CHROMIC ANODIZE

Chromic acid anodize, or Type I, is the oldest-known anodizing process and commonly used for corrosion protection under extreme service conditions or as a base (pretreatment) for paint systems. Voltage is increased throughout the process, creating an opaque film that is thinner, softer and more ductile than other methods of anodizing. This property allows the metal to be dyed or painted after the process.

BORIC-SULFURIC ANODIZE

Boric-sulfuric acid anodize, or type IC, is a popular industry alternative to Chromic Anodize. Many OEM suppliers have already decided to use Boric, specifically calling it out on their prints and specifications on newer aircraft or for parts that have been modified for re-engineered airframes.

SULFURIC ANODIZE

Sulfuric acid anodize, or Type II, is the most popular anodizing solution, particularly for aluminum. The sulfuric acid coating changes the properties of the substrate, increasing the metal's wear and corrosion resistance, improving its ability to retain lubricants, and providing electrical and thermal insulation. It offers a broad range of finish thicknesses that are generally categorized as "moderate." On an aesthetic level, this type of anodizing also makes for great results when dyeing the metal with vibrant colors.

HARD ANODIZE

Hardcoat anodize, or Type III Hard Anodize, is an electrochemical process used to build up a dense layer on aluminum components. Thicker and denser than Type II, hard anodize is often specified for applications subject to extreme wear or corrosive environments requiring superior abrasion resistance, a thicker coating, or enhanced electrical insulation. Since the thickness can be built up, hardcoat is valuable for salvaging worn or over-machined parts.

If sealing is required subsequent to any of the anodize services AMP offers several sealing solutions including nickel acetate, hot DI water, sodium dichromate, duplex, and PTFE.

CHEMICAL CONVERSION COATING

Chemical conversion coatings are usually used as pretreatment on parts to prepare the surface for excellent masking and paint adhesion. Typically applied by immersion and can also produce hydrophobic, abrasion resistant, or conductive films.



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www.AllMetalsProcessing.com | 8401 Standustrial Ave. | Stanton, CA 90680

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Painting and Coating Services from Tip to Tail



With creative masking techniques and a long history of masking experience, our paint department can handle very technical and extremely complicated multi-process parts. Housed within its own 12,000 square foot building this department consists of three large paint booths and three large ovens.

Our paint department is continually developing new techniques to improve and speed up the masking and painting process to give our customers the most value and best service possible. We are driven and passionate in our ability to exceed our diverse set of customer specifications and quality requirements. Our expert painters take on the skilled task of providing high-quality coatings, and assuring our quality controls are in place to maintain a controlled environment.

WET PRIME & TOPCOAT

After completion of cleaning or pretreatment, parts are ready for masking and primer application. Various forms of masking are used to allow paint only in a certain area or keep it away from critical surfaces. Topcoats come in a variety of colors, shades, and gloss and adhere well to a primed surface.

SOL-GEL

Sol-Gel is a specialized coating used primarily on aluminum and titanium to prevent corrosion and promote paint adhesion. It is sprayed as liquid that has been activated to form bonds on a molecular basis across the coating. The resulting structure is a dense, thin protective film.

POWDER COATING

Powder Coating is a coating, formed by powder that is electrostatically applied to a part. It allows for a consistent thickness and can be built up to a thickness beyond the point that liquid paints would adhere. It is cured at elevated temperatures to allow it to form a tough, hard finish.

TEFLON COATING

Teflon coatings are precision applied coatings that handle certain specific abrasive environmental conditions. They are typically 0.0005" thick, have a low coefficient of friction, and are chemically inert. They are used on both metallic and non-metallic surfaces such as gears and bearings.

DRY FILM COATING

Dry Film Lubricants are used in many applications where customers want to add lubrication to items such as threads and prevent galling. This coating is commonly used on many aerospace fasteners and contains solid materials which lower the friction and resistance between interacting surfaces.

FUEL TANK COATING

Fuel Tank coatings are made to endure the harsh corrosiveness of fuel contaminants in the fuel tank and other harsh chemical environments. They are usually chemically cured and provide maximum protection from fuels, oils, salt water, and hydraulic fluid.



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NDT Services for the Most Stringent Requirements



Our non-destructive testing department consists of four stations with a full range of NDT capabilities, including clean, etch, magnetic particle inspection, hardness, conductivity, nital etch and fluorescent penetrant inspection.

This department is maintained and operated in its own separate building by level 1, level 2, and level 3 testing personnel. Our dedicated staff is responsible for ensuring the parts are up to spec.

MAGNETIC PARTICLE INSPECTION

Magnetic particle inspection is a non-destructive testing process for detecting surface and slightly subsurface discontinuities in ferromagnetic materials such as iron, nickel, cobalt, and some of their alloys. The process puts a magnetic field into the part. The magnetic lines of force are perpendicular to the direction of the electric current.

The presence of a surface or subsurface discontinuity in the material allows the magnetic flux to leak. Ferrous iron particles are then applied to the part. If an area of flux leakage is present, the particles will be attracted to this area. The particles will build up at the area of leakage. The leakages can then be evaluated to determine what it is, what may have caused it, and what action should be taken.

FLUORESCENT PENETRANT INSPECTION

Fluorescent Penetrant Inspection (FPI) is a process for inspecting the surface of metals and other non-porous materials for defects (cracks, pits, etc.) that may compromise the integrity of a part, using a fluorescent liquid that fills the defects and then illuminates them under black light. FPI is a simple yet effective method, yielding high value for low cost. While limited to detecting surface defects, it is highly sensitive and able to identify even the smallest imperfections.



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