



# Metal Finishing

Comprehensive Capability

Next Generation Surface Treatments

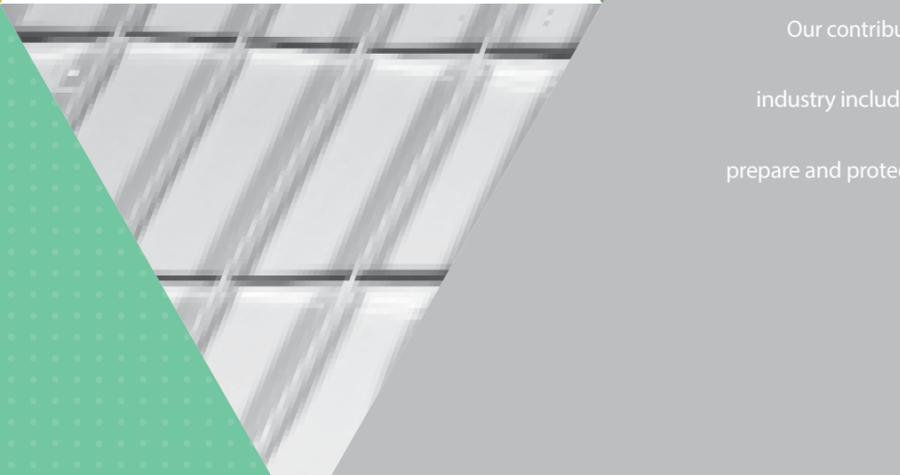
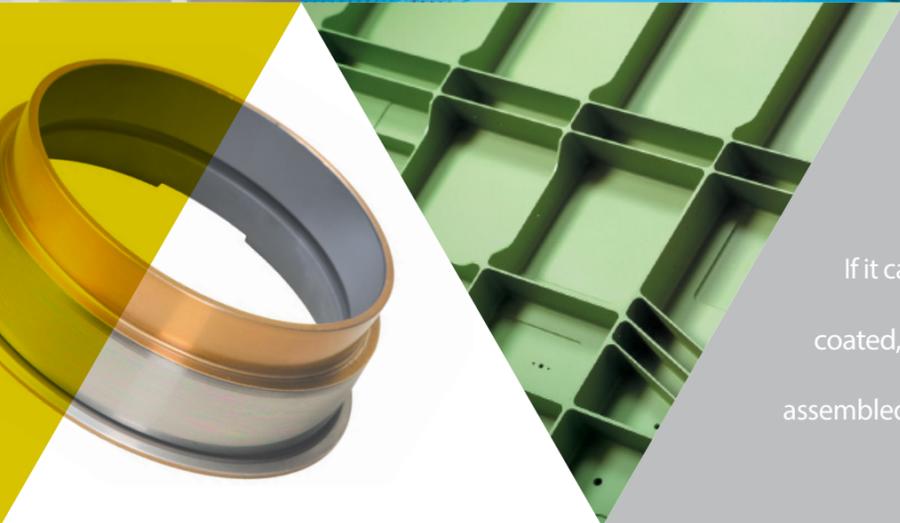
Large Parts

Complex Parts

FAA/EASA Authorized Repairs

Bench Top Assembly

**PCC** *Aerostructures*



## PCC Metal Finishing.

If it can be cleaned, sanded, ground, peened, coated, primed, painted, tested, polished, assembled, or lubed, PCC can handle it.

Our contribution to the aerospace and defense industry includes every process necessary to prepare and protect a system or vehicle.

# Turn to PCC for essential metal finishing for the smallest fasteners to the largest bulkhead.

### Comprehensive capability delivered locally.

PCC is committed to providing you with the best processes and practices available anywhere — at locations that are convenient for you.

Today, seven sites throughout the United States, Canada, and Mexico work together to comprise a large geo footprint with complete capabilities. Each follows strict PCC standards to assure consistent quality, and works with its customers to provide quick turnaround and outstanding service.

In addition, PCC operates vertically integrated sites in England, China, and Mexico with expanded component manufacturing and kitting capability.

### Authorized FAA and EASA Repairs.

Trained and skilled mechanics offer PCC customers on-site, bench work solutions. PCC operates FAA/EASA Part 145 approved repair stations with certificate ratings covering a broad range of parts.

### Just the right size for your job.

Multiple processing and finishing sites mean at least one will always be perfectly equipped and scaled to handle the specific requirements of your project. The PCC network gives you the widest possible range of processes, all accessed through a location convenient for you.

### Next generation surface treatments.

Are you looking for an eco-friendly coating for corrosion protection, wear resistance, lubricity, or some other requirement? Consult PCC. We offer a full array of approved cadmium-free and chromate-free processes and coatings, including TSA anodizing, zinc-nickel plating, aluminum paint, and thermal spray coatings.

### Jobs bid complete.

PCC uses its vertically integrated model to bid jobs complete whenever possible, saving you transaction, transit, and inventory carrying costs.

### For more information, read on.

This brochure contains additional information on our metal finishing processes and services, as well as an up-to-date index of our capabilities. Take a look at our comprehensive capability, and then let us know what we can do for you.

**Don't see what you're looking for? Email or call us, and we'll find it for you.**

#### Non Destructive Inspection, NDI

NDI methods are used to substantiate proper processing of the treated components and search for component defects such as cracks, porosity, voids, burns, and inclusions. PCC offers Nadcap certified NDI processes including magnetic particle inspection, nital etching, fluorescent penetrant inspection, hardness testing, and conductivity testing.

#### Shot Peen

Shot peening is used to work-harden metal and to increase its fatigue strength. Shot-peening benefits include increased resistance to fatigue failure, corrosion fatigue, stress corrosion cracking, hydrogen assisted cracking, fretting, galling, and erosion caused by cavitation. PCC offers both automated and manual shot peen surface treatments.

#### Anodize

Anodizing creates an abrasion and corrosion resistant oxide film on aluminum parts, which provides electrical insulation and galvanic corrosion protection. The process also forms an excellent adhesion base for organic coatings, paints, and lubricants. PCC's anodizing processes include sulfuric acid, chromic acid, hard anodizing, boric sulfuric acid, tartaric sulfuric acid, dyed and non-dyed anodizing, alodine (chemical conversion), colored and clear alodine.

#### Paint

Painting or organic finishing is used for a variety of purposes including corrosion protection, chemical resistance, electromagnetic effect management, lubrication, and aesthetics. PCC processes include epoxy and polyurethane primers and topcoats, fuel tank coatings, solid film lubricants, Sol-Gel, DriLube, Teflon<sup>®</sup>, EMI/RFI shielding, powder coating, and conventional finishes. Plating, thermal spray, and painting complement each other to provide a broad range of finishing choices. Please contact us to discuss the best finish or combination of finishes for your application.

#### Plate

Plating protects and improves the performance of aircraft components for improved resistance to corrosion and wear, increased hardness, better electrical conductivity, and other desirable attributes. PCC offers a full range of plating processes including high run barrel plating, standard racking, wiring, and other methods to cover unique and complex part configurations. Our plating processes include chrome, cadmium, nickel, copper, zinc-nickel, and Ti-Cad.

#### Thermal Spray

Thermal spraying allows coating applications of high performance materials such as metals, alloys, ceramics, and carbides to be applied to relatively easy-to-work and more economical base materials to significantly enhance component performance. Thermal spray coatings offer tremendous improvements in component performance such as wear, heat, oxidation, and corrosion resistance, making them popular for both new design and repair and overhaul. PCC offers a full range of thermal spray services including HVOF, plasma, wire spray, and flame spray.





- Machining
- Grinding
- Finishing Processes
- Large Parts
- Complex Parts
- Component Overhaul/Repair
- Bid Complete



#### Machining/Grinding/Finishing Processes

A wide range of processes are used to meet precise dimensional, surface finish, and aesthetic requirements — and PCC has them all. Whether the need is high volume production or a single part, we finish parts to the most exacting standards. PCC is a leader in grinding exotic

metals such as superalloys, ceramics, and thermally applied coatings. Our capabilities include precision ID and OD grinding, spherical ID and OD grinding, hard chrome grinding, honing, polishing, CNC and conventional grinding, centerless grinding, and superfinishing.

### P C C S P E C I A L T Y C A P A B I L I T I E S

#### Large Parts

Our customers count on PCC to finish some of the largest parts in the aerospace industry including landing gear cylinders, wing skins, spars, and major bulkheads. Our aluminum capabilities include anodizing, NDI, and painting of parts to 40 ft x 2.5 ft x 6 ft. PCC's titanium part capacities include cleaning and passivation of parts up to 18 ft x 2.5 ft x 7 ft with NDI, and painting to lengths of 40 feet. We process CRES and superalloy parts as large as 18ft by 2.5 ft by 7ft, including passivation, plating, thermal spray, and grinding.

Our fixed wing aircraft component overhaul product line consists of airframe and flight control assemblies, including: flap and slat tracks, carriages, landing gear cylinders, pistons, struts and hardware (hanger link assemblies), engine components, composite assemblies (aluminum spray), nacelles (flame spray hardening), and mechanisms.

Our rotor wing aircraft component repairs include transmission components (bearings, sleeves, swash plates, and supports) and landing gear components.

#### Complex Parts

Whether the requirement is plating, painting, or another finish, PCC has developed processes for economically finishing the most complex parts. Our CATIA driven masking processes allow for precise masking of a wide range of components, and when combined with innovative fixturing, provide surprisingly short processing times for the most complex of parts. Through best practice sharing across our sites, we also continue to improve our special masking and processing techniques for small and intricate parts, allowing us to economically service the full range of industry requirements.

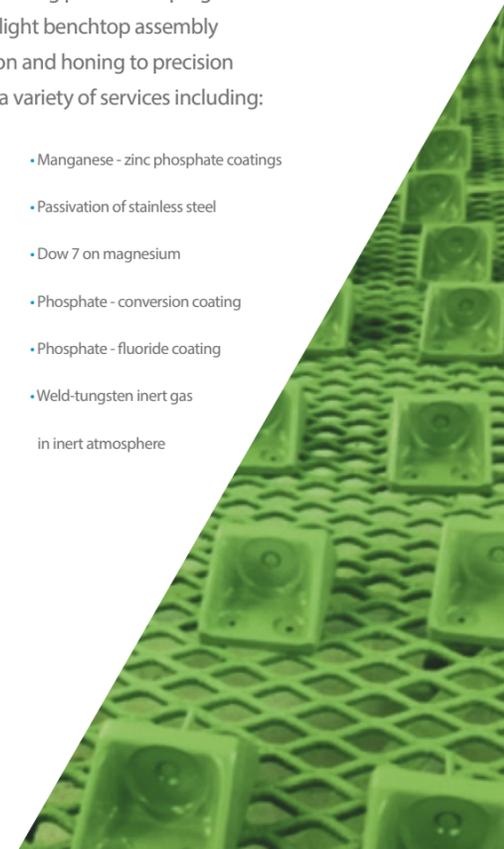
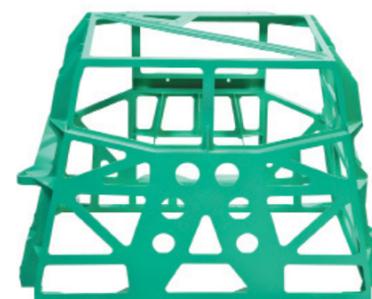
#### Bid Complete

Whenever possible, PCC will bid your job complete, saving you time and money. For recurring production programs such as flap tracks, we offer light benchtop assembly including bushing installation and honing to precision tolerances. We also provide a variety of services including:

- Anti-fretting for titanium
- Black oxide - conversion coating
- Brush plating/electrodeposited
- Chemical blackening
- Cleaning - descaling of titanium
- Corrosion protection – magnesium
- Impregnation
- Magnesium - conversion coating
- Manganese - zinc phosphate coatings
- Passivation of stainless steel
- Dow 7 on magnesium
- Phosphate - conversion coating
- Phosphate - fluoride coating
- Weld-tungsten inert gas in inert atmosphere

#### FAA/EASA Bench Top Overhaul and Repair

Trained and skilled mechanics offer PCC customers on-site, FAA/EASA-authorized bench work solutions. PCC ratings include limited airframe, accessories, powerplant, NDI, propeller, landing gear, and specialized service. All FAA-approved repairs include an 8130 certificate.





▶▶▶ Largest Airbus-approved TSA anodize line in North America



▶▶▶ Aluminum parts undergoing fluorescent penetrant testing

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- Bench Top Assembly



	Cleaning		Anodizing		Painting, Plating, and Coating					Inspection and Other Services				
Processing Sites	Passivation	Chromic Acid	Sulfuric/Boric Sulfuric Acid	Tartaric Sulfuric Acid	Paint	Cad/Nickel Plating	Chrome Plating	Zinc-Nickel Plating	Thermal Spray	NDT	Heat Treat	Repair Station	Shot Peen	Grinding/ Superfinishing
Alloy Processing Compton, California	●	●	●	●	●					●			●	
Primus International Suzhou, China	●	●	●	●	●					●	●		●	
Protective Coatings Kent, Washington	●	●	●		●	●		●		●			●	
SPS Aerostructures United Kingdom	●	●			●				●	●	●		●	●
SPS China Co., Ltd. Kunshan, China	●		●		●					●	●			
Southwest United Brampton, Ontario (API)	●					●	●		●					●
Southwest United Concord, Ontario (CEEL)	●	●	●		●	●				●			●	
Plasma Coatings Gardena, California (PCC)	●				●				●			●		●
Southwest United Tulsa, Oklahoma		●	●		●	●	●	●	●	●		●	●	●
Southwest United Querétaro, Mexico		●	●		●					●			●	
Maximum Part Dimensions														
Length	18ft / 5.4m	50ft / 15.02m	50ft / 15.02m	50ft / 15.02m	40ft / 12.0m	8ft / 2.4m	5ft / 1.5m	78ft / 2.3m	6.2ft / 1.9m	50ft / 15m	6.6ft / 2m	Call	45ft / 13.5m	6.8ft / 1.9m
Width	2.5ft / 0.75m	4ft / 1.2m	4ft / 1.2m	4ft / 1.2m	2.5ft / .75m	3ft / 0.91m	6ft / 1.8m	2.2ft / 0.6m	1.6ft / 0.50m	6.6ft / 2m	6.6ft / 2m	Call	8ft / 2.4m	8ft / 2.4m
Depth	7ft / 2.1m	12ft / 3.6m	12ft / 3.6m	12ft / 3.6m	6ft / 1.8m	4ft / 1.2m	7.6ft / 2.3m	3ft / 0.9m	7ft / 2.1m	20ft / 6m		Call		



Nadcap Approvals

All Sites



Nondestructive Testing

All Sites



Shot Peening

Automated and Manual



Anodizing

Chromic, Boric-Sulfuric, Sulfuric, Tartaric Sulfuric Acid



Plating Processes

Chrome, Nickel, Copper, Cadmium, Zinc-Nickel



Painting and Coatings

DriLube, Teflon, EMI/RFI Shielding, and Conventional



Large Part Capability

All Aerospace Materials



Thermal Spray

HVOF, Plasma, Wire Spray, Flame Spray



Grinding and Superfinishing

Thermal Spray Sites



Repair

FAA/EASA Part 145 Approved Repair Stations



SPS Aerostructures - United Kingdom  
Vertically integrated site with sheet metal, machining, kitting and assembly.

SPS China Co., LTD - Kunshan  
Vertically integrated site with sheet metal, machining and assembly.

Primus International - Suzhan  
Vertically integrated site with machining and assembly.

Southwest United - Mexico  
Vertically integrated site with machining and assembly.

**PCC. Guided by a vision of service to the aviation industry.**

Precision Castparts Corp. employs nearly 30,000 employees at more than 160 manufacturing facilities worldwide. Our mission is to be the world's leading Tier II supplier of highly engineered metallic and composite parts, kits, and assemblies to the global aerospace and defense industry.

Today, with few exceptions, every aircraft in the sky flies with parts made by PCC.

Landing gear cylinder entering passivation tank ▶▶▶



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Compton, CA 90220  
T 310-635-9995  
F 310-635-9936

Protective Coatings Inc. (ProCoat)  
1208 4th Ave. N.  
Kent, WA 98032  
T 253-854-9330  
F 253-859-0749

Primus International Suzhou  
200 Suhong Rd.  
Suzhou Industrial Park  
Jiangsu, China 215021  
T 86512-6258-2528

SPS Aerostructures Annesley  
Willow Drive, Sherwood Business Park  
Annesley, Nottinghamshire NG15 ODP  
T 44-1159-880000  
F 44-1159-880001

SPS China Co., Ltd. Kunshan  
8 Nanbang Rd.  
Kunshan, Jiang Su Province 215300  
T 86-512-5771-9210

Southwest United De Mexico S.A. de C.V.  
Ave. De la Luz No. 24 Int. 16  
Querétaro, QRO 76120  
T 011-52-422-209-5184

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 **PCC** Aerostructures