

Central Florida Jobshop Specializes in Critical Finishes For Aerospace/Defense

In a time of economic uncertainty and increasing global competition, a versatile jobshop in Central Florida has expanded by opening a new facility to service the aerospace and defense sector.



Donny Cooper

Coating a Missile Clean Room

One of the specialty finishing processes offered by Techni-Chrome is chemical coatings. This service led to one of the most memorable jobs that owner Donny Cooper can remember.

The U.S. Air Force called for bids to provide a chemical coating on a clean room that would be used for launching Titan missiles. The call included specifications for providing the coating, which had to be done on site, in a room with movable walls, large enough to handle the assembly and preparation of Titan missiles for launch. Cooper took a look at the proposal, then told Air Force officials that there was no way the project could be successful as it was proposed. Instead, he offered an alternative approach to accomplishing the task.

"I'm sure that's the only reason I got the job," said Cooper. "There were probably larger shops than mine bidding the job. I was convinced their approach was wrong, and I told them. They studied my alternative proposal, and we got the job."

Under tight security, Cooper took a small crew and worked 12 hours a day to give the clean room the required finish. "We stayed with it, and we finished the job a week ahead of schedule," he said. "We were told that we were the only company ever to provide such a service on site. As far as I know, we still are."

Donald “Donny” Cooper, owner of Techni-Chrome Plating, has been involved in the surface finishing industry since he was 16 years old. In 1993, he started the company in Orlando, FL. Going against recent trends in the industry, the innovative finisher opened a new jobshop in Titusville, FL, in December 2002, to expand services in the defense and aerospace industries.

At 12,000 ft², the new Titusville shop is larger than its sister facility in Orlando, which is housed in a 9,000 ft² building. The company employs 25 people at the two locations, but has plans for adding another 10 when the new shop is at full capacity.

Techni-Chrome Processes

The largest volume of aerospace/defense parts processed at the Titusville facility require high-quality silver or 24K gold plating. Some of the parts also receive a specialized Teflon® coating inside. About 90 percent of the work requires some type of masking, from single to multiple areas. “We have the technical know-how to plate the most complicated parts,” Cooper said.

The shop uses special anodes and racks for plating the critical components, which are typically required for military specifications and aerospace. “We’ve made it our business to accommodate military and aerospace customers,” Cooper said, “so our processes are all designed to make sure we can do it right.”

The shop also performs plating of nickel, electroless nickel, bright tin, tin-lead and zinc. Ultrasonic cleaning, passivation and blasting are done on-site. An anodizing line that will be used for hard coat and decorative finishing is under construction. The company is currently processing aluminum, stainless steel and brass substrates.

The Orlando shop processes a high volume of chromium plating, and performs hard-coat and color anodizing. In addition, specialty painting, mostly for military specifications, is performed at the facility.



Filter housings for aerospace applications are among the components finished at the Titusville facility.

Some of the company’s customers include Boeing, Lockheed Martin and Unison Industries, a division of GE Aerospace. The shop also processes work for NASA and the military directly.

Environmental Stewardship

The new shop has been designed to be a zero discharge facility. Only DI water is used in the processes. The waste stream is batch-treated and processed through drying compressors and evaporators. The concentrated sludge is dried and shipped off-site to a metal reclaiming operation. The Orlando jobshop, which provides specification painting, is also recycling paint thinner. Cooper said that the investment in equipment to clean-up the used thinner has been well worth the cost, because it saves money on purchasing thinner as well as the cost of waste treatment.



These fly wheels used in automobiles are some of the largest parts finished at Techni-Chrome.



These fuel igniter plugs are Teflon® coated inside prior to receiving a silver finish on the outside. Coating thickness is measured by X-ray fluorescence.



This is one of four lines in operation at the Titusville shop. Tanks are labeled for easy identification.



Racks for most parts, such as these igniter plugs, are custom made.

All process tanks and chemical storage containers are located in areas within containment walls to prevent accidental spills. Containers and tanks are also clearly labelled for quick identification.

Quality Control

Quality control is critical to the finishes provided for aerospace and defense applications. The shop uses X-ray fluorescence spectrometry to ensure that strict specifications are met. The quality control lab can also provide humidity and salt spray testing. Other routine tests include adhesion (rupture, bend and scrape), and solderability.

Finisher Training Sessions Extended to Branch Members

An active member of the Orlando Branch, Cooper is cooperating with other branch members to develop a series of training sessions on the preparation of metals for finishing. The program, which was initiated by Dave Roach, CEF, a charter member and past president of the Branch, and president of Peninsula Metal Finishing, Inc., is designed as a training tool that is accessible for all surface finishing professionals in the area. The first session was held in November, 2002, with Cooper, Roach and Curtis Clark, environmental manager at Techni-Chrome, providing the program.

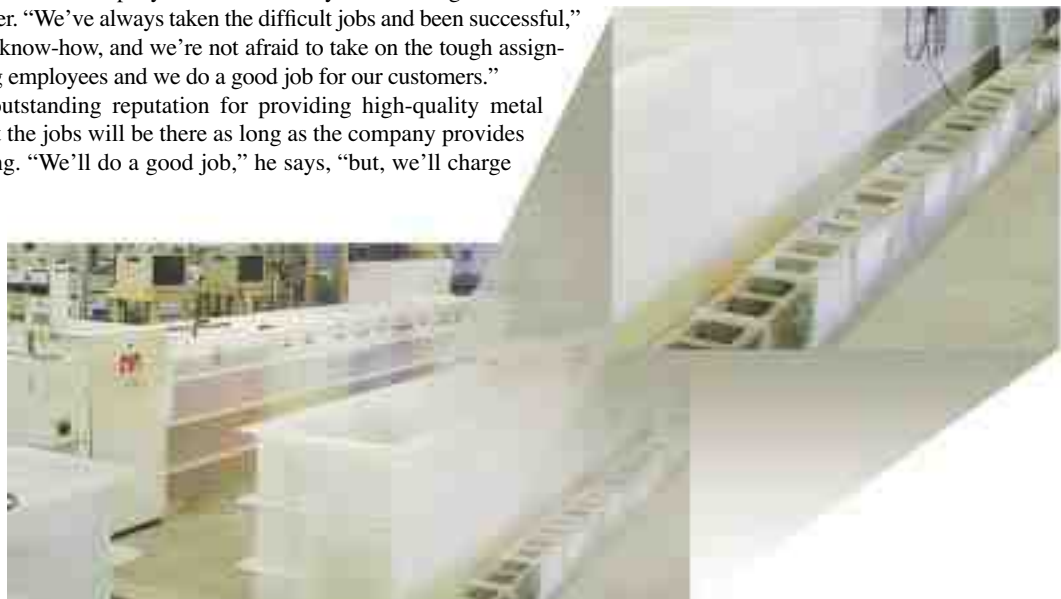
"We hope it will stimulate a lot of participation in the Orlando Branch," Cooper said. "We want people involved in all aspects of plating—from the most basic to the most experienced—to take part.

We also want suppliers and administrative people to come and learn. Our aim is to develop a successful program that can grow into more advanced subjects in the years to come."

The Future

Cooper says the future is always a little uncertain, but he has confidence that Techni-Chrome is in a good position to grow as the need for surface finishing increases in the area. The company is well on its way to becoming certified as an ISO 9000:2000 manufacturer. "We've always taken the difficult jobs and been successful," Cooper said. "We have the know-how, and we're not afraid to take on the tough assignments. We have outstanding employees and we do a good job for our customers."

The company has an outstanding reputation for providing high-quality metal finishing. Cooper feels that the jobs will be there as long as the company provides quality service and finishing. "We'll do a good job," he says, "but, we'll charge for it." *P&SF*



All process tanks and stored chemicals are located within containment walls.