

How Big is Your Part?

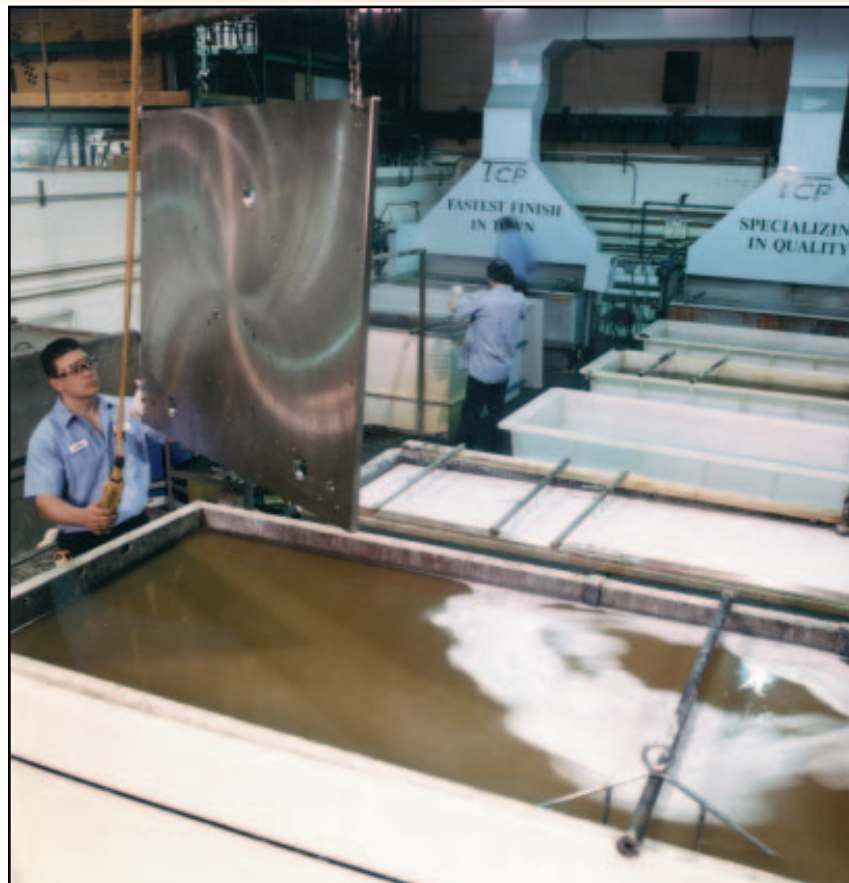
How Good is Your Finish?

Producing high-quality finishes in record time keeps Twin City Plating customers on time and happy. The company's real advantage, however, is its ability to finish large and unusual parts and provide special custom finishes to meet the special needs of customers.

Twin City Plating, Minneapolis, MN, specializes in electroless nickel (EN) plating, which accounts for more than 80 percent of its business. It wasn't always that way, but when owners Roger and Sally Plath purchased the shop in 1988, they initiated a new approach that led to a niche, which has enabled the company to quadruple its sales over the past 10 years.

"A plating company is restricted by the size of its tanks, ceiling clearance and lifting capability," said Roger, president of the company. "We have the largest process tanks available in our market, and more of them than any shop that I know of. Our ability to turn these large parts quickly has expanded our market as far as Michigan. We have eliminated the trucking time and expense from the equation."

Solving problems for customers is a service at Twin City Plating. A little more than a year ago, 3M Company requested EN on a large aluminum part (6 ft by 9 ft). The job had already been turned down by other jobshops all over the country, including Twin City, because of the large size and the inherent difficulty in activating and plating aluminum substrates. "Splicing," the practice of prepping and plating half of a part at a time with EN, is common



Plating lines at Twin City are well organized for handling large parts. (Photo courtesy of the Minnesota Precision Manufacturing Association.)

on steel substrates. The extra preparation necessary to activate aluminum, however, makes it next to impossible to plate half at a time, especially on a part that size, Roger noted.

"With careful planning, some temporary tanks and a ceremony honoring the spirit of Brenner & Riddell, we were successful," Roger says. Now the company routinely splices aluminum substrates with a 100 percent success rate.

"We really appreciate the opportunity to be involved in the design," Roger said. "Variations of our chemistry offer options that may

enhance the performance of the coating or function of the part."

Even though EN has been available since the '50s, the qualities and advantages of EN seem to be news in many areas of manufacturing, he pointed out. Twin City Plating has sent operators to EN school, and it still relies on its local vendor* for testing and support. The same vendor has supplied the chemistry for Twin City for years, even before the Plaths purchased the company.

*Industrial Chemical & Equipment Co., Minneapolis, MN



Twin City Plating owners Sally (left) and Roger (right) Plath visit with Nick Corriere in their lab. Corriere, who is the current president of AESF's Upper Midwest Branch, has been their chemical supplier since the Plaths purchased the company.



Twin City Plating is known for its quick turnaround time. Most orders are processed in 48 hours or less.

A manufacturer of harvesting equipment had received complaints of the grain meal and residue adhering to the contoured surface of the equipment. It was necessary to stop to clean the equipment repeatedly during operation, which was a nuisance. Roger convinced the manufacturer to try a high-phosphorus EN finish that would be less porous than the mid-phosphorus product that was being used. The improvement was so dramatic that one user of the equipment called just to thank Roger for the improvement.

The Best Personnel

Roger Plath is big on keeping things simple and communicating. "Our systems are designed for speed and accountability," he says. "Operators are responsible for their chemistry, quality and, occasionally, direct customer contact. Our management mission is to provide the resources, support and environment to grow personally as well as professionally."

With no experience or training in metal finishing, Roger and his wife, Sally, rely heavily on the employees of Twin City. "We try to attract and hire the best people available," Roger said. "We let them do their job, and we compensate them commensurately." The company pays generous bonuses based on productivity and profitability. Employees share equally in the success of the company. The philosophy has created a close,

stable team of employees who deliver consistent quality and performance that customers have come to expect from Twin City Plating. The company is known for its quick turnaround time. Most orders are processed in 48

hours or less. The company's motto is: "The fastest finish in town."

The process lines are clean and well organized with modern and updated equipment. More than a million dollars has been invested in improvements since the Plaths took over. The entire shop is equipped with hoists capable of handling large, heavy parts with the safety of the operator in mind.

Customer Driven

The inexperience of the Plaths has given way to innovation and resourcefulness, and some unconventional solutions that have allowed the business to grow, while reducing costs and minimizing waste. Most of the changes made in the past 10 years have been customer driven, and others have been influenced by environmental legislation.

An anodizing line was added to accommodate requests from customers. Special cleaning processes have been installed for short-run projects. "We are very interested and attentive to our customers' problems and the opportunities they present," Roger said. Twin City recently completed a quality manual for compliance with ISO 9002. The procedures will be implemented for certification this year.

Process Tanks

When the Plaths purchased the shop it had two EN lines (650-gal and

Twin City Plating Processes

Electroless Nickel, MIL-C-26074E
Steel, Aluminum, SS., non-ferrous
High-medium-low phosphorus
Largest capacity in the midwest
12 ft long-6,000 lb
6-650 gal baths

Aluminum Anodizing
Mil Spec A8625 Type II (sulphuric)
Class 1 (clear), Class 2 (black)
6 ft by 3 ft work area

Industrial Hard Chromium
Mil QQ-C-320 type II
Capacity to 10 ft long & 4,000 lb

Hard Gold
Mil Spec G-45204

Passivation for Stainless Steel
Mil Spec QQ-P-35

Ultrasonic Vapor Degreasing

Abrasive Blast (15 ft³)

Hi-Temp Baking-1200 °F
48 by 48 by 48 in.
Improved Adhesion
Improved deposit performance
Embrittlement relief

Cryogenic Tempering
-320 °F

200-gal) and two hard chromium lines. Today, the facility features six 650-gal and one 1000-gal EN tanks. Still there is an occasional need to splice large parts. Hard chrome is deposited over electroless nickel, adding wear resistance in special applications. Lately, the shop has been able to carve out niches where parts are much smaller but require extraordinary measures to satisfy quality requirements and timely deliveries.

Open Management

Roger's management style is very open. The company shares sales numbers and customer information. Employees take ownership of the jobs and have an incentive for producing each job in a timely, cost-effective manner, without sacrificing quality. Weekly meetings are held with all employees, which now number 19, including the Plaths. Roger says the meetings are time well spent, because it helps to promote team work and continuity at a fast pace.

Roger has been known to go to great lengths to illustrate the importance of quality finishing to employees. He has occasionally taken all company personnel to visit a customer so that they could see where the finished parts were going. "Once they see the equipment it's installed on they realize why our quality standards have to be absolute," Roger said. "It brings everyone together and creates a more cohesive team."

Waste Treatment

Roger Plath says he is proud of Twin City's record of compliance and waste reduction during the past 10 years. The company has consolidated and eliminated some waste streams, and has decreased water usage by 80 percent. Spent solutions from the process lines are batch treated and filter pressed to remove heavy metals. The dried cake is shipped to a local company** that reclaims the metals for recycling.

**U.S. Filter, Minneapolis, MN



Finishing large parts is a specialty at Twin City. This cylinder, used for removing husks from seeds and grains, receives a high-phosphorus nickel application.

Planning Ahead

Roger says he doesn't foresee Twin City Plating expanding quickly in the immediate future. Even though the volume of business is now four times what it was when he purchased the company, the number of employees is essentially the same. Some plans are in the works for re-designing and expanding some areas of the shop, and computer programs are being upgraded to give all employees more access to customer specifications.

When the workload gets heavy, employees will increase working hours and overlap to maintain work flow and to catch up. Most of the time, the shop operates a single shift.

For now, Twin City Plating will concentrate on continuing to do the things that have made it a success with the customer base it serves. Providing innovative, quality finishes and fast turnaround is a formula for success. *P&SF*