

Chicago Finisher's Success Formula: Environmental Savvy & Smart Process Innovations



Overview of the sophisticated, fully automated, computer-controlled finishing lines. Up to seven processes can be run in one line at the same time and the recipes can be varied at any time. The well-ventilated and well-lighted shop environment includes three air scrubbers that eliminate 98 percent of all emissions.

SWD Inc. is a highly successful Chicago-area jobshop that is a leader in environmental efforts. Its managers continually look for ways to improve process reliability and conserve water and energy. Not all their innovations are expensive or extensive—just smart moves.

In 1980, Dick Delawder parlayed 15 years of teaching experience into one big gamble of a career jump: he opened SWD Inc. in a 9,000-ft² leased facility with just three employees. Initial operations were black oxidizing, cleaning and pickling—all with used equipment.

His gamble, harnessed with a lot of hard work, paid off. The business—and SWD's reputation—grew phenomenally.

With high quality and environmental standards firmly in place, SWD is a leader in the metal finishing and fastener sorting industries. The company now has more than 90 employees, running three shifts per day, and a fleet of six tractor trailers making deliveries.

Specialized Jobshop & Fastener Sorter

SWD has expanded on its original menu of finishing services, but stays firmly specialized in black oxide (on steel, stainless or copper, with oil, wax or lacquer coatings), zinc phosphate (with seal only, oil, wax), passivation and bright dipping (aluminum or brass). In addition, SWD offers high quality cleaning and stripping services.

An important service facet of SWD's business is fastener sorting to remove defective, foreign or mixed

parts from production lots. Using a wide variety of fastener sorting equipment (optical, eddy current, sound wave, laser and machine vision), SWD personnel can sort by head diameter, shank length or diameter, cracked heads, partial threads, broken punches, filled recesses, mixed sizes, bent parts,

Mission Statement

SWD Inc. will provide superior value to our customers through service, quality & price; consistently meet or exceed all customer expectations; be a leader in environmental conservation; promote employee growth & responsibility; & thereby enable the company to continue to grow & prosper.

missing washers and missing operations—to name just a few capabilities.

SWD can produce tooling, if required, for special sorting applications. It is also equipped to assemble washers (primarily steel-backed neoprene and internal-toothed vinyl sealing washers) on screws and bolts ranging from 8 1/2 to 3/8x1-1/2.

ISO & QS Certifications in Place

Dick, president of the company, has a strong entrepreneurial spirit and has

instilled it in his sons, Rick, vice president of the metal finishing division; Tim, vice president of operations; and Matt, manager in training. When the decision was made to pursue ISO 9000 and QS 9000 certification, the Delawders pushed for ISO 14001 certification at the same time. Certification status was achieved on March 18, 1998, and it is believed that SWD is the first company in the U.S. to receive these international registrations simultaneously. The company is also believed to be the first finisher in the U.S. to receive ISO 14001 certification.

Receiving all three certifications at the same time took six months longer (for a total of two years), but SWD's managers feel it was worth the extra effort.

SWD stands behind the quality of its processes, too. Because the company's laboratory is accredited by A²LA (The American Association for Laboratory Accreditation), it can certify the quality of its metal finishing processes, adding to customer confidence.

Saving money for customers and the company is important to the management team, and SWD tries to take advantage of all assistance programs. A consultant was hired to help them through the tedious ISO certification process. Fifty percent of

the consulting fees were paid by the State of Illinois Department of Commerce through a program to help small businesses improve quality.

Conservation & Recycling Efforts

SWD managers are continually looking at other ways to save money, too. For example, using recycled water reduces the company's water bill by 40 percent. SWD installed an elevated 5,000-gal recycled water tank that eliminated a pressure pump, thereby providing filtered, recycled water for non-critical rinses.

A high-efficiency compressor is used to preheat all process water. The compressor and the high-efficiency lighting used in the plant reduce SWD's electric bill by 20 percent. Through the elimination of chemistries that cause waste to be hazardous, the company is able to save more than \$100,000/yr (disposal of non-hazardous vs. hazardous waste).

Other recycling efforts include separating office paper from the garbage and installing a cardboard baler to make cardboard scrap a saleable commodity. The managers are looking into recycling iron sludge, which is richer in ore than iron that is mined.

Better Process Management & Control

"Continuous improvement is the name of the game in our company," says Dick. To illustrate this, he summarizes process management and



Sorting fasteners for customers represents a separate business at SWD. Here, Dick Delawder shows off a vision sorting machine. Fasteners can be sorted by head diameter, shank length or diameter, cracked heads, partial threads, broken punches, filled recesses and mixed sizes.



Being a leader in environmental areas is important to the SWD team. The company is the only Chicago area finisher with EPA 33/50 plan accreditation. Tim Delawder (center), vice president of operations, holds one of SWD's environmental awards. At left is Rick Delawder, vice president of metal finishing. Dick Delawder, president, is at right. SWD is one of two metal finishing companies in the U.S. that has received Vice President Al Gore's "Hammer Award" for environmental excellence.

control steps that have been initiated over the past year:

- The installation of polymer feed pumps that automatically mix water and polymer together at a set ratio.
- The addition of a chloride-based polymer to the waste treatment system, which lowered the ppm of all metals discharged.
- Design and purchase of special processing equipment for small parts.
- The addition of defoamer to the initial treatment tank to reduce the amount of microbubbles produced by waste treatment.
- The installation of a metering pump controlled by an ORP meter to do automatic additions to the cleaner tank to maintain bath chemistry.
- After experimenting with different chemistries from different suppliers, SWD made a selection of a heavy zinc phosphate that cut sludge by 80 percent.
- The addition of air agitation to the flowing rinse after copper stripping to eliminate the remaining complexer.
- The selection of an acceptable aqueous cleaner for brass and aluminum that reduces the use of

solvents and volatile organic compounds (VOCs).

- On phosphate baths, the installation of a pump actuated by a PLC that reduces chemical usage.

Quality Policy

SWD Inc. will provide defect-free products & services that satisfy the requirements of its customers, on time & every time. Every employee is a part of our quality system & we will actively pursue constant improvement that enables every employee to do his or her job right the first time.

The managers believe that a good finishing facility needs to have consistent housekeeping practices, so the shop floor is washed down at least once a week. Processes are monitored and titrated routinely—at least once a day and sometimes more often. Automatic chemical and temperature controls are used wherever possible.

Often, employees are a good source of new ideas. To keep the flow of innovations coming in process control and environmental concerns, all SWD employees are encouraged to offer suggestions for improvements. In the way of extra incentive, monetary

rewards are given for any ideas implemented.

Innovations In SWD's Plant

No one understands effective plating shop design better than a successful jobshop manager. In 1992, to more efficiently handle incoming business and make room for future expansion, Dick and members of the staff (with some help from outside consultants) began designing and building SWD's current physical plant, which they moved into in 1995. Located in an upscale industrial park, the architecturally pleasing, impressive 105,000-ft² facility (60,000-ft² is occupied by SWD) would be welcome in almost any community, and has been recognized for design and environmental innovations. Some of the notable design features include:

- All exposed steel (columns, beams, etc.) is coated with foam and a ceramic-like material to prevent corrosion.
- Plating area floor is sloped for containment of liquids.
- Gravity-fed waste treatment plant is situated 16 ft below grade to eliminate pumping, thereby conserving electrical energy.
- A ventilating system with scrubbers inside the building prevents possible stormwater contamination.
- The plant features the most efficient lighting and compressed air systems available, as well as a combination heating/make-up air system

SWD's Environmental Leadership; Community Visibility

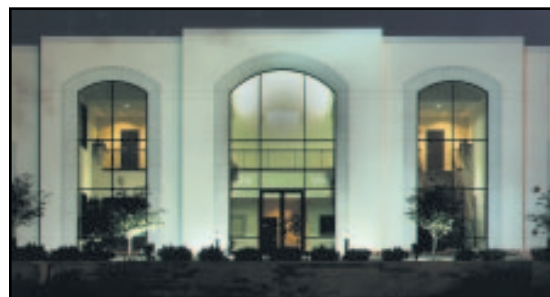
SWD is one of the charter members of the Strategic Goals Program (introduced at AESF Week 1998) that evolved out of the U.S. Environmental Protection Agency's Common Sense Initiative. SWD is also a



The waste treatment area is 16 ft below grade, utilizing a gravity-feed system that eliminates pumping of liquids, thereby conserving electrical energy and eliminating

pump-related process failures. SWD has discontinued use of all red-label products, cyanide processes and products, and chlorinated solvents. As a result, hazardous waste is no longer produced. All sludges and waste streams are non-hazardous.

Located in an upscale industrial park in Addison, IL, SWD's attractive, modern, 105,000-ft² building would make the company a welcome neighbor in almost any community.



participant in the Multi-State Workgroup, an organization of companies that are ISO 14000 certified or working toward it.

The management team makes it a point to be involved in associations that benefit SWD and other companies. "Our goal is to do as well as we can and work above and beyond what the law requires," Dick says.

He gains information for SWD and serves the finishing industry and the community through his participation in important organizations. For example, Dick is the immediate past president of the Chicago Metal Finishing Institute (CMFI). He also serves on the insurance committee for the National Association of Metal

Finishers (NAMF), and is chairman of the Environmental Impact Committee for the Village of Addison and vice chairman of the Commercial and Industrial Commission.

Rick and Tim also have leadership responsibilities outside the company. Rick sits on the board of directors for the AESF Chicago Branch, and Tim is vice president of the Addison Association of Industry and Commerce.

Well Positioned For a Good Future

Through sound environmental and engineering management, SWD has grown dramatically and increased its market share over the past 20 years. With its QS and ISO certifications in place, it's setting its sights on a solid future and aims to remain a leader in the finishing industry.

President Dick Delawder neatly sums up the company philosophy: "If you're going to do it, do it right or don't do it at all." P&SF

Environmental Policy

SWD Inc. will not knowingly operate outside environmental regulatory requirements. SWD Inc. is committed to prevention of pollution & continuous improvement. To that end, every environmental aspect will be monitored to meet regulatory requirements & evaluated for opportunities to move beyond compliance.