

SWIHART INDUSTRIES

A QS-9000/ISO-9002 Registered Facility



Our quality team is an extension of your team . . . we want to earn the position as your preferred source for lean, flexible, quality manufacturing that responds quickly to your customers' demands and new market opportunities

■ *New Product Development Assistance*

■ *Simultaneous and Concurrent Engineering*

■ *Prototype Development*

■ *Contract Manufacturing*

 **SWIHART**
INDUSTRIES
Engineering & Contract Manufacturing

The Swihart Foundation is Quality...

Quality People + Quality Processes + Quality Equipment

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Quality is the foundation upon which our business is built. From door to door, quality is the driving force. It includes inspection of raw materials, shipment of 6-sigma quality parts, and all processes in-between. And it's much broader than you might imagine.

Each facet of our business has been scrutinized, evaluated, and refined to apply the highest quality methods. This includes our business plan, preventive maintenance, training programs, shop safety, tooling control, purchasing, housekeeping, and much more.

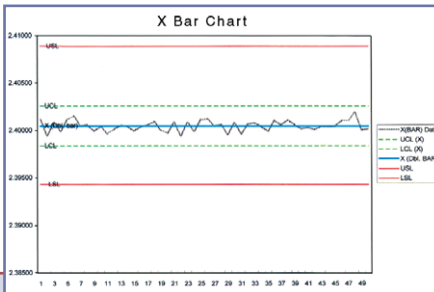
The breadth, depth, and continuous improvement of our quality program has established us as a World Class engineering and contract manufacturing company. For years, we outperformed our competitors and met or exceeded our customers' expectations. Founding trademarks of our business are manufacturing quality, reliable delivery, flexibility, and responsiveness. Now we've taken each of these attributes to higher levels. Independent auditors with AIAG (Automotive Industry Action Group) have recognized our company's values, principles, standards, and achievements with a QS-9000/ISO-9002 Certification. And we welcome the opportunity to earn your business and prove ourselves worthy of your trust.

Like others we've served, we know you'll appreciate having an exceptional supplier who delivers what they promise... quality parts on time. And we won't promise what we can't do. Imagine no surprises! Let's talk soon. Please contact us at your earliest convenience.

Once we've made a part, we can repeat the exact process weeks, months, or years later. After our experts initially determine the best process plan, machines, tooling, routing methods, and operations for a given part, this data is captured in our database and made available whenever the part is re-ordered. The QS/ISO Certification Team said our Routing and Documentation Method is among the best they've ever seen, even among the country's largest manufacturers.



Shop floor in-process inspection is standard procedure. Our operators are trained and equipped with networked PCs on the shop floor to monitor the manufacturing process. We continually enter dimensional data and perform statistical evaluations to ensure our machining processes are producing parts within acceptable tolerance limits. Holding CPK's of 2.00 or greater on tolerances as tight as $\pm .0002$ is common with our people and equipment.



Sometimes our real-time Statistical Process Control (SPC) methods pro-actively reveal the need for process correction, such as replacing worn tooling. Most times, however, our CPK values serve to verify the soundness of our part process planning, routing methods, and manufacturing process. In either case, you are assured of quality parts with minimal scrap of valuable workpieces.

Advanced Product Quality Planning (APQP)

Our staff is trained and equipped to implement every element of our APQP program to pro-actively ensure quality production. The foundation of our APQP is the "Production Part Approval Process" (PPAP) and "First Piece Inspection Approval."

PPAP comprises a checklist of 19 criteria that must be met in order to achieve part approval before production begins. These 19 criteria include requirements such as Design and Process FMEAs, Process Flow Diagrams, Dimensional Requirements, Process Capability Assessments, Control Plans, Gauge R & Rs, and more. Immediately following the PPAP approval process is our "First Piece Inspection Approval" program, which establishes the part processing method and generates documentation to clarify all job setup tasks and parameters needed to achieve or exceed the customers' part specifications.

With these fundamental elements of our Advanced Planning Quality Process (APQP) in place, it's understandable that the first part of a production run is usually a good part ... you benefit with less scrap of valuable workpieces and quicker turnaround and delivery of your parts!

Whatever you do, do it heartily, as to the Lord.
Colossians 3:23

Our Core Business is Manufacturing

Equipment + Quality Tooling = Quality Manufacturing

We can have great people and training, but they can't produce great quality unless they have great equipment and tooling. The chain is only as strong as its weakest link.

Our machines are among the best money can buy. And they're worth it. You can't fit unstable machines with CNC controls and expect to control your way to accuracy. There's no substitute for heavy, rigid machines. Similarly, no matter how good the machine, it can only perform as good as its tooling.

Whether it's machines or tooling, we use the best. It's the reason we outperform our competition...and the reason we will meet or exceed your expectations with competitive pricing!



Coolant through the spindle helps us drill holes faster and extends the life of our drills. According to Steve Swihart, "I recently inspected a \$250 drill that had drilled 15,000 holes... and it still looked new!"



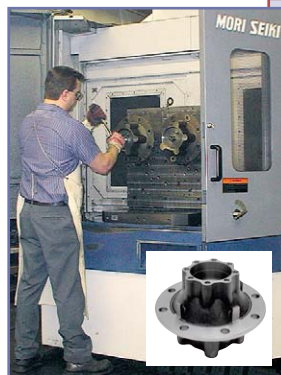
We use the best tools and tooling systems. They last longer and produce better results. Close, repeatable accuracy is possible with tooling systems that can be adjusted to yield great results. For example, these Komet boring tools can be adjusted to fine-tune our machining process.



Our Parlec Tool Presetter enables us to set our milling and boring tools "off-line" to tight tolerances. This dramatically reduces job setup time. And it helps make the first piece a good piece, which avoids scrapping your valuable workpieces.



This powerful Okuma machining center is not only able to take mega cuts in hardened steel, it can hold tolerances as tight as $\pm .0002$ " to a CPK as high as 2.5.



Dual pallets and 60 tool positions are combined with 2 second tool changes and 1260 ipm traverse rates to give customers timely delivery at competitive prices. This Mori Seiki horizontal mill also excels at producing close, repeatable accuracy... it eats up high volume, tight tolerance jobs!



Our twin spindle Okuma & Howa vertical lathes allow us to quickly and accurately turn out production for companies that require large turned parts. We have experienced CPK values as high as 2.5 on tolerances as tight as $\pm .0015$ ".

Manufacturing Equipment Profile

A full range of medium and heavy-duty CNC machines, including horizontal lathes, vertical lathes, horizontal mills, and vertical mills to handle a vast range of machining requirements and part sizes.



Our family of horizontal lathes are accurate producers. This machine holds bearing journals to $\pm .0002$ ", which enables our customer to save money in grinding operations.



With 1900 ipm traverse rates, these Brother VMCs are ideal for high volume production of close accuracy parts that require drilling, tapping, and light machining.

Pre-Production Planning Services

New Product Development Assistance

It pays to involve us early in your program.

We want to be a valuable extension of your team. We welcome "outside the box" thinking and approaches to a mutually profitable relationship as one of your parts suppliers.

At times, it may pay to involve us early in a new product program or new manufacturing and assembly strategy for your business. The best way to achieve the most reliable and economical product designs is to receive expert insight and ideas regarding the manufacturability, assembly, and maintainability of a product before "locking in on a design." Many times, minor adjustments to product design provide major cost and reliability advantages!

Because of these payoffs, we want to make our expert "manufacturability insight" available to you and other members of your new product team in a timely way...in the early stages of your program. We can also provide other assistance, such as budgetary pricing, process flow charts, delivery schedules, and development and production of prototypes.

Since no two projects are the same, we welcome the opportunity to learn more about your requirements and viable ways we can serve and support you. Please contact us at your earliest convenience to explore possibilities.



Steve Swihart, President



Jeff Swihart, Vice President

Swihart Industries... formerly known as Turning Technology, Inc. and Swihart Machine & Tool Company

During high school in 1978, Steve Swihart started Swihart Machine & Tool Company when he purchased a 1940's vintage turret lathe and began producing parts for the hydraulics industry. In 1986, Steve hired his brother Jeff to run the company while he attended an out-of-state college for business.

In 1991, Turning Technology, Inc. was birthed. The partnership of Steve Swihart (President) and Jeff Swihart (Vice President) was formed to specialize in precision CNC turning on a full range of parts, which required a mix of horizontal and vertical lathes. Concurrently, Swihart Machine & Tool was moving in the direction of providing state-of-the-art CNC milling services with its mix of heavy-duty horizontal and vertical mills. As operations evolved, it made sense for both businesses to be housed in the same facility and work together to provide complementary services to its growing and diverse customer base, which historically had been concentrated in the automotive and pump industries.

Since we've connected our operations to become a single-source provider of a full spectrum of engineering and manufacturing services, we believe it's time to present ourselves more appropriately to you as the single enterprise we've become...Swihart Industries.

SWIHART
INDUSTRIES

Engineering & Contract Manufacturing

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