

# SPIROL<sup>®</sup>

SHIMS • STAMPINGS • MACHINED COMPONENTS



# **SPIROL®** The Spirol Concept

## **WE ARE SHORT-RUN PRODUCTION SPECIALISTS**

Our objective is to provide our customers with the highest quality, short run stamped and machined components, delivered on time, at the lowest price. To achieve this objective, we developed and implemented the following strategies:

- ⊙ We acquired state-of-the-art production technology with an aim of eliminating expensive tooling while improving product quality and dimensional consistency.
- ⊙ We expanded our internal secondary process capabilities with a focus on shortening lead times, reducing costs and gaining internal control over total quality.
- ⊙ We standardized tooling and processes to lower costs and improve response time.
- ⊙ We implemented a fully integrated computerized management system of estimating and production control providing real time order tracking and the basis for quick, customer oriented service.
- ⊙ We made a total commitment to quality—to consistently anticipate and exceed our customers' needs and expectations at the lowest cost. This commitment is supported by a company-wide continuous improvement process—Total Quality Management (TQM).
- ⊙ Our emphasis is to perform as many functions as possible in-house to reduce external transaction costs, to control quality, to shorten lead time and to pass these benefits on to our customers in the form of lower prices and improved performance.

**CUSTOMER SATISFACTION IS  
OUR PRIMARY DRIVING FORCE.**

**CHALLENGE US!**





## Capabilities Summary

Most operations and services are performed in-house under the direct influence of Spirol's quality system registered to QS 9000. We can provide product—including prototypes—in thicknesses from .0005 and up with quantities ranging from one piece to thousands. We also have numerous qualified subcontractors for special needs outside our capability.

### PRIMARY OPERATIONS

- Conventional stamping
- SWAT™ — proprietary stamping
- CNC laser
- CNC high-speed machining
- CNC machining centers

### SECONDARY OPERATIONS

- Heat treating
- Machining
- Grinding
- Lapping
- Micro polishing/Deburring
- Edge bonding
- Part marking

### TOOLING

- Standard tooling manufactured with CNC precision

### MATERIALS

- Industry standard shim, sheet and coil stock, laminated materials and special metals

### FINISHES

- Any commercially available finish
- In-house passivation, chem film and painting

### SERVICE

- Fast quotations
- Real-time order tracking
- Speed shop
- EDI communications
- Special packaging and labeling
- Blanket orders — stocking programs
- SPC data
- PPAP, FEMA's control plans





# **SPIROL<sup>®</sup>** Stamping Capabilities

Our strength is cost-effective production of short run stampings, complemented with high volume capabilities for select applications when customers require single sourcing. We can deliver product in thicknesses from .0005 and up with quantities ranging from one to thousands. To meet our customer needs of process control, minimal tool investment, long-term part repeatability, prototypes, and low unit cost, we utilize a variety of stamping methods.

## **OPERATIONAL SETUP**

This method employs the use of standard tools, jigs, fixtures and technical skills to produce low-volume product. It is an excellent way to manufacture special parts, with a minimum or no tool charge, where statistical capability is not a criteria.

## **COMPOUND TOOLING**

For products with a long life cycle, we recommend one-hit compound tooling to guarantee product quality and repeatability over the life of the tool. With a competitive tool charge, this method offers the lowest unit cost and process control.

## **OD/ID COMBO**

Over the years, Spirol has accumulated thousands of OD/ID combination tools. We can produce a variety of special washer dimensions, one-hit, without a tool charge, from one piece to thousands.

## **SWAT™ — STAMPING WITHOUT A TOOL**

This proprietary method is truly the best. We stamp thin metal parts, statistically capable, with one-hit and no burr. There is no tool charge to our customers. It is ideal for dimensional repeatability and low-volume production.

## **TOOLING — DESIGN AND PRODUCTION**

Spirol's die shop produces quality tools utilizing the latest CNC and EDM production technology. We design around a standard module concept to reduce costs and shorten lead time. All components are qualified on state-of-the-art inspection equipment, and we statistically monitor tool wear to guarantee finished product dimensions. We only manufacture tools for internal use so our customers receive top priority.

# **SPIROL<sup>®</sup>** Machining Capabilities

Spirol's machining capabilities offer production methods that further eliminate tool cost while improving product quality and consistency. We produce low-volume machined components complete, or we combine stamping and machining operations to reduce total product cost—and deliver precision tolerances. We can provide product in thicknesses of .002 and up on quantities from one to thousands.

## **LASER TECHNOLOGY**

Laser cutting technology is ideal for odd configuration parts, short runs and prototypes. There is minimal setup time. We use state-of-the-art CAD/CAM systems and can accept customer DXF and IGES format drawings. There are no tool costs and CNC controls ensure precise accuracy throughout the entire lot.

## **CNC HIGH SPEED PROFILE CUTTING**

With cutting speeds up to 30,000 RPM, this process produces precision parts with superior edge quality. When used on laminated shims, there is no separation of laminations from stamping shock and the layers are easy to peel. This process improves product quality and reduces costs—there is no tool charge.

## **CNC MACHINING (MILLING)**

This process expands our capabilities beyond flat thin metals. With 3-axis capability, we can machine the most complex short-run components. Precision tapered shims are produced for airframe applications.

## **VIDEO CMM**

Utilizing state-of-the-art production equipment requires precise inspection devices. Our Video CMM accepts DXF and IGES drawing files and inspects to accuracies better than .0003 inch.



# **SPIROL<sup>®</sup>** Secondary Operations

We control quality, lead time and cost by performing many secondary finishing operations in-house.

## **HEAT TREATING**

Our statistically capable heat treating process delivers through hardened and case hardened product with precision accuracy and no warpage. We are MIL-H-6875 certified.

## **GRINDING & LAPPING**

For precision thickness, parallelism and flatness requirements, we utilize several grinding techniques. This eliminates the need to purchase expensive small lots of material and shortens lead time.

## **HIGH SPEED POLISHING**

Utilizing the latest "Super 8" vibratory and tumbling technology, we can micropolish surfaces to an 8 micro finish at the lowest cost.

## **DEBURRING TECHNOLOGY**

Our capabilities include vibratory finishing, sanders that also apply rust preventative and special handling for delicate parts. Spirol products are burr-free.

## **FINISHING**

We passivate, chem film and paint many products in-house and have numerous qualified vendors, located close to our facility, that perform special finish services.

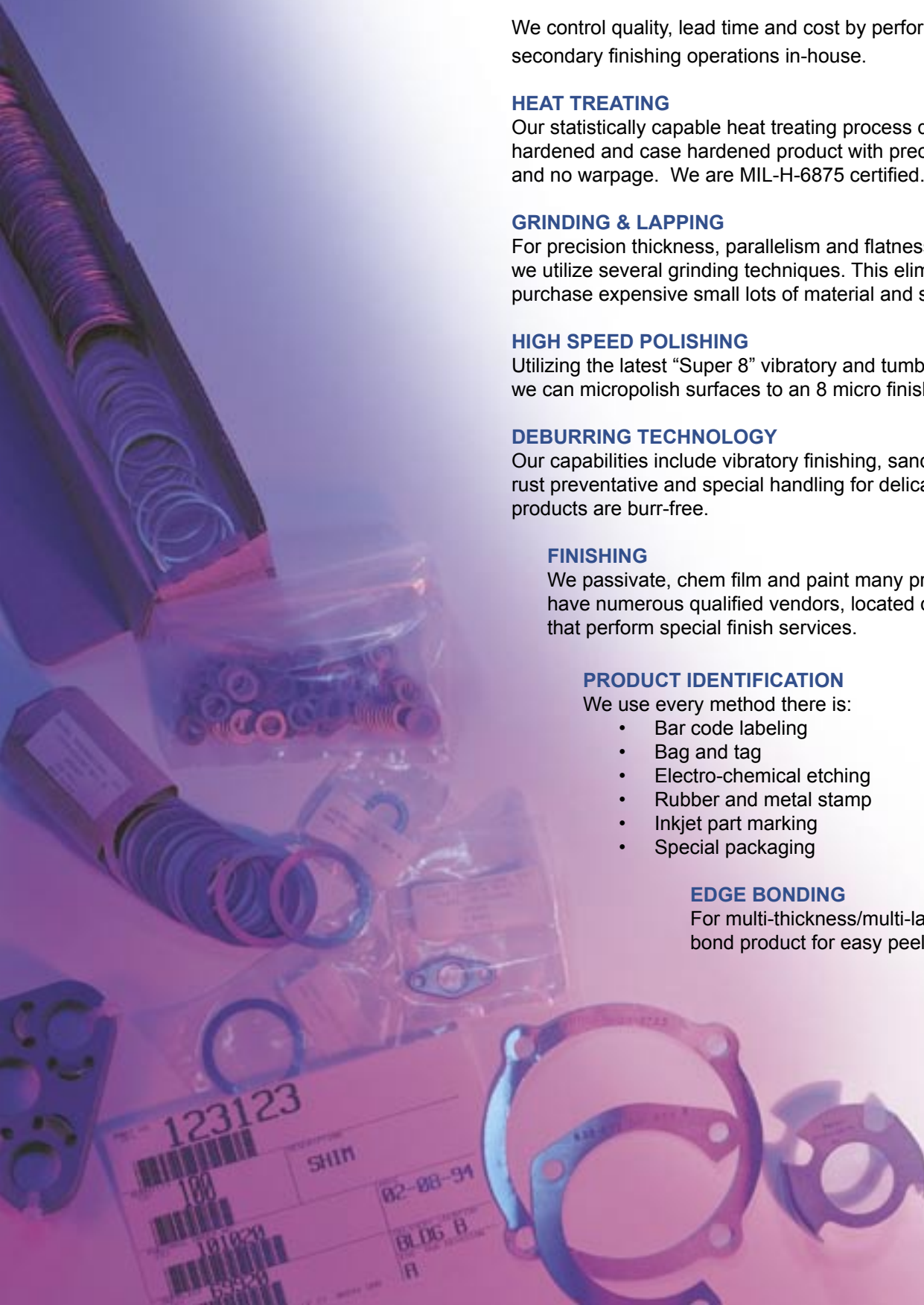
## **PRODUCT IDENTIFICATION**

We use every method there is:

- Bar code labeling
- Bag and tag
- Electro-chemical etching
- Rubber and metal stamp
- Inkjet part marking
- Special packaging

## **EDGE BONDING**

For multi-thickness/multi-layer shims, we edge bond product for easy peel and reusable shims.



# **SPIROL**® Service

## **INTERNET AND EDI COMMUNICATIONS**

We encourage EDI communications for fast and simplified order entry, shipping notifications and invoicing. We are ready to link to your computer and reduce paperwork.

## **BLANKET ORDERS AND QUOTATIONS**

Customers get the best price and service with blanket orders because we can plan production to meet your needs. Blanket quotations substantially reduce paperwork—both yours and ours.

## **JUST-IN-TIME DELIVERY**

Working together we will develop a cost-effective program, including stocking of products, to ensure they arrive when you need them.

## **SPEED SHOP**

We will expedite to meet your needs—usually at no additional cost to you!

## **EARLY WARNING SYSTEM**

Real-time computerized order tracking provides up-to-date delivery status and identifies problems early in the production cycle. Corrective action is taken quickly with the aim of meeting your requested ship date. We continually monitor and improve our performance.

## **QUALITY REGISTERED TO ISO 9002**

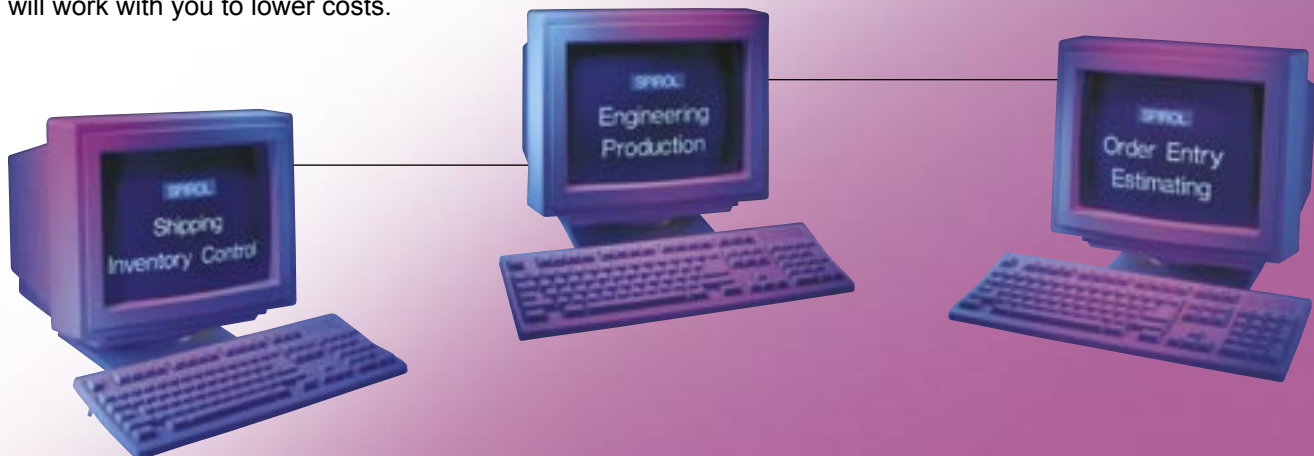
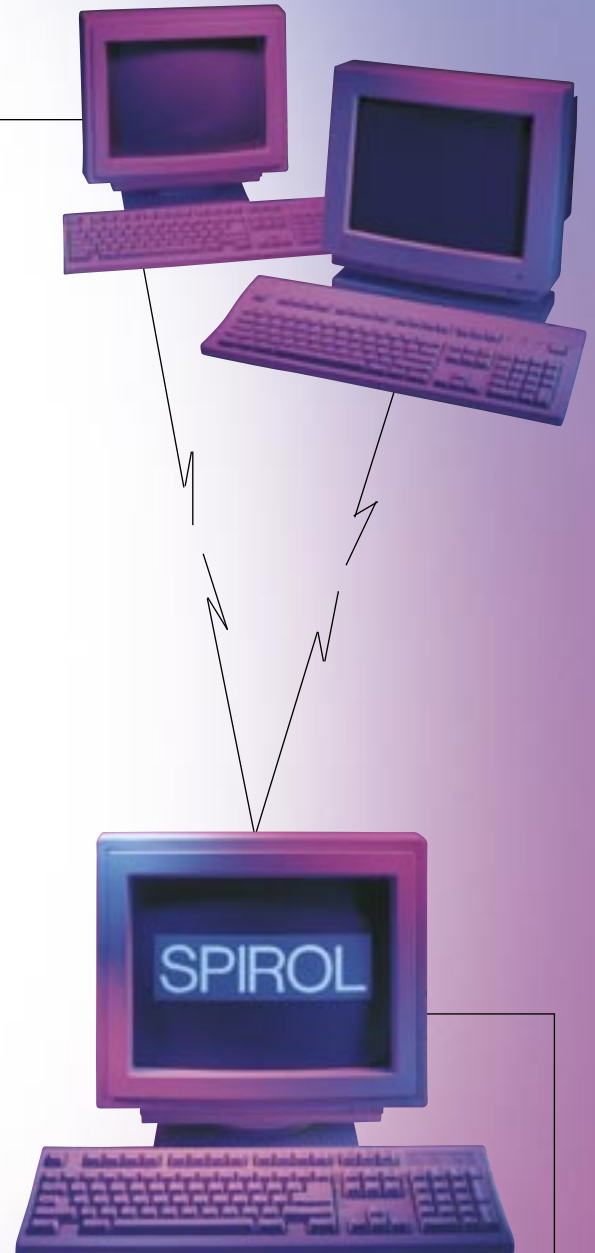
Effective quality systems eliminate the need for customers to inspect our products. We are a dock-to-stock vendor. Certifications, SPC and test data are available upon request.

## **FAST QUOTATIONS**

Our quotation process is focused on meeting the needs of your inquiry. When that is not within our capabilities, we will notify you within 8 working hours.

## **COMPETITIVE PRICES**

Spirol supplies quality product, prompt service and a competitive price. If you determine our price is too high, our process engineers will work with you to lower costs.

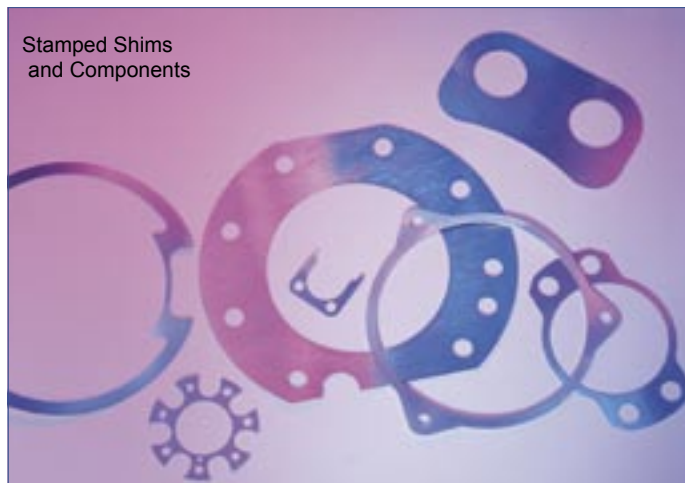
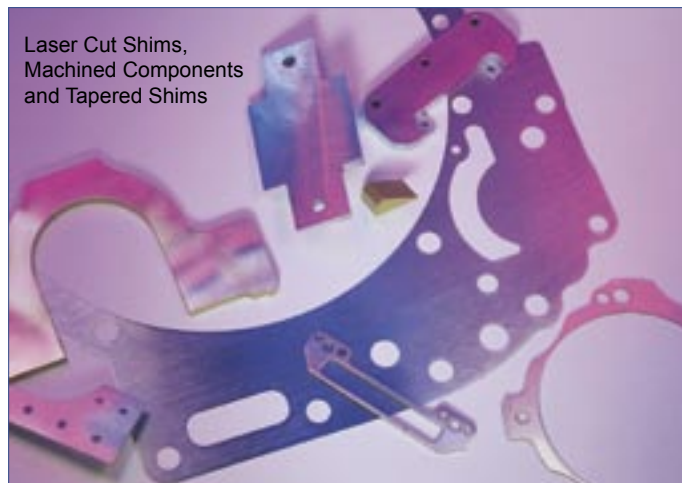


# SPIROL®

## SPIROL INTERNATIONAL CORPORATION

Spirol is a registered trademark.

### Shim Product Line



### VENDOR REDUCTION

By choosing Spirol's broad based capabilities and product range, customers can reduce their vendor base and overall purchasing costs.

In addition to shims and machined components, Spirol also manufactures coiled and slotted spring pins, solid pins, spacers and other tubular products, inserts, pin and insert installation equipment, and vibratory parts feeding equipment.

### CHALLENGE US!

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