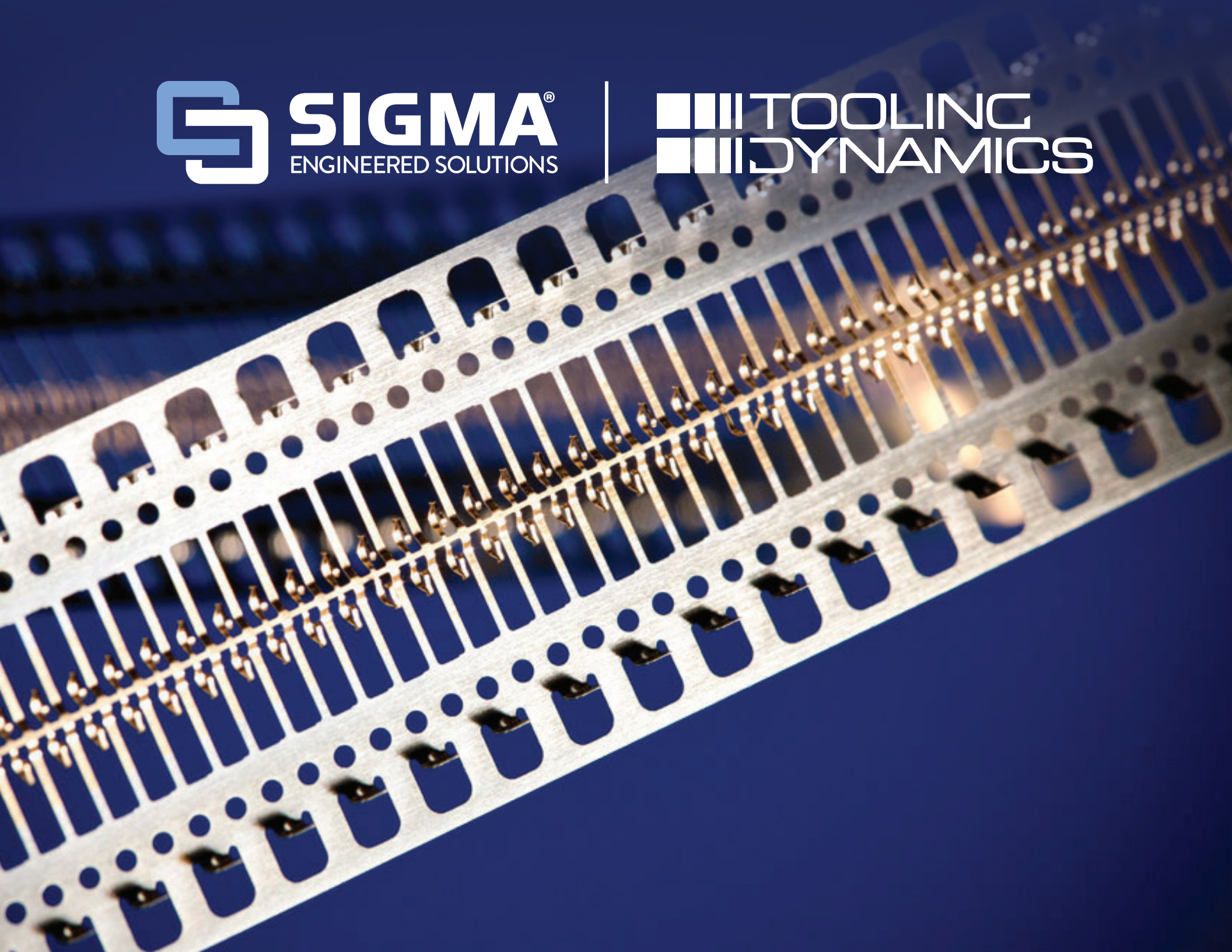
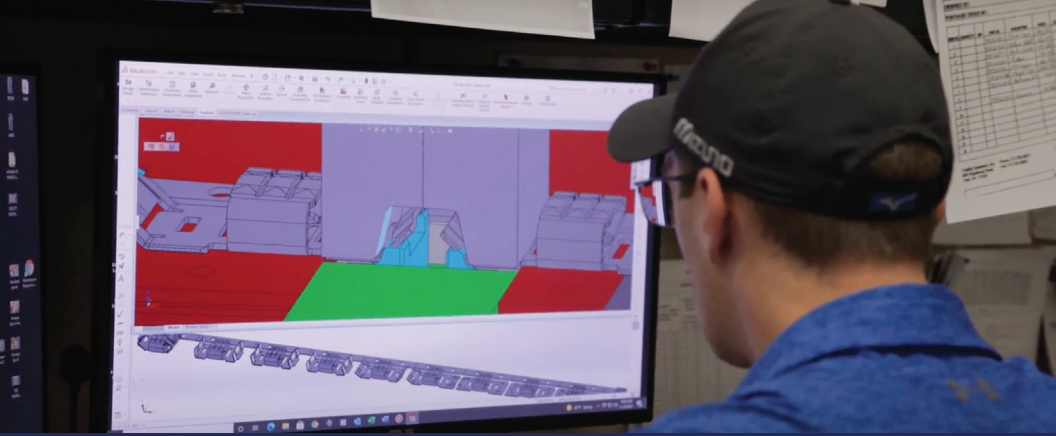




SIGMA[®]
ENGINEERED SOLUTIONS

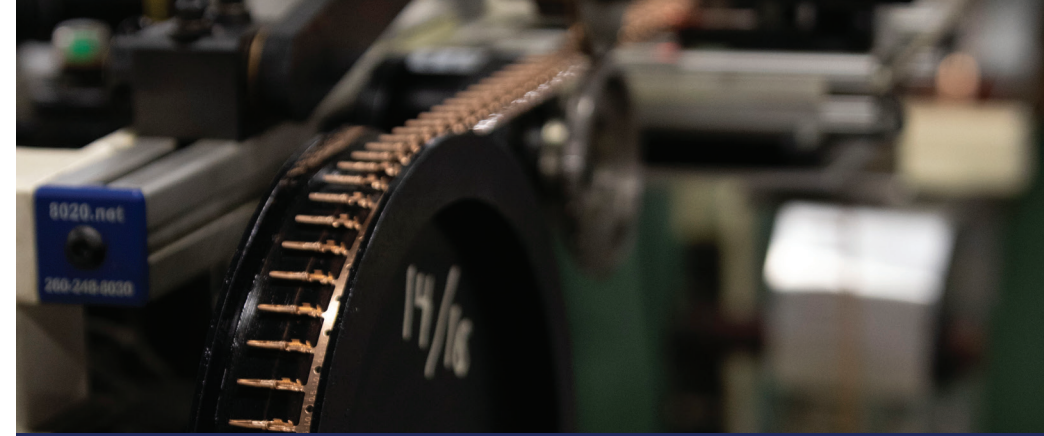
**TOOLING
DYNAMICS**





Engineering

Our innovative and experienced design team provides complete design services from concept through production.



Production

Our highest priority is customer satisfaction.

Design

The design stage is a critical phase in the metal stamping process. The proper design ensures manufacturability, minimizes development time, reduces manufacturing costs, and maximizes efficiency.

- Latest SolidWorks versions
- 100% detailed drawings on single sheets with complete die reviews and approval
- Front load dies
- Low cost modular die sets

Prototype

In today's competitive environment, time to market is critical to the success of your program. Prototyping a part or aspect of a part will help test or debug your product at a cost-prohibitive stage in your project.

- Parts are formed using chem-etching or EDM "wired" blanks
- Prototype/low volume platform dies ensure the best production quality parts until the design is finalized
- Leco Cross Sectioning equipment available

Build

Created exclusively for building new dies, our state-of-the-art tool room allows us to meet your requirements quickly and easily. Our in-house die build process creates short lead-times resulting in faster time to market for customers.

- Two on-site Agie Wire Machines
- Dies built to run material thickness as thin as .001 under extremely tight tolerances
- Built to last, there are no additional maintenance charges or annual fees to keep your dies running

Develop

With over 25 toolmakers on staff, we have the superior knowledge and engineering experience needed to meet your toughest requirements. At Sigma Engineered Solutions | Tooling Dynamics, the job is not complete until the tool is qualified.

- In-house design team works alongside toolmakers for ease in development
- Planning at the design stage minimizes development time
- Our staff's knowledge and experience is the largest benefit we offer to our customers

With guaranteed on-time delivery and comprehensive in-house production capabilities, we offer the services you need and the quality and commitment you expect.

Capabilities include:

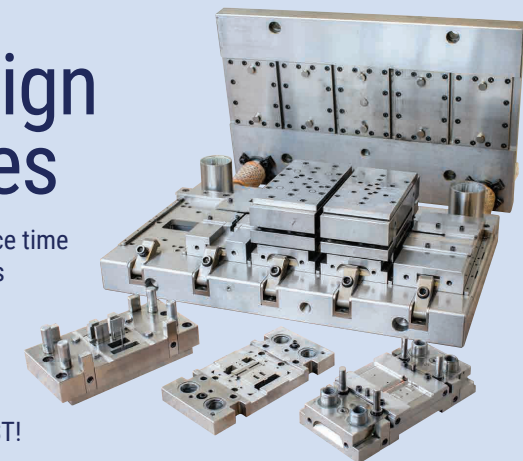
- 75+ presses ranging from 6 ton to 60 ton
- Over 25 Pennsylvania Journeyman Tool and Diemakers
- Operating 3 shifts/day, 7 days/week
- 80,000 sq. ft. facility
- Loose-piece or on-strip stamping
- Coiled or "pancaked" raw material handling

Our 25 tool and die makers specialize in working with very thin gauge metals (as thin as .001" thick) and under extremely tight tolerances. Common production materials include beryllium copper, phosphorus bronze, stainless steel, copper, brass, cold rolled steel, or Mylar.

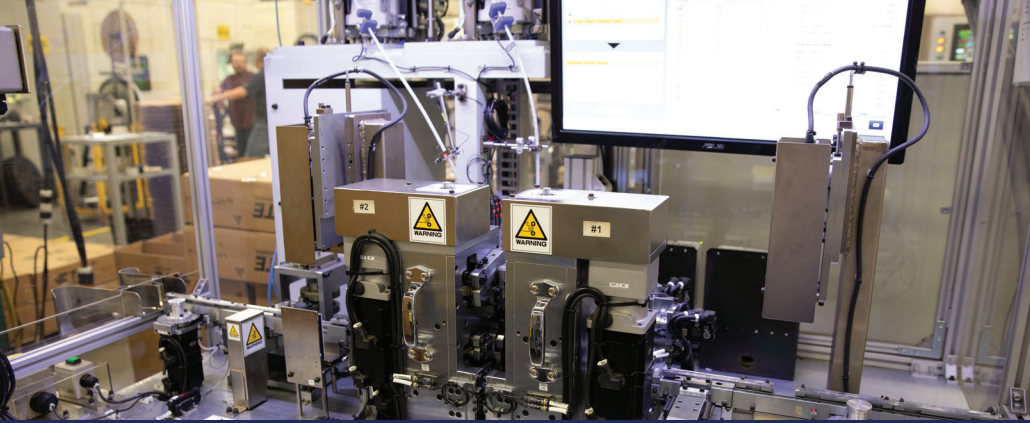
Advantages of using our

Modular Design Stamping Dies

- Reduces design time and maintenance time
- Uses many standardized components
- Provides an excellent performance, durable, high volume production tool
- Precision blanking and forming



QUICK TO THE MARKET AND LOW COST!



Automation

The automation team at Sigma Engineered Solutions | Tooling Dynamics was formed to provide continual improvement, innovation, and technical support.

Members of the automation team work on new ideas and solutions that affect productivity, safety, and value of our products. Building custom machinery and equipment inside the production facility allows us to add features to our machines specific to the products to which they are applied.

- In-line Visual Inspection Systems
- Custom reeling and de-reeling equipment
- Automated packaging and assembly

Additional Services

Assembly- Sigma Engineered Solutions | Tooling Dynamics designs, maintains, and manufactures assembled components.

Heat Treating - Our in-house heat treat ovens provide lead time and cost flexibility while keeping quality control under one roof.

Packaging - Sigma Engineered Solutions | Tooling Dynamics packages components to meet customer requirements. Components can be provided reel-to-reel, loose-piece, or stacked. We also design custom packaging for delicate components or parts with complex geometry.



Quality Control

Quality Control is a critical element of every process.

From the arrival of raw materials at our dock to the delivery of finished parts to our customers, Quality Control is a critical element of every process at Sigma Engineered Solutions | Tooling Dynamics.

Customers' specifications and dimensions are constantly tracked and monitored throughout the production process. To enhance our inspection capabilities, we use a number of quality control programs such as chart PPKs and CPKs for critical dimensions.

All customers receive a first article inspection report (on all new programs), a copy of our production inspection plan, and documented workmanship specifications on each part with visual aids available upon request for your retention.

- ISO 9001: Registered since January 2004
- Registered IATF 16949 Automotive Specification
- Several team members have trained in Six Sigma and 6 employees have Green Belt quality designations
- Over 30 Keyence Vision Systems , and 6 OGP SmartScopes with laser depth capabilities

Who We Serve

Since 1982, we've supported the following industries:

Aerospace • Automotive • Electronic • Medical • Solar

Shipping

Sigma Engineered Solutions | Tooling Dynamics' on-site warehouse ships to customers worldwide. We offer consignment and Kan-Ban services both internally and off-site at customer locations.



