



Components that make your products work

Cold Forming & Machining Specialists

By blending cold forming with secondary machining, WCS Industries has a unique capability to engineer long term cost effective solutions. As a premier cold forming and machining house, we have built our reputation for excellence on engineering value and delivering quality components to our customer's satisfaction. We match your requirements with the most cost effective manufacturing solution.

Cold forming or cold heading, as it is sometimes referred, can produce components in net or near-net shape at rates significantly faster than machining.

At WCS we are able to convert many parts from machining to cold forming resulting in lower total cost and higher performance components.



Any engineering initiative at WCS Industries is always done with a single purpose in mind:

To make your component:



SMARTER



FASTER



STRONGER

ENGINEERING: Our engineers will work with you to determine the best design for your application - before, during, and after production - with validation and APQP review.

- Prototypes, pilot and production runs, post production review
- Design review to meet fatigue life requirements

wcsindustries.com • 262-682-4711

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IATF 16949:2016 & ISO 9001:2015



WHY COLD FORMING?

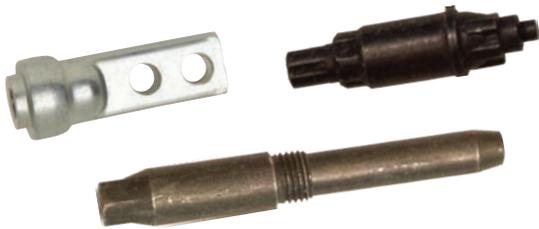
At WCS Industries our Cold Forming process produces parts at room temperature by forging the material past its elastic limits, resulting in a new shape. Cold forming takes wire from a coil, cuts it to a precise length, then progressively forms the blank through multiple dies and punches. This produces one finished product per machine cycle. Through this process it is possible to produce complex precision parts at high speed with little or no material waste.

Cold forming typically results in a much higher material yield, higher run rates and superior material properties compared to machining. This all translates into a cost-effective and superior performing solution.

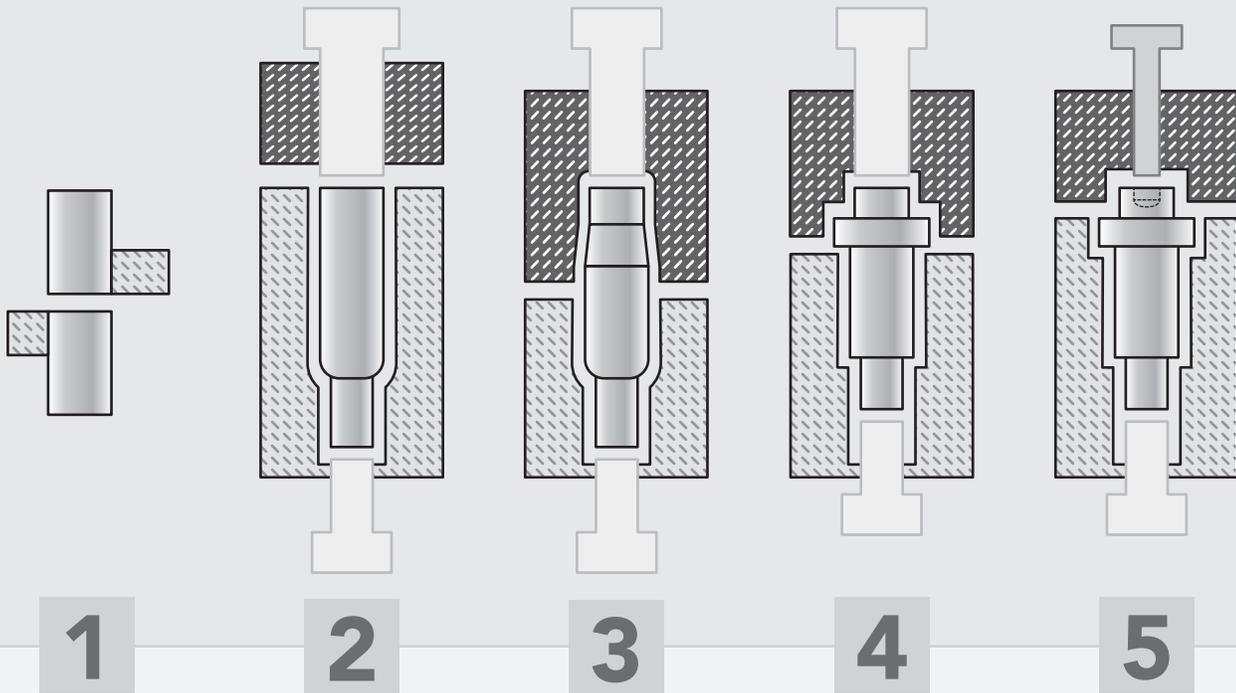


Cold forming progression: Above, parts first start as a raw blank and then are progressively formed with dies to shape and trim parts.

Secondary processes can include; thread rolling, heat treating, CNC machining, grinding, broaching and plating.



HOW COLD FORMING WORKS



1

A blank is cut from a coiled wire.

2

The blank is advanced to the next station for extruding in the **die**.

3

The blank is advanced to the next station for extruding in the **punch**.

4

The blank is advanced to the next station for **squaring** of the corners and **forming** of the collar.

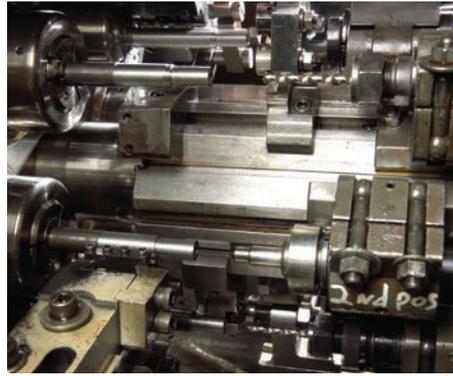
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Final step involves **piercing** an internal hole.

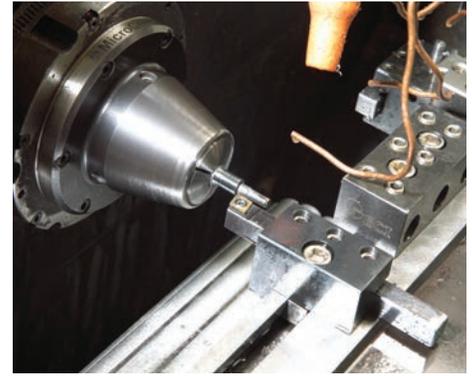




WCS quality lab & component testing.



Multi-spindle screw machine.



Precision CNC Machining.

MACHINING CAPABILITIES

Cold-formed parts can be produced up to 100X faster than machined parts, but there are times when design features require precision machining.

At WCS Industries, we also have extensive machining experience using a full range of automatic multi-spindle screw machines and CNC machining centers. Our engineers utilize state-of-the-art methods to develop the manufacturing process for your component with the optimum cost-effective production techniques.

- **MULTI-DIE COLD FORMING MACHINES FOR VARIOUS WIRE DIAMETERS UP TO 5/8 INCH**
- **MULTI-SPINDLE AUTOMATIC SCREW MACHINES UP TO 2 5/8 INCH DIAMETER**
- **CNC MACHINING & SWISS MACHINING**
- **CENTERLESS GRINDING**
- **THREAD ROLLING**
- **SECONDARY MACHINING & ASSEMBLY MILLING, CROSS DRILLING, DEBURRING, BROACHING**
- **MULTIPLE MATERIAL TYPES INCLUDING: LOW & HIGH CARBON STEEL, STAINLESS STEEL, BRASS, BRONZE, ALUMINUM, COPPER, ALLOY STEELS AND VARIOUS PLASTICS**

WCS is ISO 9001:2015 certified and has dedicated quality and engineering support to make your product right the first time.



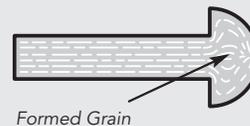
MACHINED OR COLD FORMED?

Our Engineers will perform a "Process Analysis" on your part to determine the optimal manufacturing strategy.

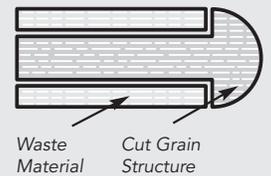
Based on the quantity, component geometries, performance and cost objectives, our engineer will develop a process that may be cold forming, machining or a combination of both.

Machined parts have some cost advantages for small quantities and complex geometries that don't lend themselves to cold forming.

COLD FORMED



MACHINED



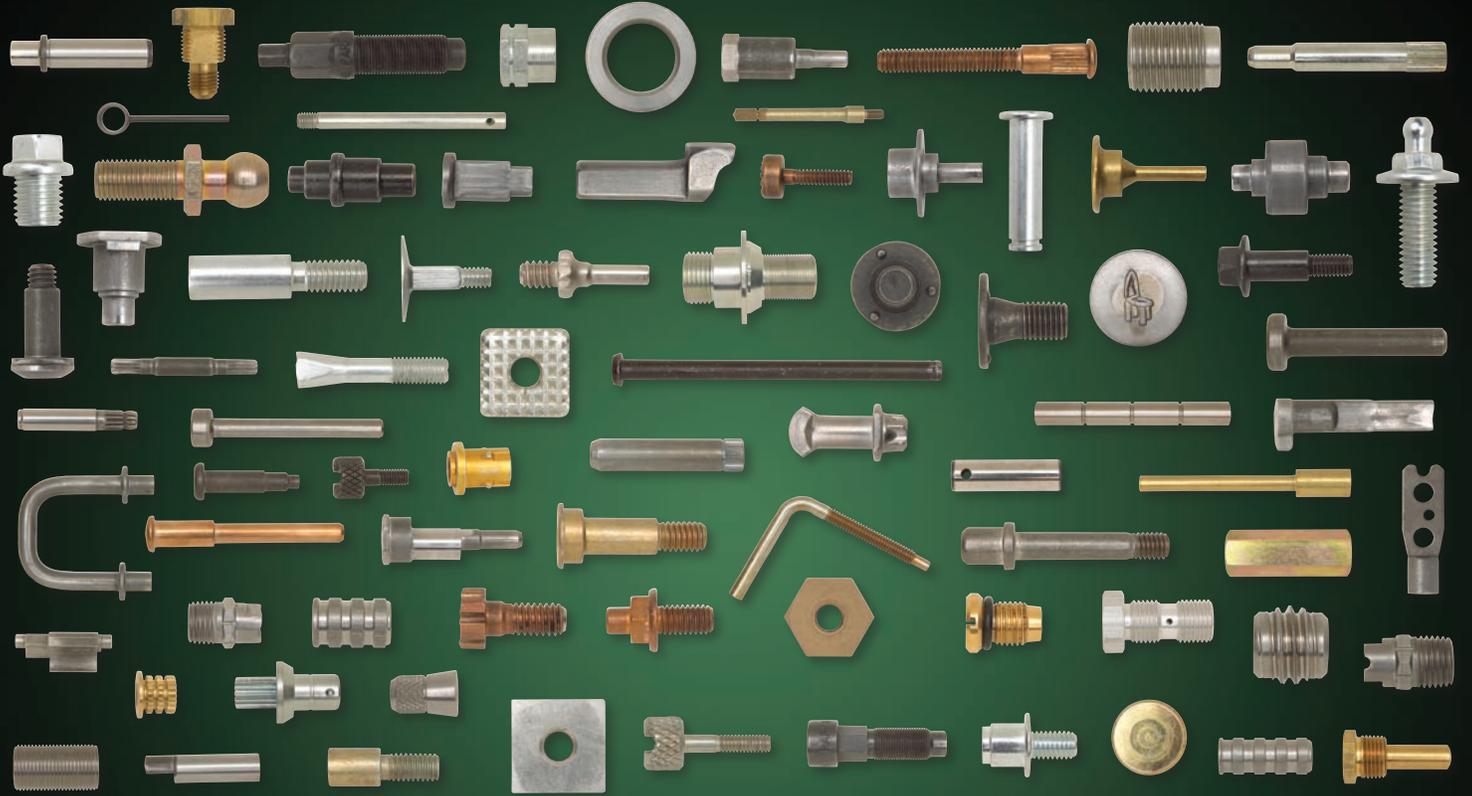
Cold forming forges the finished part using cold work to maintain grain structure and produce a stronger part with a superior surface finish.

Machined parts are produced by cutting through the grain structure of the base material to produce a part and waste.

Eccentric and irregular shapes are excellent candidates for cold forming, as are parts requiring more strength.



Cold Heading & Specialty Machining of Custom Engineered Components



"It is our mission to deliver the highest quality and cost effective specialty fasteners and engineered components for our customers."

We Create the SPARK

The right spark in the right place at the right time can change everything—igniting momentum, illuminating opportunities and inspiring purpose.

Our promise is to provide that spark and fire up collaboration, top notch engineering and superior products.

WCS INDUSTRIES

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