



**NEWCOMB  
SPRING CORP**  
*First in Forming®*

[www.newcombspring.com](http://www.newcombspring.com)





## First in Forming®

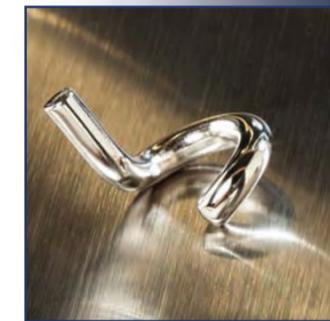
For more than a century Newcomb Spring has proudly manufactured the highest quality springs, stampings and wire forms. We are proud of our reputation as one of North America's largest and most advanced metal form manufacturers, and are dedicated to producing precision parts that meet the highest levels of accuracy and repeatability. The experienced Newcomb Spring team is dedicated to excellence and committed to customer satisfaction. We are ready to offer design assistance and help you receive the parts you need at the best possible prices. We serve customers in North America, Central America, South America, Europe, India, Asia and beyond from our network of facilities throughout the United States and Canada.

With state-of-the-art equipment, efficient operations and the latest quality control technologies, we produce large runs, short runs and prototypes of:

- Compression Springs
- Extension Springs
- Torsion Springs
- Stampings & Flat Springs
- Wire Forms
- Battery Contact Springs
- Hooks & Paint Hooks
- Shaped Rings
- Magazine Springs
- Microsprings

Customers often look to Newcomb Spring to produce extremely complex and unique parts, and for precise orders with fast turnaround requirements. We offer some of the most accurate production processes and advanced manufacturing technologies in the industry, and are ready to put our expertise to work for you.

No matter what your metal forming needs are,  
**Newcomb Spring Kan-Do It!**

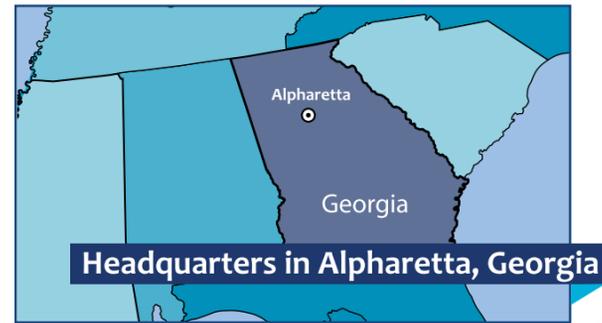


# A Network of Facilities – Leading the Spring & Metal Forming Industry .....

Newcomb Spring offers a network of facilities located throughout the United States and in Canada. Our cutting-edge manufacturing plants are equipped with state-of-the-art machinery and technologies. These facilities operate with highly efficient and precise processes. All of our facilities operate with ISO-certified quality systems in addition to ITAR, DDTC and an array of other standards.

The entire Newcomb Spring organization works to meet the strictest customer specifications, delivering parts on time and at the best price possible. Our plants operate with the latest process management tools, which help orders flow efficiently, and allows job requirements to be communicated at every step of the production process. It is our goal to provide complete customer satisfaction on every order.

Newcomb Spring provides our North American customers with localized, personal service by strategically locating our plants in different areas of the United States and Canada. These multiple locations also lower shipping costs – so Newcomb Spring parts can travel shorter distances to reach their final delivery destination. This network also provides manufacturing redundancy – if one plant ever goes off-line or has a large work load, another plant is able to quickly and accurately produce your parts. All of our locations are connected with real-time data sharing, for fast and efficient communications.





## Custom Manufacturing . . . . .

Newcomb Spring's parts are custom-manufactured to meet your specifications. Our experienced team can review your design and provide information about part function and material considerations.

Our plants are equipped with advanced manufacturing machinery and technologies that extend well beyond standard metal forming equipment. With more than a century of experience, Newcomb Spring recognizes the value of innovation and utilizes cutting-edge solutions to solve the toughest manufacturing challenges.

Newcomb Spring has built an entire Research and Development department for unique orders that require customized tooling or a non-standard approach. If the equipment to efficiently and cost-effectively manufacture your part does not exist, our R&D staff will simply build the technology to get the job done.

Our proprietary equipment designs include some of the industry's most progressive forming machinery and quality control systems. By combining imaging and forming technologies with real-time data reporting, we can provide some of the industry's best manufacturing processes. Our production capabilities are constantly improving, helping us produce parts rapidly, accurately and efficiently.



## Materials . . . . .

Newcomb Spring produces custom components from virtually any type of material – including standard, semi-precious and precious metals. Our advanced manufacturing processes reduce waste and increase part compliance, allowing Newcomb to produce parts using extremely rare materials at some of the industry's best prices. With state-of-the-art equipment, the latest quality control technologies and the experience of one of North America's largest metal forming companies, Newcomb Spring can offer our clients an incredible array of material options.

We work with material shapes including:

- Round
- Square
- Rectangular
- Round Edge
- One Half-Round
- Dog House
- Special Section & Shaped

We often work with customers to help evaluate which materials best fit their needs. Our experienced team can advise on stress limitations, special tolerances and environmental concerns that can affect the functionality of springs and forms, helping customers determine the best metal for their needs.

**While we can utilize virtually any material, some of our commonly requested metal options include:**

- Spring Steel
- Stainless Spring Steel
- Low Carbon Steel
- Phosphor Bronze
- Nickel Plated Carbon Steel
- Non-Ferrous Metals
- Monel®
- Gold
- Titanium
- & More
- Stainless Alloys
- High Carbon Steel
- Beryllium Copper
- Spring Brass
- Elgiloy®
- Hastelloy®
- Inconel®
- Silver
- Tin



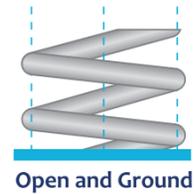
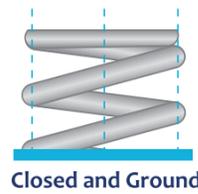
# COMPRESSION SPRINGS . . . .

Compression springs are designed to create resistance to a compressive force. Newcomb Spring uses the latest quality control technologies to monitor and control the length of these coil springs during the manufacturing process, maintaining strict compliance to your specifications.

While many of the compression springs we manufacture are constant-coiled, our advanced forming equipment rapidly and accurately produces springs in a variety of shapes, including:

- Open-Coiled
- Helical Shaped
- Coiled with a Constant Diameter
- Hourglass Shaped
- Barrel Shaped
- Custom Shapes
- Cone Shaped

We frequently produce compression springs using round wire, square wire, rectangular wire and special section wire. As the entire Newcomb Spring manufacturing process is customized, parts can be produced to meet virtually any need.



Compression spring ends are often ground to meet space requirements and to allow the spring to sit squarely on the load-bearing surface. Grinding also increases the number of active coils and the wire diameter available in a given volume of space, which can result in higher loads or lower stresses.

Our facilities offer a wide variety of grinding equipment, from hand-operated tools to automatic, high-speed vertical spindle disc grinders, so your parts are produced efficiently and at the lowest prices possible.

### Material size range

.002-inches to .625inches in diameter



# EXTENSION SPRINGS . . . .

Extension springs are designed to absorb and store energy by creating a resistance to a pulling force. All coils are active in an extension spring, and it is the initial tension that holds the coils together tightly. Our production capabilities for these springs meet almost any customer need, from a standard cross center hook, to a special purpose extension spring used on oven doors with extended hook ends.

As with all Newcomb Spring parts, we offer state-of-the-art production capabilities for the manufacturing of extension springs, and all of our processes are customized to comply with your specifications. While extension springs are usually produced using round wire because it is the most adaptable to standard coiler tooling, Newcomb Spring can also produce parts out of square, rectangular and special section wire.

Spring ends can be produced to vary in distance from the spring body. Newcomb Spring produced extension spring ends include:

- Standard Machine Ends
- Cross Loops
- Expanded Eyes
- Rectangular Ends
- Extended Twist Loops
- Hooks
- Reduced Eyes
- Teardrop-Shaped
- Draw Bars
- Swivel Hooks
- Threaded Inserts
- V-Hooks

### Material size range

.002-inches to .625inches in diameter



## TORSION SPRINGS .....

Torsion springs are often suited to situations where torque is applied from two directions, as they are designed to offer resistance to externally applied pressures. Torsion refers to the twisting action of the coils, although the wire itself is subjected to bending stresses rather than torsionally applied stresses. These springs perform at a maximum when supported over a tube or rod. Newcomb Spring facilities also manufacture an extensive array of double torsion springs.

While all Newcomb Spring parts are customized for your order specifications, many torsion spring ends are:

- Bent
- Twisted
- Produced with Custom Ends
- Hooked
- Looped

Torsion springs can be closed or open wound and are usually designed to wind up. While this type of spring is most often made of round wire, Newcomb Spring can produce torsion springs and double torsion springs out of a variety of materials, including round, square, rectangular and special



Torsion springs store rotational energy or apply torque. Newcomb Spring produces all of our torsion springs to wind up in use and to apply force in the direction of the wind. This protects the spring from damage that can be caused by bending stress.

### Material size range

.002-inches to .625inches in diameter

## STAMPINGS, STRIP FORMS & FLAT SPRINGS .....

Newcomb Spring offers a wide range of manufacturing capabilities to produce stampings, strip forms and flat springs. These parts are often manufactured on power presses, four-slides, verti-slides and specially built multi-slide machines using continuous coil material. Many of our stamped parts and metal forms are fabricated in conjunction with other components and assembled to customer specifications.

Newcomb Spring is equipped to produce stampings, strip forms and flat springs in small quantities from sheet material or etched blanks, as well as produce large, high-volume manufacturing runs. These parts are most often produced on power presses using a die set created for a specific part.

The extensive variety of equipment we utilize to manufacture these metal parts, combined with our use of form tools, enables Newcomb Spring to create complex shapes as well as produce die sets, which can be used for cutting, etching, notching, swedging, extruding and more. Our facilities also offer primary and secondary operation departments that make components of short-order flat forms. These forms are made from blanks produced by etching, EDM or simple dies.

### Material size range

.004 Inches to .125 inches thick and up to 5.0 inches wide



### Material Considerations For Metal Stampings & Flat Springs

Newcomb Spring is capable of manufacturing parts using virtually any material, although we typically produce flat springs and metal stampings from continuous coil material. The most frequently chosen coil materials are #3 slit edge, #5 deburred edge and #1 round edge. The main differences among these options are:

#3 Slit Edge - is frequently used when a die cut eliminates the edge of the material; when edge condition is not critical to a part's fit, form or function; or when costs prohibit other edge options.

#5 Deburred Edge - often is used when the edge condition is critical to a part's fit, form or function. This edging option offers improved safety in part and stock handling, as the edging process produces broken corners instead of square corners.

#1 Round Edge - one of the safest material options in terms of handling parts and stock. This edging also increases the cycle life.

## WIRE FORMS . . . . .

Newcomb Spring custom manufactures wire forms on a variety of equipment including CNC machines, four-slide machines, multi-slide machines and verti-slide machines. Our facilities are equipped with the latest metal forming technologies which allow us to produce extremely intricate parts, often without the need for special tooling or manual finishing. We use modern machinery and state-of-the-art technologies to quickly produce very precise orders.

Modern CNC forming machinery allows for fast wire form prototype production and easier design updates. Rapid prototypes provide the opportunity to confirm spatial requirements are met, and can avoid costly design errors.

Our wire forms are used in a diverse variety of installations and applications, from mission critical parts to components that undergo rigorous, daily use. We produce durable, reliable parts that provide dependable performance and long lifespans.

As with all Newcomb Spring components, we manufacture wire forms that are completely customized and meet strict specifications requirements. Most often, wire forms are produced from:

- Rolled Round Wire
- Rectangular Material
- Tempered Wire
- Flattened Round Wire
- Shaped Material
- Special Section Wire



### Material size range

.002-inches to .625inches in diameter



## BATTERY CONTACT SPRINGS . . . . .

Newcomb Spring produces battery contact springs from continuous coil materials as well as strip metal. Although we most often use round and rectangular wire, our efficient manufacturing equipment also can form square and special section wire.

Using state-of-the-art machinery, Newcomb Spring can produce an infinite variety of battery contact spring sizes and shapes, which are customized to fulfill virtually any customer need.

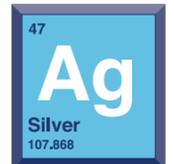
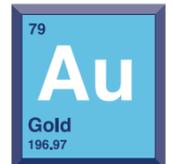
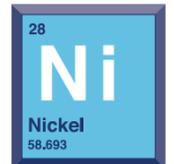
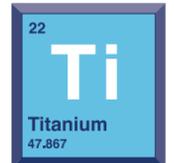
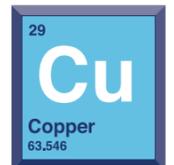
While Newcomb Spring facilities maintain an inventory of wire specially formulated for battery springs, other sizes and materials can also be supplied domestically, allowing us to quickly respond to your prototype and production requirements. In addition to our stock nickel-plated carbon steel wire, we often produce battery contacts using copper alloys, carbon steel and precious metals including silver and gold. Newcomb Spring uses highly precise production processes which allow us to reduce waste and produce competitively priced parts using rare metals.

### Factory-stocked material

.020 inch (.5mm) and .024 inch (.6mm) nickel-plated carbon steel spring wire

### Material Electrical Conductivity Wire/Strip Conductivity Percentage of IACS

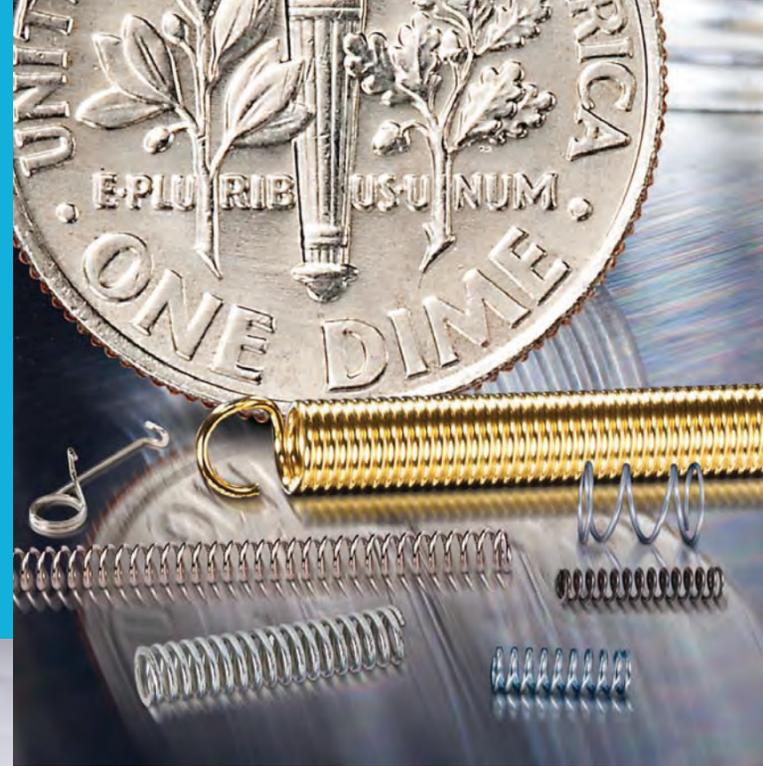
- Carbon Steel Music Wire: 7%
- Nickel Pre-Plated Music Wire: 20%
- Hard Drawn Carbon Steel: 7%
- Oil Tempered Carbon Steel: 7%
- Valve Spring Wire: 7%
- Chrome Vanadium: 7%
- Chrome Silicon: 5%
- 302 Stainless Steel Wire: 2%
- 17-7 Stainless Steel Wire: 2%
- NiCr Stainless Steel: 2%
- Phosphor Bronze: 15%
- Silicon Bronze (A): 7%
- Silicon Bronze (B): 12%
- Beryllium Copper: 21%
- Spring Brass, CA260: 17%
- Inconel® Alloy 600: 1.5%
- Inconel® Alloy X750: 1%
- Ni-Span-C® Alloy: 1.6%
- Monel® Alloy 400: 3.5%



## MICRO SPRINGS .....

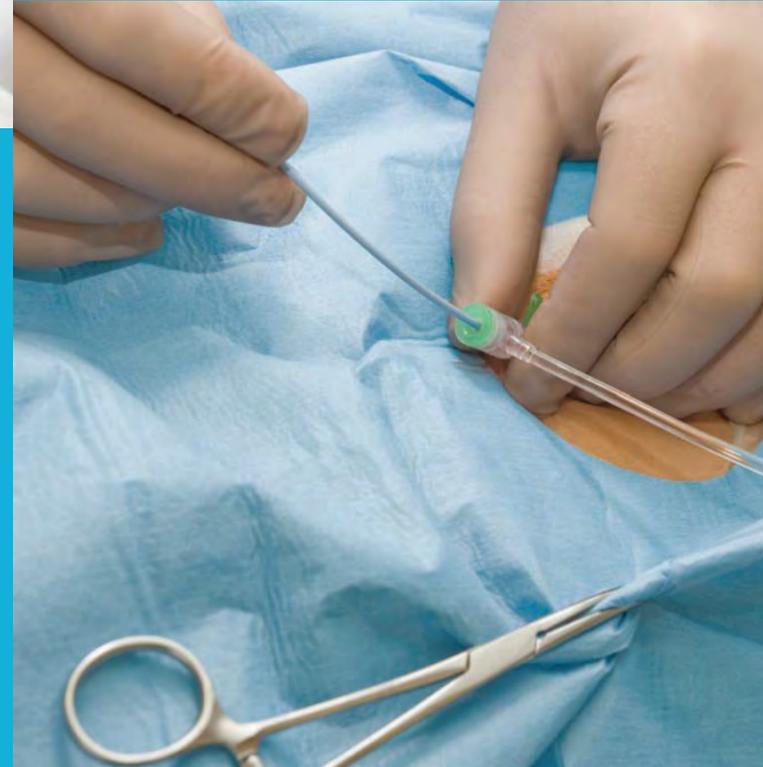
Newcomb Spring uses state-of-the-art equipment and advanced quality systems to manufacture our micro springs. Our operations and processes are designed to deliver the highest quality parts at low prices.

Newcomb Spring's micro components include micro compression, extension and torsion springs, as well as wire forms and stampings that fall in the micro-size range.



Parts are produced in a variety of shapes and lengths using round, square, rectangular and special section wire, as well as flat and strip material. With a wide range of material types, from standard spring steel to precious metals such as silver, gold and platinum, we custom produce our micro parts to meet your order specifications.

Our micro springs are utilized in a variety of unique, specialized and mission-critical applications, from medical to aerospace. Our team understand the importance of performance and dependability with these precision parts, and is a recognized leader in quality verification.



We offer advanced part testing and compliance reporting to meet the strictest order specifications, and are ready to put our expertise to work for you.

With a variety of secondary operations, from specialty packaging to electroplating for clear part identification, Newcomb Spring works to make our parts easy to use in your products.

Newcomb facilities manufacture:

- Micro Compression Springs
- Micro Extension Springs
- Micro Torsion Spring
- Other Custom Micro-Sized Parts

## SHAPED RINGS, HOOKS & HANGERS .....



Newcomb Spring produces a variety of hooks, hangers and shaped rings to meet customer requirements. Our processes are designed for efficiency and help to lower costs and shorten turnaround times.

We produce hooks, paint hooks and spring hooks using high-speed forming machinery that can bend wire up to 0.625-inches in diameter. Our engineers can advise on a hook's width, length and wire diameter based on your needs and application requirements. While most customers request V-shaped ends for paint hooks, all Newcomb Spring hooks can be produced with an array of ends types, which can vary in design based on your needs.

Our hook end types include:

- V-Hooks
- Round Hooks
- Straight Legs
- Chamfered
- Reduced End Swivel Hooks
- Custom Designed Ends

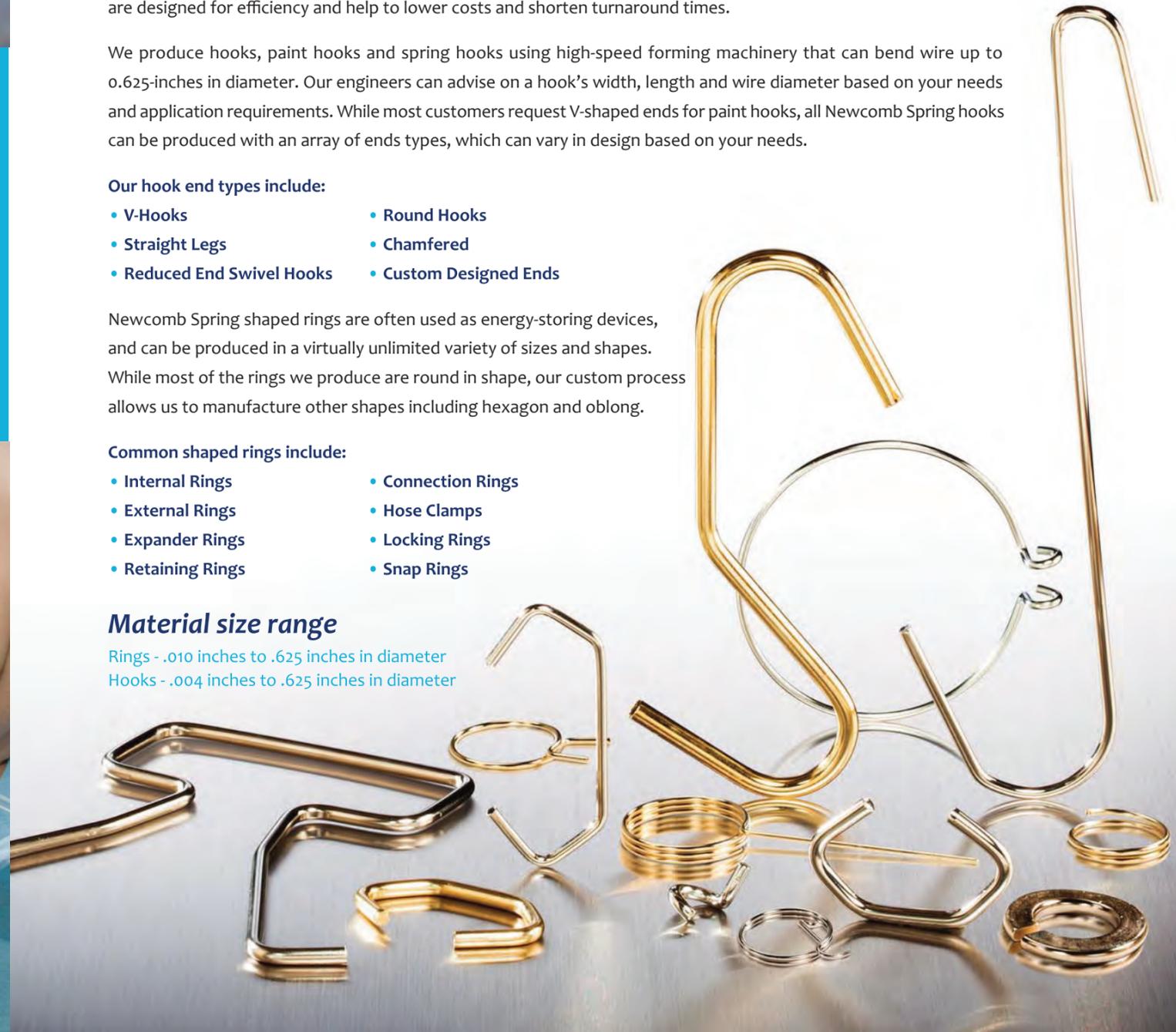
Newcomb Spring shaped rings are often used as energy-storing devices, and can be produced in a virtually unlimited variety of sizes and shapes. While most of the rings we produce are round in shape, our custom process allows us to manufacture other shapes including hexagon and oblong.

Common shaped rings include:

- Internal Rings
- Connection Rings
- External Rings
- Hose Clamps
- Expander Rings
- Locking Rings
- Retaining Rings
- Snap Rings

### Material size range

Rings - .010 inches to .625 inches in diameter  
Hooks - .004 inches to .625 inches in diameter





## MAGAZINE SPRINGS . . . .

Newcomb Spring produces magazine springs, as well as magazine catch springs, for a variety of applications and for many mission-critical functions. We utilize high-speed equipment to rapidly produce magazine springs with strict compliance to specifications. Our precise operations and advanced quality control testing allow Newcomb Spring parts to meet even the most demanding requirements.

Newcomb Spring is compliant with a variety of quality systems used by the firearms industry, and we maintain ISO, ITAR, DDTC, SAM and a variety of MIL certifications.

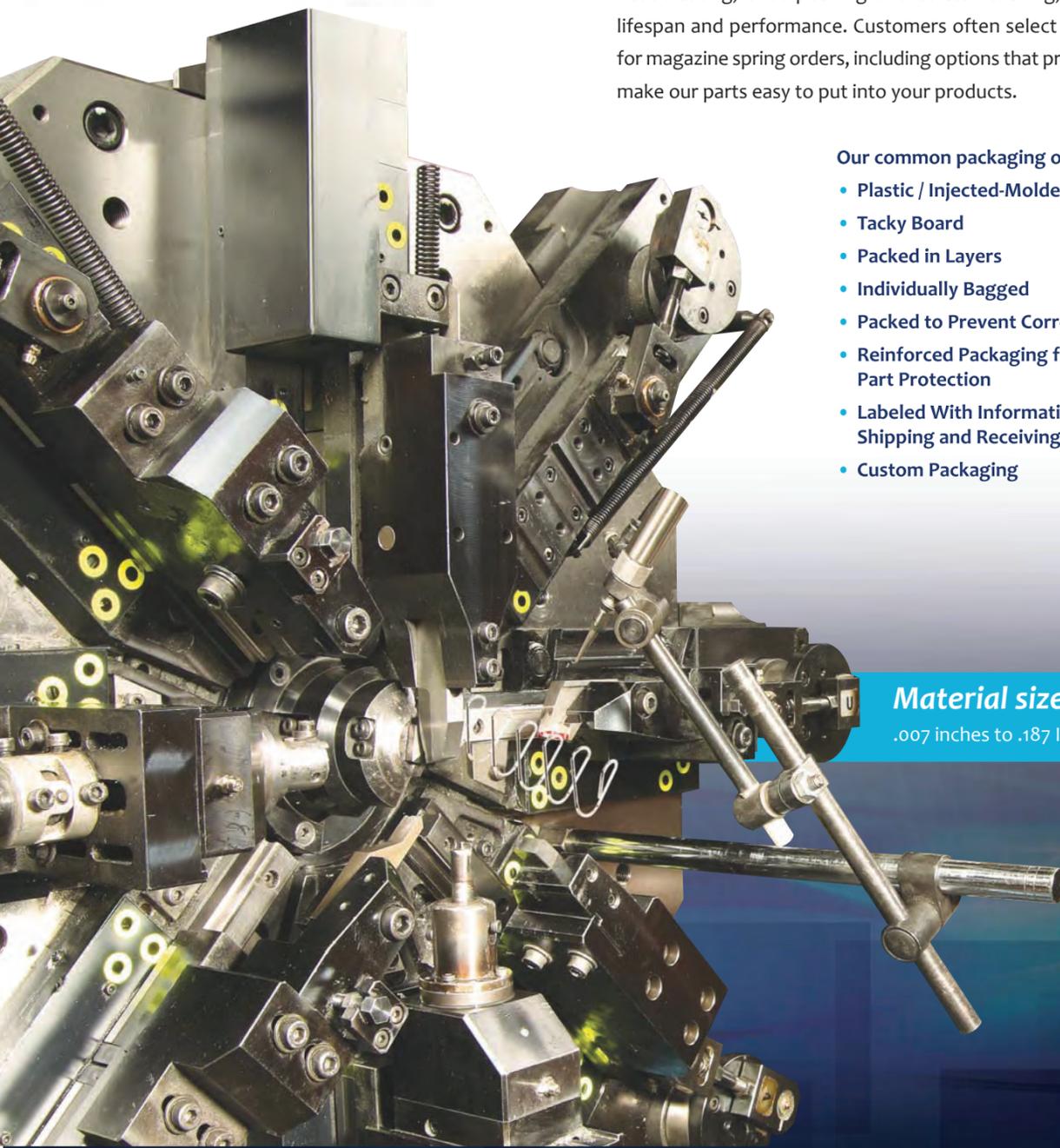
Many of our magazine springs undergo secondary processes, such as heat-treating, shot peening and stress relieving, to improve part lifespan and performance. Customers often select special packaging for magazine spring orders, including options that prevent damage and make our parts easy to put into your products.

### Our common packaging options include:

- Plastic / Injected-Molded Trays
- Tacky Board
- Packed in Layers
- Individually Bagged
- Packed to Prevent Corrosion
- Reinforced Packaging for Increased Part Protection
- Labeled With Information Helpful for Shipping and Receiving Departments
- Custom Packaging

### Material size range

.007 inches to .187 Inches in diameter



## Leading the Industry & Forming the Future . . . .

Newcomb Spring is built on a foundation of traditional business values – goals and ideals which we continue to honor today. With a manufacturing history that began in the 1890's, Newcomb Spring's mission is to produce the highest quality metal parts while offering personalized customer service. We continue to operate as a family run business, with four generations of the Jacobson family proudly leading the company.

Newcomb Spring Corp. founder, George L.C. Jacobson, built a business that customers trusted to deliver high-quality parts on time and for a competitive price. He valued new ideas and manufacturing advancements, and his innovative spirit continues to be felt today. While running Newcomb Spring, he helped create the Association of Spring Manufacturers (now known as the Spring Manufacturers Institute, or SMI), of which Newcomb Spring is a charter member.

The Jacobson family continues to lead Newcomb Spring, and has expanded the organization's capabilities while maintaining its position as an industry leader. With state-of-art technologies, advanced equipment, in-house R&D and a network of facilities, Newcomb Spring continues to be one of the largest and most sophisticated metal forming companies in North America.

Newcomb Spring offers an unmatched combination of experience, service and technology to the spring, stamping and wire form manufacturing industry. It's how we "Form the Future."





# NEWCOMB SPRING CORP

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ISO 9001 Certified ♦ ITAR ♦ DDTC ♦ MIL ♦ SAM



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