

联合弹簧

## **Engineering Innovative SPRING & STAMPING SOLUTIONS**

## FROM **PROTOTYPES** TO **PRODUCTION**



**AEROSPACE & DEFENSE** 

With a deep understanding of Aerospace & Defense precision requirements, we expertly engineer & manufacture AS9100 components with DFARS compliant materials for critical applications, including: commercial & military aviation, satellite systems, space vehicles & missiles.



**COMPRESSOR COMPONENTS** 

As a global leader in the design & manufacture of precision engineered flapper & reed valves for both automotive & industrial HVAC & refrigeration, our experience in patented product & process innovations provide a competitive advantage to our customers.



We custom-design & produce Power Springs & other Flat Coil products in a wide range of sizes & materials for applications that are non-magnetic, high temperature & high fatigue.



**BELLEVILLE DISC SPRING WASHERS** 

Our custom engineered Belleville spring washers excel in high load applications where space is a premium, such as in transmission clutch assemblies, detents & loading fasteners. We combine them in various sequences to offer optimized loadcarrying alternatives.



Our capabilities & expertise enable us to engineer & manufacture all your custom, metal stampings & flat spring requirements in a variety of shapes, sizes or materials.



**MEDICAL** 

We have expertise in designing precision engineered solutions for a range of medical devices, including: surgical, medical & optical instruments, electro-medical & x-ray equipment & many other custom medical applications. Our portfolio includes medical certified division(s).



Produced in thousands of configurations for multiple applications, our custom engineered, precision compression springs are efficient & reliable, manufactured to exacting tolerances for both manual & automated assembly.



**ENGINE/DRIVELINE SPRINGS** 

Engineered, designed & manufactured in one of our world-class facilities, our precision spring solutions (engine valve, TCC) meet or exceed customer requirements using the latest materials & innovative, state-of-the-art technologies (product & process).



MICRO/SMALL SPRINGS & STAMPINGS

Our precision micro/small springs, stampings, wire forms & inductors are used in a variety of computer & telecommunications applications. Additional capabilities include: precious metal plating, assembly, tape & reel packaging & other custom solutions.





















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We manufacture a wide variety of complex multi-slide components using various material grades, sections (both wire & flat) & sizes to your specifications that optimizes both performance & life-cycle costs.



SPECIAL ORDER/PROTOTYPES

Special Order is a service we offer to meet your requirements for custom, engineered solutions (Prototype & Short Run) using our diverse manufacturing capabilities for precision springs, stampings, assemblies & other critical components.



Our in-depth expertise with metal stamping enables us to offer the exact custom spring washers to meet your application requirements. Belleville, Slotted, Curved, Wave, Finger & Disc spring washers are available in many materials & sizes.



We have superior capabilities in designing, engineering & assembling parts into sub-assemblies, spring packs & finished products. We provide turnkey convenience – assembly, testing & packaging to order.



TORSION SPRINGS

We design, engineer & manufacture custom torsion springs for a multitude of applications & industries, such as: hinges, counterbalance mechanisms, lever returns, ratchets, machine components, small electronic devices & chair control units



Our innovative automotive transmission springs (TCC, arcuate) are engineered & produced using the latest materials & state of the art manufacturing processes. This technology supports modern, high efficiency, fuel saving transmission designs, optimizing performance & lifecycle costs.



Our transmission disc springs are engineered & produced using the latest materials through innovative, state-of-the-art manufacturing processes. We partner with our customers to solve their design & manufacturing challenges driven by environmental regulations, efficiency & global competition.



We design & manufacture transmission snap rings that provide a "shoulder" that functions to locate & retain parts on shafts or in cylinders, thus enabling an economy of manufacture, ease of assembly & accuracy of positioning & tolerance take-up versus alternate solutions.



Our world class engineering & manufacturing capabilities include custom wire forms in a wide variety of clips, clamps & other static or dynamic applications. With over 157 years of spring making expertise, we offer unique innovative solutions.

















