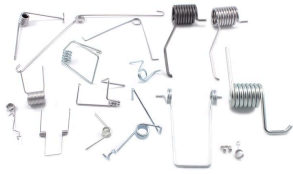


TORSION SPRINGS

Torsion springs are helical springs, also known as coil springs. They are designed to exert torque in a radial direction. They are the opposite of compression springs which are designed to keep mechanisms apart. Torsional springs hold two mechanisms together and their tightness is proportional to the energy stored inside of it. Tension must be removed in order for the spring to release this stored energy.

Single & Double-Helical Spring Configurations



(/wp-content/uploads/2015/03/cap-torsion-lg.jpg)We carefully manufacture single-bodied and double-helical torsion springs with different end configurations including straight, offset, and hinge ends. Based on your custom application needs, torsion springs can be produced with wire diameters ranging from 0.005" to 0.250", and designed to rotate either counter-clockwise or clockwise. Operating environment, life expectancy, and spring load are taken into account when designing your custom springs. Our design allows torsion springs to be used in the direction that winds the coil. Generally, a torsion spring is used over a shaft or arbor, so when selecting the appropriate mandrel size we recommend allowing roughly 10% clearance for various deflections. If your application requires a high deflection, a reduction in mandrel size is suggested to ensure proper performance.

At James Spring & Wire, we offer springs in a variety of materials and sizes for your convenience – we want to be your one-stop shop for any of your spring needs. There are several materials to choose from, including Beryllium Copper, Elgiloy, Hastelloy, Chrome Silicone, Chrome Vanadium, and much more.

Customized Surface Treatment Options

Need surface treatment for your torsion springs? James Spring & Wire has the capability to provide several surface treatment options for your springs, including anodizing, bead blasting, passivation, electro-polish, powder coating, rust prevention, deburring, color coding, laser etching, and more. We also offer torsion spring plating, with finishes such as black oxide, cadmium, chrome, gold, nickel, phosphate, tin, and zinc.

As an ISO-certified torsion spring manufacturer, our quality control is second to none. We are proud to offer nothing but the highest quality springs and torsion spring treatments for all your application needs. Contact us (/contact-us/) today to learn more!

Materials List

Beryllium Copper, Chrome Silicon, Chrome Vanadium, Elgiloy, Hard Drawn Wire, Hastelloy, Inconel, Monel, MP35N, Music Wire, Nitinol, Oil Tempered, Phosphor Bronze, Stainless Steel (17-7 SS, 302 SS, 304 SS, 316 SS, & 316L SS), Titanium

Wire Diameter Springs are available in wire sizes ranging from 0.005" to 0.250"

Equipment List CNC Spring Coilers

Torsion Spring end Configurations

- Custom Shaped Ends
- Hinge Ends
- Offset Ends
- Short Hook Ends
- Straight Ends

Certifications ISO 9001:2015

Quality Control Material and Part Certifications, Production Part Approval Process (PPAP), Statistical Process Control (SPC)

- Anodizing
- Bead Blasting
- Citric & Nitric Passivation
- Cleaning - Conventional and Ultrasonic
- Color Coding
- Deburr - Vibratory & Tumble
- Electro Polish
- Laser Etching
- Powder Coating
- Rust Preventative
- Shot Peening
- Stress Relieving & Heat Treating

- Plating**
- Black Oxide
 - Cadmium
 - Chrome
 - Gold
 - Nickel
 - Phosphate
 - Tin
 - Zinc

Frequently Asked Questions About Torsion Spring

- **What are torsion springs used for?**

Torsion springs are used in a variety of applications, including automotive, aerospace, medical devices, and industrial equipment. They are designed to resist twisting or torque and are commonly used to provide rotational force or maintain tension in a system.
- + **What materials can be used to manufacture?**
- + **What factors should be considered during the design?**
- + **What is the spring rate?**
- + **What is the maximum torque the spring can handle?**
- + **What is the manufacturing process?**
- + **Can custom torsion springs be manufactured?**
- + **What is the lead time for manufacturing?**



(https://www.jamesspring.com/wp-content/uploads/2023/09/0156858_ENG_JAMES-SPRING-WIRE-COMPANY.pdf)



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