



Precision Metal Spring Manufacturing



PRODUCT CATALOG

Compression • Extension • Torsion • Die • Disc • Wave Springs



About Quality Spring

We offer a well-developed, bespoke design and manufacturing service to suit your requirements, covering an extensive range of compression, extension, and torsion springs. Our team provides complete design and development support and is always available to advise on spring design and application.

Quality Spring is a prominent manufacturer of extension springs in India, with the capacity to manufacture products across wire diameters from 0.1 mm to 50 mm, and spring steel strips from 0.1 mm to 4.0 mm thick.

The following pages present our core product range with representative diagrams, typical applications, and standard specification ranges. Exact part specifications (wire diameter, load rate, finish) are confirmed against each customer's drawing or requirement at the time of order.

About Quality Spring Products

➤ Compression Springs

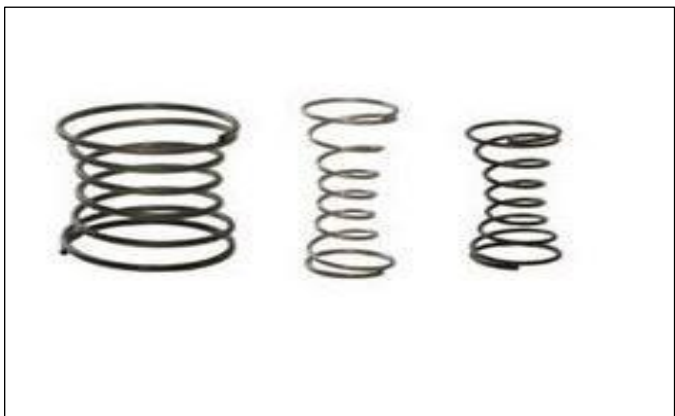
- A compression spring is an open-coil helical spring that resists a compressive force applied axially. Compression springs are usually coiled as a constant- diameter cylinder.
- Other common forms of compression springs such as conical, concave(barrel), convex(hourglass), or various combinations of these are used as required by the Customer



Compression Spring



Conical Spring



Concave Spring



Concave Spring

About Quality Spring Products

➤ Tension and Extension Springs

- Extension springs are springs which absorb and store energy by resisting a pulling force. Various types of ends are used to attach the extension spring to the source of the force.
- Extension springs are usually straight, tapered and conical.
- Springs are available in various shapes and sizes. These are made in variety of extensions as per customer applications.



Tension Spring

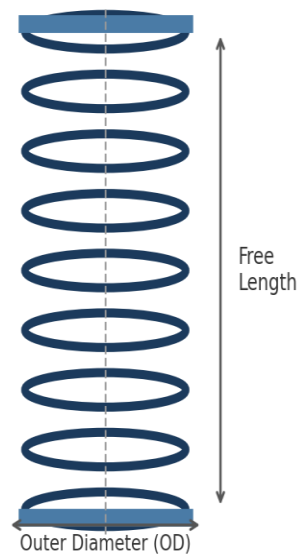


Tension & Extension Spring



Concave Spring

Compression Springs



Overview

Open-coil helical springs that resist compressive (squeezing) force and push back to their free length when the load is removed, usually coiled as a constant-diameter cylinder. Other common forms — conical, concave (barrel), convex (hourglass), or combinations of these — are also produced as required by the customer.

Product Gallery



Compression Spring



Conical Spring



Concave Spring

Typical Applications

- Automotive suspension & valve assemblies
- Industrial machinery and molds

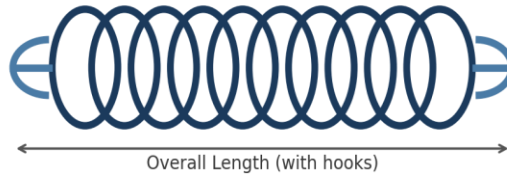


- Electronics & switches
- Mattresses and furniture
- Agricultural and pump equipment

Standard Specifications

Specification	Standard Range
Material	Music wire (ASTM A228), Oil-tempered wire, Stainless Steel 302/304/316, Chrome Silicon
Wire Diameter	0.10 mm – 50 mm
Outer Diameter (OD)	1.5 mm – 150 mm
Free Length	Up to 500 mm (custom lengths on request)
Shape Variants	Cylindrical, Conical, Concave (Barrel), Convex (Hourglass)
Finish	Plain, Zinc plated, Phosphate coated, Powder coated
Tolerance	As per DIN 2095 / customer drawing
End Types	Plain, Squared, Squared & Ground

Extension (Tension) Springs



Overview

Close-wound helical springs that absorb and store energy by resisting a pulling (tension) force, returning to their original length when released. Extension springs are usually made straight, tapered, or conical, with various hook and loop end types used to attach the spring to the source of the force.

Product Gallery



Tension Spring



Tension & Extension Spring



Extension Springs

Typical Applications

- Garage doors and trampolines
- Agricultural machinery
- Toys and consumer products
- Balancing and counterweight mechanisms
- Industrial trigger and latch systems

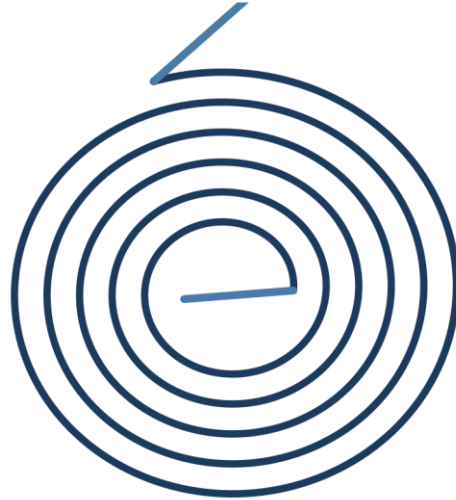
Standard Specifications

Specification	Standard Range
Material	High Carbon Steel, Stainless Steel, Music Wire
Wire Diameter	0.15 mm – 10 mm



Outer Diameter (OD)	2 mm – 100 mm
Body Length	Up to 400 mm
Shape Variants	Straight, Tapered, Conical
End Types	Machine hooks, Side loops, Extended hooks, Custom ends
Finish	Plain, Zinc plated, Passivated (SS)
Tolerance	As per DIN 2097 / customer drawing

Torsion Springs



Coiled Body with Straight Legs

Overview

Helically coiled springs with straight or formed legs that exert rotational (twisting) force. As the legs are angularly displaced, the coil winds tighter and generates torque, returning to its set position when released.

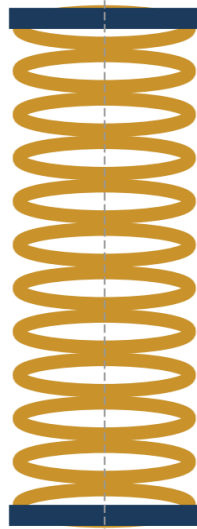
Typical Applications

- Clothespins, clips and hinges
- Garage door and cabinet mechanisms
- Automotive levers and pedals
- Counterbalance and ratchet assemblies
- Electrical switchgear

Standard Specifications

Specification	Standard Range
Material	Music Wire, Stainless Steel, Chrome Vanadium
Wire Diameter	0.20 mm – 10 mm
Coil Diameter	2 mm – 80 mm
Leg Configuration	Straight, Formed, Tangential, Custom angle
Wind Direction	Left-hand or Right-hand
Finish	Plain, Zinc plated, Passivated
Tolerance	As per DIN 2194 / customer drawing

Die Springs (Heavy-Duty)



Heavy-Duty Rectangular Wire Coil

Overview

Heavy-duty compression springs made from rectangular or specially profiled wire, engineered for high load capacity in a compact envelope. Widely color-coded by load rating (light, medium, heavy, extra-heavy) for quick identification in press tools and dies.

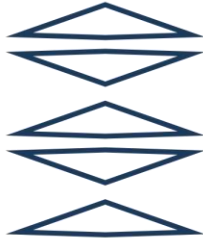
Typical Applications

- Stamping dies and press tools
- Molds and fixtures
- Heavy industrial machinery
- High-load, short-travel applications

Standard Specifications

Specification	Standard Range
Material	Chrome Silicon / Chrome Vanadium alloy steel
Wire Section	Rectangular, profiled wire
Outer Diameter (OD)	10 mm – 100 mm
Load Rating	Light, Medium, Heavy, Extra-Heavy (color-coded)
Finish	Color-coded coating (per ISO 10243)
Tolerance	As per ISO 10243 / customer drawing

Disc Springs (Belleville Washers)



Stacked Belleville (Disc) Washers

Overview

Cone-shaped washers that deliver high load in a very short deflection and small axial space. Individual discs can be stacked in series (for greater deflection) or parallel (for greater load) to tune the spring characteristic.

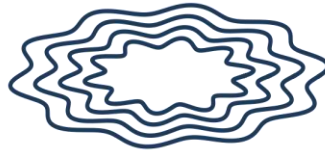
Typical Applications

- Bolted joint load retention
- Clutches and brakes
- Valves and safety relief devices
- Heavy machinery preload applications

Standard Specifications

Specification	Standard Range
Material	Spring Steel, Stainless Steel, Alloy Steel
Outer Diameter	8 mm – 250 mm
Thickness	0.3 mm – 10 mm
Stacking	Series, Parallel, or Series-Parallel sets
Finish	Plain, Phosphate coated, Zinc plated
Tolerance	As per DIN 2093 / customer drawing

Wave Springs



Multi-Turn Wave Coil

Overview

Flat wire, multi-turn springs with a wave pattern that provide spring force similar to a standard coil spring at roughly one-third to one-half the axial height, ideal for space-constrained assemblies.

Typical Applications

- Bearing preload
- Electronic connectors
- Compact seal and clutch assemblies
- Medical devices and instrumentation

Standard Specifications

Specification	Standard Range
Material	Stainless Steel, Carbon Steel, Alloy Steel flat wire
Inside Diameter	5 mm – 200 mm
Number of Turns	2 – 20 (application dependent)
Waves per Turn	2 – 3 (standard), custom available
Finish	Plain, Passivated
Tolerance	As per customer drawing



Custom Manufacturing & How to Order

Beyond the standard ranges shown above, Quality Spring designs and manufactures fully custom springs to a customer's drawing, sample, or performance requirement, including special wire materials, plating/coating, and combined geometries.

Information needed for a quotation

- Spring type (compression, extension, torsion, die, disc, wave)
- Material and wire diameter
- Key dimensions — OD/ID, free length, number of coils
- Load / deflection requirement or working force
- Finish / plating requirement
- Quantity and target delivery date

Contact

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This catalog presents representative diagrams and standard specification ranges. Final drawings, tolerances, and pricing are confirmed by order.