What Are Compression Spring Used For?

Engineering Hardware & Fasteners · engineeringhardware.com/applications/cad-svg-142-spring

Compression Springs are used for storing and returning mechanical energy. They are manufactured to ISO / DIN, and selection is driven by the wire diameter, the fit and tolerance the assembly requires, and the service environment.

Primary duty

Storing and returning mechanical energy

Governing standard

ISO / DIN

Wire diameter range

0.6 mm to 5 mm

Category

Springs

Application notes are general engineering guidance. Verify the property class and any approval requirement against your own design calculation.

Compression Springs are used primarily for storing and returning mechanical energy. This page lists the industries and assemblies where they are specified, the selection criteria that matter for each application, installation practice, and the cases where a different fastener type is the correct choice. Parts are supplied to ISO / DIN. Stocked across roughly 0.6 mm to 5 mm, they cover light-duty and instrument-scale work.

Typical Applications for Compression Spring — ISO / DIN (Series 142)

The most common settings where these are specified:

Maintenance & repair (MRO): a stocked size for servicing existing plant where the original fastener spec must be matched.

Fabrication & metalwork: bench and on-site assembly of steel frames, enclosures and weldments.

Mechanisms & latches: return and detent forces in moving assemblies.

Valves & actuators: controlled closing or opening force.

Vibration & cushioning: absorbing shock and maintaining contact pressure.

How to Specify Compression Spring — ISO / DIN (Series 142) for Your Application

Size: Select on wire diameter, and confirm it against the mating feature in the assembly. This product spans 0.6 mm–5 mm; check the full table below for the exact dimensions of each size.

Material: Choose the material and finish for the service environment — plated steel for general use, stainless for corrosion resistance.

Environment: For damp, coastal or chemical exposure prefer A4/316 stainless or a suitable coating; indoors, plated steel or A2 is usually sufficient.

Standard: This is a trade-series article rather than one covered by a published dimensional standard, so dimensions can differ between manufacturers. Quote the dimensions you need — or the part you are replacing — rather than a standard number.

Where Compression Spring — ISO / DIN (Series 142) Are Not the Right Choice

Not where a precise, repeatable force is needed without rating the spring, and avoid over-stressing beyond the rated deflection.

Custom manufacturing · Made to drawing

Need a compression spring outside the standard range?

A non-standard spring is quoted from the drawing; where one already exists in the catalog, the special is usually a variation on its tooling.

Minimum order from 2,000 pieces; samples within 7 days of drawing approval.

Custom spring manufacturing (https://engineeringhardware.com/custom/springs/)

Send a drawing (https://engineeringhardware.com/custom/springs/#rfq)

Technical Drawing

Customize the parameters below — every spec field is editable, and the drawing redraws to match the values you choose. Changing the size will snap the other fields to that size's standard values; you can then override any individual value.

Dimensioned line drawing of 0.6 Compression Spring — ISO / DIN (Series 142). Side view and top view, drawn to the dimensions in the table below and redrawn for any size selected.

Opens a short step to confirm the exact specification before you enter contact details.

Request a Quote

Click “Request this configuration” under the drawing to confirm the exact specification, then add your contact details. You can also send the request without a specification — but only an accurate selection gets an accurate quote.

Dimensions & Specifications (ISO / DIN)

Wire dia d (mm)	Outer diameter De (mm)	Free length Lo (mm)	Rate k (N/mm)	Ratec
0.6	5.2	20	1.5	12
0.8	6.6	25	2.5	22
1.0	8.0	30	3.5	35
1.2	10.4	40	6.0	55
1.6	15.2	60	8.5	90
2.0	20.0	80	18.0	165
2.5	25.0	100	28.0	260
3.0	30.0	120	45.0	450
4.0	40.0	150	90.0	1000
5.0	50.0	200	170	1900

Video: What Are Compression Spring Used For? in use

(https://www.youtube.com/watch?v=xKsRGG3uwJM)(https://www.youtube.com/watch?v=xKsRGG3uwJM)

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Third-party video, selected automatically for this topic. It is not produced by Engineering Hardware and is not a specification source — use the tables on this page for dimensional data.

Inside the plant

Manufactured in our own plant

This part is cold-formed, threaded, heat-treated and finished in-house. The stages below are where its class and finish are actually decided.

01

Cold heading

Wire rod is drawn to size and cold-formed into blanks. Forming rather than cutting keeps the grain flow continuous around the head, which is where a bolt is most likely to fail.

Head dimensions and under-head radius checked at set-up and per shift.

02

Thread rolling

Threads are rolled between hardened dies rather than cut. Rolled threads are stronger in fatigue than cut threads and hold pitch and flank angle far more consistently across a batch.

Go / no-go ring gauges to ISO 965 tolerance class 6g.

03

Heat treatment

Quench-and-temper brings carbon and alloy steel to the property class ordered — 8.8, 10.9 or 12.9 — with the furnace charge tracked so a finished lot can be traced back to it.

Core hardness and tensile tested per lot to ISO 898-1.

04

Surface treatment

Zinc, zinc-nickel, hot-dip galvanizing, black oxide, phosphate and Dacromet, selected against the service environment rather than against the price list.

Coating thickness and neutral salt spray hours to ISO 9227.

Frequently Asked Questions

What are Compression Spring — ISO / DIN (Series 142) used for?

Storing and returning mechanical energy. They are supplied to ISO / DIN.

Which industries use Compression Spring — ISO / DIN (Series 142)?

They are commonly specified in mechanisms & latches, valves & actuators and vibration & cushioning, among other sectors.

How do I choose the right size of Compression Spring — ISO / DIN (Series 142)?

Select on wire diameter and on the fit the assembly requires. This product is available from 0.6 mm to 5 mm; the full dimension table on this page lists each size.

How do I avoid over-stressing Compression Spring — ISO / DIN (Series 142)?

Stay within the rated deflection and load. Compressing or extending a spring beyond its design limit causes permanent set or fatigue failure.

Can I get a quote for Compression Spring — ISO / DIN (Series 142) in the size and material I need?

Yes. Use the technical drawing and quote form on this page to set the size and options, then send the exact configuration to our team for pricing and lead time.

Related Pages

Product page: Compression Spring — ISO / DIN (Series 142) — specifications & sizes (https://engineeringhardware.com/fastener/cad-svg-142-spring/)

Compression Spring — ISO / DIN (Series 142) Specification Guides

- **A4 stainless Compression Spring — ISO / DIN (Series 142) (https://engineeringhardware.com/guide/material/a4-stainless-steel-cad-svg-142-spring/)**

Related Fastener Applications

- **Compression Spring — ISO / DIN (Series 141) applications (https://engineeringhardware.com/applications/cad-svg-141-spring/)**
- **Compression Spring — ISO / DIN (Series 144) applications (https://engineeringhardware.com/applications/cad-svg-144-spring/)**
- **Compression Spring — ISO / DIN (Series 145) applications (https://engineeringhardware.com/applications/cad-svg-145-spring/)**
- **Compression Spring — ISO / DIN (Series 146) applications (https://engineeringhardware.com/applications/cad-svg-146-spring/)**
- **Compression Springs applications (https://engineeringhardware.com/applications/compression-springs/)**
- **Extension Spring — ISO / DIN (Series 143) applications (https://engineeringhardware.com/applications/cad-svg-143-extensionspring/)**