What Are Extension Spring Used For?

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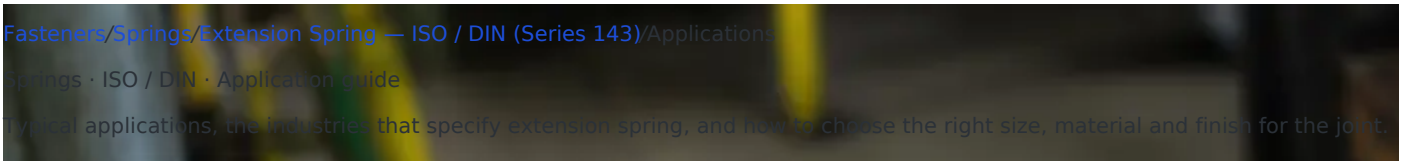

Extension Springs are used for storing and returning mechanical energy. They are manufactured to ISO / DIN, and selection is driven by the wire diameter, the fit and tolerance the assembly requires, and the service environment.

Primary duty
: Storing and returning mechanical energy

Governing standard
: ISO / DIN

Wire diameter range
: 0.8 mm to 4 mm

Category
: Springs

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

Application guide for Extension Springs to ISO / DIN. The core duty of the type is storing and returning mechanical energy. The typical industries, the how-to-specify checklist, assembly practice and the exclusion cases are set out below. Stocked across roughly 0.8 mm to 4 mm, they cover light-duty and instrument-scale work.

Typical Applications for Extension Spring — ISO / DIN (Series 143)

The most common settings where these are specified:

- **Vibration & cushioning:** absorbing shock and maintaining contact pressure.
- **General machine building:** fastening covers, brackets, motors and sub-assemblies on production equipment.
- **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.

How to Specify Extension Spring — ISO / DIN (Series 143) for Your Application

- **Size:** Select on wire diameter, and confirm it against the mating feature in the assembly. This product spans 0.8 mm–4 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 product is supplied to ISO / DIN. Quoting the standard on your order guarantees interchangeable dimensions between suppliers.

Where Extension Spring — ISO / DIN (Series 143) 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.

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.

Sends the selected values to the quote form below.

Request a Quote

The form below follows the current technical drawing configuration. Change the drawing values above and the request details update automatically.

Dimensions & Specifications (ISO / DIN)

Wire dia d (mm)	Outer diameter De (mm)	Free length Lo (mm)	Initial tension F0 (N)	Rate k (N/mm)	Material	Reference standard
0.8	6	30	2	2.5	Music wire	DIN 2097 / GB/T 23935
1.0	8	40	4	4.0	Music wire	DIN 2097 / GB/T 23935
1.2	10	50	6	6.5	Music wire	DIN 2097 / GB/T 23935
1.6	14	70	10	12.0	Music wire	DIN 2097 / GB/T 23935
2.0	18	90	18	20.0	Music wire	DIN 2097 / GB/T 23935
2.5	22	120	28	32.0	Music wire	DIN 2097 / GB/T 23935
3.0	28	150	45	55.0	Music wire	DIN 2097 / GB/T 23935
4.0	40	200	90	110.0	Music wire	DIN 2097 / GB/T 23935

Video: What Are Extension Spring Used For? in use

► Watch video: https://www.youtube.com/watch?v=mbUZnIXDoMk

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.

1. 

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.

2. 

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.

3. 

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.

4. 

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

Are Extension Spring — ISO / DIN (Series 143) made to a recognized standard?
Yes — they are manufactured to ISO / DIN, so dimensions are interchangeable between suppliers when you quote the standard on your order.

What are Extension Spring — ISO / DIN (Series 143) used for?
Storing and returning mechanical energy. They are supplied to ISO / DIN.

Which industries use Extension Spring — ISO / DIN (Series 143)?
They are commonly specified in maintenance & repair (mro), fabrication & metalwork and mechanisms & latches, among other sectors.

How do I choose the right size of Extension Spring — ISO / DIN (Series 143)?

Select on wire diameter and on the fit the assembly requires. This product is available from 0.8 mm to 4 mm; the full dimension table on this page lists each size.

Can I get a quote for Extension Spring — ISO / DIN (Series 143) 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: Extension Spring — ISO / DIN (Series 143) — specifications & sizes

Extension Spring — ISO / DIN (Series 143) Specification Guides

- A4 stainless Extension Spring — ISO / DIN (Series 143)

Related Fastener Applications

- Compression Spring — ISO / DIN (Series 141) applications
- Compression Spring — ISO / DIN (Series 142) applications
- Compression Spring — ISO / DIN (Series 144) applications
- Compression Spring — ISO / DIN (Series 145) applications
- Compression Spring — ISO / DIN (Series 146) applications
- Compression Springs applications