

# How to Improve Product Design and Manufacturability with the Coiled Spring Pin

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In any assembled component there are three ways to reduce the overall cost of the assembly: reduce the cost of the individual components, reduce component preparation cost, and reduce the cost to assemble the components. To achieve optimal low cost designs, Design Engineers must examine not only product design, but the entire assembly process. "Fastening products which improve the robustness of the overall product design and simplify the assembly process provide a win-win for the company," indicated Christie L. Jones, SPIROL International's North American Market Development Manager. "Unfortunately, many times the fastener is an after-thought during the design process, and the Designer has lost the opportunity to achieve an optimum product and manufacturing process unless they redesign."

An example of a fastening product which fits this "win-win" category is the Coiled Pin. The Coiled Pin is a self-retaining fastener designed to absorb forces during use of the end-product, which thereby improves the life of the assembly and reduces warranty costs. In addition, it simplifies the design of an assembly as it replaces multiple components with one pin, and decreases the cost of preparation for installation. Perhaps best of all, it is easy to automate so assembly and the associated labor time and cost are minimized.

By design, the Coiled Pin has an interference "fit" that conforms to the shape and size of the mating component's hole. Coiling, or flexing, of the pin results in controlled insertion forces that prevents damage to the mating component during installation. In addition, the flexibility of the pin also protects the component from damage during the product's life as it absorbs working forces. Finally, the flexibility of the pin provides a retention force that will keep the pin in the hole for the life of the assembly.

Coiled Pins operate in holes with relatively wide tolerances. In most assemblies, Coiled Pins can be utilized in holes that have simply been drilled rather than prepared with an expensive reaming operation. This reduces the cost of hole preparation; another important factor in reducing the overall cost of the assembly.



**Flexibility under load: Coiled pins continue to flex after insertion when a load is applied to the pin.**

The combination of square, burr-free ends, controlled insertion forces, and its symmetrical design, all of which ease feeding of the pins, makes the Coiled Pin the ideal component for semi or fully automated assembly systems.

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***SPIROL offers free samples and free engineering support.***

Please contact us for our **Coiled Spring Pins** catalog, samples, or for a visit by your local SPIROL applications engineer.

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