What Differentiates Coiled Pins?

Prior to Installation

All Spring Pins have the common characteristic of a pin diameter larger than the hole diameter into which the pin is installed. SPIROL Coiled Pins can be easily identified by the 2 1/4 coil cross-section. The absence of a slot eliminates pin nesting and interlocking.

Flexibility During Installation

When SPIROL Coiled Pins are installed, the compression starts at the outer edge and moves through the coils toward the center. SPIROL Coiled Pins spread compressive stress over the entire pin and do not have stress point concentrations.

Comparatively, Slotted Pins compress by closing the slot, and stress is concentrated 180 degrees opposite the slot. This imbedded stress at installation, combined with the concentration of stress during the assembly’s life reduces the fatigue life of the Slotted Pin potentially causing premature assembly failure.

Solid Pins are retained by compressing and deforming the host material, not the pin. If the Solid Pin has knurls, the knurls cut into the host material during installation. In all instances, the Solid Pin must be harder than the host material or else the pin will be deformed.

Flexibility Under Applied Loads

The SPIROL Coiled Pin continues to flex and coil toward the center, absorbing shock and vibration, distributing the load equally throughout the cross section. Due to the fact that the material is able to coil over each other, load continues to be absorbed by the pin under a wide variety of situations.

Slotted Pins cannot flex after the slot is closed and load stresses are transferred to the assembly at this point rather than being absorbed by the pin. This often results in hole damage.

Similarly, due to their inflexibility, Solid Pins often damage the holes when used in dynamic loading applications. This leads to premature failure. Additionally, using a softer Solid Pin material reduces host damage, but commensurately reduces the pin’s strength.
SPIROL Application Engineers will review your application needs and work with you to recommend the optimum solution. One way to start the process is to visit our Optimal Application Engineering portal at SPIROL.com.