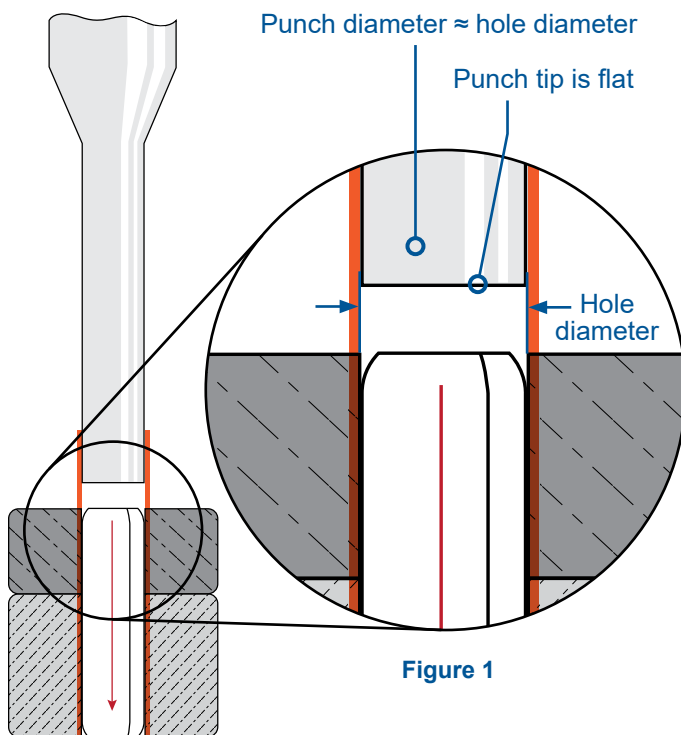


WHITE PAPER

Unlike Solid Pins that immediately damage the hole upon installation, Coiled Spring Pins are serviceable fasteners and can be removed with no damage to the host components - if done properly. However, the level of difficulty for pin removal varies significantly by hole type. Coiled Pins in through-holes are simple and quick to remove. Conversely, there are limited options available for removing Coiled Pins from blind holes.

THROUGH-HOLE REMOVAL

In assemblies with through-holes, Coiled Spring Pins can be removed easily and quickly. First, determine the hole diameter. Next, locate a pin punch with the same nominal diameter. The punch must have a flat, square end and a consistent diameter throughout. Under no circumstances should the diameter at the end of the punch that contacts the pin be any smaller than the diameter of the outermost coil of the Coiled Pin. Insert the punch into the hole and then carefully advance the punch with a hammer or press until the Coiled Pin exits the other side. If done properly, the assembly will not be damaged and the pin can be installed back into the assembly after the components are serviced. Although effective for Slotted Pins, do not use round ball end punches to remove Coiled Pins. See *Figure 1* below.



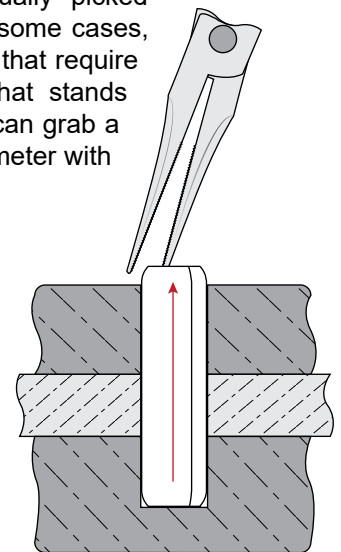
CONCLUSION

Designers should consider the serviceability requirements of their assembly and optimize the design of the host components accordingly. Consideration must not only be put on the ease of pin installation but also on the ease and ability to remove the pin.



BLIND HOLE REMOVAL

Assemblies with blind holes present significant challenges. While there are many approaches to pin removal with varying levels of success, the most effective removal method is to utilize an electrical discharge machine (plunge EDM). In some applications, drilling into the axis of the pin, if done carefully and with coolant, may remove enough of the pin to allow it to be manually "picked" out of the hole with pliers. In some cases, manufacturers with blind holes that require serviceability will use a pin that stands proud of the hole so that they can grab a hold of it and pull the outer diameter with pliers out of the hole.



Originally written by Jeff Greenwood

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**Innovative Fastening Solutions.
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Technical Centres

Americas **SPIROL Canada**
Windsor, Ontario
+1 519 974 3334
info-ca@spirol.com

SPIROL International Corporation
Connecticut, USA
+1 860 774 8571
info@spirol.com

SPIROL Shim Division
Ohio, USA
+1 330 920 3655
info@spirol.com

SPIROL Mexico
Apodaca, Nuevo León
+52 81 8385 4390
info-mx@spirol.com

SPIROL Brazil
Indaiatuba, São Paulo
+55 19 3936 2701
info-br@spirol.com

Europe **SPIROL United Kingdom**
Corby, Northants, England
+44 (0) 1536 444800
info-uk@spirol.com

SPIROL Ford
South Shields, Tyne & Wear, England
+44 (0) 1914 540141
contactus@ford-engineering.com

SPIROL France
Saint-Léonard
+33 (0) 3 26 36 31 42
info-fr@spirol.com

SPIROL Germany
Münich
+49 (0) 89 4 111 905 71
info-de@spirol.com

SPIROL Spain
Barcelona
+34 932 71 64 28
info-ib@spirol.com

SPIROL Czech Republic
Prague
+420 226 218 935
info-cz@spirol.com

SPIROL Poland
Warsaw
+48 510 039 345
info-pl@spirol.com

Asia Pacific **SPIROL China**
Shanghai
+86 (0) 21 5046-1451
info-cn@spirol.com

SPIROL Malaysia
Iskandar Puteri, Johor
+60 77 063 960
info-my@spirol.com

SPIROL Korea
Seoul, South Korea
+82 (0) 10 9429 1451
info-kr@spirol.com



Coiled Spring Pins



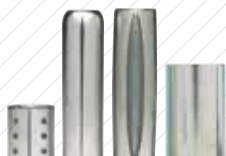
Slotted Spring Pins



Solid Pins



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