

APPLICATION NOTES

How to Use the Two Press-fit Options of the 7949-0-15-20-09-14-11-0 Omniball™ Spring-Loaded Solder-Cup Pin

Mill-Max's 7949 spring-loaded pin offers two different types of press-fit features – a barb and a knurl – to provide flexibility in mounting methods based on the application. Both features were designed to allow for the pin to be press-fit into a plastic housing or directly into a non-plated through-hole.

There is a press-fit feature on opposing sides of the shoulder, allowing the pin to be inserted into a PCB or plastic housing from either direction.

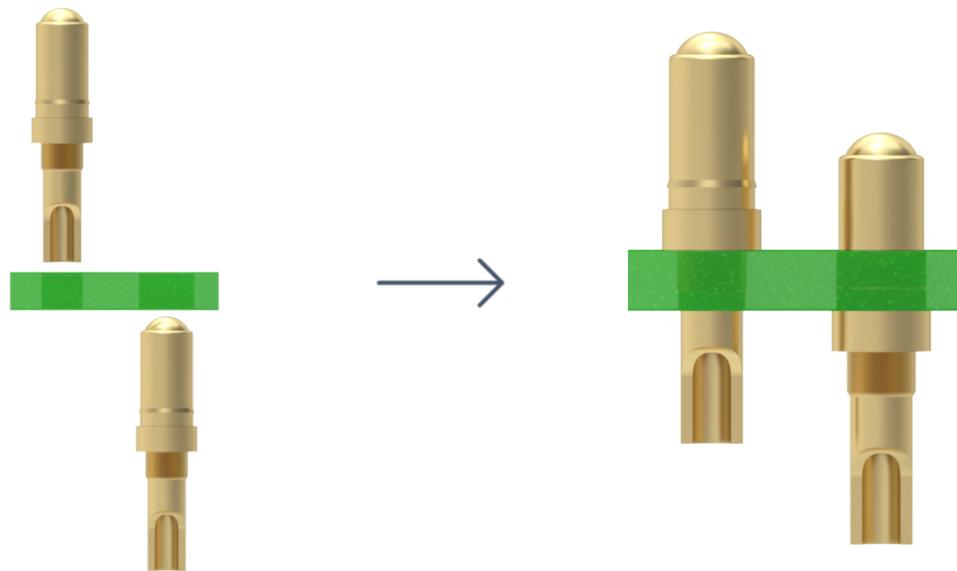
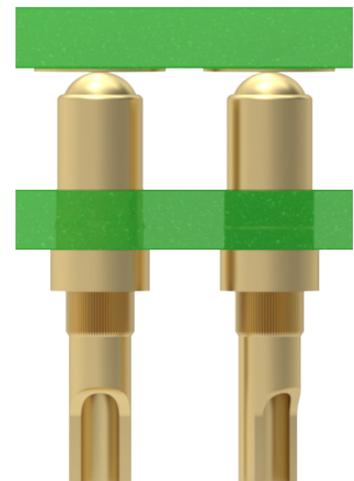


Figure 1. Parts can be inserted from either direction.

While both types function similarly as a retention feature, there are differences that should be noted. The barb, located on the Omniball side, is ideal for insertion into molded housings or drilled holes when a low profile on the mating side is desired. If using the barb, a .106" (2.69 mm) diameter mounting hole is recommended for a light press-fit.

Note: barbs are not anti-rotation features, see knurl press-fit below.

Figure 2. Barb feature used in a PCB and mated against gold plated lands/pads.



The knurl, located on the solder-cup side, is an anti-rotation feature and should be used if uniform alignment of the solder-cups is critical during the assembly and/or soldering process.



Figure 3L: Barb used; pins may be subject to rotation during handling/soldering.

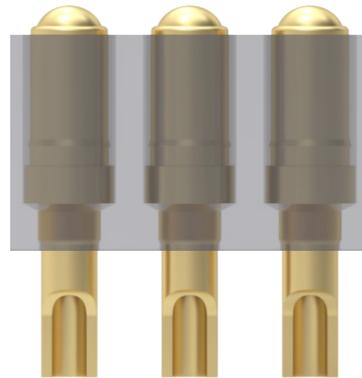


Figure 3R: Knurl used; cups maintain position during handling/soldering.

Inserting the solder-cup side first provides secure retention as the shoulder acts as a hard-stop, preventing the pins from pulling out of the board or housing due to strain applied to the wires. The knurl will require a more robust press-fit so a .079" (2.01 mm) diameter hole is recommended for the .082" (2.08 mm) diameter feature. The example shown below incorporates a counterbore in the housing to enclose the body of the pin. This counterbore diameter should be .122" (3.10 mm) minimum.



Figure 4. Knurl location allows the shoulder to act as a hard stop.

Since the barb and knurl are not the same diameter, knowing which will be used needs to be determined prior to specifying a hole size.

