APPLICATION NOTES

How to Use the Two Press-fit Options of the 7983-1-15-20-75-14-11-0 Spring-Loaded Solder-Cup Pin

Mill-Max's 7983 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 PCB 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.

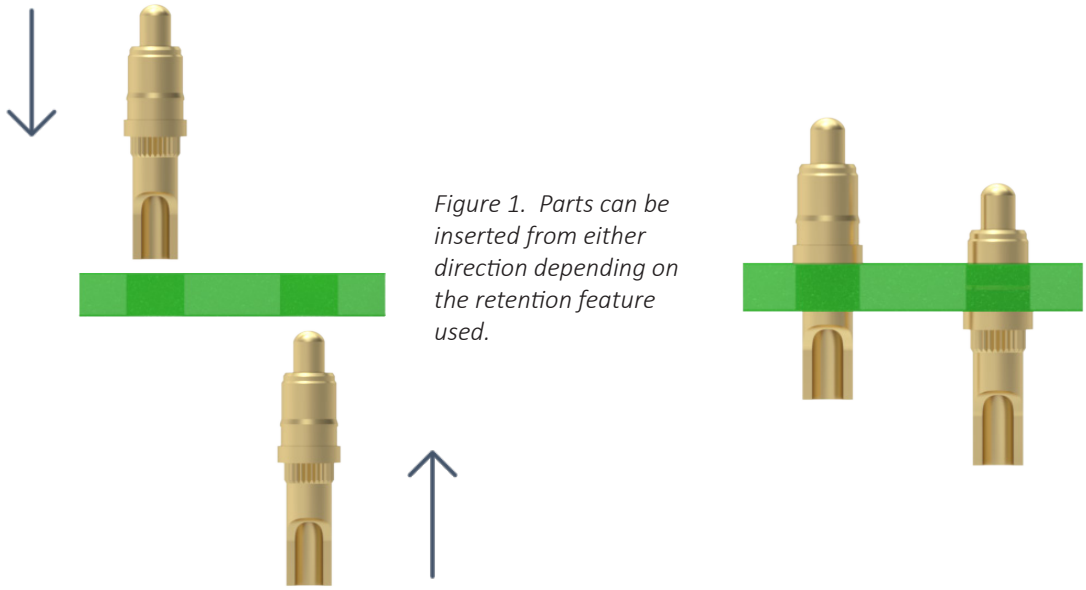

Figure 1. Parts can be inserted from either direction depending on the retention feature used.

While both types function similarly as a retention feature, there are differences that should be noted.

The barb, located on the plunger 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 .0755" (1.92 mm) diameter mounting hole is recommended for a light press-fit.

Note: barbs are not anti-rotation features, to prevent rotation, use the knurl press-fit as shown below.

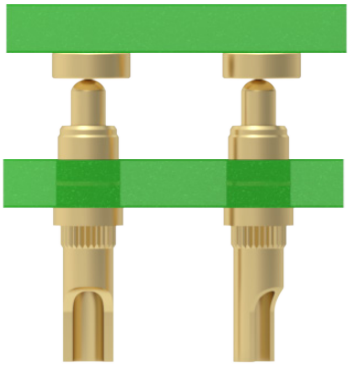

Figure 2. Barb feature used in a PCB and mated against Mill-Max target discs creating a low-profile connection between boards.

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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.

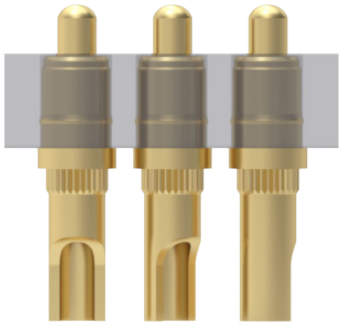

Figure 3L: Barb used; pins may be subject to rotation during handling/soldering.

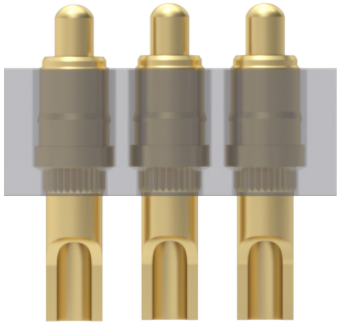

Figure 3R: Knurl used; cups maintain position during handling/soldering.

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 .062" (1.58 mm) diameter hole is recommended for the .065" (1.65 mm) diameter feature. The example shown below incorporates a counterbore in the housing to enclose the body of the pin, the counterbore diameter should be .087" (2.21 mm) minimum.

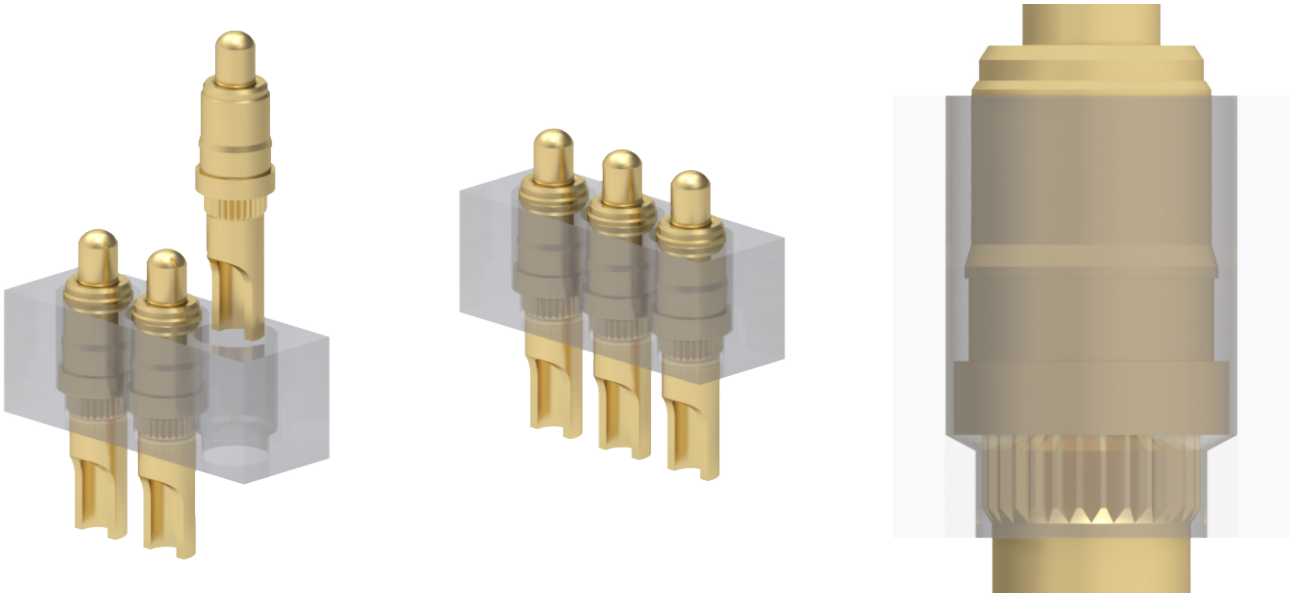

Figure 4. Knurl location allows the shoulder to act as a hard stop.

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.