Helicoils

Helicoils are precision-formed screw thread coils of 18-8 stainless steel wire having a diamond-shaped cross section. *[Figure 7-31]* They form unified coarse or unified fine thread classes 2-band 3B when assembled into (helicoil) threaded holes. The assembled insert accommodates UNJ (controlled radius root) male threaded members. Each insert has a driving tang with a notch to facilitate removal of the tang after the insert is screwed into a helicoil tapped hole.

They are used as screw thread bushings. In addition to being used to restore damaged threads, they are used in the original design of missiles, aircraft engines, and all types of mechanical equipment and accessories to protect and strengthen tapped threads in light materials, metals, and plastics, particularly in locations that require frequent assembly and disassembly and/or where a screw locking action is desired.

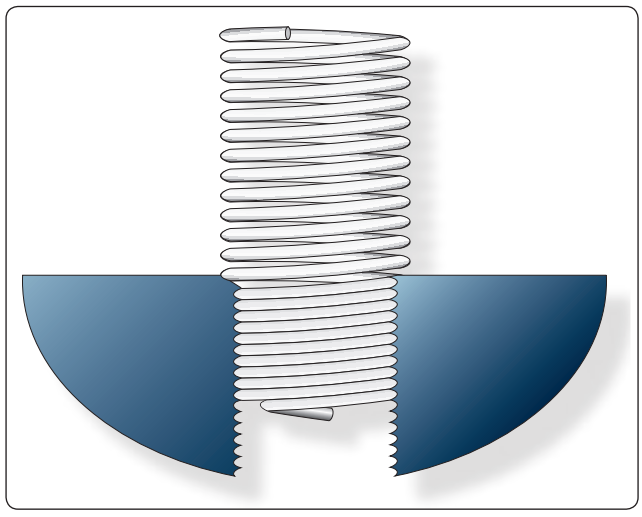

Figure 7-31. *Helicoil insert.*

Helicoil installation is a 5 or 6 step operation, depending upon how the last step is classed. *[Figure 7-32]*

Step 1: Determine what threads are damaged.

Step 2: (a) New installation of helicoil—drill out damaged threads to minimum depth specified.

(b) Previously installed helicoil—using proper size extracting tool, place edge of blade in 90° from the edge of the insert. Tap with hammer to seat tool. Turn to left, applying pressure, until insert backs out. Threads are not damaged if insert is properly removed.

Step 3: Tap—use the tap of required nominal thread size. The tapping procedure is the same as standard thread tapping. Tap length must be equal to or exceed the requirement.

Step 4: Gauge—threads may be checked with a helicoil thread gauge.

Step 5: Insert assembly—using proper tool, install insert to a depth that puts end of top coil ¼ to ½ turn below the top surface of the tapped hole.

Step 6: Tang breakoff—select proper breakoff tool. Tangs should be removed from all drilled through holes. In blind holes, the tangs may be removed when necessary if enough hole-depth is provided below the tang of the installed insert.

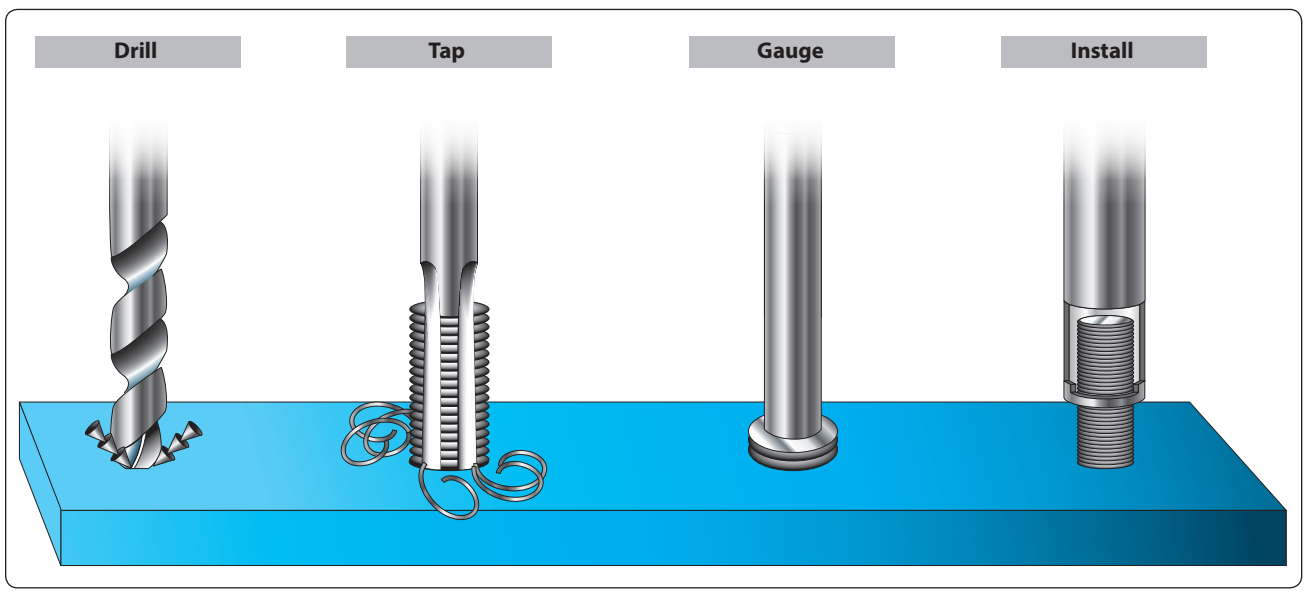

Figure 7-32. *Helicoil installation.*