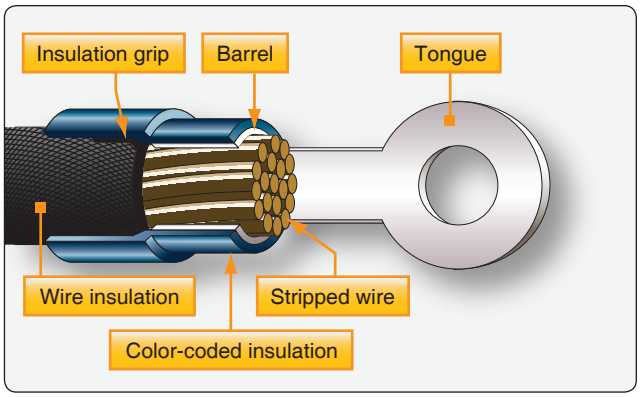

Figure 4-103. *Preinsulated terminal lug.*

Crimping Tools

Hand, portable power, and stationary power tools are available for crimping terminal lugs. These tools crimp the barrel of the terminal lug to the conductor and simultaneously crimp the insulation grip to the wire insulation.

Hand crimping tools all have a self-locking ratchet that prevents opening the tool until the crimp is complete. Some hand crimping tools are equipped with a nest of various size inserts to fit different size terminal lugs. Others are used on one terminal lug size only. All types of hand crimping tools are checked by gauges for proper adjustment of crimping jaws.

Figure 4-104 shows a terminal lug inserted into a hand tool. The following general guidelines outline the crimping procedure:

1. Strip the wire insulation to proper length.
2. Insert the terminal lug, tongue first, into the hand tool barrel crimping jaws until the terminal lug barrel butts flush against the tool stop.
3. Insert the stripped wire into the terminal lug barrel until the wire insulation butts flush against the end of the barrel.
4. Squeeze the tool handles until the ratchet releases.
5. Remove the completed assembly and examine it for proper crimp.

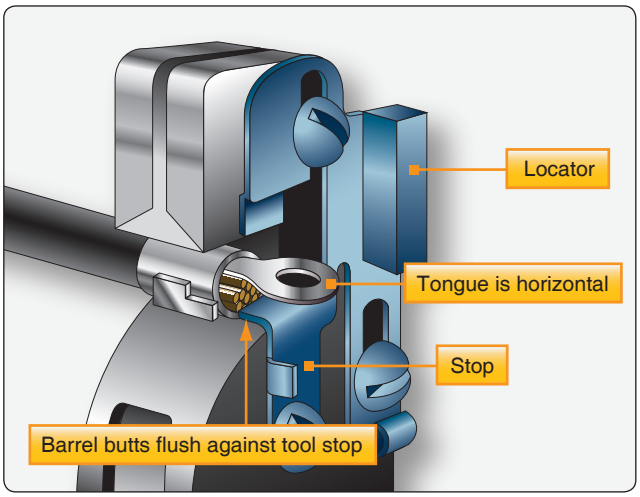

Figure 4-104. *Inserting terminal lug into hand tool.*

Some types of uninsulated terminal lugs are insulated after assembly to a wire by means of pieces of transparent flexible tubing called sleeves. The sleeve provides electrical and mechanical protection at the connection. When the size of the sleeves used is such that it fits tightly over the terminal lug, the sleeves need not be tied; otherwise, it should be tied with lacing cord *[Figure 4-105]*

Aluminum Wire Terminals

Aluminum wire is being used increasingly in aircraft systems because of its weight advantage over copper. However, bending aluminum causes "work hardening" of the metal, making it brittle. This results in failure or breakage of strands much sooner than in a similar case with copper wire. Aluminum also forms a high-resistant oxide film immediately upon exposure to air. To compensate for these disadvantages, it is important to use the most reliable installation procedures. Only aluminum terminal lugs are used to terminate aluminum wires.

All aluminum terminals incorporate an inspection hole that permits checking the depth of wire insertion. *[Figure 4-106]* The barrel of aluminum terminal lugs is filled with a petrolatum-zinc dust compound. This compound removes the oxide film from the aluminum by a grinding process during the crimping operation. The compound also minimizes later oxidation of the completed connection by excluding moisture

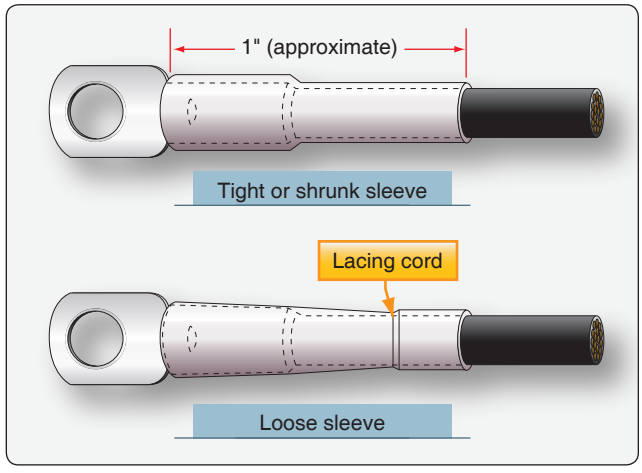

Figure 4-105. *Insulating sleeves.*