

Instruction
Hardware Engineering

No. LMS 11-4

Subject: Stripping of Wire

APPROVED BY Manager, Hardware Engineering

STATUS Maintenance Revision

PURPOSE Covers the procedures for determining the method of stripping wire and the amount of wire to be stripped for the purpose of making connections to various electrical components. Raytheon Training, Inc. Flight Simulation (hereafter referred to as Raytheon) personnel will follow this instruction when stripping of wire is required for making connections to equipment.

AFFECTED FUNCTIONS Hardware Engineering
Manufacturing

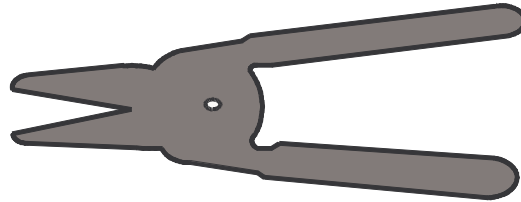
REFERENCES None

DEFINITIONS None

1. Requirements

- 1.1 Stripping tools. The following tools are recognized as approved for stripping insulation when properly adjusted and sharpened.
- a. Manual precision stripper (Ideal), see Figure 1.
 - b. Manual, coaxial cable stripper (Ideal), see Figure 2.
 - c. Automatic stripping machines (such as Artos, Carpenter, Hi Speed Hammer, etc.).
 - d. Knife (for shielded cables and large power cables only).
 - e. Thermal strippers.

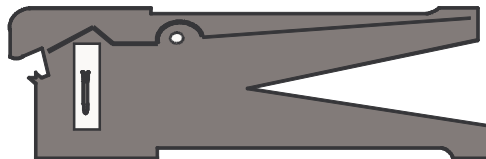
NOTE: The “Ideal” strippers may be used for stripping wire on all programs. The use of “Miller” strippers is prohibited for all applications.



00110236

Figure 1 Typical Manual Stripper

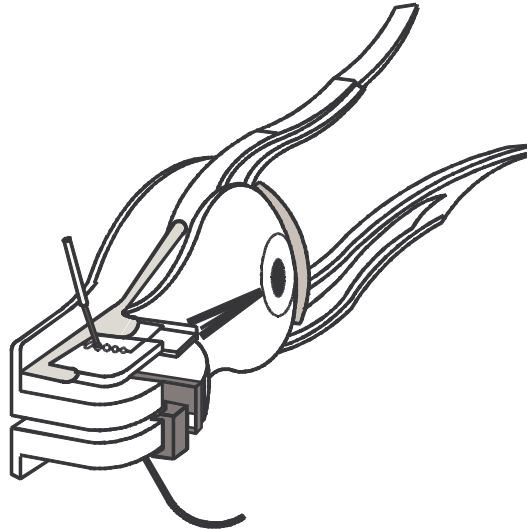
- 1.2 Wire stripping instructions. In stripping vinyl and Teflon insulations, care shall be exercised to prevent nicking or cutting of the strands. Check the first tube of removed insulation for signs of cut strands and check the stripped wire for signs of nicking; if either is found, readjust the tool to correct this condition. Sharp dies and cutting edges must be maintained when stripping Teflon, since this material dulls tools rapidly.
- a. When stripping the outer jacket on shielded wire and coaxial cables, special care shall be used to prevent nicking the fine strands of the shield. Slitting the outer jacket carefully will aid in removing the insulation. See Figure 2 for a typical “Ideal” coaxial cable stripper.



00110237

Figure 2 Coaxial Cable Stripper

- b. When stripping any wire with an automatic tool or precision manual tool (Figure 3), be sure that the correct plate is in the tool for the type of wire being stripped (solid or stranded) and that the wire is inserted in the proper hole for the gauge of wire being prepared. When using an adjustable manual tool, make sure that the tool is properly adjusted for the gauge of wire being stripped.



00110238

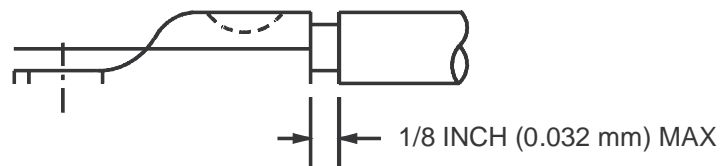
Figure 3 Precision Cutting – Type Stripper

- c. Thermal stripping. Caution must be exercised when using thermal stripping on polytetrafluorethylene (teflon) or polyvinyl chloride insulation to provide adequate ventilation.
- 1.3 Wire preparation. All insulated wire shall be stripped by the appropriate method. After stripping, wire shall be examined for insulation damage. Wires with damaged insulation, such as burns, pinch marks, or abrading shall not be used. After insulation removal, insulation deformation shall not exceed 20 percent of the insulation thickness. Insulation discoloration resulting from thermal stripping is permissible.
- a. Wires or wire strands shall not be broken, severed, or birdcaged. Wires and strands shall be inspected at 4X magnification. Nicks, cuts, scrapes, stretching, or other observable damage which exceeds 10 percent of the original wire cross-sectional area is unacceptable. Discoloration of the wires or strands that shows evidence of overheating is undesirable.

- b. For solid wires, the following represents the "worst-case" conditions. Anything exceeding these "worst-case" conditions shall be cause for rejection:
- (1) One nick per wire, with a depth up to 1/8 of the wire diameter.
 - (2) One scratch per wire, with a depth up to 1/8 of the wire diameter by 3/16 inch (0.048 mm) in length.

NOTE: Exposed copper shall be touched up with solder.

- c. Length of strip. The length of insulation or shield braid to be removed will depend upon the application and the type of termination for the wire.
- (1) The stripped length of wire terminating in an AN type connector shall be just enough for the insulation to clear the top of the terminal cup when the wire is bottomed.
 - (2) Wire terminating at blue ribbon type connectors shall be stripped approximately 1/4 inch (0.064 mm) or just sufficiently to form a hook into the terminal eye.
 - (3) The stripped length of wire termination in a series 53 taper pin terminal shall be 3/16 inch (0.048 mm).
 - (4) The stripped length of large power conductors shall be determined by the depth of the termination used on the wire. The insulation shall be stripped so that not more than 1/8 inch (0.032 mm) of conductor is exposed between the terminal and the end of the insulation. (See Figure 4.)



00110239

Figure 4 Terminal Insulation Clearance

**UNSIGNED HARDCOPY
NOT CONTROLLED**



Instruction
Hardware Engineering

No. LMS 11-4

2. Quality Assurance Provisions
 - 2.1 The Quality Assurance Organization shall be responsible for assuring the requirements and procedures of this instruction are adhered to.
3. Preparation For Delivery (Not Applicable)