
ALPHABETICAL INDEX
INSTALLATION AND REPAIR PRACTICES
AIRCRAFT ELECTRIC AND ELECTRONIC WIRING

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UNACCEPTABLE TERMINATION (INSUFFICIENT HEAT)

DULL RED COLOR (THERMAL INDICATOR) IS CLEARLY VISIBLE.

ORIGINAL SHAPE OF SOLDER PREFORM IS CLEARLY VISIBLE.

MELTABLE SEALING INSERTS HAVE NOT FLOWED.

CONTOUR OF BRAID AND/OR LEAD IS BLOCKED BY SOLDER.



ACCEPTABLE TERMINATION (MINIMUM SOLDER FLOW)

SLIGHT TRACES OF DULL RED COLOR SHALL BE PRESENT.

SOLDER HAS LOST ALL ORIGINAL SHAPE.

SEALANT INSERTS HAVE MELTED AND FLOWED ALONG WIRES.

SHIELD AND LEAD CONTOURS ARE VISIBLE.

A DEFINITE FILLET IS VISIBLE BETWEEN LEAD AND SHIELD.



ACCEPTABLE TERMINATION (MAXIMUM SOLDER FLOW)

DULL RED COLOR HAS DISAPPEARED.

NO TRACES OF DULL RED COLOR REMAIN IN THE SEALANT INSERT AREA. SLIGHT TRACES OF DULL RED COLOR IN SEALANT INSERT AREA ARE ACCEPTABLE.

A DEFINITE FILLET IS CLEARLY VISIBLE BETWEEN LEAD AND SHIELD.

JOINT AREA IS VISIBLE DESPITE BROWNING OF SLEEVE.



UNACCEPTABLE TERMINATION (OVERHEATED)

JOINT AREA IS NOT VISIBLE BECAUSE OF SEVERE DARKENING OF THE OUTER SLEEVE.

SOLDER FILLET IS NOT VISIBLE ALONG LEAD AND SHIELD INTERFACE.

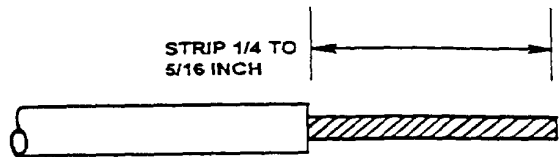
WIRE INSULATION DAMAGED OUTSIDE OF SLEEVE.



Figure 15 . Termination Inspection

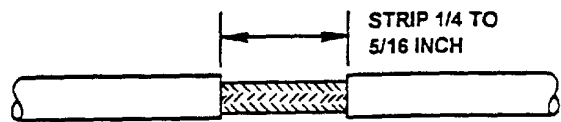
A. GROUND LEAD PREPARATION

1. IF GROUND WIRE IS NOT PRE-INSTALLED, SELECT WIRE FROM MIL-W-22759

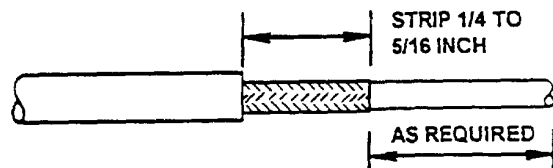


B. SHIELD PREPARATION

1. STRIP 1/4 TO 5/16 INCH OF JACKET FROM CABLE.



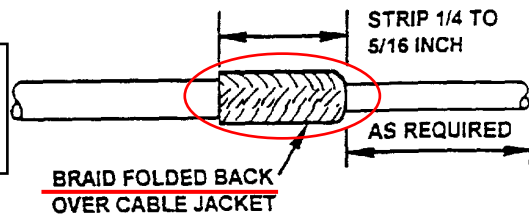
CENTER STRIPPED FOR CABLES
 RATED ABOVE 257°F (125°C)



END STRIPPED FOR CABLES
 RATED ABOVE 257°F (125°C)

2. AFTER STRIPPING, BUILD UP DIAMETER OF SMALL CABLE BY FOLDING BRAID OVER JACKET.

Folding the braid back over the jacket avoids the risk of braid to wire shorts after installing the solder sleeve termination. Shorts can happen months after the solder sleeve terminations have been applied & inspected if the braid is not folded back.



BRAID FOLDED BACK FOR SMALL
 CABLE RATED BETWEEN 221°F
 (105 C) AND 257°F (125°C)

Figure 16 . Immersion Resistant and Standard Solder Sleeve Installation (Sheet 1 of 3)

C. ASSEMBLY.

1. Assemble Cable, Ground Lead, and Solder Sleeve Ensuring No Strands Protrude to Puncture Sleeve. Ground Lead Entry May Be From Front or Rear.

WARNING

Do not perform hot work without specific authorization of activity Aviation Gas Free Engineer (AVGFE) or Gas Free Engineer (GFE).

The HT-900B, HT-920B, HT-71002 and MCH-100-A heat guns are the only authorized heat guns to be used when working on aircraft that have not been defueled and purged. The aircraft must be defueled and purged before using any other heat guns listed in this manual.

Aircraft with open fuel cells or broken or open fuel lines shall be certified gas free in accordance with NAVAIR 01-1A-35. Only the HT-900B/HT-920B, HT-71002, MCH-100-A heating tools are authorized for use on any aircraft whenever AVGAS, JP-4 or the presence of fuel is imposing an immediate danger.

When using heat guns with electric motors, recertification may be required as work progresses, as directed by the Aviation Gas Free Engineering Technician (AVGFET).

The MCH-100-A heat gun has been electromagnetic interference (EMI) qualified for flight line or flight deck use. All other electric motor type heat guns are not authorized for flight line or flight deck use due to electromagnetic interference (EMI). The electric motor type heating tools are safe for use by Navy/Marine Corps personnel at the organizational maintenance level to repair aircraft wiring in a hangar or hangar deck environment, provided the aircraft meets the gas-free environment criteria (NAVAIR 01-1A-35), and there are no EMI restrictions.

Use of nitrogen with the HT-900B/HT-920B heating tool in an enclosed area can be hazardous. Discharge of nitrogen into a poorly ventilated area can result in asphyxiation.

Do not perform wire repair while using explosive solvent/paint products on the aircraft.

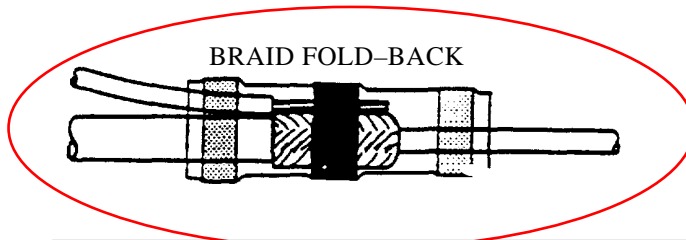
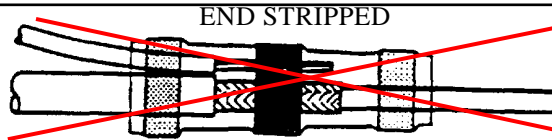
Nozzle and output air of heating tools get very hot. Use extreme care while operating heating tool to avoid serious burns.

When using a heat tool, do not use electrical power from the aircraft being repaired. Use electrical power from a ground power unit.

2. Using Heat Gun, Apply Heat Directly to Solder Perform Until Solder Melts, Flows and Wets Shield Braid and Ground Lead.



This method has a risk of braid to wire shorts happening after installation & inspection.



Use this method for TEFZEL wiring to avoid risk of braid to wire shorts. Shorts can happen after solder sleeve application & inspection.

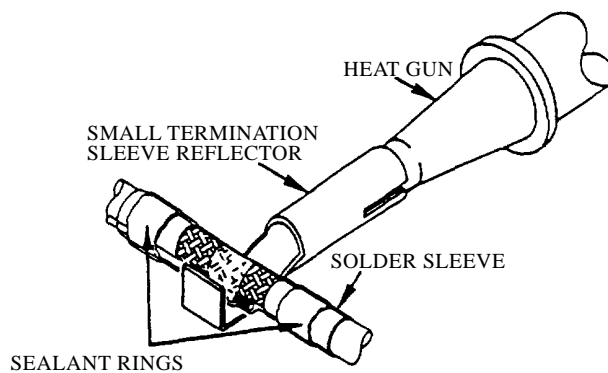


Figure 16. Immersion Resistant and Standard Solder Sleeve Installation (Sheet 2)