Appendix

Proper Wiring Techniques

Terminal Removal Instructions

Terminal retention within the connector generally takes two forms:

1. A flexible primary lock, either part of the terminal or part of the connector.

2. A hinged or loose piece secondary lock. To remove a terminal, both must be disengaged or removed.

First, locate and remove the secondary lock (Terminal Position Assurance TPA).

1. The secondary lock or TPA may be located in the rear, the side or the front of the connector. These can generally be removed with a small screwdriver.

2. Some secondary locks may require the use of a release tool to “hook” the lock and lift it out of the connector. If such a tool is used it should be used with caution as the tool may become deformed easily.

Now remove the terminal by disengaging the primary lock.

1. Determine the terminal part number or family, then get the appropriate removal tool.

2. Locate the area in the front of the connector where the removal tool is to be inserted. The tool should never be inserted into the mating end of the terminal, instead it should be inserted next to the terminal where the primary lock is located. Inserting the tool into the terminal itself will cause damage to the terminal and create a loose connection between mating terminals.

3. Position the terminal by using the attached wire. For push to seat terminals, slide the terminal forward. For pull to seat terminals, slide it rearward. This allows the lock tang to disengage from the lock shoulder.

4. Flex the primary lock tang, whether it is part of the connector or part of the terminal, by lightly prying it with the removal tool selected, then gently remove the terminal from the connector by pulling or pushing on the wire connected to the terminal.

NOTE:

When using the terminal removal tools, only light pressure is needed to flex the primary locks. If excessive force must be applied to release the lock, it is possible that the wrong tool may have been selected.

Standard Terminal Replacement

STANDARD TERMINAL REPLACEMENT

1

CUT OFF TERMINAL BETWEEN CORE AND INSULATION CRIMP.

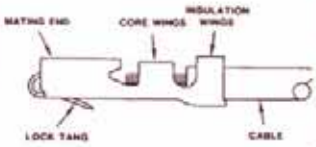
(MINIMIZE WIRE LENGTH LOSS)

2

STRIP INSULATION (1/4" LENGTH)

CAUTION MUST BE USED NOT TO CUT STRANDS

3



POSITION WIRE IN TERMINAL AS SHOWN. CAUTION MUST BE USED NOT TO POSITION STRIP TOO FAR FORWARD. IT MAY INTERFERE WITH MATING PORTION OF TERMINAL.

4

HAND CRIMP CORE WINGS FIRST, THEN INSULATION WINGS USING ONE OF THE APPROVED CRIMPING TOOLS. USE CRIMP MATRIX IN THE TABBED SECTIONS TO DETERMINE CORRECT TOOL COMBINATION.

STANDARD TERMINAL REPLACEMENT

(cont)

5

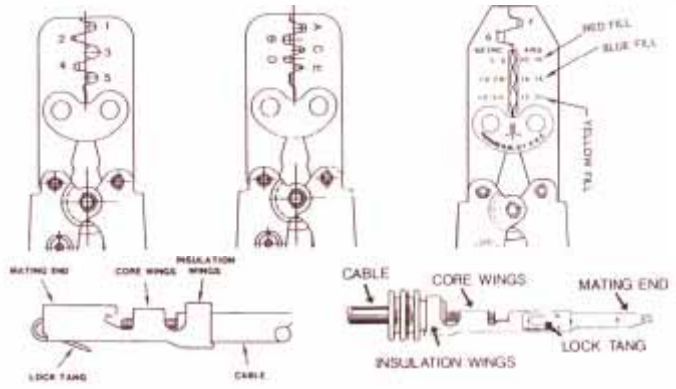
SOLDER ALL HAND CRIMPED TERMINALS.

CAUTION: USE EXTREME CARE ON ALL MICRO-PACK AND 150 METRI-PACK TERMINALS. AVOID SOLDER ON INTERFACE OR BOX AREA.

6

ELECTRICALLY CHECK REPAIRED TERMINAL FOR CONTINUITY.

MAKE SURE TERMINAL IS REPLACED IN CORRECT CONNECTOR CAVITY TO ASSURE PROPER INDEXING.



Sealed Terminal Replacement

TERMINAL REPLACEMENT SEALED WEATHER PACK AND METRI-PACK

1

CUT OFF TERMINAL BETWEEN CORE AND INSULATION CRIMP.

(MINIMIZE WIRE LENGTH LOSS)

REMOVE SEAL

2

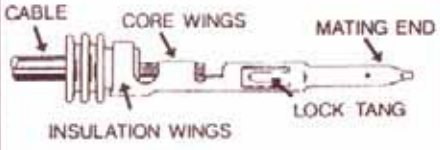
APPLY CORRECT SEAL PER GAUGE SIZE OF WIRE. SLIDE BACK TO ENABLE REMOVAL OF INSULATION. STRIP 1/4" OF INSULATION.

CAUTION MUST BE USED NOT TO CUT STRANDS

3

ALIGN SEAL WITH CABLE INSULATION

4



POSITION STRIP AND SEAL IN TERMINAL AS SHOWN. CAUTION MUST BE USED NOT TO POSITION STRIP TOO FAR FORWARD. IT MAY INTERFERE WITH MATING PORTION OF TERMINAL.

TERMINAL REPLACEMENT SEALED WEATHER PACK AND METRI-PACK

(cont)

5

HAND CRIMP CORE WINGS FIRST, THEN INSULATION WINGS USING ONE OF THE APPROVED CRIMPING TOOLS. USE CRIMP MATRIX IN THE TABBED SECTIONS TO DETERMINE CORRECT TOOL COMBINATION.

6

SOLDER ALL HAND CRIMPED TERMINALS.

CAUTION: USE EXTREME CARE ON ALL MICRO-PACK AND 150 METRI-PACK TERMINALS. AVOID SOLDER ON INTERFACE OR BOX AREA.

7

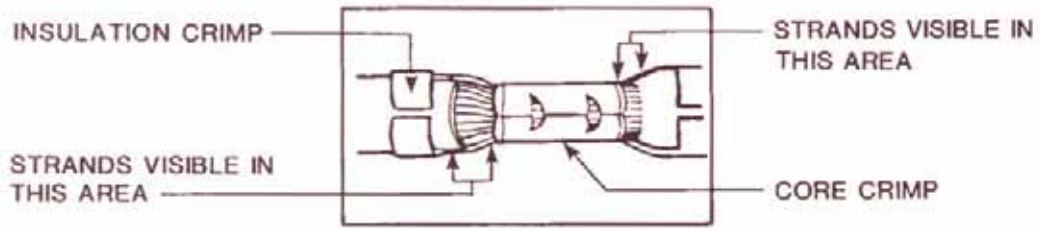
ELECTRICALLY CHECK REPAIRED TERMINAL FOR CONTINUITY.

MAKE SURE TERMINAL IS REPLACED IN CORRECT CONNECTOR CAVITY TO ASSURE PROPER INDEXING.

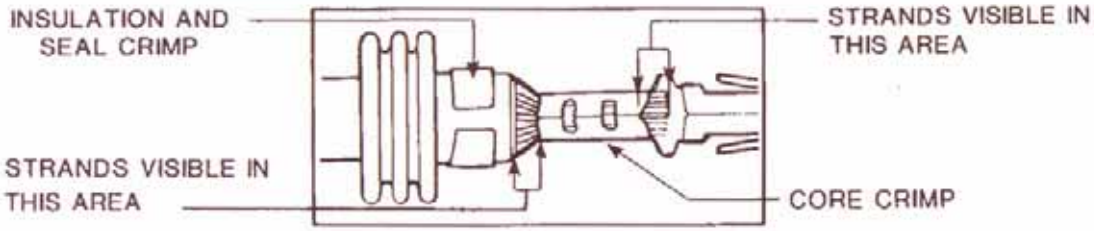
Visual Standards for Cimping

VISUAL STANDARDS

TERMINAL APPLICATION



TERMINAL WITH SEAL APPLICATION



SPLICE APPLICATION

CRIMP AND SEAL APPLICATION

Visual Standards for Soldering

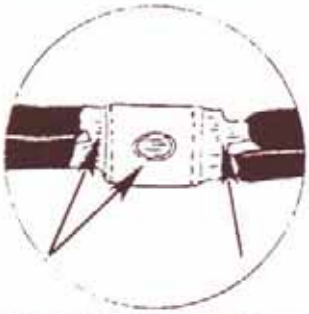
VISUAL STANDARDS

SOLDER APPLICATION

TERMINAL

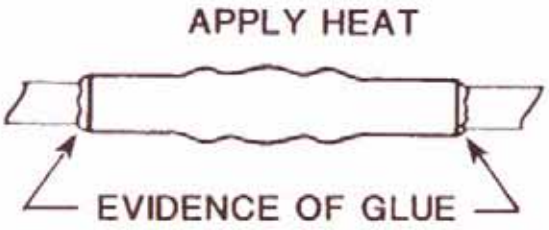
GOOD SOLDER APPLICATION

SPLICE CLIP



GOOD SOLDER APPLICATION

GLUED HEAT SHRINK APPLICATION



Soldered Splice Clip / Butt Connection

SPLICE CLIP

1

CUT OFF CLIP

(MINIMIZE WIRE LENGTH LOSS)

2

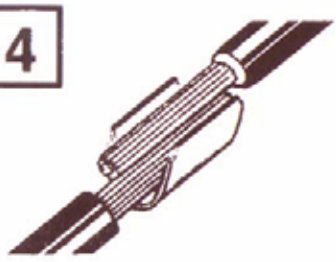
STRIP INSULATION (1/2" LENGTH)

CAUTION MUST BE USED NOT TO CUT STRANDS

3

PREFERRED: LOCATE NEW SPLICE 40 MM (1.5") MINIMUM FROM AN OUTLET OR ANOTHER SPLICE.

4



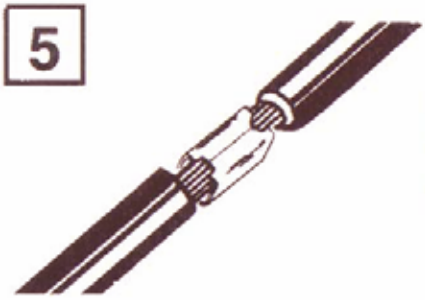
DETERMINE PROPER SPLICE CLIP FOR GAUGE SIZE OF WIRES.

POSITION CLIP ON STRIPS.

SPLICE CLIP

(CONT)

5



HAND CRIMP TO SECURELY CLOSE THE ENTIRE CLIP USING CRIMPERS OR PLIERS.

6

SOLDER SPLICE CLIP

7

ELECTRICALLY CHECK CONTINUITY.

8

COVER ENTIRE SPLICE WITH SPLICE TAPE.

TAPE MUST EXTEND ONTO THE INSULATION ON BOTH SIDES OF SPLICE.

Crimped Splice Clip / Butt Connection

CRIMP AND SEAL SPLICE SLEEVE

1

CUT OFF CLIP IF APPLICABLE

(MINIMIZE WIRE LENGTH LOSS)

2

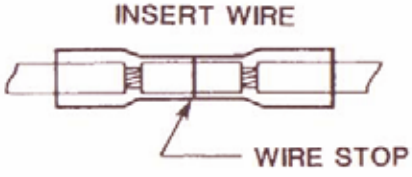
STRIP INSULATION. 3/16" LENGTH FOR 10 THRU 20 GA, 3/8" FOR 22 GA. FOLD STRIPPED END OF 22 GA ONLY IN HALF.

CAUTION MUST BE USED NOT TO CUT STRANDS

3

PREFERRED: LOCATE NEW SPLICE 40 MM (1.5") MINIMUM FROM AN OUTLET OR ANOTHER SPLICE.

4



DETERMINE PROPER SLEEVE FOR GAUGE OF WIRE.

POSITION STRIPPED ENDS OF WIRE INTO SLEEVE UNTIL WIRE HITS THE STOP.

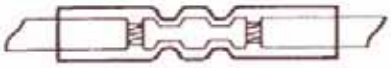
CRIMP AND SEAL SPLICE SLEEVE

(CONT)

5

HAND CRIMP

CRIMP CONNECTOR



GENTLY TUG ON WIRE TO MAKE SURE THEY ARE SECURE BEFORE APPLYING HEAT TO SLEEVE.

6

APPLY HEAT USING ULTRATORCH OR OTHER DEVICE HEATING TO 175°C.

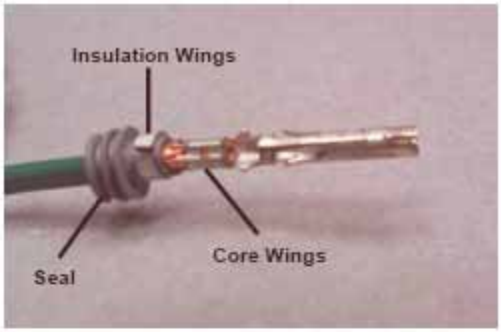
CAUTION: DO NOT USE MATCH OR OPEN FLAME TO APPLY HEAT TO SEAL

7

ELECTRICALLY CHECK FOR CONTINUITY.

Weatherpack

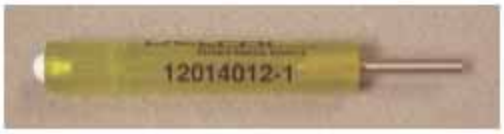
4 pin weatherpack connector



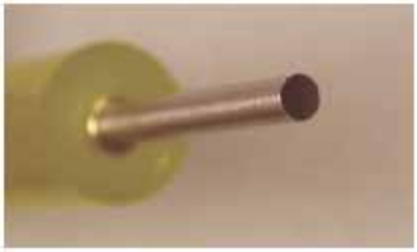
Weatherpack female pin with cable seal

Weatherpack hand crimping tool

4pin weatherpack connector



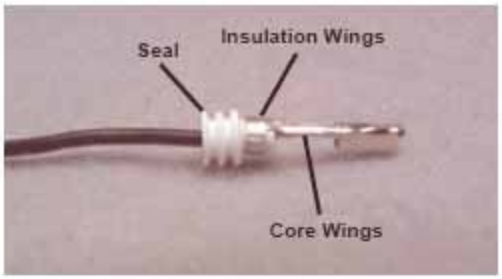
Weatherpack removal tool



M

Metripack

Metripack 150 connector



Metripack female pin with cable seal

Metripack hand crimping tool

Metripack removal tool