SHIELDED CABLES AND WIRES

GENERAL CONNECTING INFORMATION

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1. GENERAL

1.1 Scope of Section

1.11 This section covers the general requirements and methods for connecting and soldering shielded cables and wires.

1.12 Each figure of this section illustrates only conditions to which reference is made in the text and is not to be considered as covering the requirements for other conditions that may be involved.

1.13 The requirements covered in this section shall be followed except as modified by applicable specifications and drawings.

1.2 Arrangement of Tools, Precautions, and Verification

1.21 Refer to Section 700 of Handbook 9 for information pertaining to these items.

2. INSTALLING EQUIPMENT

2.1 In addition to the tools and supplies ordinarily required for connecting and soldering operations, the following are required for the operations covered by this section.

R-3192	Screwdriver, Small Screw Holding
RM-628413	Sleeving, KS-7851, No. 13 Black
RM-628437	Sleeving, KS-7851, No. 18 Black
ITE-4034 or ITE-4442	Volt-Ohmmeter

3. COMMON REQUIREMENTS AND METHODS

3.1 Shield Grounding

3.11 Before connecting the shields of shielded cables and wires, use an ITE-4034 or ITE-4442 volt-ohmmeter and perform the following:

3.111 Check for ground, or the absence of ground, on apparatus terminals, cans or covers, shields, etc., as indicated on the application schematics.

3.112 Check from shield to ground to determine that there is no foreign ground on shield which might have an adverse effect on the high carrier frequencies.

NOTE: Unless otherwise specified on drawings, grounds caused by bare shields touching the inside of ducts are not ordinarily considered to have an adverse effect.

3.2 Running and Dressing Shield Ground Leads

3.21 Running: When shielded cables or wires terminate at terminal strips with fanning strips and all the shield ground leads are to be connected to a common terminal or a common row of terminals, run the shield ground leads along in back of the fanning strip and bring them through the fanning hole opposite the common terminal or common row of terminals.

3.22 Dressing: When the shield ground leads are connected to terminals, dress these leads in the same manner as the skinner(s) from the shielded cable or wire.

3.3 Soldering

CAUTION: EXTRA CARE MUST BE EXERCISED WHEN SOLDERING CONDUCTORS HAVING POLYETHYLENE INSULATION (AS IN TYPE BF WIRE, 750-TYPE CABLE, 724-TYPE, 754, 760, 761A, 762A (761A prs) & 763A TYPE & KS19906-L1, SDC-75-25 (RG-59/U), AND RG-58/U CABLES) BECAUSE OF THE LOW MELTING POINT OF POLYETHYLENE. USE A SOLDERING COPPER HEATED TO ITS PEAK TEMPERATURE AND HOLD IT ON THE CONNECTION ONLY FOR THE MINIMUM TIME REQUIRED FOR A SATISFACTORY CONNECTION.

3.31 All soldering shall be done with the standard 40% tin, rosin-core solder (RM-546293).

3.32 Use the midget soldering copper (R-3007) at midget type potentiometers and other apparatus having delicate terminals, or at congested locations where skinners have polyethylene insulation.

3.33 Use the R-3007 soldering copper when soldering the conductors of KS-19224-L1 and KS-19414-L1 cables. The teflon dielectric of these cables is not subject to heat damage.

4 GENERAL REQUIREMENTS AND METHODS

4.1 Shielded Cables

4.11 Skinning 16AA Wire

4.111 When 16AA wire is specified on the wiring diagrams for shield lead connections, skin this wire using the power wire stripper (R-2155).

4.12 Shop Formed Cables

4.121 Shop-formed cables may be slightly shortened as required for connection, because of nicked or broken wires at the connection.

4.122 Where shop-formed cables have shield ground connectors connected, remove any duplicate ground connectors furnished with the panels, and return.

4.13 Mounting Shield Ground Connectors

4.131 When mounting shield ground connectors, it is important that any lock washers specified, be placed in the exact locations shown on the equipment views on drawings. Use the small screw holding screwdriver (R-3192) to start the screws. Do not attempt to tighten screws with this screwdriver, as it may be broken. Use the regular 3" cabinet screwdriver (R-2443) from the 168 kit for final tightening.

4.14 Tip Identification of Twin Conductor Cables

4.141 On 720 type cable the TIP or first lead of the pair is the ridged conductor with a yellow longitudinal stripe.

4.142 On 762A (10-761A prs) 754, 760, 761A, type cable, white conductor is the TIP or first lead of the pair. The blue lead is the RING.

4.143 On KS-19414-L1 Cable when identifying the TIP or first lead of pair:

4.1431 The white lead is the TIP or first lead of the pair when it is with another solid colored lead.

4.1432 The solid colored lead is the TIP or first lead of the pair when it is with a stripped conductor.

4.15 Connecting Twin-Conductor Cables

4.151 When connecting 720-type cable twist conductors of pair together in a counterclockwise direction.

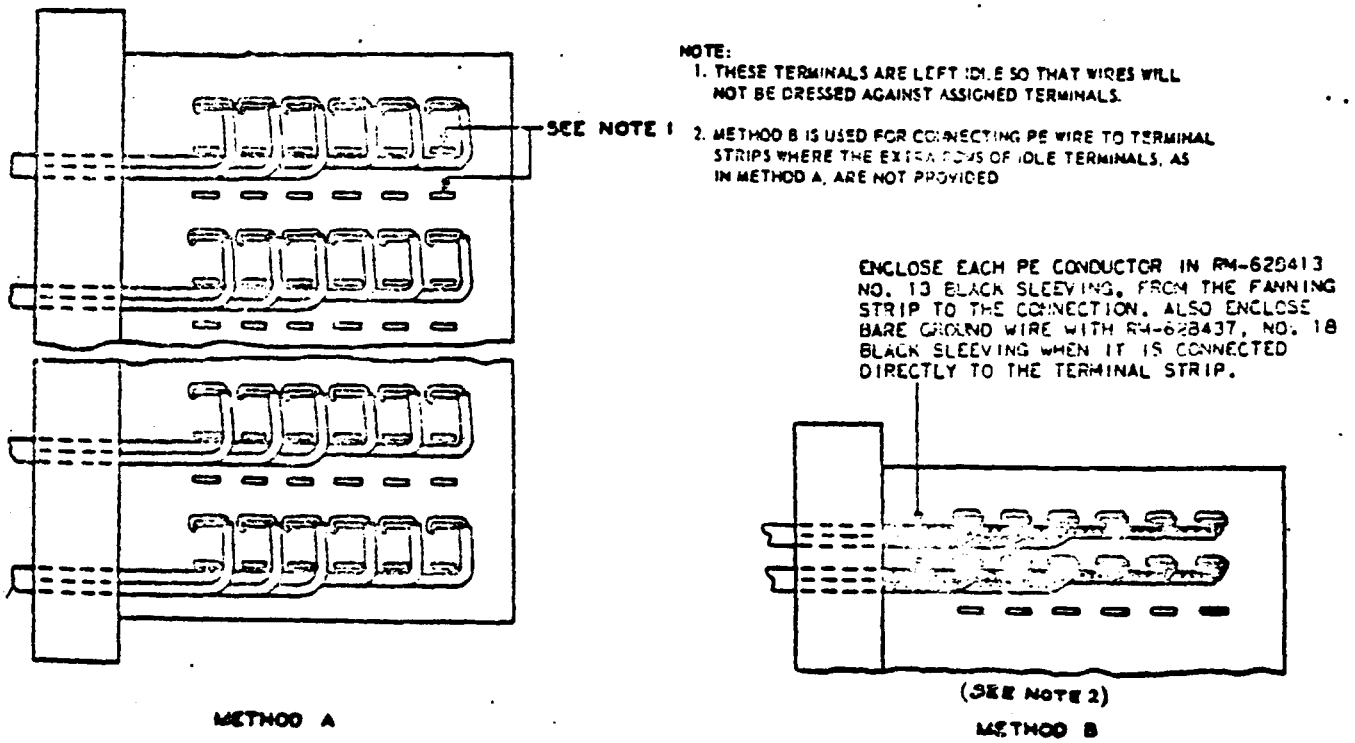

FIG. 1 METHOD OF CONNECTING Pe WIRE TO TERMINAL STRIPS (PAR. 4.212)

with approximately one twist to the inch, as close to the connection as possible without placing the connection under undue strain.

4.152 Keep rubber or Pe insulation slightly away from the connection (approx. 1/32") to avoid damage to the rubber or Pe insulation during the soldering operations.

4.16 Connecting Coaxial Cables

4.161 The insulation on skinners of coaxial cable shall extend as near to the soldered terminals as practicable (but not closer than 1/32 inch) and must be close enough to insure against crossing bare wire with another conductor or ground.

4.162 When the skinner of 724, 726, 727A, 728A, 730A, KS19906-L1 cable; KS-8086 or RG-58/U cable; or SDC-75-2S (RG-59/U) cable is bent on a radius of 3 inches, 1 inch and 1-3/4 inches, respectively, remove the insulation from the skinner and replace it with No. 13 black sleeving (RM-628413).

4.2 Shielded Wires

4.21 Connecting Pe Insulated Wire

4.211 Keep Pe insulation slightly away from the connection (approximately 1/32 inch) to avoid damage to the insulation during the soldering operations.

4.212 Pe insulated wires connected to solder type terminals must be connected as shown in Figure 1. If the leads are dressed against terminals other than those to which they are connected, the leads must be sleeved (Method B) unless the terminals have been left idle for this purpose (Method A).

4.213 When connecting Pe leads to terminals approved for solderless wrapped connections (including those on terminal strips that have solder type terminals on one side), the requirements in methods A and B of Figure 1 do not apply. The Pe leads should be connected by means of a standard solderless wrapped connection, then dressed away from terminals to which they do not connect. When an unqualified solderless wrapped connection is made, dress other leads away and solder. No sleeving is required.

4.214 When connecting PVC or PE-PVC insulated wires, they may rest against terminals to which they are not connected. However, they should be dressed away from terminals against which they rest while these terminals are being soldered to.

→ Arrowed lines indicate new or changed information.

[Vertical line at side of paragraphs indicates requirements.

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Reason for Reissue:
To Add New Cables:

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