

HANDLING WIRE AND CABLE

1. INTRODUCTION

1.01 This section covers the general factors to be considered when handling wire and cable and terminating and identifying conductors.

1.02 This section is reissued to revise Fig. 1 to show hand holes in the carton to provide easier handling.

2. REMOVING WIRE OR CABLE FROM A COIL

2.01 To remove jacketed wire from the carton:

- (1) Punch out perforated holes from carton.
- (2) Place carton on floor and feed wire from centre of coil (Fig. 1).
- (3) Use small hole to tuck in wire after use of coil.

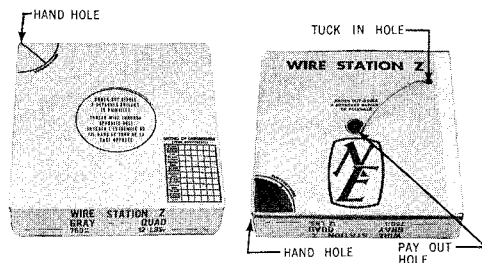


Fig. 1 — Feeding Jacketed Wire

2.02 To remove twisted wire from a coil:

- (1) Place coil flat on floor so that inner end will feed from coil in a counterclockwise direction.
- (2) Feed from centre of coil (Fig. 2).

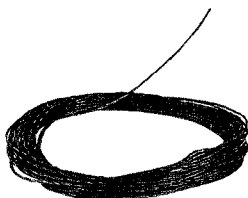


Fig. 2 — Removing Twisted Wire

2.03 To pay out cable, remove cable from coil by paying it off from outside of coil (Fig. 3).



Fig. 3 — Paying Out Cable

3. STRIPPING CABLE

3.01 To strip plastic-covered inside wiring cable:

- (1) Slit end of cable sheath with diagonal pliers for approximately 1 inch.
- (2) Locate nylon jacket-splitting cord under sheath and wrap the cord around end of long-nose pliers.
- (3) Grasp cable with one hand. With long-nose pliers in other hand pull nylon cord through cable sheath. Keep pliers close to jacket.

3.02 To strip braid or older plastic-covered inside wiring cable without jacket-splitting nylon cord. Use inside wiring cable stripper as follows:

- (1) Support cable between stripper and last attachment.

- (2) Angle tool to cable and insert point just under outer covering.
- (3) Pull stripper toward free end of cable (Fig. 4).

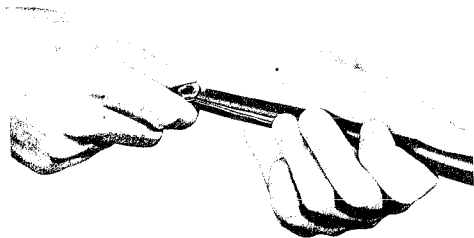


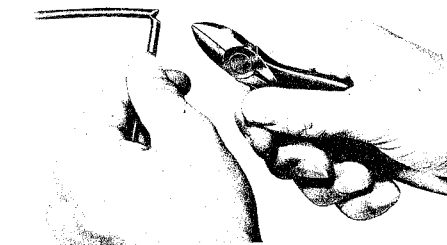
Fig. 4 — Using Cable Stripper

4. SKINNING CONDUCTORS (STATION WIRE, BLOCK WIRE, AND CABLE), FIG. 5, 6, 7, 8, AND 9

4.01 To remove the jacket and conductor insulation from Z station wire proceed as follows:

3.03 To strip lead-covered cable:

- (1) Score a groove around cable at butt marks with a crimping knife.
- (2) Cut deep enough so sheath will break when bent.
- (3) Slide section of sheath off free end of cable.
- (4) When a long length of sheathing is to be removed, score in 4-inch lengths and remove each section.



- (1) Grasp the end of the wire with one hand. Cut into wire with diagonal pliers at approximately 4 inches from the end, deep enough to sever (2) conductors only. (Fig. 5).

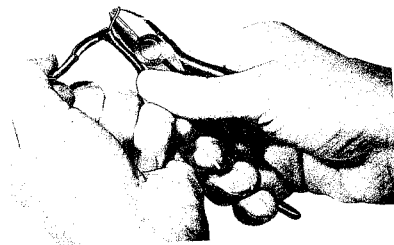


Fig. 5 — Skinning Jacketed Wire

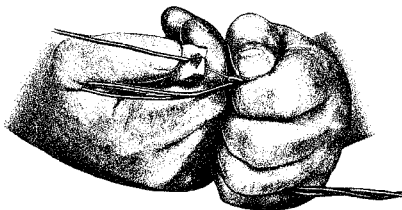


Fig. 6 — Skinning Twisted Wire

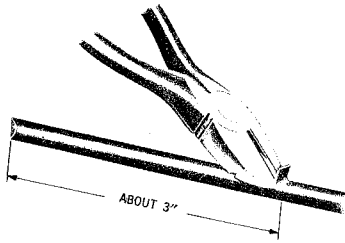


Fig. 7 — Skinning Flat Rubber Cordage

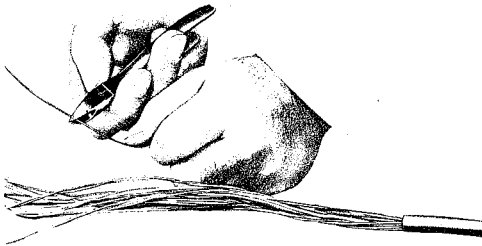


Fig. 8 — Skinning Conductors of Inside Wiring Cable

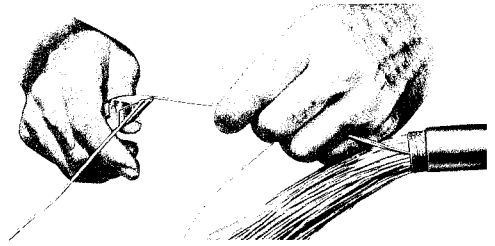


Fig. 9 — Skinning Conductors of Lead-Covered Cable

(2) Grip the end of both conductors, as illustrated in Fig. 5, and pull at an approximately 45° angle to cable. Do not exert too much pressure on diagonal pliers to avoid cutting conductors. Rip approximately 6 in. of cable jacket.

(3) Release pliers and grasp both conductors with hand. Continue pulling until the desired length of conductors are exposed.

(4) Cut off end portion at point of initial cut in Step 1.

(5) Remove insulation on conductors as shown in Fig. 8.

4.02 To remove conductor insulation from twisted wire proceed as follows:

(1) Untwist conductors from desired length to be terminated. Hold at this point between thumb and index finger.

(2) Place conductor in groove on jaws of diagonal pliers as illustrated in Fig. 6, squeeze and pull in direction as shown. Repeat for other conductors.

5. TERMINATING WIRE AND CABLE CONDUCTORS, FIG. 10, 11, 12, 13, AND 14

- Hold wire properly to avoid catching in threads of binding post.
- Turn wire around binding post in same direction as the screw or nut is turned to tighten.
- Avoid overlapping wire around binding post.
- Keep insulation approximately 1/8 inch from the washer.

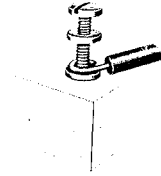
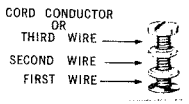
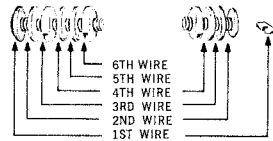


Fig. 10 — Terminating on Screw Terminal

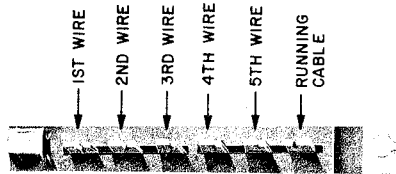


42 or 44 Type



30 Type

31 Type



66 Type

Fig. 11 — Terminating Sequence, Connecting Blocks

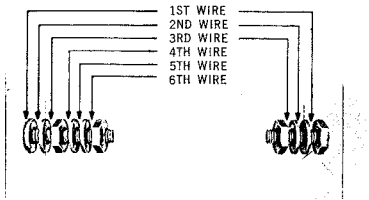


Fig. 12 — Terminating Sequence, Distributing Terminal

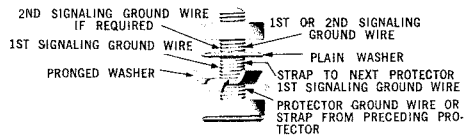
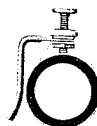


Fig. 13 — Ground Connection Sequence at Protector



PLACE GROUND WIRE UNDER WASHER AND TIGHTEN LOCKNUT FIRMLY

Fig. 14 — Terminating Sequence, Ground Clamp

6. IDENTIFICATION OF TRACER

6.01 Means of identifying conductors are:

- Coloured threads in the insulation. Table A).
- Coloured insulation.
- Tracer ridges in the insulation. Table B).
- Coloured dots in the insulation.

7. INSIDE WIRING CABLE COLOUR CODES

7.01 D inside wiring cable is available in light-olive gray and ivory in pair sizes 6, 12, and 16. The following pair sizes are available in light-olive gray only: 21, 25, 50, 75, and 100.

- The 6 to 25 pair sizes are layer construction. That is, one or more pairs are used for the core and the other pairs are wrapped around to form the cable.
- The 50 to 100 pair sizes are unit construction. That is, each cable is composed of 2 to 4 units of 25 pairs each with each unit bound with a binder colour (Table C).
- Individual conductor insulation is identified by the even-count colour coding scheme.
- See Tables D, E, F, and G for colour codes.

7.02 E inside wiring cable is a sheathless cable intended for use in prewiring homes during construction. It is available in six, twelve and 25 pair sizes.

Individual conductor insulation is identified by the even-count colour coding scheme. (See Table D for colour codes).

TABLE A
COLOURED THREAD
OR
SOLID-COLOURED INSULATION

Colour of Tracer	Number of Conductors		
	Pair	Triple	Quad
Red	•	•	•
Green	•	•	•
Yellow		•	•
Black			•

7.03 Cable Wiring Power Plant is available in gray in six pair size. It is intended for use in bridging power plants to stations and PBX systems. (See Table H for colour code).

TABLE B
RIDGED CONDUCTORS

Tracer Ridge	Number of Conductors	
	Pair	Triple
Double		•
Single	•	•
Plain	•	•

TABLE C**BINDER COLOURS**

Unit No.	Binder Colour	Pair
1	BL-W	1-25
2	O-W	26-50
3	G-W	51-75
4	BR-W	76-100

TABLE D
CONDUCTOR COLOUR CODES
D INSIDE WIRING CABLE (LIGHT-OLIVE GRAY AND IVORY)*

Pair	Ring Wire	Tip Wire	Binder Color for 50, 75, and 100 Pairs
1	BL-W	W-BL	BL-W
2	O-W	W-O	
3	G-W	W-G	
4	BR-W	W-BR	
5	S-W	W-S	
6	BL-R	R-BL	
7	O-R	R-O	
8	G-R	R-G	
9	BR-R	R-BR	
10	S-R	R-S	
11	BL-BK	BK-BL	
12	O-BK	BK-O	
13	G-BK	BK-G	
14	BR-BK	BK-BR	
15	S-BK	BK-S	
16	BL-Y	Y-BL	
17	O-Y	Y-O	
18	G-Y	Y-G	
19	BR-Y	Y-BR	
20	S-Y	Y-S	
21	BL-V	V-BL	
22	O-V	V-O	
23	G-V	V-G	
24	BR-V	V-BR	
25	S-V	V-S	
26-50	Repeat First 25 Colours		O-W
51-75	Repeat First 25 Colours		G-W
76-100	Repeat First 25 Colours		BR-W

* 21-, 25-, 50-, 75-, and 100-pair cable available in light-olive gray only.

TABLE E
CONDUCTOR COLOUR CODES
D CABLE (BROWN OR IVORY)*

Pair	Ring Wire	Tip Wire
1	BL	W
2	O	
3	G	
4	BR	
5	S	
6-10	Repeat First 5 Colours	R
11-15		BK
16-20		Y
21-25		V
26	BL-W	W
27	O-W	
28	G-W	
29	BR-W	
30	S-W	
31-35	Repeat Colours 26-30	R
36-40		BK
41-45		Y
46-50		V
51	BL-R	W
52	O-R	
53	G-R	
54	BR-R	
55	S-R	
56-60	Repeat Colours 51-55	R
61-65		BK
66-70		Y
71-75		V
76†	R	W

* Manufacture Discontinued.

† Substituted for last pair in each cable.

TABLE F
CONDUCTOR COLOUR CODES
STANDARD C CABLE*

Pair	Ring Wire	Tip Wire
1	BL	W
2	O	
3	G	
4	BR	
5	Slate	
6	BL-W	W
7	BL-O	
8	BL-G	
9	BL-BR	
10	BL-S	
11	O-W	W
12	O-G	
13	O-BR	
14	O-S	
15	G-W	W
16	G-BR	
17	G-S	W
18	BR-W	
19	BR-S	W
20	S-W	W
21-40 41-60	Repeat First 20 Colours	R
		BK
61-75	Repeat First 15 Colours	R-W
76†	R	W

Note: D inside wiring cable of 101-pair size is constructed with a red-white pair (pair 101) in the center of four units. Each unit is colour coded the same as the first 25 pairs in the 26 pair, D inside wiring cable, as shown in the table above. Each complete unit of 25 pairs is bound with a different coloured cotton binder.

TABLE G
CONDUCTOR COLOUR CODES
D INSIDE WIRING CABLE (BEIGE)*

Pair	Ring Wire	Tip Wire	Binder Color for 50, 75, and 100 Pairs
1	BL	W	BL-W
2	O		
3	G		
4	BR		
5	S		
6-10	Repeat First 5 Colours	R	
11-15		BK	
16-20		Y	
21-25		V	
26-50	Repeat First 25 Colours		O-W
51-75			G-W
76-100			BR-W

* Manufacture Discontinued.

TABLE H
CONDUCTOR COLOUR CODES
CABLE WIRING POWER PLANT (GRAY)

Pair	Ring Wire	Tip Wire
1	BL-1W	BL-2W
2	O-1W	O-2W
3	G-1W	G-2W
4	BR-1W	BR-2W
5	S-1W	S-2W
6	BL-1R	BL-2R

8. PRECAUTIONS

8.01 When the cable has been kept in locations where the temperature is close to freezing, handle carefully and allow the cable to reach room temperature before using.



Do not use friction tape to hold coil of wire together. Chemical reaction between friction tape and jacket of wire or cable may cause a stain.