BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G32.101.1
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AT&TCo Standard

DROP AND BLOCK WIRING
INSULATED WIRE
DESCRIPTION AND USE

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1. GENERAL

1.01 This section covers the description, selection, use and handling of insulated parallel and twisted form wire used in drop and block wiring. It also includes the type of wire used for cross-connecting terminals.

1.02 This section is reissued to describe and illustrate the methods used to prepare drop wire ends for splicing or terminating.

2. DESCRIPTION OF WIRE

2.01 **C Drop Wire** is a parallel-type wire consisting of two copper-steel conductors of .038-inch diameter which are insulated with rubber compound and joined with a thin fin. The insulated pair is covered with a serve of cotton yarn and a neoprene jacket. The tracer conductor is provided with one ridge molded on the outside neoprene jacket of the wire. See Fig. 1.

C DROP WIRE

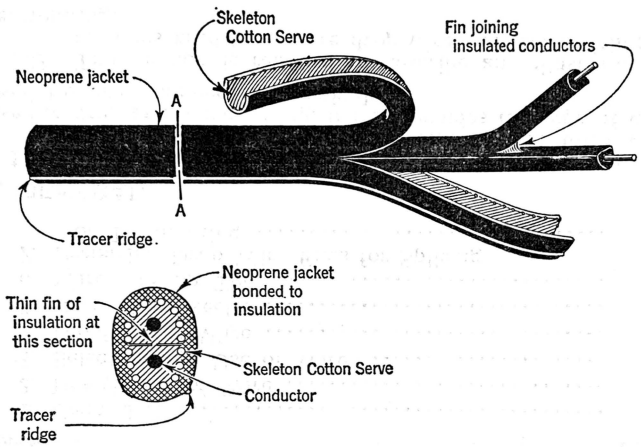


Fig. 1

2.02 **NP Drop Wire preceded C Drop Wire:** The NP Drop Wire is similar in construction to the C Drop Wire except for the lower strength copper-steel conductor which is made by a hot welding process instead of electroplating. **This wire may be identified by a twin tracer ridge on the outside of the neoprene jacket.**

2.03 **D Block Wire** is furnished in single, or twisted pair and triple forms. It consists of .027-inch annealed electroplated copper-steel conductors. Each conductor is insulated with a rubber compound covered by a neoprene jacket.

The insulated conductors are distinguished by raised longitudinal tracer ridge on the neoprene covering. **The single wire has two ridges; in pair wire, one conductor has a single ridge as shown in Fig. 2; in triple wire, one conductor has a single ridge and another has two ridges.**

D BLOCK WIRE

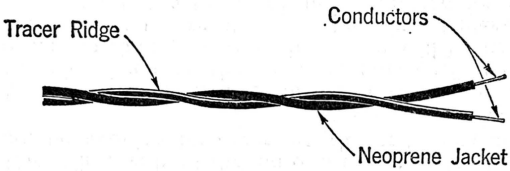


Fig. 2

2.04 **HD Wire** is furnished in twisted form consisting of two No. 14 AWG hard-drawn copper conductors. Each conductor is insulated with a rubber compound covered with a neoprene jacket. **The jacket on one conductor of the pair bears two longitudinal ridges as a tracer.**

2.05 **B Cross-Connecting Wire** is a single or twisted pair arrangement of No. 22 AWG soft copper conductors insulated with distinctively colored polyvinyl chloride compound. **In pair form one conductor is colored red and the other black.** Single wire has either red or black insulation.

3. SELECTION AND USE OF WIRE

3.01 Table A indicates the type of wire, gauge, number of conductors, conductor identification and principal use of parallel and twisted wire for drop and block wiring and for cross-connecting terminals.

TABLE A

	TYPE OF WIRE	GAUGE	NO. OF CONDUCTORS	CONDUCTOR IDENTIFICATION	PRINCIPAL USE
PARALLEL	C DROP WIRE	18 1/2	TWO	SINGLE RIDGE ON NEOPRENE JACKET ADJACENT TO ONE CONDUCTOR	SUBSCRIBER LOOP RUNS BETWEEN POLES AND FROM POLE TO HOUSE
TWISTED	D BLOCK WIRE	21 1/2	SINGLE PAIR OR TRIPLE	SINGLE HAS TWO RIDGES. PAIR HAS SINGLE RIDGE ON ONE CONDUCTOR, OTHER CONDUCTOR PLAIN. TRIPLE HAS SINGLE RIDGE ON ONE CONDUCTOR, ANOTHER HAS TWO RIDGES, ANOTHER PLAIN.	BLOCK WIRING ON RINGS ATTACHED TO BUILDINGS.* SPANS BETWEEN BUILDINGS BRIDLING BETWEEN OPEN WIRE (OR RURAL WIRE) AND DROP WIRE WHEN FUSELESS PROTECTION IS USED AT STATION.
	HD WIRE	14	TWO	TWIN RIDGE ON ONE CONDUCTOR, OTHER CONDUCTOR PLAIN.	EMERGENCY RESTORATION OF SERVICE ON DAMAGED OPEN WIRE LINES. POLE TO POLE SPANS. REPLACING LONG DROP WIRE RUNS BECAUSE OF TRANSMISSION. DROPS TO TOLL STATIONS.
	B CROSS-CONNECTING WIRE	22	SINGLE OR PAIR	RED CONDUCTOR AND/OR BLACK CONDUCTOR	FOR CROSS CONNECTIONS IN INSIDE AND OUTSIDE CROSS-CONNECTING CABLE TERMINALS.

* LIMITATION – NOT IN EXCESS OF 35 FT. IN LENGTH SUPPORTED IN DROP WIRE CLAMPS. IN SPANS LONGER THAN 35 FT. STRING DROP WIRE. SEE G32.165.

4. HANDLING OF WIRE

4.01 Exercise care to protect wire from injury. When transporting in vehicles, see that the wire is not subjected to injury by tools or other equipment. It is usually preferable to run wire from the outside of a coil. When uncoiling wire, do not allow kinks to develop. If a kink does develop to the extent of deforming the wire, it should be cut out.

4.02 In unwinding twisted wire, such as D Block Wire and HD Wire, without the aid of a drop wire reel, kinks and spirals can be avoided by reversing the coil every five or six turns.

4.03 Where parallel wire is unwound from a coil without the aid of a reel, the required twists will be obtained in the normal unwinding of the wire and it will be unnecessary to purposely introduce twists into the wire. Unless the coil is reversed or rotated, a twist will be introduced for each turn in the coil. If the wire tends to kink, the coil should be reversed and a sufficient number of turns taken off the reversed coil to reduce this tendency.

4.04 **In running parallel wire along a pole line or from pole to building, it is desirable that at least three twists be present in each span of wire. Where the wire is run from a reel for a distance of more than four pole sections, throw at least three twists into the wire at alternate poles as follows:**

(a) Attach the wire at the end of the run (call this pole, pole No. 1).

(b) At the next pole from the end of the run (pole No. 2) turn the wire over three times before making the attachment.

(c) At the fourth and other even-numbered poles proceed as on the second pole.

It is not necessary to twist the wire at the odd-numbered poles. However, the wire should be attached to each pole in numerical order.

5. DROP WIRE REEL

5.01 **The C Drop Wire Reel** is available to facilitate the installation and recovery of drop wire. It supersedes the B Drop Wire Reel. These reels will accommodate coils of wire having an inside diameter of about 15 inches, such as the standard coils of drop wire. If it is desired to use a drop wire reel for paying out a coil of wire having a greater inside diameter, it will be necessary either to wind the wire on the reel from the coil or to re-coil the wire so that the diameter of the coil will be between 15 and 16 inches and its thickness about 4 inches. Wire which is re-coiled for use on a drop wire reel shall be of such length that its weight will not exceed approximately 50 pounds.

5.02 See Sections G32.137.1 and G32.137.2 on use of the drop wire reel when stringing drop wire, and Sections G32.415.1 and G32.415.2 when lowering and replacing drop wire.

5.03 **The B and C Drop Wire Reels** are shown in Figs. 3 and 4.

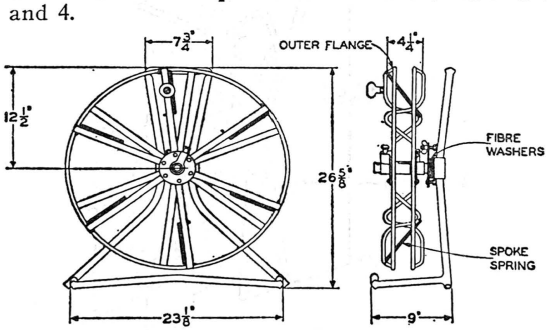
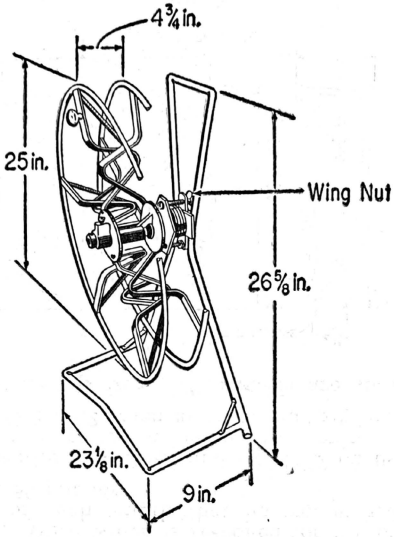


Fig. 3



C DROP WIRE REEL

Fig. 4

Note that the C Reel has been improved by eliminating the overhang at the outer end of the flange rings and by changing the brake adjusting assembly so that the wing nut faces the rear of the frame.

5.04 The drop wire reel can be used either in the vertical or horizontal position. Facilities are provided for carrying it on various truck bodies from which position the wire may be uncoiled or coiled if this can be done with safety.

5.05 A coil of new drop wire can be placed on a drop wire reel best when the reel is in the horizontal position. Hold out the locking pin and remove the outer flange. Place the coil of wire on the inner flange and replace the outer flange, engaging the locking pin in the inner hole. The outer hole is provided for use only when equipping the reel with wire which has been coiled on the reel in the field.

5.06 **The drop wire reels** are equipped with an adjustable brake which can be tightened to prevent overrunning of the reel and to reduce slack when paying out wire. The brake should be released entirely when reeling in wire.

5.07 When reeling in recovered wire with the reel removed from the motor vehicle, it is usually more convenient to use the reel in the vertical position, steadying it with one foot on the base. The locking pin should be engaged in the inner hole when recovering wire.

5.08 The bearing between the spindle and the sleeve should be lubricated occasionally through the oil hole in the outer flange and lubricant should be placed as necessary on the outer surface of the sleeve to facilitate removing and replacing the outer flange. Any of the commonly used automobile engine oils are satisfactory for these purposes.

6. WIRE RAISING TOOL

6.01 A tool such as the Wire Raising Tool may be used to advantage in threading drop wire through trees.

7. PREPARING DROP WIRE ENDS FOR SPLICING OR TERMINATING

7.01 The C or NP Drop Wire neoprene jacket may be stripped by using a C Braid Stripper or a Wire Slitter Model No. 205 as indicated in the following methods:

(1) **C Braid Stripper Method:** Place the drop wire (with the tracer ridge to one side) in the smaller groove of the stripper. Depress the sliding thumb guard over the wire, applying thumb pressure to allow the cutting blade to penetrate the neoprene jacket. Maintain pressure and pull along the wire as illustrated in Fig. 5.

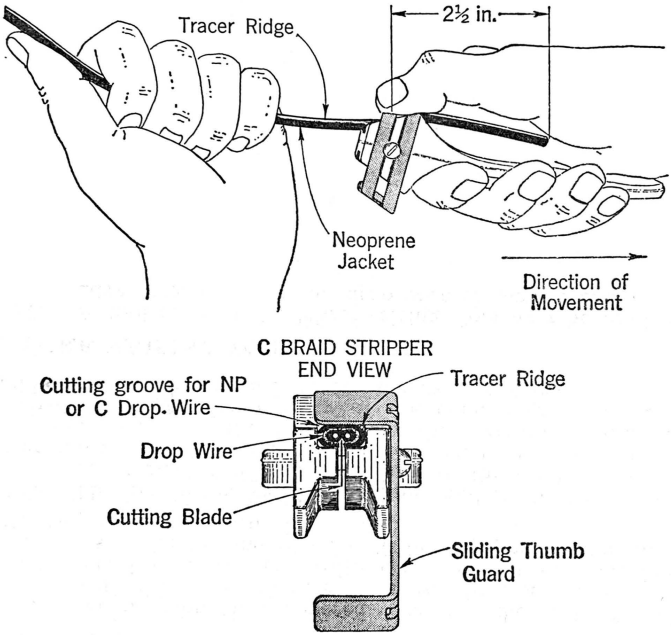
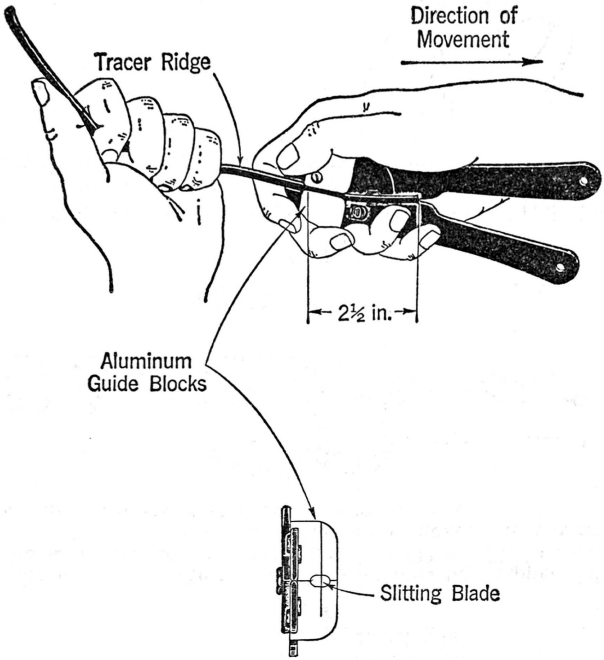


Fig. 5

(2) **Wire Slitter Method:** Place the drop wire (with the tracer ridge to one side) in the groove of the wire slitter opposite the slitting blade. Close slitter and apply light thumb pressure over the guide block to allow the slitting blade to penetrate the neoprene jacket. Maintain pressure and pull along the wire as illustrated in Fig. 6.



WIRE SLITTER MODEL No. 205
END VIEW

Fig. 6

DO NOT GRIP HANDLES TO SLIT DROP WIRES AS THE PRESSURE APPLIED IN THIS MANNER CAUSES THE WIRE TO BIND IN THE TOOL.

7.02 To remove the neoprene jacket:

Peel back the scored neoprene jacket and cut at the beginning of the score as illustrated in Fig. 7.

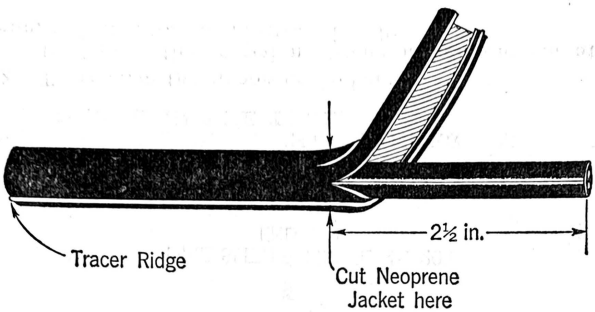


Fig. 7

If desired, the opposite side of the wire may be stripped following the same procedure described in 7.01 (1) or (2). In this case peel both halves of the scored neoprene jacket and cut at the beginning of the score as shown in Fig. 8.

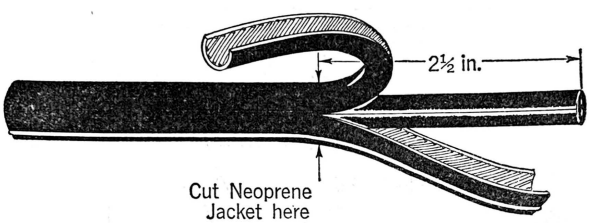


Fig. 8

7.03 Separate the conductors and remove insulation as indicated in Figs. 9 and 10. Clean the skinned conductors with either diagonal or long-nose pliers.

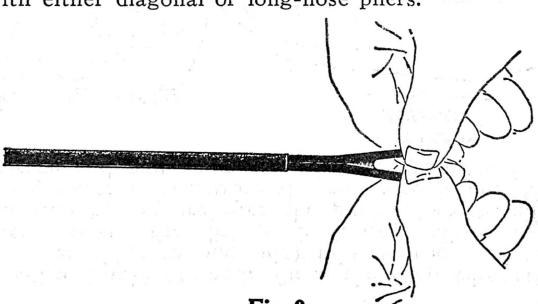
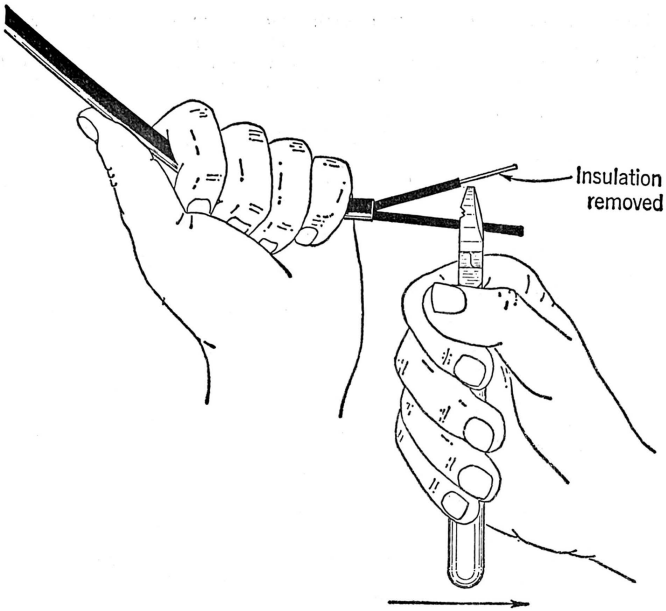


Fig. 9



CAUTION: When removing insulation from conductors with the diagonal pliers pull away from body.

Fig. 10

7.04 For splicing drop wires refer to pressed sleeve splices in Section G32.102.1.

7.05 For terminating drop wires refer to wiring practices in the G32 Series.