

DEDICATED PLANT
WIRING AND CONNECTING ARRANGEMENTS
POLE AND WALL MOUNTED CABINETS FOR
CONTROL AND ACCESS POINTS

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1. GENERAL

1.01 This section is reissued to revise the wiring and connecting arrangements for the 29Q2B Cabinet for use as an access or control point.

1.02 The 29Q3B and 29Q4B Cabinets are now obsolete. Brief information on the obsolete types is retained to cover those in plant.

1.03 The 29Q2B Cabinet is capable of holding a maximum of 900 pairs IN and 1,000 pairs OUT, and can be mounted either on pole or wall.

2. HARDWARE

2.01 (a) *Insignia Adhesive*: used for identifying control and access points. The insignia C and P will designate a control point while A and P will be used to designate an access point. (See Fig. 1).

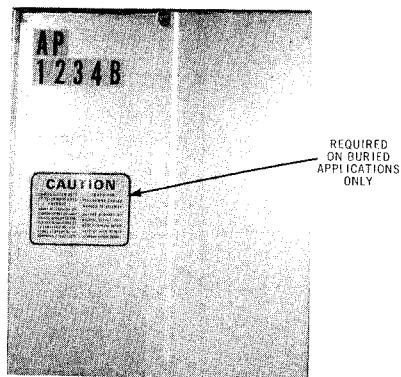


Fig. 1

(b) *Cable Unit Markers*: used to identify individual groups in the cables.

(c) *Channel Rings*: are included in the 29Q2B, 29Q3B and 29Q4B for routing of the cable pairs within the cabinet.

(d) *E Plastic Caps*: used with plugging compound for clearing and capping the ends of the IN Cable binder groups at cable ends. The caps come in different sizes which are able to accommodate cables up to 3 inches.

(e) **Plastic Bags:** used with plugging compound for clearing and capping the ends of the IN cable binder groups at cable ends. The bags come in two sizes 4" x 8" and 3" x 5".

(f) **B Wire Connectors:** used to connect IN cable pairs to OUT cable pairs. They are pressed on the conductors with a B Connector Presser.

(g) **Warning Marker Form E-5190:** used to identify special circuits. This tape is mounted on dispenser cards and when required, is peeled off the card and wrapped around the "B" Wire Connector.

3. CONTINUOUS PIC SHEATH COUNT

3.01 Continuous PIC Sheath Count is a technique for identifying groups in control and access points.

3.02 Continuous PIC Sheath Count aids in making the pair connections and identi-

fication within a control or access point cabinet and is accomplished by assigning:

(a) A consecutive pair count starting with pair one to all of the IN cable pairs appearing in the cabinet regardless of the number of cable sheaths involved.

(b) A consecutive pair count starting with pair one to all of the OUT cable pairs appearing in the cabinet regardless of the number of cable sheaths involved.

(c) Binder group markers of both IN and OUT cables will be made continuous to correspond to these pair counts as shown in Table A.

By this technique, each control or access point will appear to have only one IN and one OUT cable; thus, making pair identification easier.

3.03 If a cable stub entering a control or access point contains both IN and OUT pairs, the cable will be identified accordingly. The centre groups of the cable should contain the OUT cable pairs.

TABLE A					
CONTINUOUS PIC SHEATH COUNT AND BINDER GROUP COLOUR AND NUMBER					
Cable Unit Marker No.	Continuous PIC Sheath Count	Binder Group Color	Cable Unit Marker No.	Continuous PIC Sheath Count	Binder Group Color
1	1-25	Bl-W	21	501-525	Bl-V
2	26-50	O-W	22	526-550	O-V
3	51-75	G-W	23	551-575	G-V
4	76-100	Br-W	24	576-600	Br-V
5	101-125	S-W	25	601-625	Bl-W, R
6	126-150	Bl-R	26	626-650	O-W, R
7	151-175	O-R	27	651-675	G-W, R
8	176-200	G-R	28	676-700	Br-W, R
9	201-225	Br-R	29	701-725	S-W, R
10	226-250	S-R	30	726-750	Bl-R, R
11	251-275	Bl-Bk	31	751-775	O-R, R
12	276-300	O-Bk	32	776-800	G-R, R
13	301-325	G-Bk	33	801-825	Br-R, R
14	326-350	Br-Bk	34	826-850	S-R, R
15	351-375	S-Bk	35	851-875	Bl-Bk, R
16	376-400	Bl-Y	36	876-900	O-Bk, R
17	401-425	O-Y	37	901-925	G-Bk, R
18	426-450	G-Y	38	926-950	Br-Bk, R
19	451-475	Br-Y	39	951-975	S-Bk, R
20	476-500	S-Y	40	976-1000	Bl-Y, R

4. INSTALLATION OF IN AND OUT CABLES

4.01 The IN Cable Pairs from the switching centre must enter on the left hand side as viewed from the front of the cabinet and the OUT Cable Pairs on the right side.

4.02 To help channelling the cables the channels may be removed from the cabinet.

4.03 To provide for adequate slack for wiring, cut the cables in the cabinet as follows:

IN cable entering from the top, 50" from the point of entrance into the cabinet.

IN cable entering from the bottom, 80" from the point of entrance into the cabinet.

OUT cable leaving from the top, 60" from the point of entrance into the cabinet.

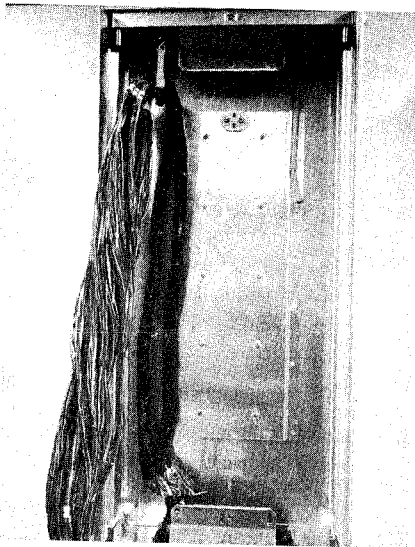


Fig. 2 — Taping of Cable Pairs in Group of 200 Pairs

OUT cable leaving from the bottom, 90" from the point of entrance into the cabinet.

4.04 The IN and OUT cables entering from the bottom of the cabinet must be taped in groups of 300 pairs or less if necessary from the point of entrance to the slack wire chain at the top. (See Fig. 2).

4.05 *Grounding Method:* The cable shall be grounded to the cabinet as described in Division 638 on "Z" Bond Clamp.

5. CABLE PREPARATION AND BINDER GROUP IDENTIFICATION

5.01 To facilitate pair connection and identification in control and access points a continuous PIC Sheath Count will be established for all IN and OUT cables. This method is described in Part 3 of this section.

5.02 It will be necessary in many cases to mark the binder groups with a number identification which differs from that normally associated with the cable sheath in accordance with the Continuous PIC Sheath Count Method.

5.03 Identify the IN and OUT cables using the Dymo Tape Writer. The Dymo Tag should include the word IN or OUT according to the cables' designation, plus the count of the cable.

5.04 Before removing the unit binder, wrap each binder group of the IN and OUT cable (or cables) with the cable unit marker using the number that corresponds with the group. (e.g., Blue, White — No. 1) unless a change is required to correspond to the Continuous PIC Sheath Count. Place the markers both near the sheath opening and at the clear and capped end of the IN cable. (See Fig. 3).

5.05 The continuous PIC Sheath Count and the unit marker to use for binder group identification ties are listed in Table A.

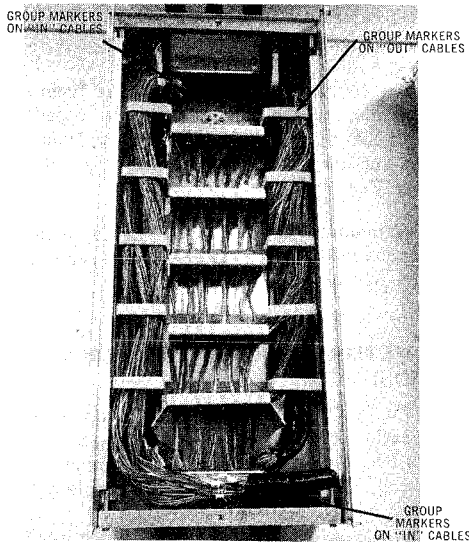


Fig. 3 - Installation of Unit Group Markers

6. CAPPING SPARE IN PAIRS

6.01 Clear the ends of the spare IN cable pairs using a plastic bag or B Plastic Cap as described in appropriate section in Division 633.

7. WIRING

7.01 Route the IN and OUT cables along the sides of the cabinet. The IN cable must be routed along the left side, the OUT along the right.

7.02 Clear the IN cable pairs as per Part 6. Ensure that there will be enough slack in the wires to permit the making of the connections at the extreme right hand side of the bottom wiring bracket.

7.03 Replace the Channelling Rings that were removed from the cabinet prior to the installation of the cables.

OUT Cables

7.04 Route the OUT pairs or groups directly over the channelling ring at the level which they are to be spliced if they enter the cabinet from the bottom. If the cable enters the cabinet from the top the pairs or groups will be routed under the channelling ring, at the appropriate level.



Fig. 4

7.05 Route the OUT cable binder groups across the top of the wiring brackets. The binder group colour codes must correspond to the colour code on the front of the distributing bracket. (See Fig. 4)

7.06 Feed each 25 pair binder group through the back row of holes in the wiring bracket in accordance with the colour code and pair count indicated on the front of the distributing bracket. Figures 3, 4 and 5 give a top view of the distributing brackets.

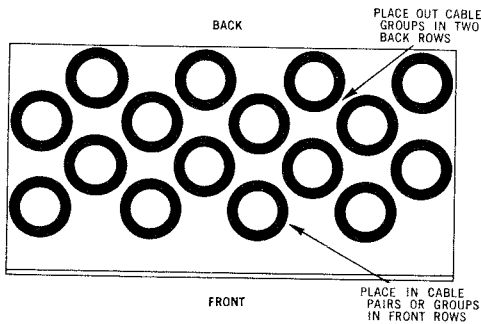


Fig. 5 — Distribution Bracket For 29Q2B (Top View)

7.07 Cut each binder group to a length of 12 to 15 inches below the bottom of the bracket to preserve the pair twist. Install a single wire tie near the end of the binder group. (See Fig. 6).

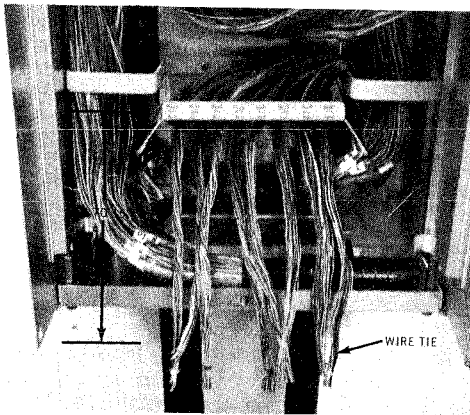


Fig. 6

7.08 Select a pair and pull from the single wire tie. Pull the pair taut, to remove any slack and cut the pair from 6 to 8 inches below the bottom of the distributing bracket.

7.09 Apply from four to six twists in the cable pair as close to the bottom of the wiring bracket as possible. This prevents splitting of the OUT pair. (See Fig. 7).

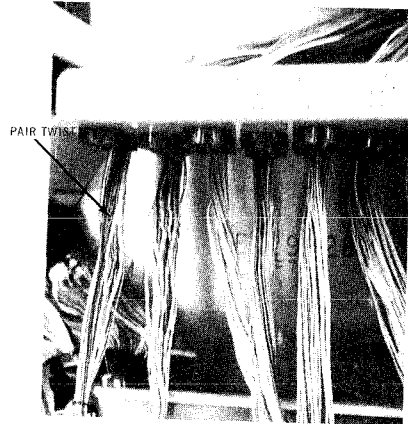


Fig. 7

7.10 Repeat Paras. 7.08 and 7.09 for each pair of the binder group and using the top of the next lower distributing bracket as a guide, cut all pairs of the group. This assures a uniform length for the binder group.

7.11 Secure the pairs in the binder group by wrapping with a single wrap of wire twisted together to bind the group together.

7.12 Repeat procedures outlined in Paras. 7.07 through 7.11 for the remaining binder groups. Pairs through the lower bracket should be cut to the same length as the other pairs.

8. CONNECTING

8.01 Select and cut the IN cable pair from the capped binder group.

8.02 Pull the selected IN cable pair from the binder group immediately below the group marker which is located at the cable sheath opening at the top of the cabinet. **DO NOT** remove the selected pair from the binder group identification marker at the cable sheath opening.

8.03 Rerun the selected IN pair through the channelling rings, on the right of the spare

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IN pairs to the appropriate splicing level. Care must be exercised to avoid tying in the spare IN pairs.

8.04 Place the IN cable pair through the front hole of the distributing bracket corresponding to the OUT cable pair.

8.05 Pull the IN cable pair taut to remove slack and cut to the same length as the binder group containing the OUT cable pair.

8.06 Remove the selected OUT pair from the wire wrap and connect the IN cable pair to the OUT cable pair using "B" Wire Connectors. Do not remove the OUT pairs from the rear hole of the wiring bracket.

8.07 Repeat Paras. 8.01 through 8.06 to connect any additional IN cable pairs to OUT cable pairs.

8.08 When splicing keep the pairs taut and pigtail the pairs together at the point where they meet.

9. VERIFICATION OF PAIRS COMMITTED (C.P. to A.P.)

9.01 At time of committing pairs through a C.P. to feed an A.P., one pair in each 25 pair group (committed in whole or part) shall be tested between the C.P. and A.P. to ensure pair continuity and correct binder group sequence.

10. IDENTIFYING SPECIAL CIRCUITS

10.01 When a cable pair is used for a special service, it will be necessary to identify the circuit by wrapping a red warning marker tape around each of the "B" Wire Connectors that are used to splice the IN and OUT pair.

11. TALKING CIRCUIT

11.01 If a talking circuit is assigned connect the cable pair to the terminal block which is located immediately above the top distributing bracket as outlined in Paras. 11.02 to 11.04.

11.02 Cut the assigned talk pair from the capped binder group and pull the pair from the

binder group immediately below the binder group marker which is located at the top of the cabinet.

11.03 Route the talk pair around the top left hand channelling ring and directly to the terminal block.

11.04 Strip the insulation from the ends of the talk pair and terminate by wrapping the wires around the binding post of the terminal block and tighten the nuts.

12. LENGTHENING PAIRS

OUT Cable Pairs

12.01 If an OUT cable pair is too short, lengthen the conductors as follows:

(a) Obtain a length of wire having the same coloured insulation and gauge as the cable pair to be lengthened.

(b) Cut the ends of the OUT cable conductors that are to be lengthened and the lengthening conductors square at a suitable location in the wiring channel, insert the B Wire Connectors and press.

(c) Route the lengthened wires through the distributing ring and place through the assigned rear hole of the wiring bracket and apply four to six tight twists to prevent pair splitting.

IN Cable Pairs

12.02 The IN cable pairs which have been disconnected from OUT pairs or cut from the cleared and capped end and are not to be used immediately must be cleared and dressed as described below:

(a) Lengthen the pair as described in Para. (12.01 (a) and (b)).

(b) Route the wires through the distributing rings along with the remaining IN spare pairs of the *same binder group*.

(c) Cut the pair the same length as the rest of the IN spare pairs.

(d) Clear the end of the pair by placing a "B" Wire Connector on *each individual* wire.

(e) Tape the wires to their respective binder group near the cleared end of the IN pair stub.

and is capable of holding a maximum of 200 OUT pairs. (See Fig. 8).

13. OBSOLETE TYPES 29Q3B and 29Q4B

29Q3B

13.01 The 29Q3B was used as an access point

29Q4B

13.02 The 29Q4B was used as a control or access point and is capable of holding a maximum of 450 OUT pairs. (See Fig. 9).

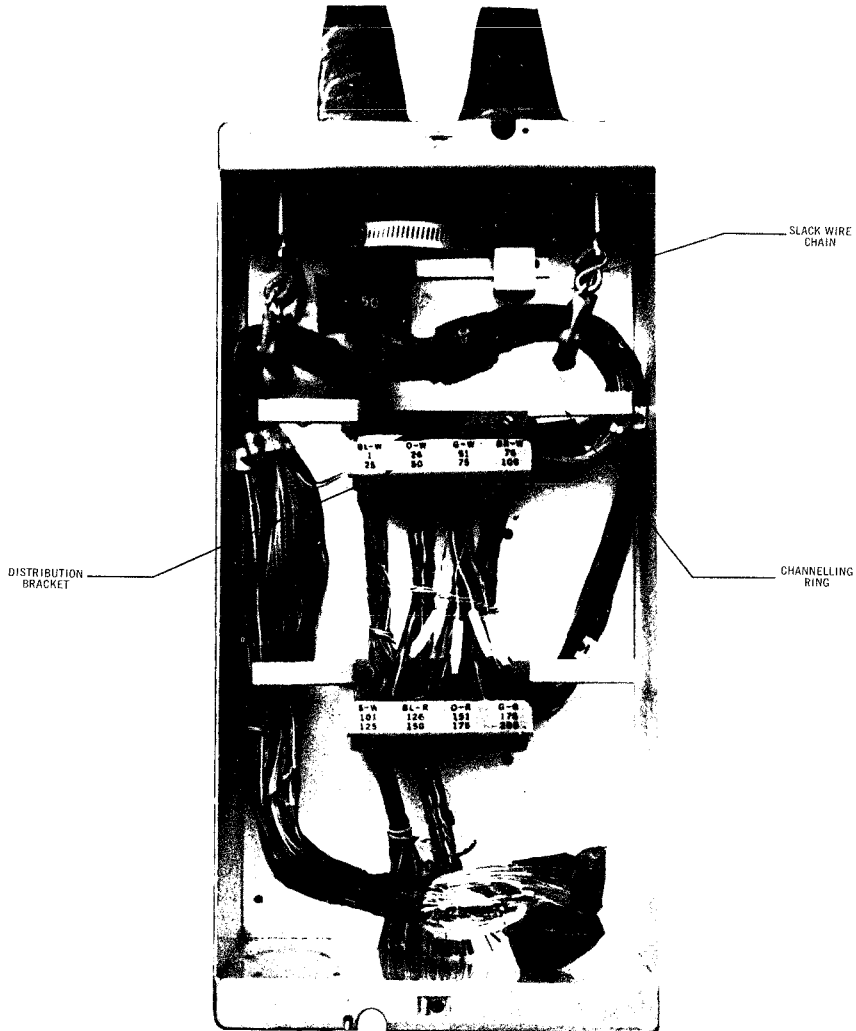


Fig. 8 — 29Q3B with IN and OUT Cables

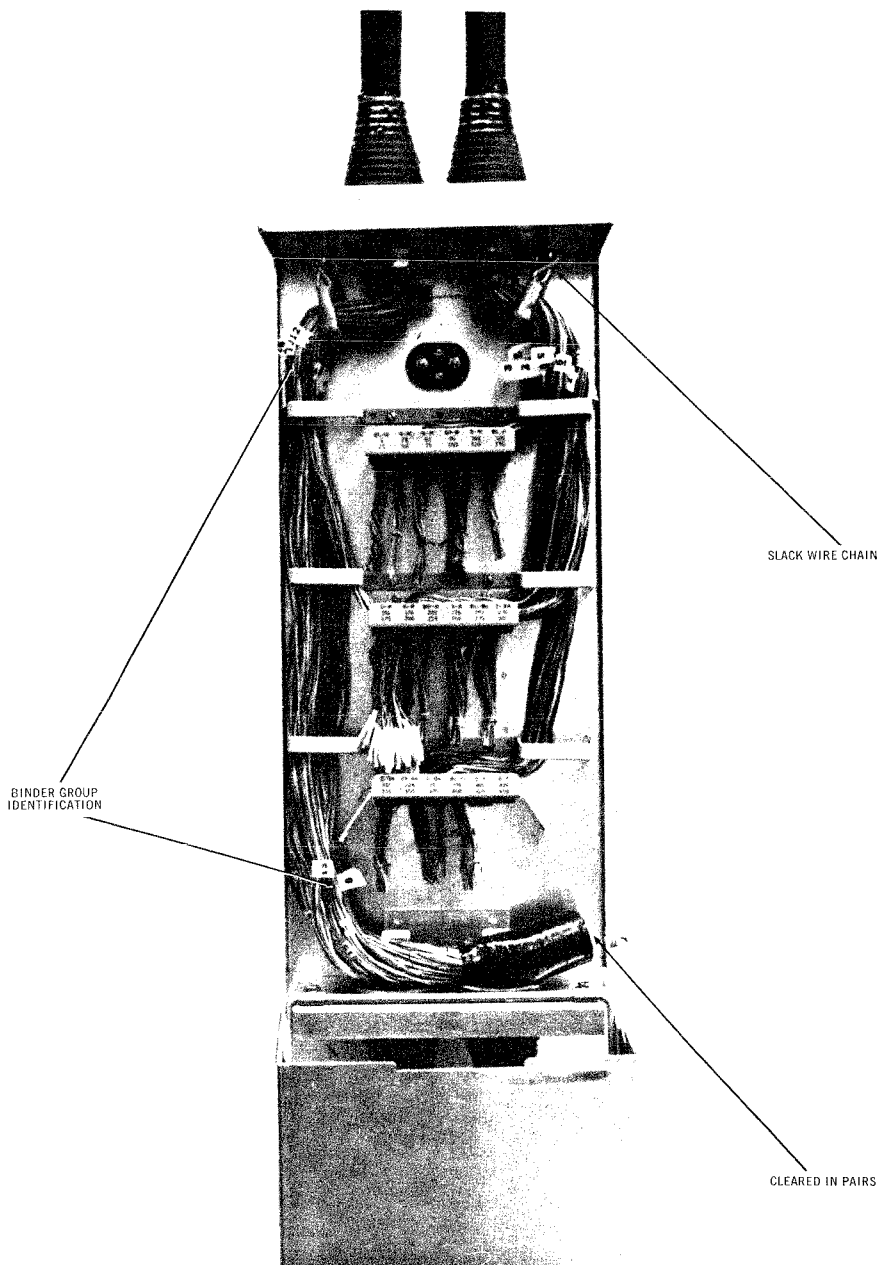


Fig. 9 — 29Q4B Wired