

PAIR IDENTIFICATION USING CB AUTOMATIC PAIR IDENTIFIER

1. GENERAL

1.01 This section covers the instructions for operating the CB Automatic Pair Identifier which is designed for rapid identification of both spare and working noncolor coded pairs at a field location.

1.02 The CB100D (Central Office) Test Set, Fig. 1, together with the CB101D (Field) Test Set, Fig. 2, make up the CB Automatic Pair Identifier.

1.03 The CB100D is equipped with four KS-19163 L4 connectors so that P100A and P100B cords along with various test connectors can be used for making connections to 100-pair groups of cable pairs terminated on the main frame.

1.04 The CB101D is furnished with three cords permanently wired to the test set: A paired

cord equipped with a C cable clip for connection to the control pair, a single conductor cord with clip for ground connection, and a single conductor cord equipped with a transfer clip for connection to either the tip or ring conductor of the pair to be identified.

1.05 The description and maintenance of the CB Automatic Pair Identifier is covered in Section 106-310-122.

2. USE

2.01 Place test connections on the 100-pair group of terminated pairs to be identified at a field location. Connect the Central Office Unit (CB100D) to the test connectors using P100A or 100B cord as required. Use central office jumper wire to connect any good spare pair that appears at the field location to the binding post on the CB100D designated CONTROL LINE. Solder at

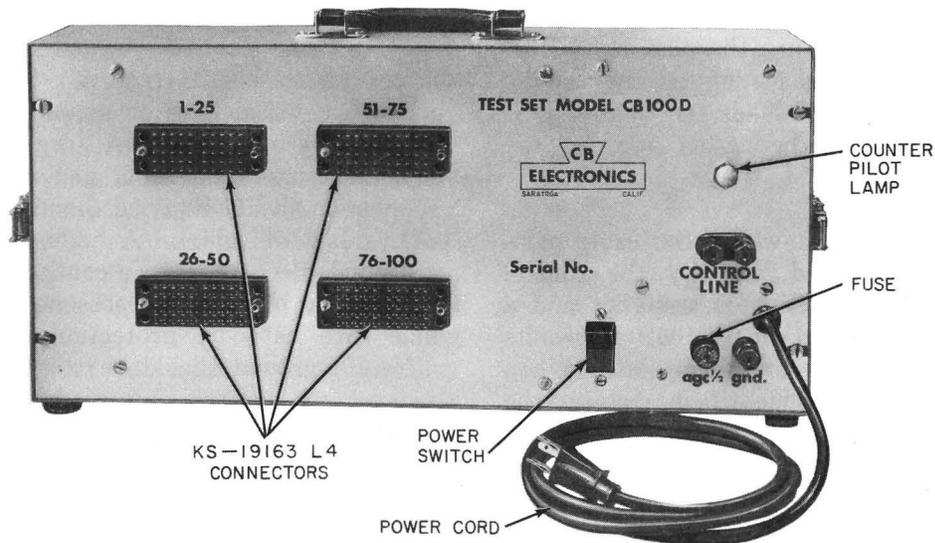


Fig. 1—Central Office Test Set—CB100D

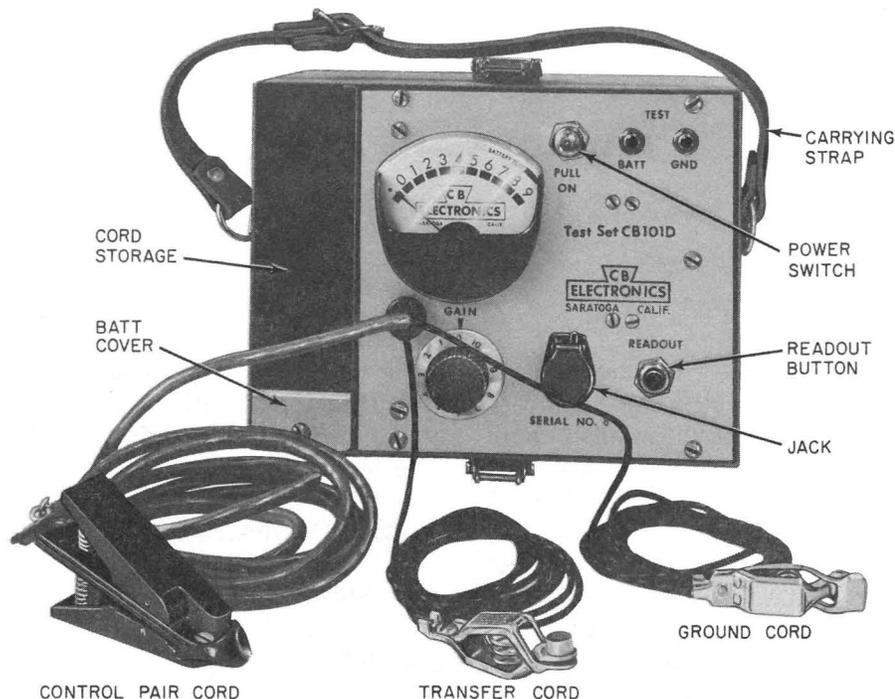


Fig. 2—Field Test Set—CB101D

connector-protector end to ensure a good connection. Connect a ground wire from CO ground to the binding post designated, GND. The ground wire can be omitted if ground is provided by the third wire of the power cord. Connect the power cord to 115V, 60Hz power source and operate the power switch to ON. The pilot lamp should light immediately; a timer will turn the pilot lamp OFF in approximately four seconds unless the control pair is defective (noisy) and holds the counter ON. If this occurs, select another cable pair for the control pair.

2.02 At the field location where the cable pairs are to be identified, identify the control pair using a 147B (or equivalent) amplifier and a probe. The Central Office Unit (CB100D) transmits an interrupted 500 Hz tone for this purpose. When the control pair has been identified, connect the control pair to the cord equipped with C cable clip. This connection does not require polarization: (The black or red jaw can be connected to either tip or ring conductor of the control pair). Connect ground cord clip to ground.

2.03 Pull power switch to ON position on the Field Unit (CB101D). Depress BATTERY

TEST button. The meter needle should fall within the range indicated on the meter. If the temperature is freezing or below, the reading may be one division lower than normal and the set will function normally even though the batteries are good.

2.04 Depress GROUND TEST button to test ground connections and control pair. The meter needle should read 4. However, readings which are within plus or minus 1 of the normal 4 reading are acceptable. A lower reading indicates a high resistance ground, and a different ground connection should be tried (bonding ribbon, ground rod, shield of cable). A higher reading indicates a grounded control pair, a control pair crossed with battery, or possibly the presence of a nearby pipe line with cathodic protection, in which case a different ground should be tried.

2.05 Connect transfer clip to one side of a pair to be identified. Holding the readout button in the operated position, slowly advance the gain control until meter reads out the pair identity by moving to first digit, then to second digit. Note the gain setting for this readout. Repeat this procedure for three or four different pairs. Advance the GAIN setting by one scale division beyond the

average gain required for the 4 to 5 test pairs. This setting will normally be satisfactory for the rest of the pairs within the group.

2.06 Proceed to identify pairs. Normally, it will be necessary to depress the readout switch only momentarily. However, if a conductor does not identify, hold readout switch operated and advance gain control slowly. If the pair identifies, continue holding readout button operated to be certain that a second readout is identical to the first readout. If the second readout is not identical, a cross is indicated and the second readout is the identity of the crossed pair.

2.07 Where all pairs of a group are identified by one readout for each pair, crossed pairs will be detected when a second pair identifies with the same number as a pair already identified. This occurs because the scanner begins each sequence at the first pair of the group to be identified.

3. TROUBLE SHOOTING

3.01 If pairs can not be identified, the following tests should be made in order:

(1) Connect only the red side of black-red clip to the ring side of the control pair and operate the test ground switch. Meter should read approximately 4 as outlined in 2.04. Test the tip side of control pair and reading should be identical. If one side does not read, an open is indicated in the control pair or jumper to the CB100D to control line terminal. An open fuse in the Central Office Unit may also be the trouble.

(2) If tests in (1) are satisfactory, repeat Step (1) using the black side of black-red clip. The absence of a reading indicates an open between black-red clip and Field Unit chassis. In such a case, the Field Unit must be repaired.

(3) Connect a head telephone set or a receiver across the control pair (leaving the black-red

clip connected) and momentarily operate the readout button. A strong 1 KHz tone from the Field Unit (CB101D) should be heard for about one second followed by weaker tones from the Central Office Unit (CB100D). If the tones from the Central Office Unit are not received, the Central Office Unit should be checked to be certain that it is on.

(4) Check the test connectors to ascertain that they are on the correct count, that switches on the test connectors are closed, and that the connecting cables from Central Office Unit to test connectors are in place. If pair used for control line is in the count being identified, check to see that it identifies correctly.

(5) Connect transfer clip to either jaw of black-red clip and operate ground test switch. A reading of about 0 should be obtained. If not, an open transfer clip cord is indicated.

(6) Should some pairs within the group identify but others do not, check connector placement at main distributing frame.

(7) Check CB101D in central office and verify that pairs are identifying at main distributing frame. If pairs do not identify, check connectors on CB100D.

3.02 If the cables connecting the CB100D Test Set to the main distributing frame connectors (Fig. 3) are transposed when placed, incorrect identification will result. Verification of correct placement can be made as follows:

(1) Open the switches on the 50-pair connector frame for the following pairs: 1, 27, 53, and 79.

(2) Attempt reidentification of these tagged pairs at the work location. If the cables have been correctly connected, these pair numbers will not identify.

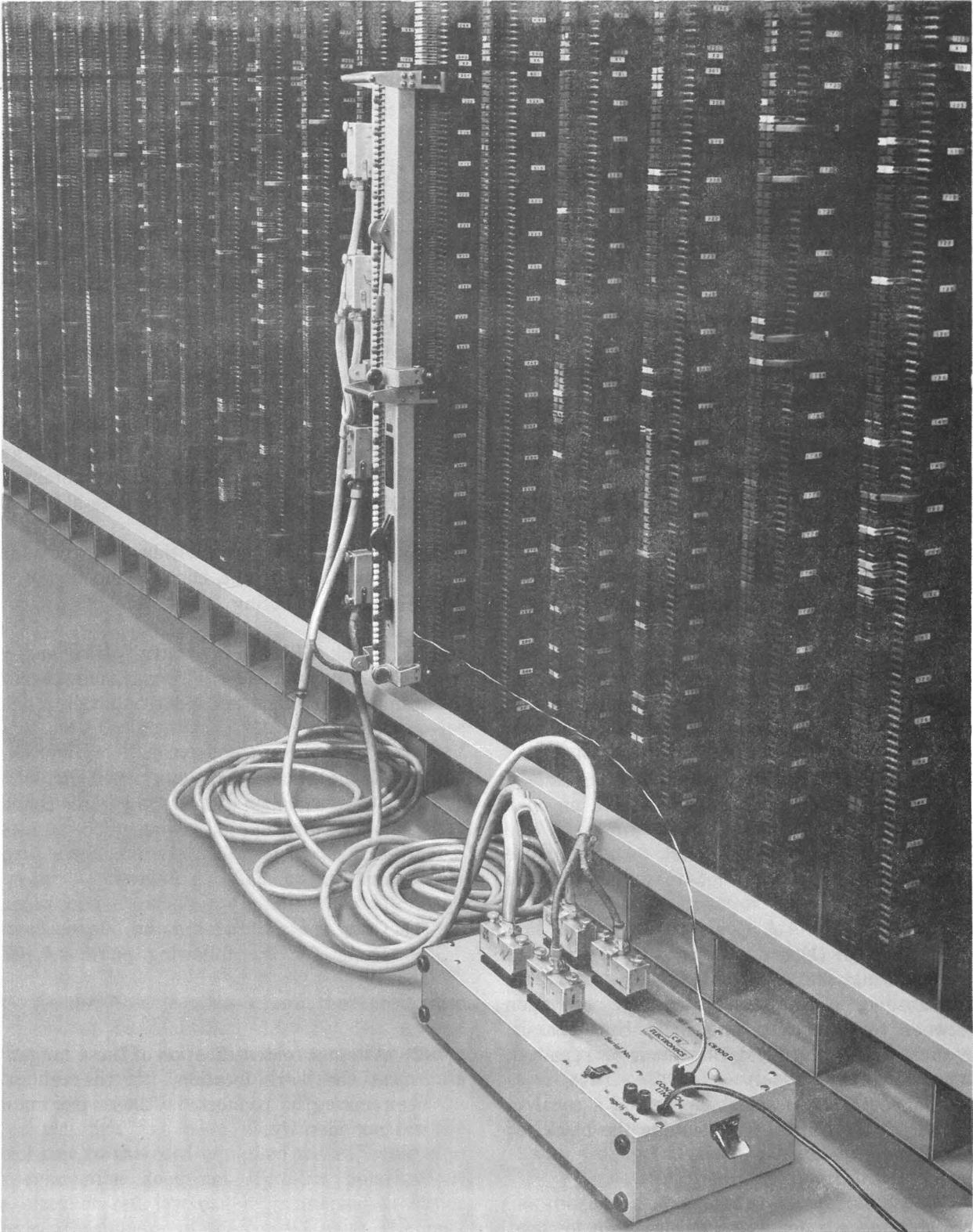


Fig. 3—CB100D Connected to Main Frame