A.E.CO. TYPE 2 SECRETARIAL ANSWERING CABINET INSTALLATION

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1. GENERAL

1.01 This section covers installation of the A.E.Co. Type 2 Secretarial Answering cabinet. It is reissued with a revised title to correct and expand the information on connection of an attendant's telephone set, and to provide modification procedures for sets from current production, both dial and Touch Calling.

2. INSTALLATION

Location

2.01 In locating the answering cabinet, be guided by the customer's wishes insofar as installation requirements and other provisions of these practices permit. If the customer's wishes cannot be followed, explain the reason to the customer. Consider the following before beginning the installation:

(a) A desk or table with sufficient space to accommodate the cabinet is required. The Types 2A, 2B, and 2C require approximately 42, 72, and 84 square inches of table top area, respectively.

(b) The terminal box is pre-wired to the cabinet with a 6' plastic covered cable and is generally mounted on the side of the desk or table. When locating the terminal box, allow sufficient room for connecting exchange and station lines.

(c) Avoid areas where excessive dust, dampness, corrosive fumes or severe vibration might be encountered.

Power Supply

2.02 The secretarial answering cabinet requires no a-c power for its operation. It obtains its necessary operating power from the exchange lines and a 6V nickel-cadium battery mounted on the electronic common ringer assembly. However, the cabinet is shipped from the factory with the positive (+) lead to the battery disconnected at terminal B of the terminal box to prevent battery drain during shipment and storage. This lead must be reconnected at the installation site by strapping terminals A and B.

2.03 If the answering cabinet has been stored more than three months since manufacture or last use, the nominal 6V battery potential may have dropped to a value less than 5V. If so, connect a source of 50 Vdc to terminals A (positive) and C (negative) for approximately ten hours to recharge the battery.

Attendant's Telephone Set

2.04 In addition to a principal method, which makes full use of the connections and wiring provided in the cabinet, there are three optional methods of connecting the attendant's telephone set to the secretarial answering cabinet.

Principal Arrangement

2.05 In the principal method of connection, the attendant is assigned one of the lines controlled by a key on the cabinet, the tip (+) and ring (–) conductors of which are cross-connected at the terminal box to the G and 5 terminals, respectively. A standard telephone instrument wired for bridged ringing is connected to the + and – Secr. Ans. terminals, as shown in Figure 1. With this arrangement, an incoming call to the attendant's line will light the associated line lamp and sound the common audible signal at all times. With all keys in the Hold or Release positions in any combination, or with the key for the attendant's line in the Answer position, the ringer in the attendant's telephone set will also sound on such a call. To minimize disturbance, the ringer will not sound if the key of any other line is operated to the Answer position.

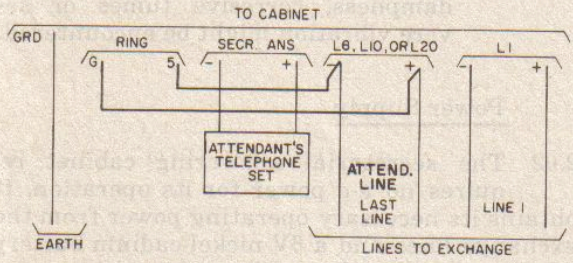

Figure 1. Connections for Attendant's Telephone Set, Principal Arrangement.

Alternate Arrangement A

2.06 Alternate method A is used when the attendant has no line assigned to her own use, but answers calls for others. A standard telephone set (which need not be equipped with a ringer) is connected to the + and – Secr. Ans. terminals, as shown in Figure 2. With this arrangement, the line lamps and common audible signal provide indication of incoming calls on all lines. If the attendant's set is equipped with a bridged ringer, and the key of any line is left in the Answer position, the ringer will sound on incoming calls to that line, if no higher-numbered Answer key is operated.

Alternate Arrangement B

2.07 Alternate arrangement B is used when a line is assigned to the attendant, but the capacity of the answering cabinet is fully utilized by the other lines which are to be answered. The tip (+) and ring (–) conductors of the attendant's line are wired at the terminal box to terminals G and 5, respectively, and an external ringer box is connected at the same point. A standard telephone instrument (which should not be equipped with a ringer) is connected to the + and – Secr. Ans. terminals, as shown in Figure 3. With this arrangement, an incoming call to the attendant's line will sound the external ringer, which cannot be silenced even if she is talking on another line. Provided that no key on the answering cabinet is in the Answer position, the call may be answered from the attendant's telephone set, but cannot be held. Outgoing calls over the attendant's line may be placed under the same conditions.

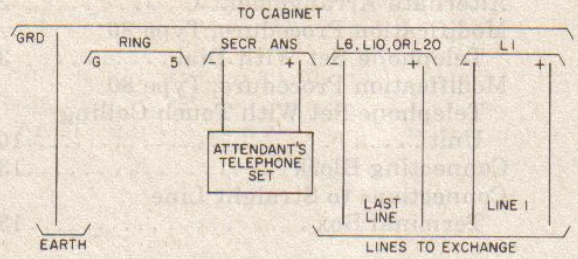

Figure 2. Connections for Attendant's Telephone Set, Alternate Arrangement A.

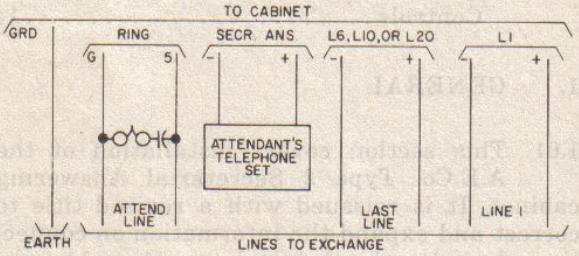

Figure 3. Connections for Attendant's Telephone Set, Alternate Arrangement B.

Alternate Arrangement C

2.08 Alternate method C is identical to method B except for the means of furnishing the ringer on the attendant's line. A standard desk telephone set is modified as explained in Paragraphs 2.09 through 2.14 to provide a ringer bridge separate from the conversation path. The self-contained ringer is then wired across the attendant's line as shown in Figure 4. This arrangement is useful at locations where it is not convenient to mount an external ringer box.

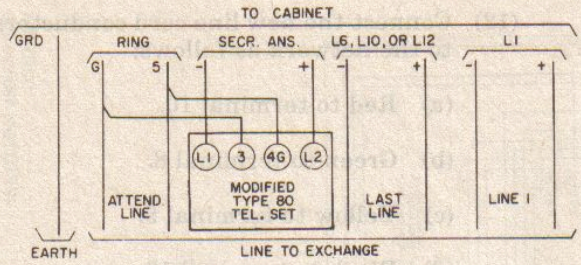

Figure 4. Connections for Attendant's Telephone Set, Alternate Arrangement C.

Modification Procedure, Type 80 Telephone Set With Dial

2.09 To modify a Type 80 telephone set equipped with self-compensating transmission network for use with alternate arrangement C, above, proceed as follows:

(1) Loosen the three base mounting screws and lift the housing free from the base.

(2) Press inward and downward on the edge of the dial number ring, until the bayonet slots on the dial bracket are disengaged from the lugs on the mounting tripod. Set the dial assembly aside to gain access to the network.

(3) Disconnect the three conductors of the standard line cord from the network terminals.

(4) Loosen the screw holding the line cord retaining clamp to the right rear foot. On sets of earlier manufacture, free the clamp from its retaining slot and pull the end of the old line cord through the hole in the rim of the base. On more recent models, merely lift the cord out of its channel, spread the U-shaped clamp and remove it.

(5) Move the orange hookswitch lead from network terminal 6 to terminal 7 when provided; otherwise tape and store it.

(6) Move the red ringer lead to network terminal 6.

(7) Install a four-conductor line cord by reversing the procedure used in item (4).

(8) Connect the new line cord conductors to the network as follows:

(a) Red to terminal 10.

(b) Green to terminal 8.

(c) Yellow to terminal 9.

(d) Black to terminal 6.

(9) Dress all leads and tighten all network terminals securely.

(10) Set the dial assembly in place on the mounting tripod, so that the tripod lugs enter the bayonet slots on the dial bracket. Press inward and upward on the edge of the dial number ring until the lugs are seated in the bracket slots.

(11) Reposition the housing on the base and tighten the three mounting screws.

2.10 The wiring diagram of a Type 80 telephone set with self-compensating network components mounted on a printed circuit board is shown, as modified in accordance with the above procedure, in Figure 5 (for NC-series instruments) or Figure 6 (for NB-series). The wiring diagram of a Type 80 set similarly modified, but with self-compensating network components mounted in a shallow styrene shell and potted with a jelly-like compound, is shown in Figure 7.

2.11 To modify an early Type 80 telephone set equipped with a manually-adjusted series rheostat and with potted-shell network D-38362-A, for use with alternate arrangement C, above, proceed as follows:

(1) Loosen the three base mounting screws and lift the housing free from the base.

(2) Press inward and downward on the edge of the dial number ring, until the bayonet slots on the dial bracket are disengaged from the pins of the mounting tripod. On sets of earlier

manufacture, loosen the shoulder-head screw at each side of the dial bracket and lift the bracket until its slots clear the shank of the screws. Set the dial assembly aside to gain access to the network.

(3) Disconnect the three conductors of the standard line cord from the network terminals.

(4) Loosen the screw holding the line cord retaining clamp to the right rear foot. Free the clamp from its retaining slot and pull the end of the old line cord through the hole in the rim of the base.

(5) Move the orange hookswitch lead from network terminal 6 to terminal 10 for storage.

(6) Move the black ringer capacitor lead from terminal 15 to terminal 6.

(7) Remove the right-hand mounting block, located between the network and the ringer volume control slot and held in place by a screw beneath the base.

(8) Mount a D-68563-A capacitor (1 μF, can-type) onto a D-731517-A mounting block, using a D-7700-A hex nut (6-32), and solder a black spade-ended lead to each of its terminals.

(9) Install the capacitor assembly behind the network as shown in Figure 8, securing the capacitor bracket mounting block to the base in place of the plain mounting block removed in step (7), and fastening it to the base with the original screw.

(10) Terminate the two leads from the capacitor on terminals 11 and 13.

(11) Insert the end of a four-conductor line cord through the hole in the rim of the base at the right rear, and thread the conductors through until they will reach the network terminals. Insert the cord retaining clamp into its slot in the base, compress the cord into the entry channel and tighten the screw securing the clamp to the right rear foot.

(12) Connect the new line cord conductors to the network as follows:

(a) Red to terminal 10.

(b) Green to terminal 8.

(c) Yellow to terminal 9.

(d) Black to terminal 16.

(13) Dress all leads and tighten all network terminals securely.

(14) Set the dial assembly in place on the mounting tripod, so that the tripod pins enter the bayonet slots on the dial bracket. Press inward and upward on the edge of the dial number ring until the pins are seated in the bracket slots. On sets of earlier manufacture, press the bracket inward against the tripod and tighten the shoulder-head screw on each side.

(15) Reposition the housing on the base and tighten the three mounting screws.

2.12 To modify an early Type 80 telephone set equipped with a manually-adjusted series rheostat and with potted-shell network D-38368-A, for use with alternate arrangement C, above, proceed as follows:

(1) Loosen the three base mounting screws and lift the housing free from the base.

(2) Press inward and downward on the edge of the dial number ring, until the bayonet slots on the dial bracket are disengaged from the pins of the mounting tripod. Set the dial assembly aside to gain access to the network.

(3) Disconnect the three conductors of the standard line cord from the network terminals.

(4) Loosen the screw holding the line cord retaining clamp to the right rear foot. Free the clamp from its retaining slot and pull the end of the old line cord through the hole in the rim of the base.

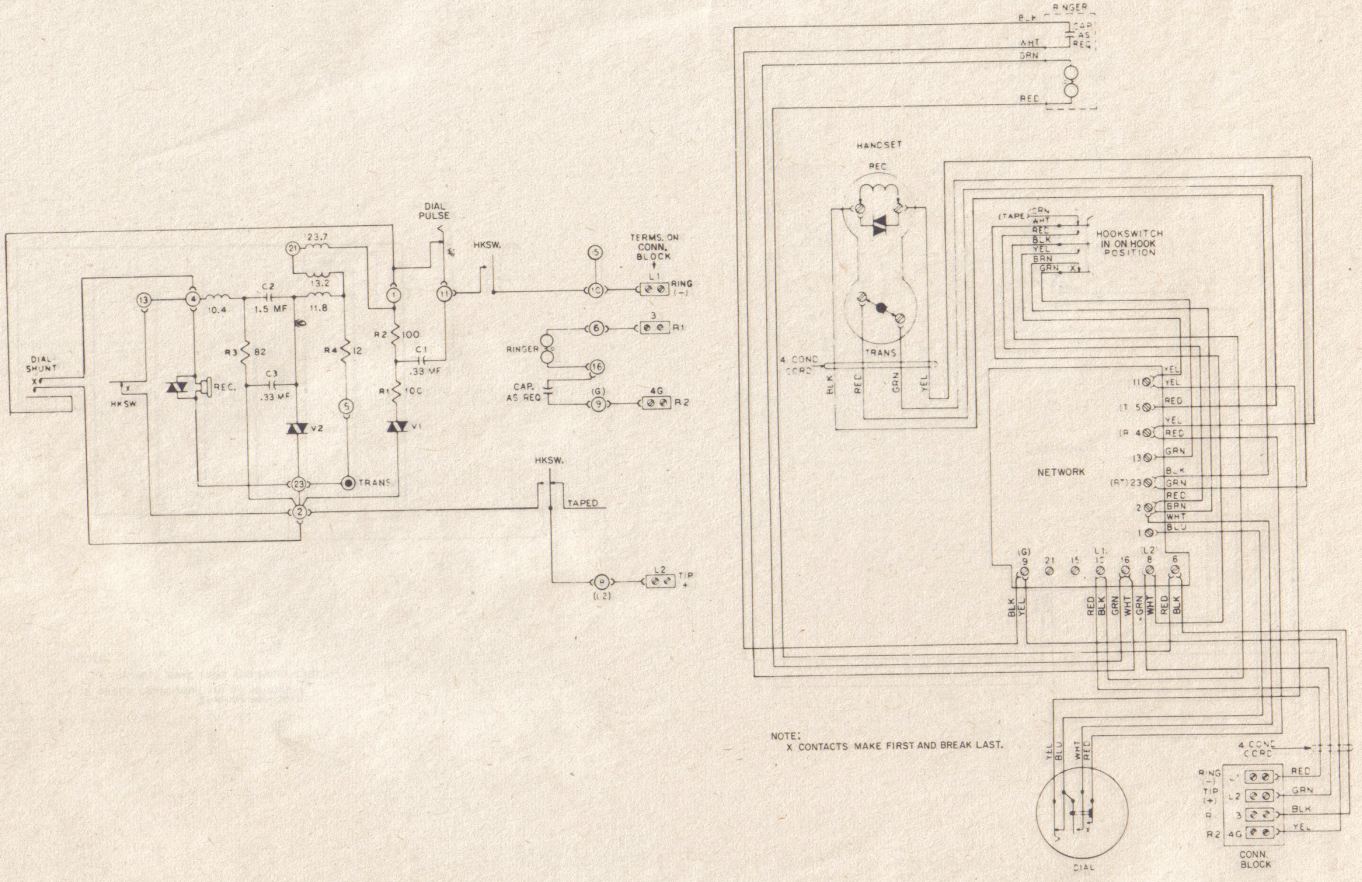

Figure 5. Attendant's Set Conversion, NC-Series Type 80 Telephone Instrument.

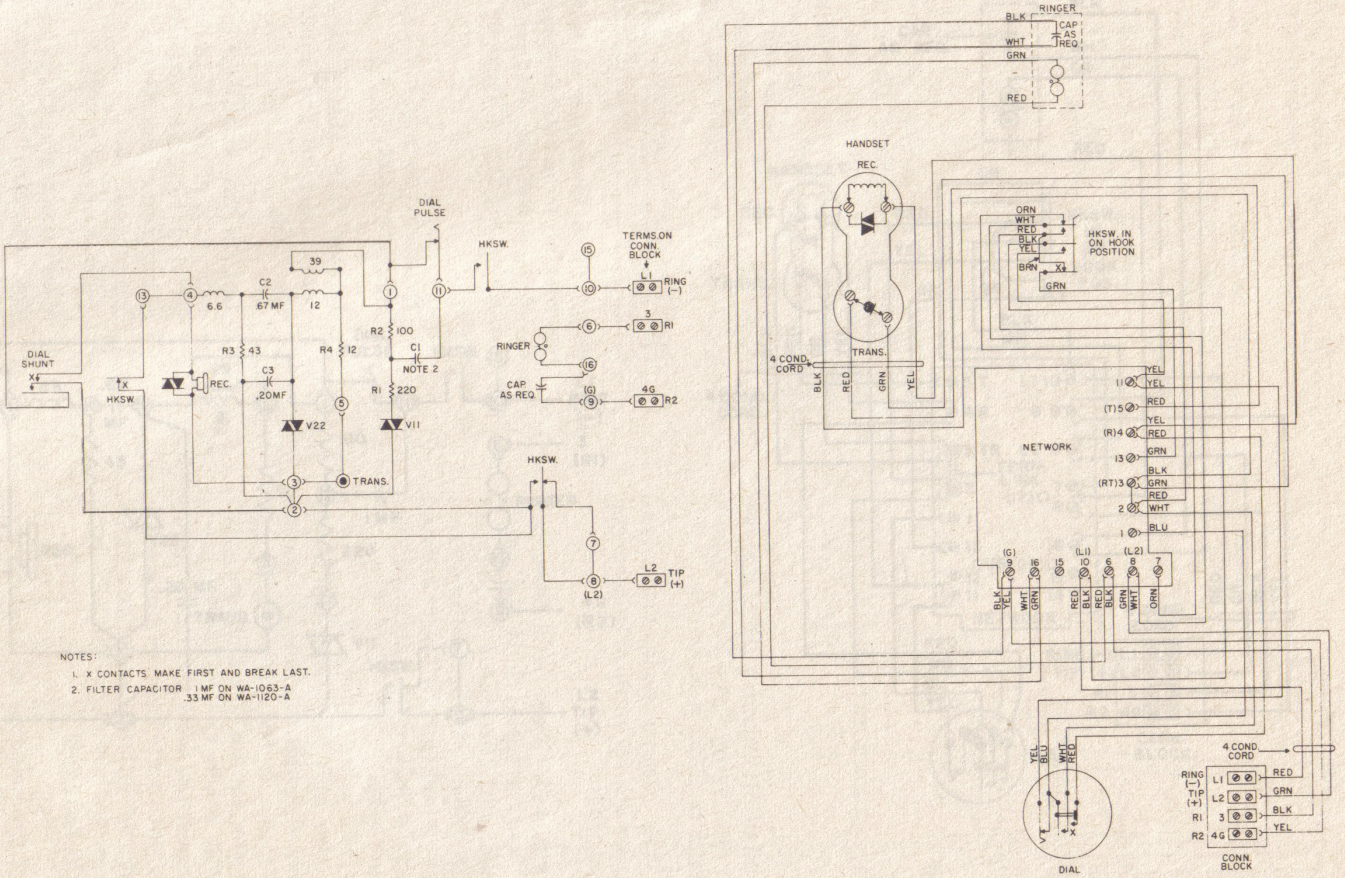

Figure 6. Attendant's Set Conversion, NB-Series Type 80 Telephone Instrument With Printed-Circuit Board Network.

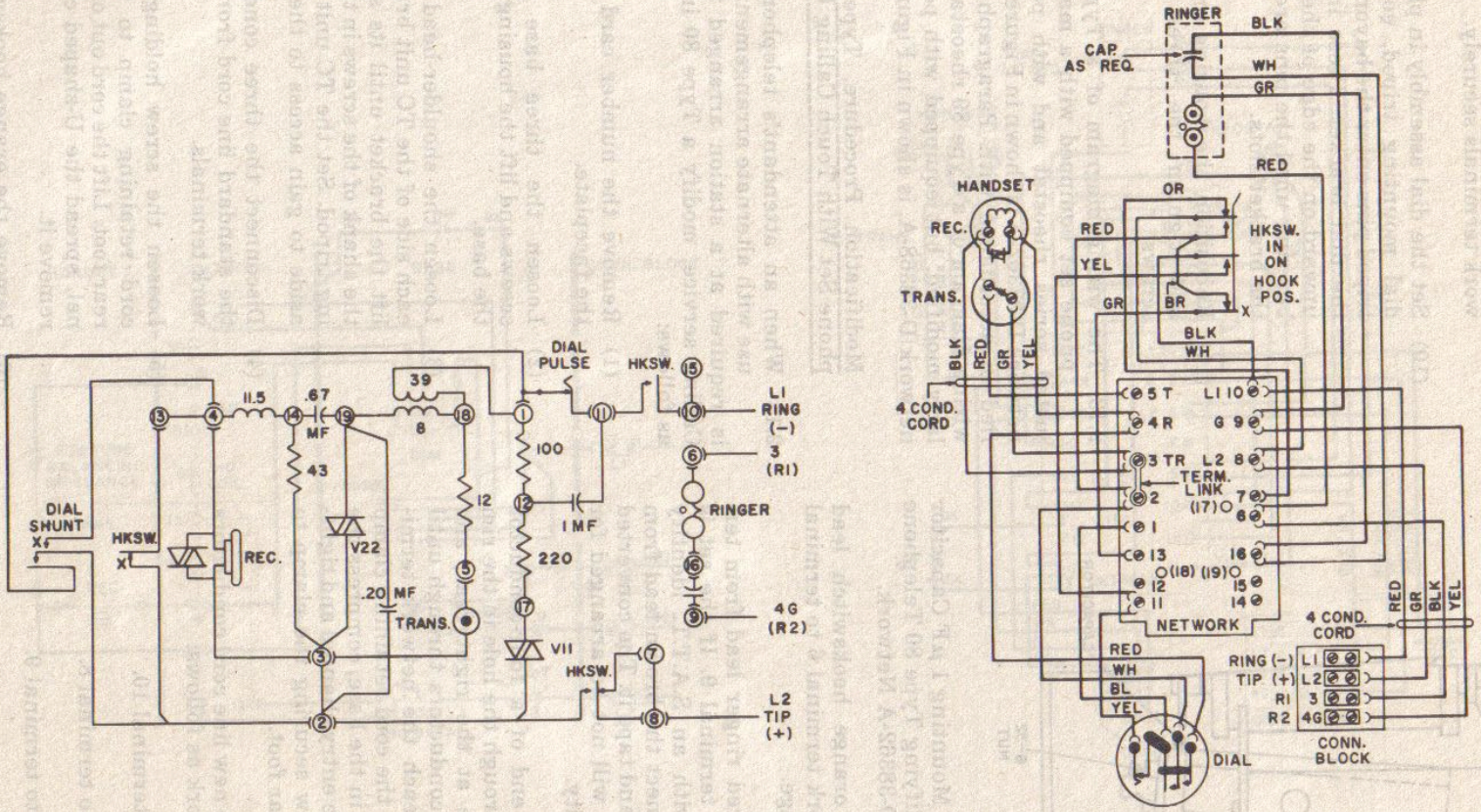

Figure 7. Attendant's Set Conversion, NB-Series Type 80 Telephone Instrument With Potted-Shell Self-Compensating Network.

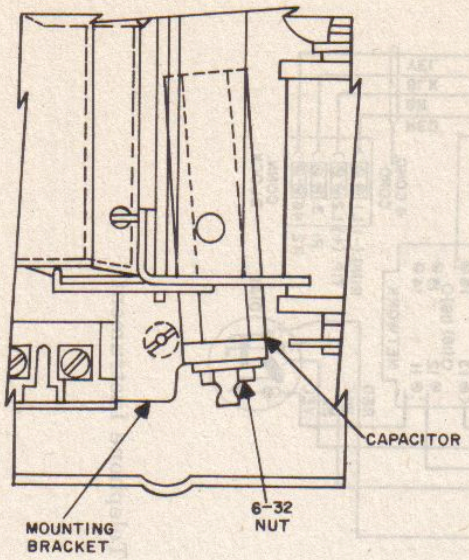

Figure 8. Method of Mounting 1 μF Capacitor When Modifying Type 80 Telephone Set With D-38362-A Network.

(5) Move the orange hookswitch lead from network terminal 6 to terminal 10 for storage.

(6) Move the red ringer lead from terminal 7 to terminal 9. If the set is equipped with an S.A.T.T. identity dial, disconnect the brown lead from terminal 9 and tape it. The converted instrument will not be arranged for party identity.

(7) Insert the end of a four-conductor line cord through the hole in the rim of the base at the right rear, and thread the conductors through until they will reach the network terminals. Insert the cord retaining clamp into its slot in the base, compress the cord into the entry channel and tighten the screw securing the clamp to the right rear foot.

(8) Connect the new line cord conductors to the network as follows:

(a) Red to terminal 10.

(b) Green to terminal 8.

(c) Yellow to terminal 9.

(d) Black to terminal 16.

(9) Dress all leads and tighten all network terminals securely.

(10) Set the dial assembly in place on the dial mounting tripod, so that the tripod pins enter the bayonet slots on the dial bracket. Press inward and upward on the edge of the dial number ring until the pins are seated in the bracket slots.

(11) Reposition the housing on the base and tighten the three mounting screws.

2.13 The wiring diagram of a Type 80 telephone set equipped with a manually-adjusted series rheostat and with potted-shell network D-38362-A is shown in Figure 9 as modified in accordance with Paragraph 2.11. The wiring diagram of a Type 80 rheostat set similarly modified, but equipped with potted-shell network D-38368-A, is shown in Figure 10.

Modification Procedure, Type 80 Telephone Set With Touch Calling Unit

2.14 When an attendant's telephone set for use with alternate arrangement C, above, is required at a station arranged for Touch Calling service, modify a Type 80 instrument as follows:

(1) Remove the number card slide and the faceplate.

(2) Loosen the three base mounting screws and lift the housing free from the base.

(3) Loosen the shoulder-head screw at each side of the TC unit bracket, and lift the bracket until its slots clear the shank of the screws in the mounting tripod. Set the TC unit assembly aside to gain access to the network.

(4) Disconnect the three conductors of the standard line cord from the network terminals.

(5) Loosen the screw holding the line cord retaining clamp to the right rear foot. Lift the cord out of its channel, spread the U-shaped clamp and remove it.

(6) Remove the orange hookswitch lead from network terminal 6 and tape it.

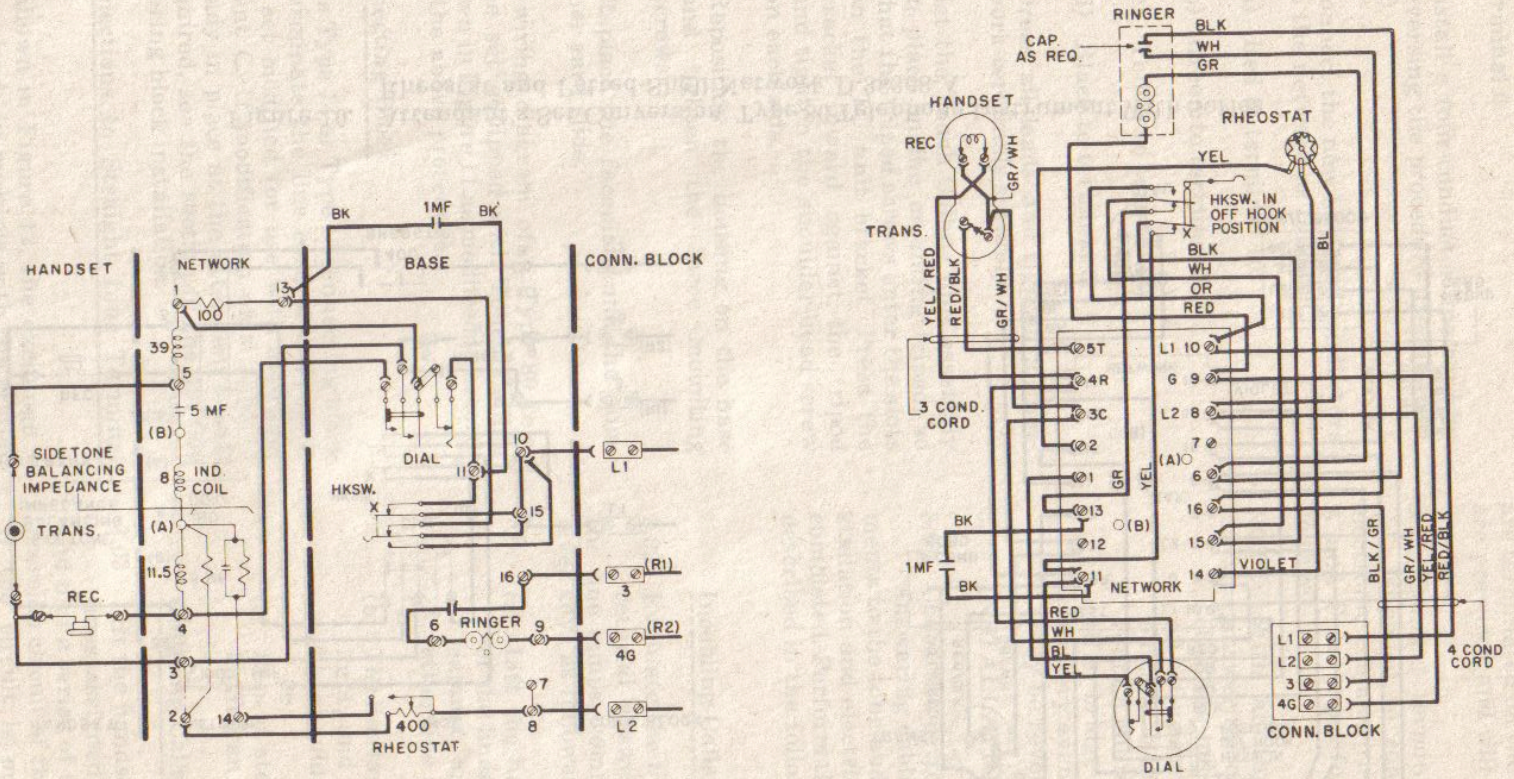

Figure 9. Attendant's Set Conversion, Type 80 Telephone Instrument With Series Rheostat and Potted-Shell Network D-38362-A.

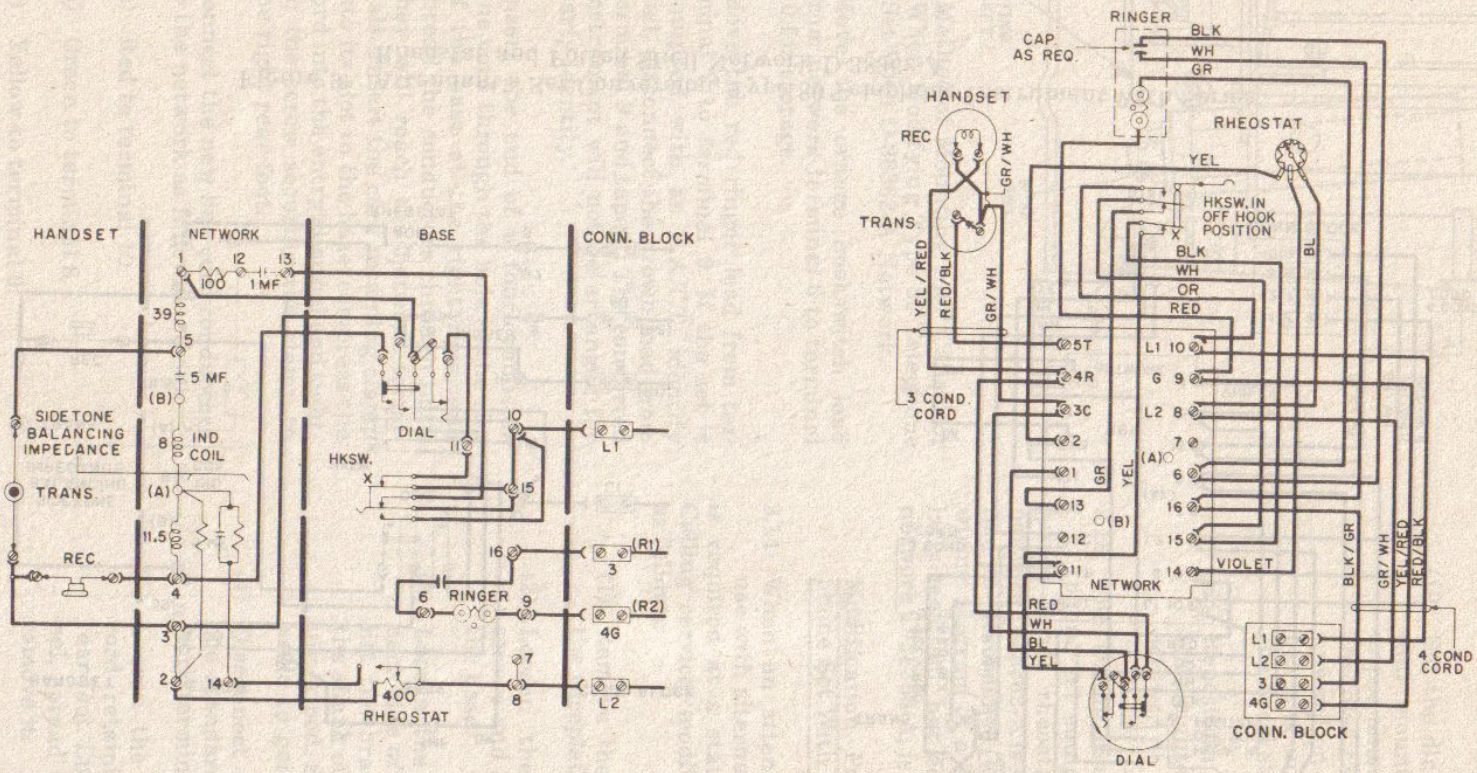

Figure 10. Attendant's Set Conversion, Type 80 Telephone Instrument With Series Rheostat and Potted-Shell Network D-38368-A.

(7) Move the red ringer lead to network terminal 6.

(8) Install a four-conductor line cord by reversing the procedure used in item (5).

(9) Connect the new line cord conductors to the network as follows:

(a) Red to terminal 10.

(b) Green to terminal 8.

(c) Yellow to terminal 9.

(d) Black to terminal 6.

(10) Dress all leads and tighten all network terminals securely.

(11) Set the Touch Calling unit assembly in place on the mounting tripod, so that the tripod screws enter the slots on the TC unit bracket. Press the bracket inward against the tripod and tighten the shoulder-head screw on each side.

(12) Reposition the housing on the base and tighten the three mounting screws.

(13) Replace the faceplate and the number card slide.

2.15 The wiring diagram of a Type 80 telephone set equipped with Touch Calling unit is shown in Figure 11 as modified in accordance with the above procedure.

Connecting Block

2.16 Use a Type 14 or Type 15 connecting block to terminate the line cord of a Type 80 telephone set modified for use with alternate arrangement C. If modification of a Type 13 block already in place at the attendant's location is required, see the section in the 491-500 series covering block installation.

Connections to Straight Line Terminal Box

2.17 As shown in Figure 12, the exchange + and − leads in multiple with the station telephone + and − leads are terminated on one side of the terminal strips in the terminal box. The lines to the secretarial answering cabinet are terminated on the opposite side. These leads are prewired and will not require any changes.

2.18 Connect terminals A and B with strap supplied to connect the battery to the electronic common ringer assembly. Terminals A and C are used for measuring the battery voltage.

NOTE: With all three types of secretarial answering cabinets, the number one (L1) line must always be connected to an active station line. This enables the battery to charge from a small d-c current (.8 milliampere) of that line. A rectifier bridge in the unit will charge the battery even though the line potential may be reversed.

3. INSTALLATION TESTS

3.01 Check the performance of the secretarial answering cabinet and make final adjustments to the tone and volume controls, after installation and electrical connections have been completed. Perform the checks and adjustments described in the following paragraphs.

Incoming Calls

3.02 Evaluate the overall operation of the secretarial answering cabinet by checking the line lamps, common ringer assembly, and lever keys as follows:

(a) Lift the handset at a station on one of the lines assigned to the answering cabinet, and dial the number of another line so assigned.

(b) The line lamp for the called line should light, and the common ringer assembly should sound.

(c) Repeat steps (a) and (b) for each line having an appearance on the cabinet.

Outgoing Calls

3.03 Lift the handset at a station on one of the lines assigned to the answering cabinet, and dial a series of 9's. This will check the suppression circuit of the common ringer assembly. If the circuit is properly absorbing the line surges from dial pulsing, the ringer assembly should not sound during dialing.

Adjustments - Volume and Tone Controls

3.04 Lift the handset at a station on one of the lines assigned to the answering cabinet, and dial the number of another line so assigned. During the ringing period, make adjustments to volume and tone controls, if necessary.

3.05 The volume control is accessed through the bottom hole located at the rear of the cabinet (Figure 13). Adjust this control to the maximum desirable volume as determined by the customer. To increase the volume, turn adjustment screw in a clockwise direction.

3.06 The tone control is accessed through the top hole located at the rear of the cabinet (Figure 13). When more than one secretarial answering cabinet is installed in the same office, adjust the tone controls to different frequency outputs on each cabinet. The different frequency outputs will indicate which cabinet has a call to be answered.

3.07 When only one cabinet is installed in an office, the frequency setting is not an important factor. Set the tone output to the frequency desired by the customer.

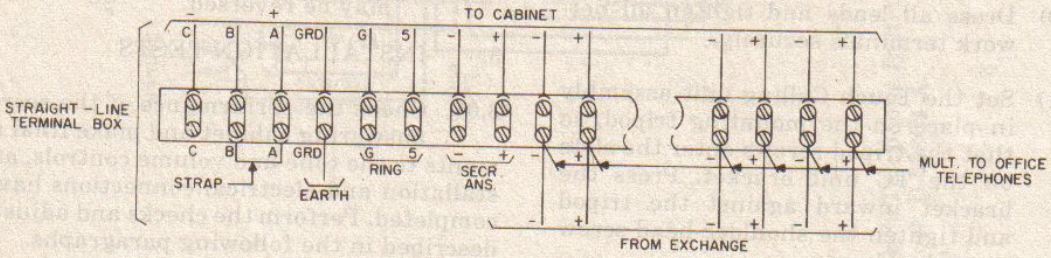

Figure 12. Connections to Straight Line Terminal Box.

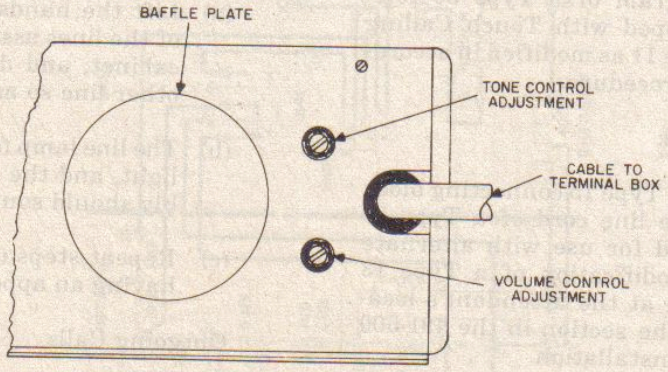

Figure 13. Location of Tone and Volume Control Adjustment Screws.

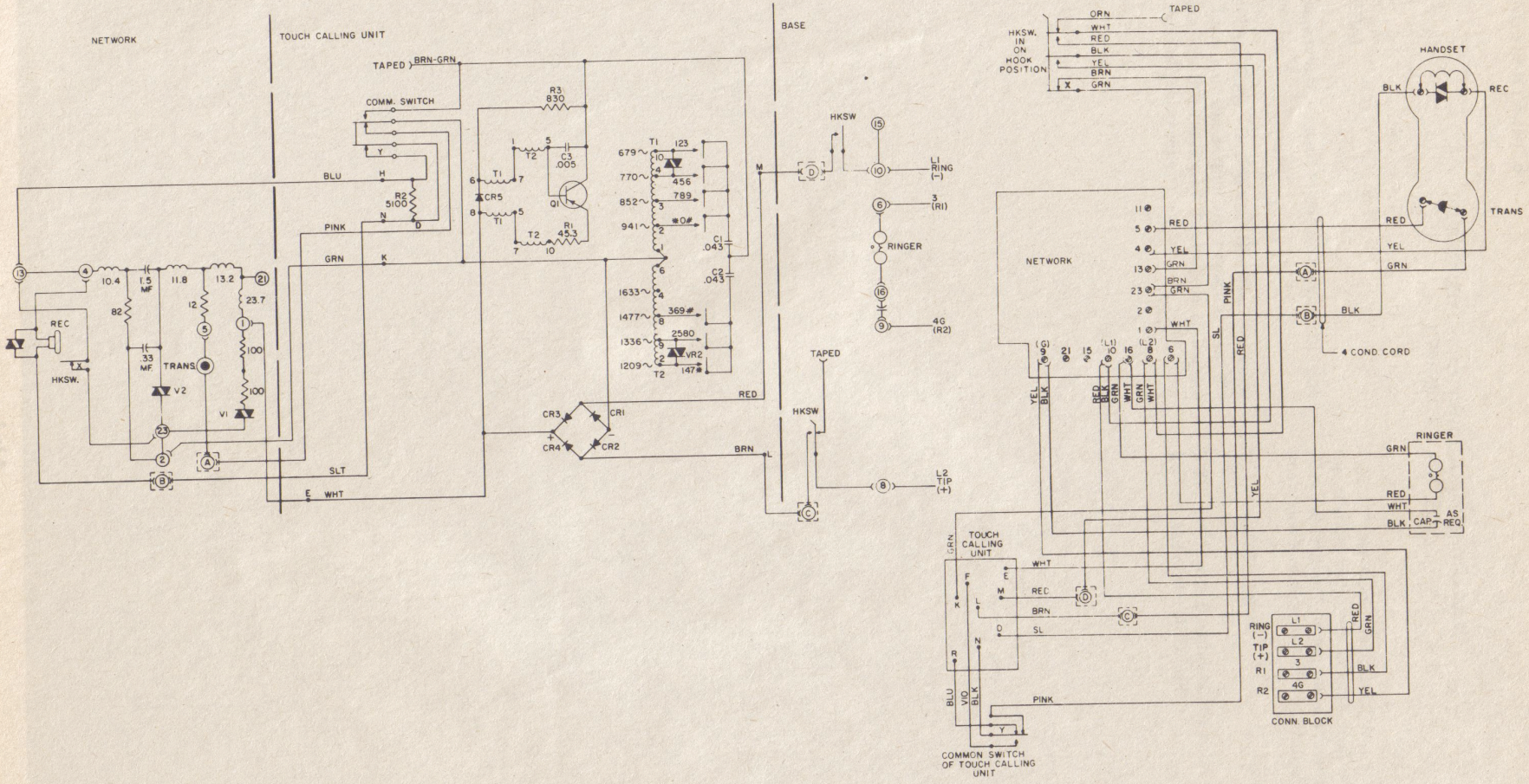

Figure 11. Attendant's Set Conversion, Type 80 Telephone Instrument With Touch Calling Unit.