

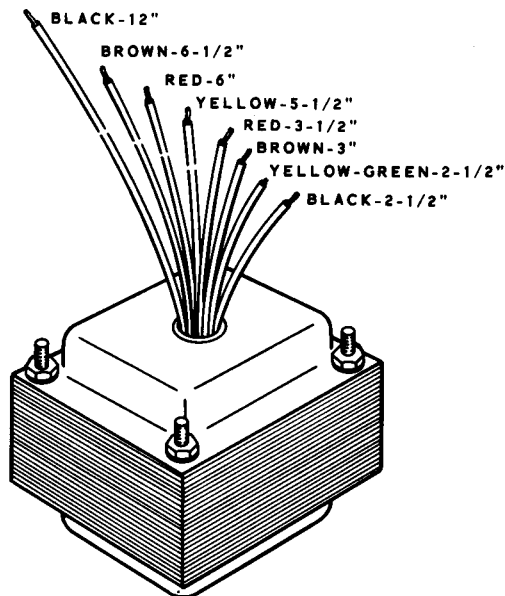
PICTORIAL 12

WIRING CHASSIS BOTTOM

NOTE: Route all wires as shown in the following Pictorials. Do not route wires across dotted areas because other pieces of hardware will be mounted in the dotted areas.

Refer to Pictorial 12 for the following steps.

- () Cut the leads of the power transformer to the lengths indicated in Detail 12A. Measure the leads from where they come out of the transformer.

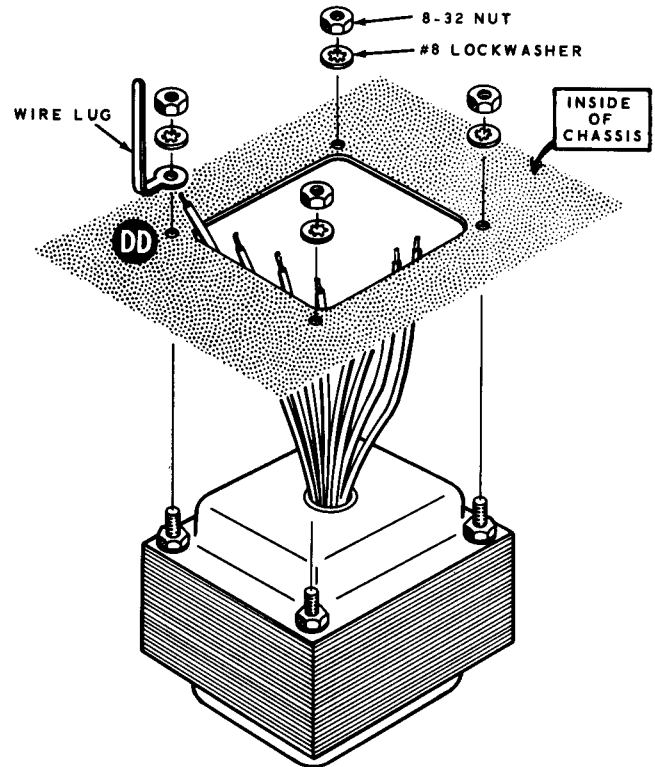


Detail 12A

- () Remove 1/4" of insulation from the end of each transformer lead. Twist together the small strands of wire at the end of each lead; then melt a small amount of solder on each exposed lead end to hold the small wire strands together.

NOTE: The power transformer mounts from the top of the chassis with the nuts, lockwashers, and wire lug on the bottom of the chassis.

- () Refer to Detail 12B and the Pictorial and mount the power transformer and wire lug to the chassis. Use four 8-32 nuts and four #8 lockwashers.



Detail 12B

Connect the power transformer leads as follows:

- () Long black to lug 5 of control AA (S-1).
- () Long brown to lug 2 of terminal strip L (NS).
- () Yellow to lug 4 of terminal strip L (NS).
- () Short brown to lug 4 of terminal strip M (NS).
- () Short black to lug 3 of terminal strip R (NS).
- () Yellow-green to lug 4 of terminal strip R (NS).
- () Long red to lug 1 of electrolytic capacitor S (NS).
- () Short red to lug 6 of terminal strip R (NS).

- (/) Connect the red wire extending through grommet DC to lug 2 of terminal strip C (NS).
- (/) Connect the black wire extending through grommet A to lug 2 of tube socket V7 (NS).
- () Connect the brown wire extending through grommet A to lug 4 of tube socket V7 (NS).
- () Connect the blue wire extending through grommet A to lug 3 of terminal strip K (NS).
- () Connect the white wire extending through grommet A to lug 1 of terminal strip R (NS).

NOTE: Do not loop the end of the red wire around lug 2 of tube socket V9, because this wire will be disconnected during the alignment procedures.

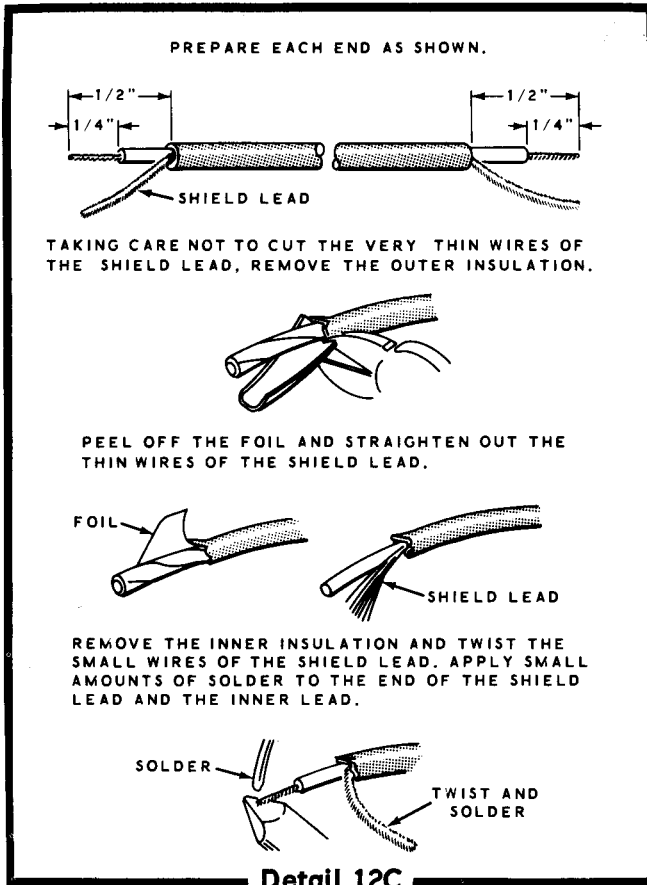
- () Connect the free end of the red wire extending through the hole at tube socket V9 to lug 2 of tube socket V9 (NS). Check that the sleeving on the wire extends through the hole.
- () Prepare the following lengths of hookup wire:

5-1/2" yellow	5-1/2" green
4" yellow	6" red
7" brown	3-1/2" red
5" red	1-1/2" red
6" brown	1" bare (small)
3" brown	

- () Connect a 5-1/2" yellow wire from lug 1 of terminal strip B (NS) to lug 1 of terminal strip G (NS).
- () Connect a 4" yellow wire from lug 1 of terminal strip G (NS) to lug 1 of terminal strip L (NS).
- () Connect a 7" brown wire from lug 4 of tube socket V7 (NS) to lug 5 of tube socket V8 (NS).

- (/) Connect a 5" red wire from lug 5 of terminal strip G (NS) to lug 2 of terminal strip C (NS).
- () Connect a 6" brown wire from lug 1 of tube socket V9 (NS) to lug 4 of terminal strip L (NS).
- () Connect a 3" brown wire to lug 1 of tube socket V9 (NS) and leave the other end free.
- () Connect a 5-1/2" green wire from lug 1 of phone jack BD (NS) to lug 8 of octal socket BF (NS).
- () Connect a 6" red wire from lug 4 of electrolytic capacitor S (NS) to lug 4 of octal socket BF (NS).
- () Connect a 3-1/2" red wire from lug 4 of electrolytic capacitor S (NS) to mounting lug 2 of electrolytic capacitor DA (S-1).
- () Connect a 1-1/2" red wire from lug 1 of electrolytic capacitor S (NS) to mounting lug 2 of electrolytic capacitor DB (S-1).
- () Connect a 1" small bare wire between lug 1 (S-1) and the ground lug nearest lug 1 (S-1) of octal socket BF.

CAUTION: The insulation on the inner leads of the coaxial cables melts quite easily; therefore, the connections should be soldered as quickly as possible to prevent the cables from shorting. When soldering the shields, it is advisable to use a pair of long-nose pliers as a heat sink. Grip the shield between the connection and the cable. This will prevent the heat from reaching the insulation of the inner lead. A rubber band around the handles of the pliers will keep them in place to free both hands for soldering.



- () Refer to Detail 12C and prepare two 21" coaxial cables.
- () At one end of one of these coaxial cables, connect the inner lead to hole J (S-1) and the shield to hole K (S-1) of the circuit board.
- () At the other end of this coaxial cable, connect the inner lead to lug 3 of control AA (S-1) and the shield to lug 2 on terminal strip B (NS).
- () At one end of the other 21" coaxial cable, connect the inner lead to hole M (S-1) and the shield to hole N (S-1) of the circuit board.

- () At the other end of this coaxial cable, connect the inner lead to lug 2 of control AA (S-1) and the shield to lug 2 of terminal strip B (NS).
- () Route the cables and bend the two #8 wire lugs at X and W around the cables to hold the cables in place. See Pictorial 12.
- () Connect a 1" bare wire from lug 1 of control AA (S-1) to lug 2 of terminal strip B (NS).
- () Prepare a 12" coaxial cable as shown in Detail 12C.
- () At one end of this 12" cable, connect the inner lead to hole B (S-1) and the shield to hole A (S-1) of the circuit board.
- () At the other end of this 12" cable, connect the inner lead to lug 1 of terminal strip K (NS) and the shield to lug 2 of terminal strip K (NS).

Refer to Pictorial 13 (fold-out from Page 25) for the following steps.

- () Prepare the following lengths of hookup wire.

15" green	17" red
9" red	14" green
8" red	3" bare (small)
4" brown	3" bare (large)
17" white	13" brown
4" green	

- () Connect a 15" green wire from circuit board hole Y (S-1) to lug 8 of octal socket BF (NS).
- () Route the cables and wires as shown, and bend the #8 wire lug at Y around the three cables to hold them in place.
- () Connect a 9" red wire from circuit board hole H (S-1) to lug 3 of electrolytic capacitor S (NS).

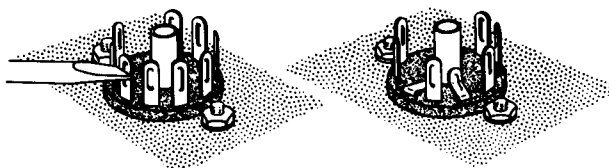
- () Connect an 8" red wire from circuit board hole F (S-1) to lug 2 of electrolytic capacitor S (NS).
- () Connect a 4" brown wire from circuit board hole E (S-1) to lug 2 of octal socket BF (NS).
- () Connect a 17" white wire from circuit board hole D (S-1) to lug 2 of terminal strip L (NS).
- () Connect a 4" green wire from circuit board hole C (S-1) to lug 8 of octal socket BF (S-3).
- () Connect a 17" red wire from lug 5 of terminal strip G (NS) to lug 2 of electrolytic capacitor S (NS).
- () Connect a 14" green wire from lug 2 of terminal strip G (NS) to lug 1 of phone jack BD (NS).
- () Connect a 3" small bare wire to lug 1 of trimmer capacitor U (S-1).
- () Insert the other end of this wire through lug 1 of 15-meter coil L9 (S-2), through lug 1 of 40-meter coil L10 (NS), and to lug 1 of 80-meter coil L11 (NS).
- () Insert one end of a 3" large bare wire through lug 1 of variable capacitor CA (S-2) to lug 1 at coil L7 (NS). Connect the free end of the wire to circuit board hole X (S-1). This wire must not touch the chassis.
- () Connect a 13" brown wire from lug 4 of terminal strip L (S-3) to lug 2 of octal socket BF (S-2).
- () Refer to Detail 12C and prepare a 10" length of coaxial cable.

- () At one end of this 10" cable, connect the inner lead to lug 9 of tube socket V7 (NS) and the shield to solder lug D (S-1).
- () At the other end of this cable, connect the inner lead to lug 2 of phono socket BA (S-1) and the shield to lug 1 of phono socket BA (S-1).

Refer to Detail 13A and then bend and solder the following lugs to the center post of tube socket V7.

- () Lug 1 (S-1).
- () Lug 5 (S-1).
- () Lug 7 (S-1).

BEND LUG DOWN AGAINST CENTER POST

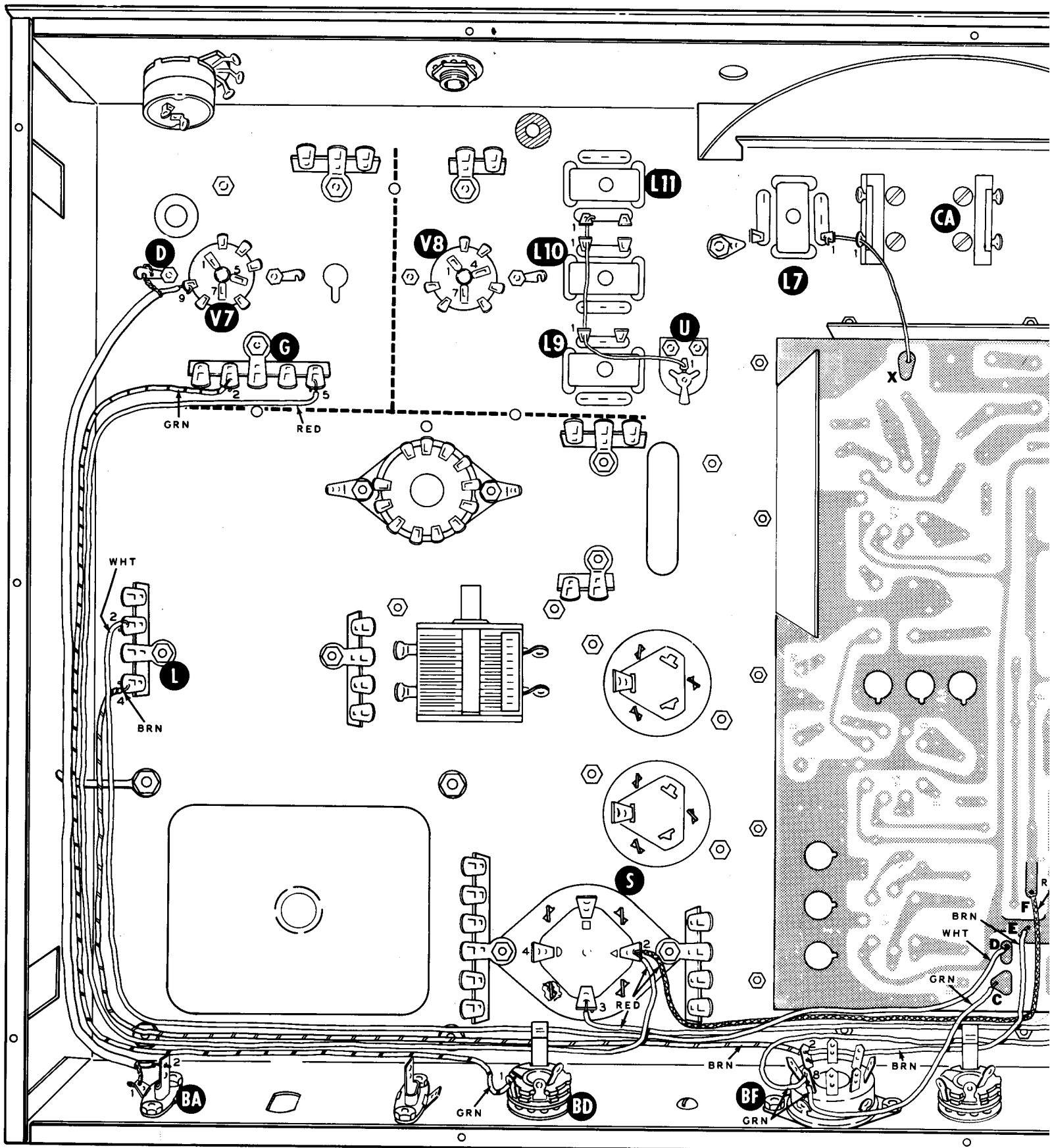


Detail 13A

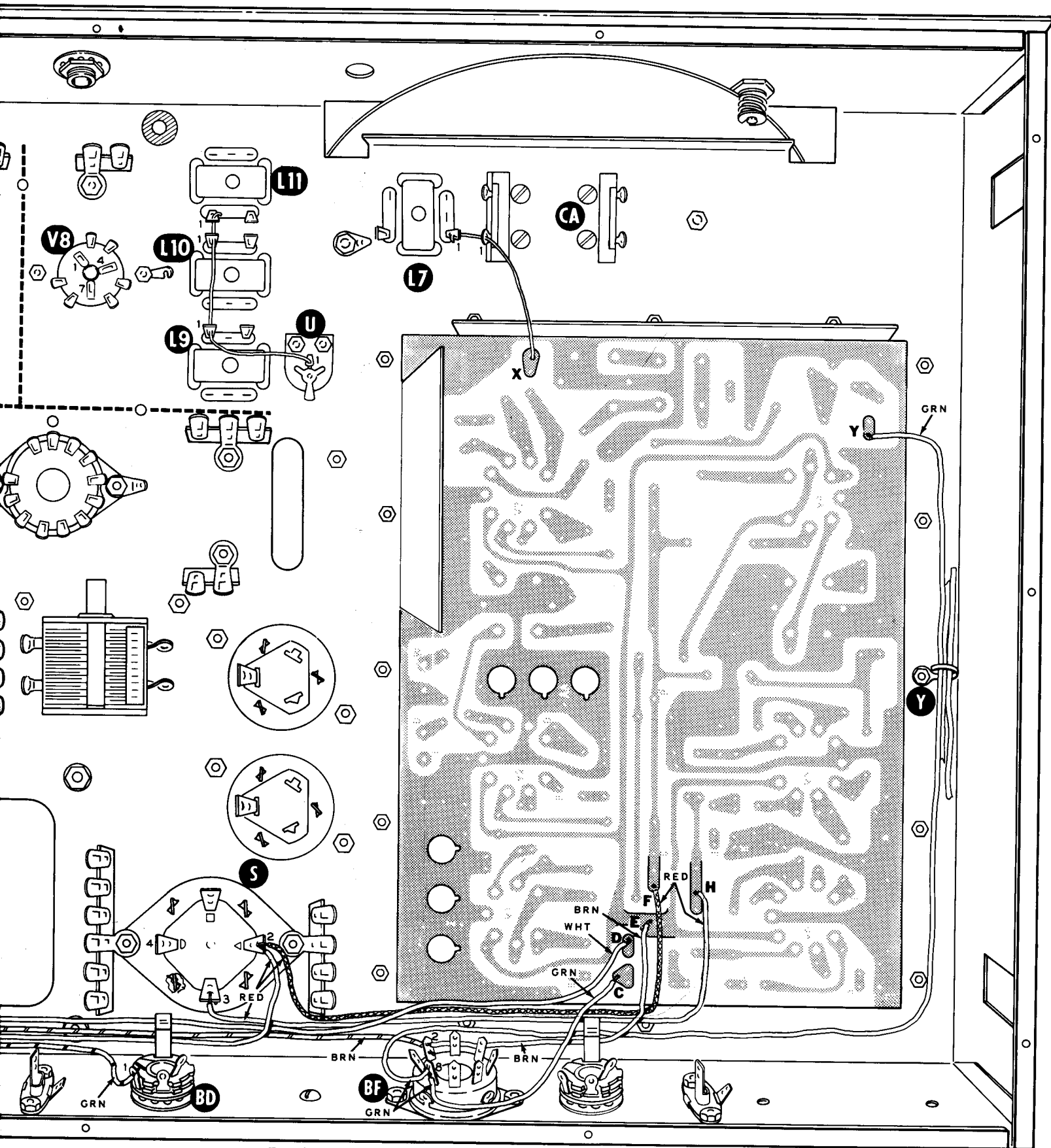
In a like manner, bend the following lugs to the center post of tube socket V8.

- () Lug 1 (S-1).
- () Lug 4 (S-1).
- () Lug 7 (S-1).
- () On electrolytic capacitor S, solder the mounting lug located between lug 3 and lug 4 to the capacitor mounting wafer.

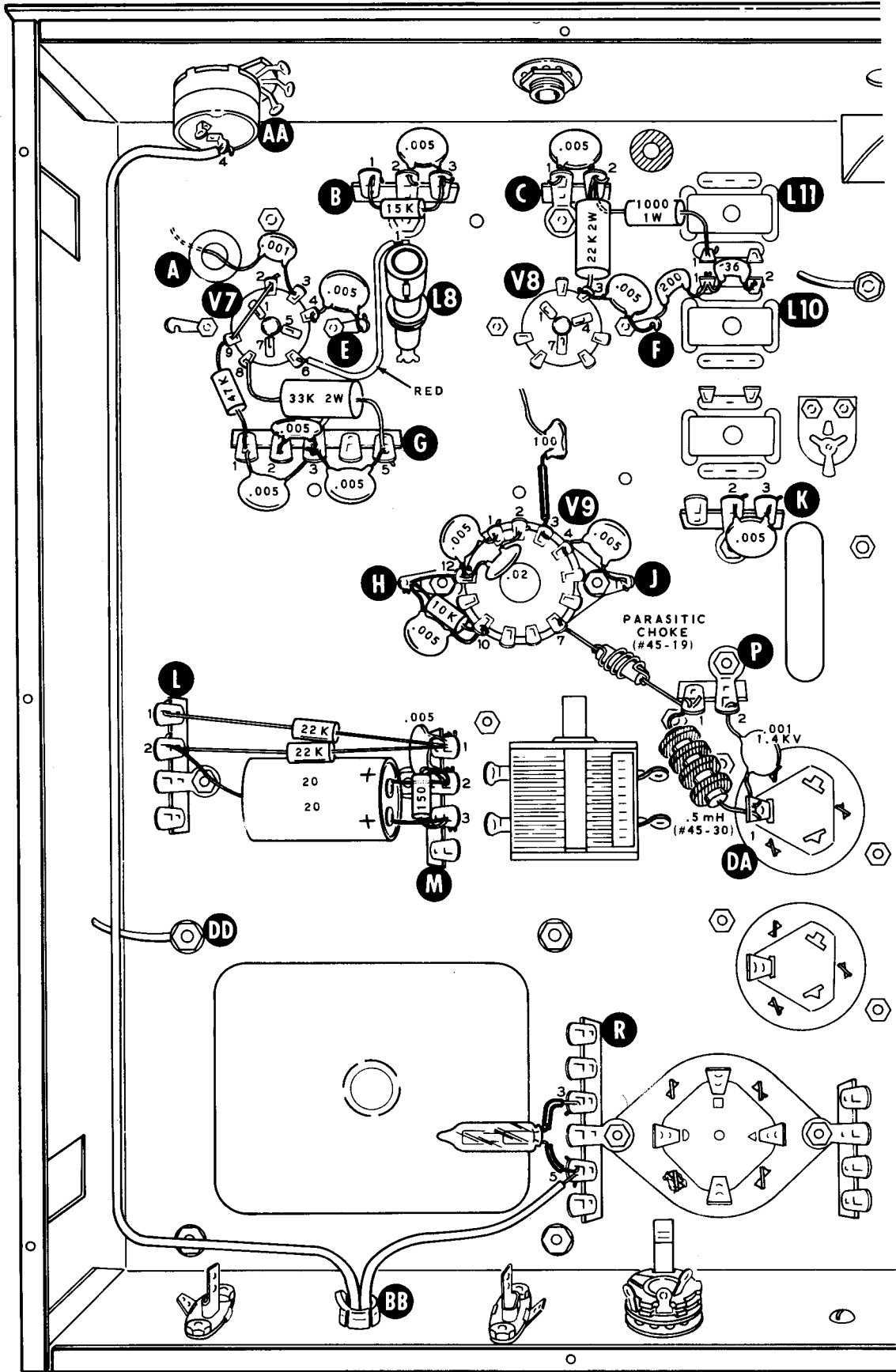
NOTE: The leads of a component should be cut to the proper length before the component is installed. Review Kit Builders Guide Pages 9 and 10 and refer to the Chassis Photographs on Pages 57 and 58, which show a typically well-assembled Transceiver.



PICTORIAL 13



PICTORIAL 13

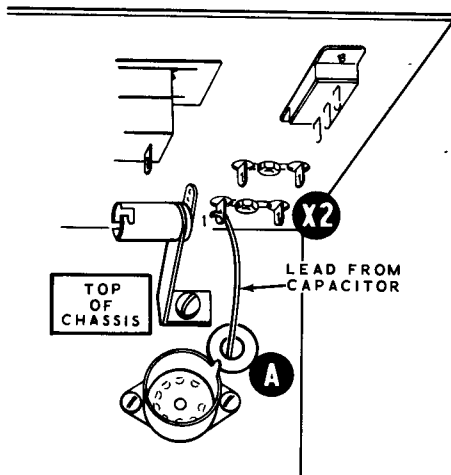


PICTORIAL 14

Refer to Pictorial 14 for the following steps.

NOTE: The .001 μ fd disc capacitor being connected in the next two steps has one lead connected from the bottom of the chassis and one lead connected from the top. Be sure the lead connected to the tube socket is long enough so that the capacitor can be placed near the grommet.

- () Cut one lead of a .001 μ fd disc capacitor to 1". Connect this lead to lug 3 of tube socket V7 (S-1).
- () Refer to Detail 14A and insert the other lead of the .001 μ fd disc capacitor through grommet A. From the top of the chassis, connect this capacitor lead to lug 1 of crystal socket X2 (S-2).



Detail 14A

- () Connect a .005 μ fd disc capacitor from lug 4 of tube socket V7 (S-3) to solder lug E (NS).

NOTE: When resistors are installed, use only 1/2 watt resistors unless higher wattage resistors are specifically called for.

- () Insert one lead of a 47 K Ω (yellow-violet-orange) resistor through lug 9 (S-3) to lug 2 (S-2) of tube socket V7. Connect the other lead to lug 1 of terminal strip G (NS).

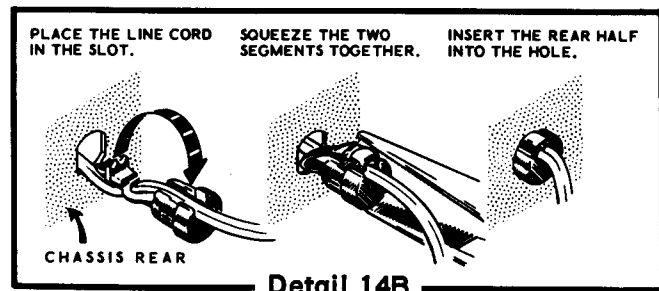
- () Connect a .005 μ fd disc capacitor between lug 1 (NS) and lug 3 (NS) of terminal strip G.
- () Connect a .005 μ fd disc capacitor between lug 2 (NS) and lug 3 (NS) of terminal strip G.
- () Connect a .005 μ fd disc capacitor between lug 3 (NS) and lug 5 (NS) of terminal strip G.
- () Connect a 33 K Ω (orange-orange-orange) 2 watt resistor from lug 8 of tube socket V7 (S-1) to lug 5 of terminal strip G (NS).
- () Connect a .005 μ fd disc capacitor between lug 2 (S-4) and lug 3 (NS) of terminal strip B.
- () Connect a 15 K Ω (brown-green-orange) resistor between lug 1 (S-2) and lug 3 (NS) of terminal strip B.
- () Connect a 22 K Ω (red-red-orange) resistor from lug 1 of terminal strip L (S-2) to lug 1 of terminal strip M (NS).
- () Connect a 22 K Ω (red-red-orange) resistor from lug 2 of terminal strip L (NS) to lug 1 of terminal strip M (NS).
- () Connect a .005 μ fd disc capacitor between lug 1 (NS) and lug 2 (NS) of terminal strip M.
- () Connect a 150 Ω (brown-green-brown) resistor between lug 2 (NS) and lug 3 (NS) of terminal strip M.
- () Locate a 20-20 μ fd 200 V electrolytic capacitor. Place it between terminal strips M and L with the two leads at the end of the capacitor marked positive (+) toward terminal strip M. Connect one of these positive leads to lug 2 of terminal strip M (S-3) and the other positive (+) lead to lug 3 of terminal strip M (NS).
- () Connect the negative (-) lead of this capacitor to lug 2 of terminal strip L (S-4).

- () Connect a 10 K Ω (brown-black-orange) resistor from lug 10 of tube socket V9 (NS) to solder lug H (NS).
- () Connect a .005 μ fd disc capacitor from lug 10 of tube socket V9 (S-2) to lug H (NS).
- () Connect a .005 μ fd disc capacitor from lug 12 (NS) to lug 1 (S-3) of tube socket V9.
- () Insert one lead of a .02 μ fd disc capacitor through lug 12 of tube socket V9 (S-3) to solder lug H (S-3). Connect the other lead to lug 2 of tube socket V9 (S-2).
- () Cut one 1" length of sleeving and cut one lead of a 100 pf resin capacitor to 1-1/4". Place the 1" sleeving on the 1-1/4" capacitor lead and connect this lead to lug 3 of tube socket V9 (NS). Leave the other end free.
- () Connect a .005 μ fd disc capacitor from lug 4 of tube socket V9 (NS) to solder lug J (S-1).
- () Connect a parasitic RF choke (#45-19) from lug 7 of tube socket V9 (S-1) to lug 1 of terminal strip P (NS).

NOTE: In the next two steps, do not loop the ends of the .001 μ fd 1.4 KV disc capacitor and the .5 mH choke around lug 1 of electrolytic capacitor DA, because these leads will be disconnected during the alignment procedures.

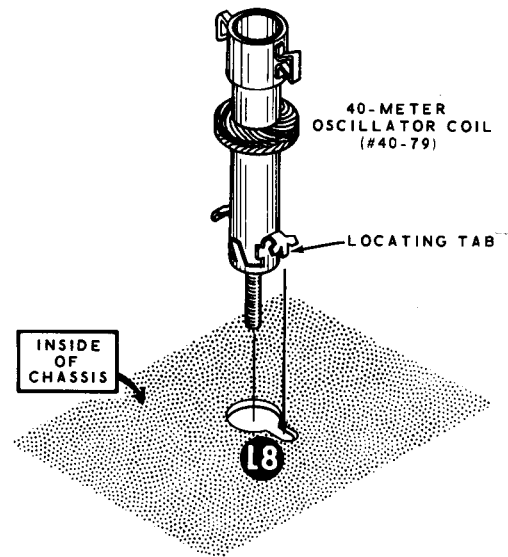
- () Connect a .001 μ fd 1.4 KV disc capacitor from lug 2 of terminal strip P (S-1) to lug 1 of electrolytic capacitor DA (NS).
- () Connect a .5 mH choke (#45-30) from lug 1 of terminal strip P (NS) to lug 1 of electrolytic capacitor DA (NS).
- () Connect a .005 μ fd disc capacitor between lug 1 (S-1) and lug 2 (NS) of terminal strip C.

- () Connect a 1000 Ω (brown-black-red) 1 watt resistor from lug 2 of terminal strip C (NS) to lug 1 of 80-meter coil L11 (S-2).
- () Connect a 36 pf resin capacitor between lug 1 (NS) and lug 2 (NS) of 40-meter coil L10.
- () Connect a 200 pf resin capacitor from lug 1 of 40-meter coil L10 (S-4) to solder lug F (NS).
- () Connect a .005 μ fd disc capacitor from solder lug F (NS) to lug 3 of tube socket V8 (NS).
- () Connect a 22 K Ω (red-red-orange) 2 watt resistor from lug 2 of terminal strip C (S-5) to lug 3 of tube socket V8 (S-2).
- () Split a 12" section of the line cord, and then cut off 10" from one of the two line cord leads. Strip 1/4" insulation from both line cord leads.
- () Insert the line cord through hole BB and connect the longer line cord lead to lug 4 of control AA (S-1). Connect the shorter line cord lead to lug 5 of terminal strip R (NS). Route the line cord along the sides of the chassis as shown.
- () Install the line cord strain relief on the line cord from the rear of the chassis as shown in Detail 14B.



- () Route the cables and wires as shown, and bend the #8 wire lug at DD around the 10 cables to hold them in place.

- () Cut two 1/2" lengths of sleeving. Place one length of sleeving on each circuit breaker lead.
- () Connect the circuit breaker between lug 3 (S-2) and lug 5 (S-2) of terminal strip R.
- () Connect a .005 μ fd disc capacitor between lug 2 (NS) and lug 3 (NS) of terminal strip K.
- () Refer to Detail 14C and mount the 40-meter oscillator coil (#40-79) to the chassis at L8. Press the coil firmly into the hole. When seated properly, the small tabs will snap out to lock the coil in place.
- () Connect a 2" red wire between lug 6 of tube socket V7 (S-1) and lug 1 of 40-meter oscillator coil L8 (NS).

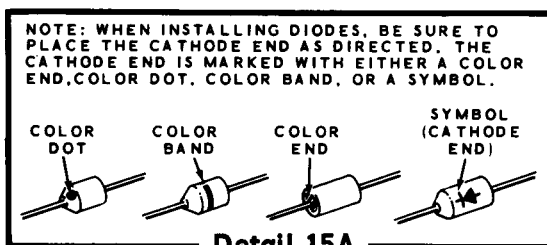


Detail 14C

Refer to Pictorial 15 (fold-out from Page 29) for the following steps.

- () Connect a 1000 Ω (brown-black-red) resistor between lug 1 (S-5) and lug 2 (NS) of terminal strip G.
- () Connect a 220 K Ω (red-red-yellow) resistor between lug 2 (S-4) and lug 3 (S-4) of terminal strip G.
- () Insert one lead of a .5 mH choke (#45-30) through lug 11 (S-2) to lug 3 (S-2) of tube socket V9. Connect the other lead to lug 1 of terminal strip M (S-4).

NOTE: Refer to Detail 15A before connecting the silicon diodes.

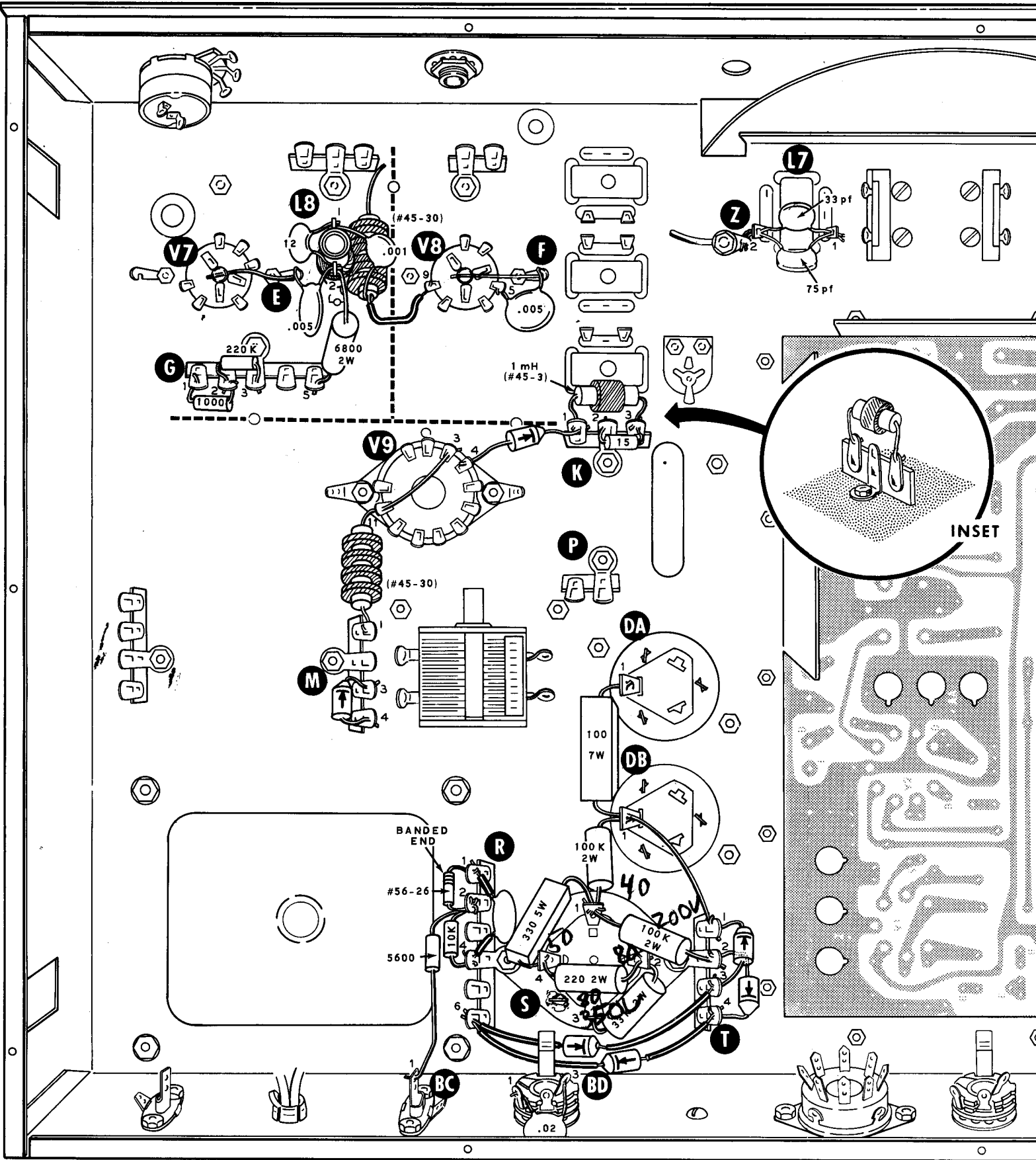


Connect each of the silicon diodes as follows:

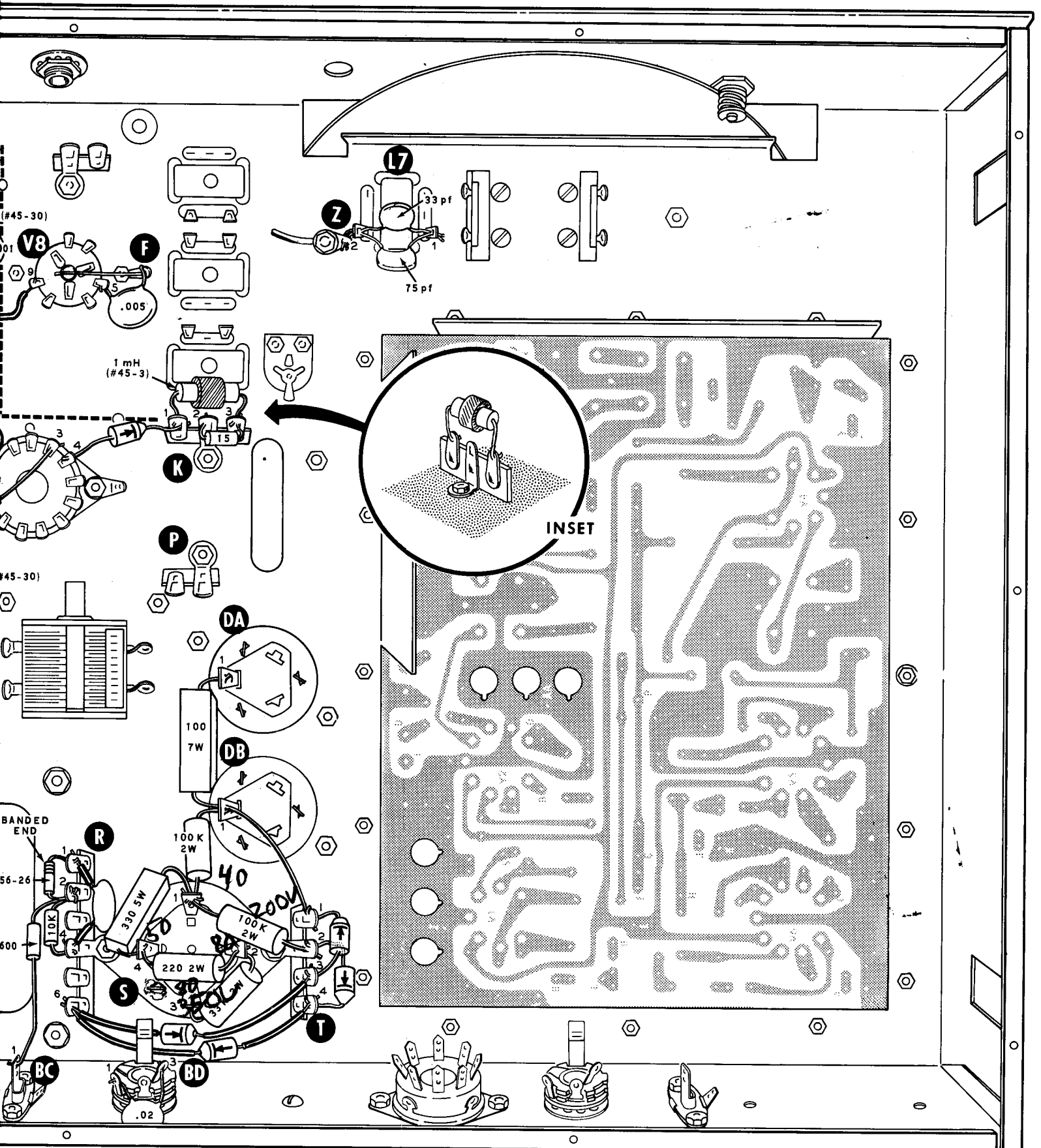
- () Cathode lead to lug 3 (S-3) and the other lead to lug 4 (S-2) of terminal strip M.
- () Cathode lead to lug 1 of terminal strip K (NS) and the other lead to lug 4 of V9 (S-2).
- () Cathode lead to lug 1 (NS) and the other lead to lug 3 (NS) of terminal strip T.
- () Cathode lead to lug 4 (NS) and the other lead to lug 2 (NS) of terminal strip T.
- () Place a 1" length of sleeving on each lead of a silicon diode. Connect the cathode lead of this silicon diode to lug 3 of terminal strip T (S-2) and connect the other lead to lug 6 of terminal strip R (NS).
- () Place a 1" length of sleeving on each lead of a silicon diode. Connect the cathode lead of this silicon diode to lug 6 of terminal strip R (S-3) and connect the other lead to lug 4 of terminal strip T (S-2).
- () Locate a #56-26 (brown-white-brown) germanium diode.



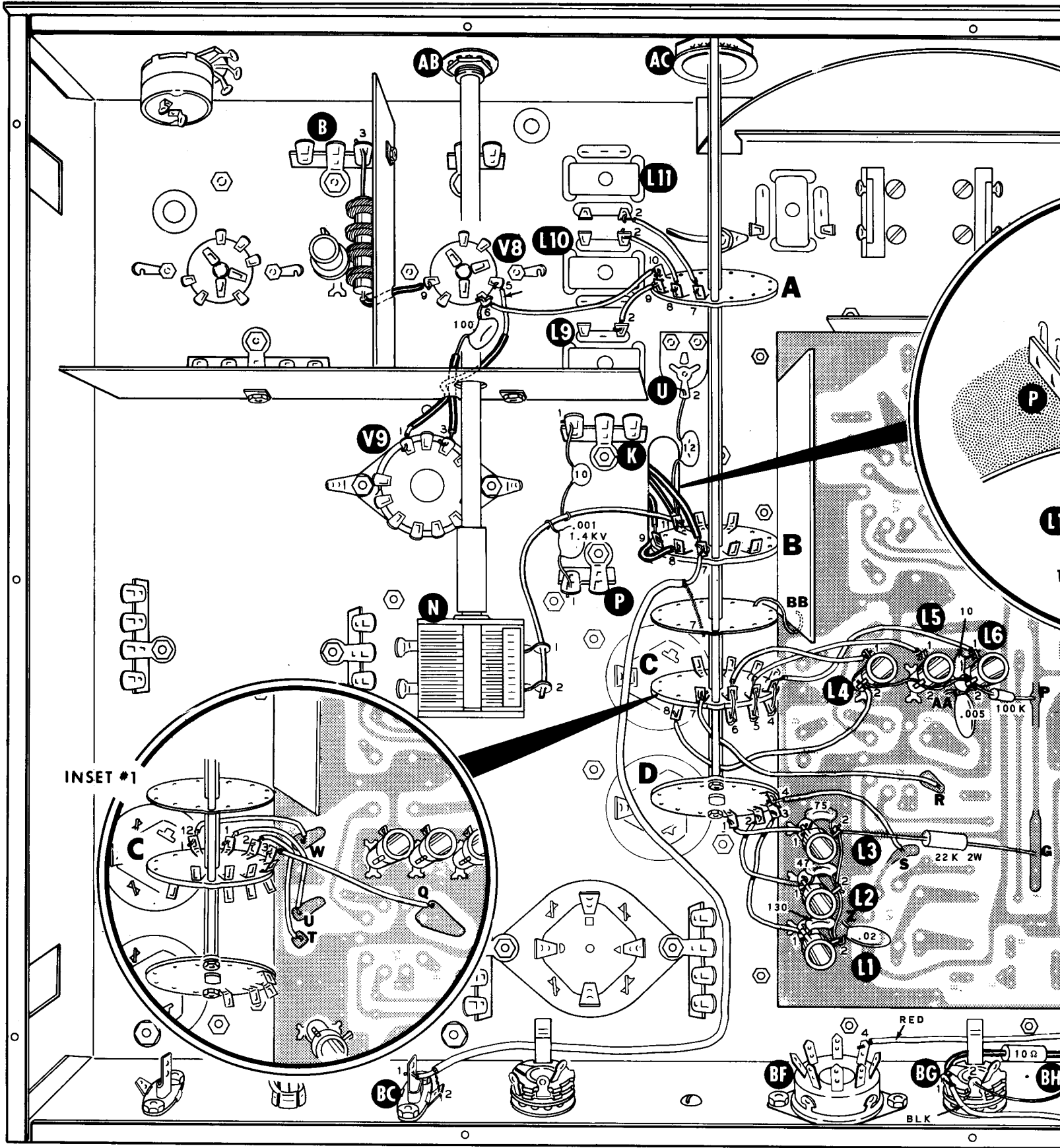
- () Connect the lead from the banded end of this diode to lug 1 (NS) and the other lead to lug 2 (NS) of terminal strip R.
- () Place a 1/2" length of sleeving on each lead of a .005 μ fd disc capacitor. Then connect this capacitor between lug 1 (S-3) and lug 4 (NS) of terminal strip R.
- () Connect a 10 K Ω (brown-black-orange) resistor between lug 2 (NS) and lug 4 (S-3) of terminal strip R.
- () Connect a 5600 Ω (green-blue-red) resistor from lug 2 of terminal strip R (S-3) to lug 1 of phono socket BC (NS).
- () Connect a 33 K Ω (orange-orange-orange) 2 watt resistor between lug 2 (NS) and lug 3 (S-2) of electrolytic capacitor S.
- () Connect a 220 Ω (red-red-brown) 2 watt resistor between lug 2 (S-4) and lug 4 (NS) of electrolytic capacitor S.
- () Connect a 330 Ω 5 watt resistor between lug 1 (NS) and lug 4 (S-4) of electrolytic capacitor S.
- () Connect a 100 K Ω (brown-black-yellow) 2 watt resistor from lug 1 of electrolytic capacitor S (NS) to lug 1 of electrolytic capacitor DB (NS).
- () Insert one lead of a 100 Ω 7 watt resistor through lug 1 of electrolytic capacitor DB (S-3) to lug 1 of terminal strip T (S-2). Connect the other lead to lug 1 of electrolytic capacitor DA (S-3).
- () Connect a 100 K Ω (brown-black-yellow) 2 watt resistor from lug 1 of electrolytic capacitor S (S-5) to lug 2 of terminal strip T (S-2).
- () Connect a 15 Ω (brown-green-black) resistor between lug 2 (S-3) and lug 3 (NS) of terminal strip K.
- () Connect a 1 mH choke (#45-3) between lug 1 (NS) and lug 3 (S-4) of terminal strip K. Position the choke above the terminal strip as it is shown in the inset drawing on Pictorial 15.
- () Connect one lead of a .005 μ fd disc capacitor around solder lug F (S-4) to the center post of tube socket V8 (S-1). Connect the other lead to lug 5 of tube socket V8 (NS).
- () Cut a 1" length of sleeving and place it on one lead of a .5 mH choke (#45-30) and connect this lead to lug 9 of tube socket V8 (S-1). Leave the other lead free and position the choke as shown in the Pictorial.
- () Connect a .001 μ fd disc capacitor from lug 1 of 40-meter oscillator coil L8 (NS) to the lead of the RF choke that is connected to lug 9 of tube socket V8 (S-1). Make the connection near the choke body.
- () Insert one lead of a .005 μ fd disc capacitor around solder lug E (S-3) to the center post of tube socket V7 (S-1). Connect the other lead to lug 2 of 40-meter oscillator coil L8 (NS).
- () Connect a 12 pf resin capacitor between lug 1 (S-3) and lug 2 (NS) of 40-meter oscillator coil L8.
- () Connect a 6800 Ω (blue-gray-red) 2 watt resistor from lug 5 of terminal strip G (S-5) to lug 2 of 40-meter oscillator coil L8 (S-3).
- () Insert one lead of a 75 pf resin capacitor through lug 2 of coil L7 (NS) to solder lug Z (NS). Connect the other lead to lug 1 of coil L7 (NS).
- () Insert one lead of a 33 pf disc capacitor through lug 2 of coil L7 (S-4) to solder lug Z (S-2). Connect the other lead to lug 1 of coil L7 (S-3).
- () Connect a .02 μ fd disc capacitor from lug 1 (S-3) to lug 3 (S-1) of jack BD.



PICTORIAL 15



PICTORIAL 15



PICTORIAL 16