

Fig. 5. Suggested parts layout for the adapter.

DRILLING LEGEND

"A"—No. 32-drill for socket and shield

"B"— $\frac{9}{32}$ -inch-diameter drill

"C"— $\frac{5}{8}$ -inch-diameter socket punch

"D"— $\frac{3}{4}$ -inch-diameter socket punch

little more than was drawn by the IF tube replaced by the adapter. A single plate and screen voltage lead will suffice when the supply voltage is 130 or less. A single 250-volt DC source will require that an 18,000-ohm, 12-watt screen voltage dropping resistor be connected between pins 4 and 8 on the power plug.

An alternate output coupling circuit, and a method of applying AVC voltage from the receiver to the second amplifier stage in the adapter are shown in Fig. 4. This circuit is mainly useful when the adapter is connected to a receiver that has few AVC-controlled stages. The AVC voltage is taken from the control grid connection on the IF tube socket and is applied to the grid of V_2 through the output coupling coil of the mechanical filter. The lead from the plate of V_2 to the IF tube socket should be the shortest possible length of RG-59/U coaxial cable. The primary of the receiver's second IF transformer should be returned after plugging in this cable.

MECHANICAL DETAILS

This adapter unit was constructed in a $2\frac{1}{4}$ x $2\frac{1}{4}$ x 4-inch Minibox (Bud CU-3003), a good compromise that is compact, yet not too small for easy wiring. A larger box may be required if a "B" or "C" type rectangular mechanical case filter designed for horizontal mounting is used instead of the "J" model. A somewhat smaller Minibox will suffice if the circuit in Fig. 4, eliminating L_2 , is used.

For maximum isolation between input and output circuits, a parts layout similar to that shown in the drilling diagram, Fig. 5, should be followed. After

drilling and punching all holes, the tube and mechanical filter sockets, power plug and rubber grommets may be assembled. Solder lugs were placed on all socket screws for ground connections. Then, a 3-x 3-inch piece of perforated sheet aluminum is formed into the shield shown in the bottom and oblique views, Figs. 6 and 7, respectively. A $\frac{3}{8}$ -inch-wide flange is formed along all edges of this shield except where it crosses the center of the 9-pin socket. A small notch is cut in the shield next to the socket for heater and plate power leads to V_2 . The shield passes between the lugs for pins 3 and 4, and 8 and 9, then is bolted to a soldering lug that has been soldered to pin 2 on the socket. The upper flange on the shield also is bolted to the box directly above L_2 , and two self-tapping screws are driven into the shield's side flanges when the other half of the box is assembled.

Assembling the two IF tube socket probes takes little more time than is required to explain it. First, cut two lengths of RG-58/U coaxial cable 17 inches long and remove $1\frac{1}{2}$ inches of the vinyl cover on one end of each piece. Slide the braided shield back over the outer cover, then trim the center conductor and insulation so that $\frac{1}{2}$ inch protrudes beyond the shield. Next, skin the insulation to expose $\frac{1}{4}$ inch of the center conductor, trim one lead of the 10-mmf capacitor, C_2 , and solder it to the center conductor with a $\frac{5}{16}$ of an inch overlap. Cut narrow strips of plastic insulating tape and wrap them around this joint up to the body diameter of the capacitor as shown in Fig. 8.

Slide the braided shield over the capacitor, pull it

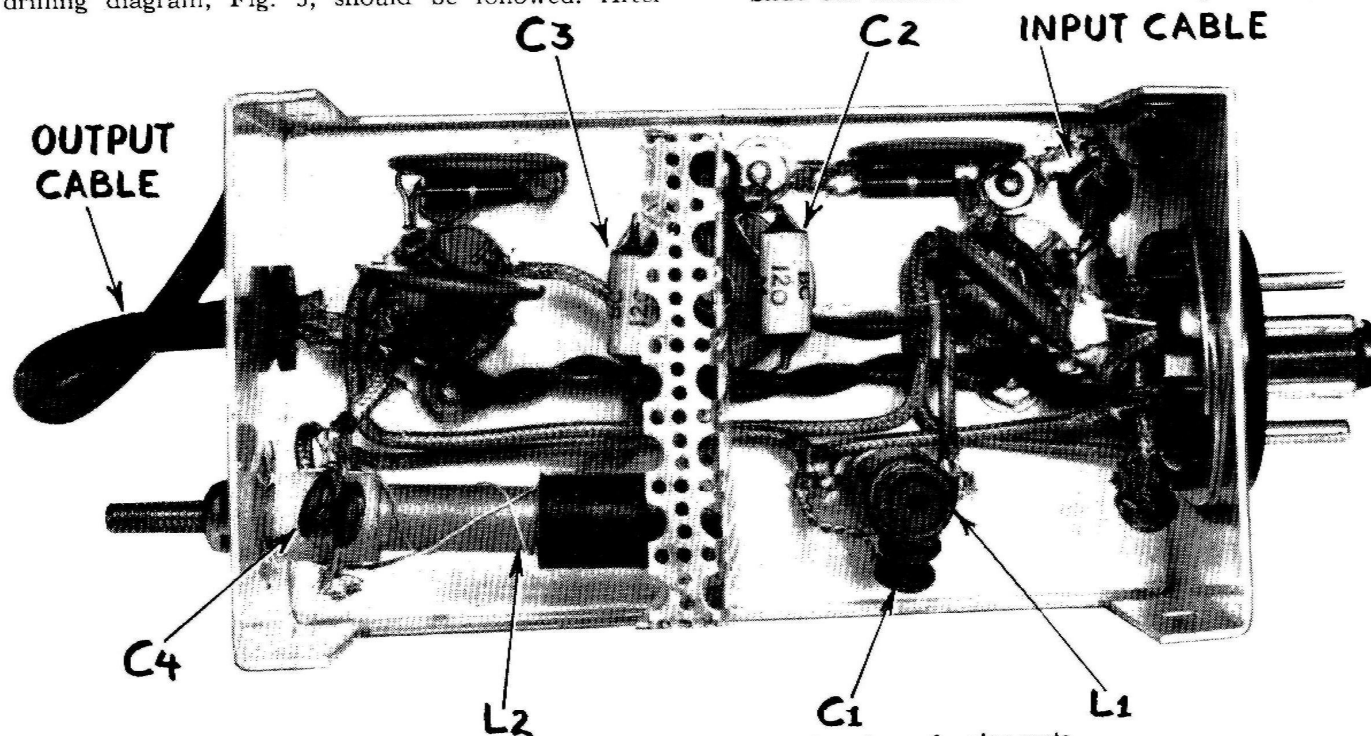


Fig. 6. Bottom view of the adapter showing locations of major parts.