

Cathode Coupler

Place S_1 , L_1 , and C_1 close to the tube socket, as shown in Fig. 6. In this amplifier, Millen type 39005 universal-joint couplings were used between the shaft of C_1 and the front panel to allow the control to be placed symmetrically in respect to others on the panel. Even though the shaft and rotor of C_1 are at ground potential, use an insulated shaft coupling to couple the indicator dial to avoid the possibility of setting up a spurious tuned circuit. If you don't gang the input and output band switches, as described presently, use an extension shaft on the input switch so that the switch can be placed close to the tube socket.

Ganging the Switches

It is not difficult to gang S_{1A-B} and S_{1C} to provide single control. This can be accomplished by means of a National type RAD geared right-angle shaft coupler. A Johnson rigid ceramic shaft coupler (type 104-252) is attached to the tail shaft of the B & W coil unit. A short length of $\frac{1}{4}$ -inch brass rod couples the gear end of the right-angle drive to the ceramic coupler. S_{1A-B} is mounted below deck with its shaft extending through a clearance hole in the chassis so that the shaft can be lined up with the shaft of the right-angle drive. The two shafts are coupled together by means of a ceramic semiflexible coupler (Johnson 104-262). Since the switch on the B & W coil unit has 60-degree indexing, S_{1A-B} must have the same indexing, rather than the more common 30-degree indexing. The 60-degree switch is, however, a standard item in the manufacturer's catalog. A 30-degree switch may be used, of course, if ganging is dispensed with.

Wiring

As the photographs indicate, very little actual wiring is required. The positive high-voltage lead enters the rear of the chassis through a Millen high-voltage connector where it immediately connects to the first 500-pf. bypass capacitor. RFC_3 is mounted between this capacitor and a feedthrough insulator which is connected to one side of the voltmeter multiplying resistor. The feedthrough carries the high voltage through to the top of the chassis where it connects to the second 500-pf. capacitor mounted on the chassis, and to the bottom end of RFC_2 . A tapped ceramic pillar insulator threads onto the top terminal of this capacitor. The two blocking capacitors are suspended from a short copper strap fastened across the top end of the insulator, and a second strap connects them to the top of the r.f. choke. The parasitic suppressor Z_1 is inserted at the center of a copper strap connecting the top of RFC_2 to the plate cap of the tube.

Since the high- C input circuit carries considerable current, the r.f. wiring should be done with reasonably heavy wire (I used No. 10). This includes the short between the 80-meter contacts of S_{1A} .

A lead attached to the stator of C_3 passes down

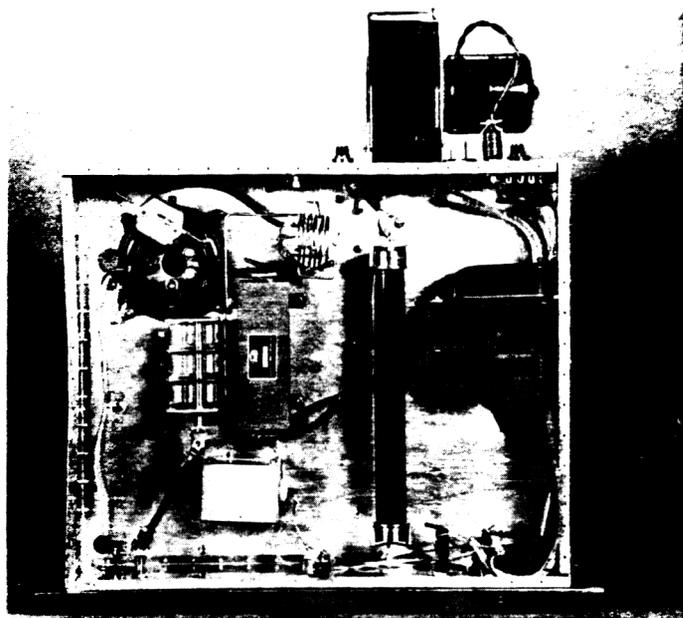


Fig. 6—Bottom view of the 4-1000A amplifier. The filament transformer and voltmeter multiplier resistor are to the right. The input coil, L_1 , is at top center, supported on S_{1AB} by its leads. Input capacitor C_1 is operated through a pair of universal-joint shaft couplers so that the capacitor may be placed close to the tube socket without upsetting panel-layout symmetry. The small shielding box ($2\frac{3}{4} \times 2\frac{1}{8} \times 1\frac{1}{8}$ -inch Minibox), below the bifilar filament choke, houses the r.f. output-indicator diode and associated components.

through the chassis via a second feed-through insulator to the box below containing the r.f. output-indicator components. A short section of RB-8 U connects the stator of C_3 to J_2 . Be sure to ground both ends of the outer conductor.

Blower Mounting

Don't compromise on the blower. The 4-1000A requires 60 c.f.m. at 0.6 inch of static pressure. Some so-called 60-c.f.m. blowers aren't worth their salt when you try to pressurize the chassis. The blower suggested does an excellent job in this respect, and is priced quite reasonably.

Be sure to place the blower well away from the tube socket. If it is placed too close, it will create a pressure wall across the bottom of the socket which will tend to restrict the flow of air through the base and chimney.

An a.c. receptacle is set in the rear apron of the chassis and a short cord from the blower motor plugs into it.

The Panel

The panel is a standard $15\frac{3}{4} \times 19 \times \frac{1}{8}$ -inch unit of aluminum. The four meters are in line across the top. A $4 \times 17 \times 3$ -inch aluminum chassis fits over the back of the line of meters to shield them from r.f. fields. It is held in place by eight No. 6 sheet-metal screws inserted from the front. Shielded meter leads (Belden 8882 wire) are brought up from below chassis through rubber grommets in the chassis and in notches filed in the bottom front corners of the meter enclosure.

The panel is fitted with chrome handles (Bud type H9113) for lifting the amplifier in and out