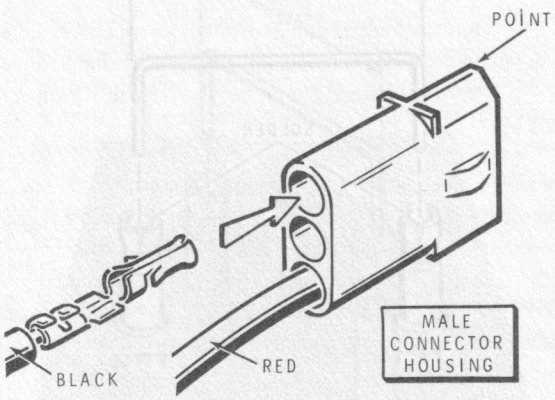


Figure 2-9

( ) Similarly, push the pin on the red wire into the lower hole, leaving the center hole open.

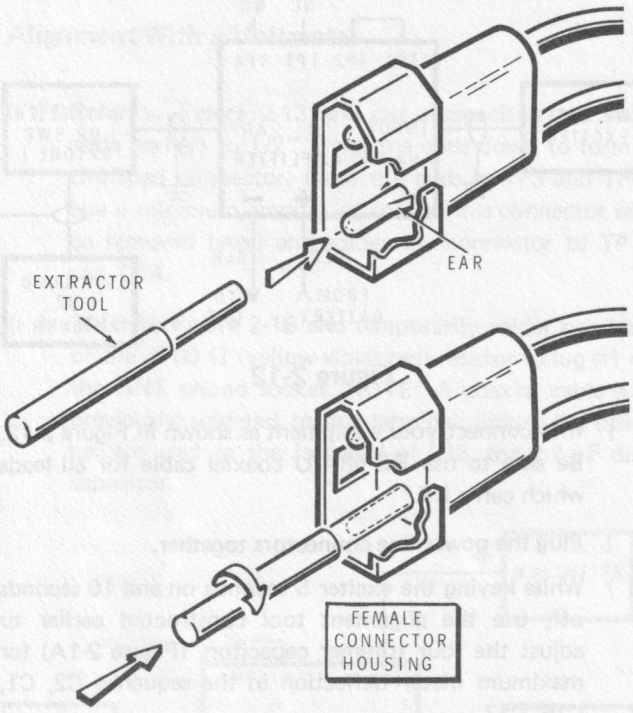


Figure 2-10

NOTE: An extractor tool is furnished (see Figure 2-10) so you can remove a pin from one of the connector housings, should it become necessary. To use the tool, push it very firmly over the end of the pin, as shown, until it compresses the expanded ears of the pin. When this occurs, the wire with its pin can be pulled from the other end of the housing.

( ) Route the free end of the red wire toward the battery and solder it to the remaining lug of the fuse block.

( ) Make sure the male and female connector housings are not plugged together. Then connect the free end of the red wire coming from the fuse block to the battery.

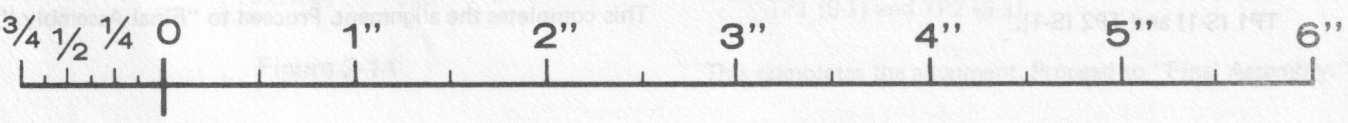
ALIGNMENT

Alignment Notes

1. To avoid overheating and damaging the transistors, do not key the exciter continuously during alignment. A cycle of five seconds on followed by ten seconds off is recommended until alignment has been completed.

2. Although it is unlikely, you could encounter low-frequency oscillation (squegging) under certain conditions of mistuning. When it is properly tuned, the Amplifier will not exhibit these oscillations, but low-frequency spurious output has been observed during alignment, and this condition can destroy Q1 and Q2 if it is allowed to exist for any length of time. A portable broadcast receiver makes a good indicator when it is tuned to an unused frequency and placed near the Amplifier. The existence of squegging will be easily recognized as an unusual noise from the broadcast receiver.

3. If you use your battery as a power source, check the voltage across its terminals with the engine running and all accessory equipment and lights off. This Amplifier is designed for 16 volts maximum input, and if the voltage is in excess of this figure, you should have your voltage regulator adjusted or replaced.



4. It is good practice to start the tuneup procedure at 11 to 12 volts input. If you are using your battery as a power source, leave the engine off during the initial alignment steps. Then start the engine (in a well-ventilated area) for the final tuneup.

5. The relay may chatter until C2 is peaked. This is normal and is due to the low input impedance possible when the Amplifier is mistuned.

6. The alignment of this Amplifier requires the following:

   a. A two-meter exciter (transmitter) capable of five to fifteen watts output.

   b. A 50 Ω nonreactive load, such as the Heathkit Cantenna, connected to the Amplifier's output. An antenna may be used, but its VSWR should be as low as possible, and in no event more than 2:1.

   c. An output indicator. A watt meter (or SWR bridge) is preferred, but a voltmeter may be used. The instructions and the connections for these two devices differ; therefore, separate alignment instructions are given below. Follow the appropriate set of instructions for the alignment equipment you have.

7. Before starting alignment, tune your exciter for maximum output in the portion of the 2-meter band in which you expect to operate. The Amplifier operating range will then be approximately 750 kHz each side of the alignment frequency.

Alignment With a Wattmeter or SWR Bridge

If a wattmeter or SWR bridge is used for alignment, it is important that they be capable of accurate measurements at the operating frequency of the Amplifier; otherwise, there may be a false indication of peak power output, and possible misalignment.

( ) Refer to Figure 2-11 and cut a capacitor lead (laid aside earlier) to 5/8". Bend the ends down to form a U-shaped connector. Place the ends in connector pins TP1 (S-1) and TP2 (S-1).

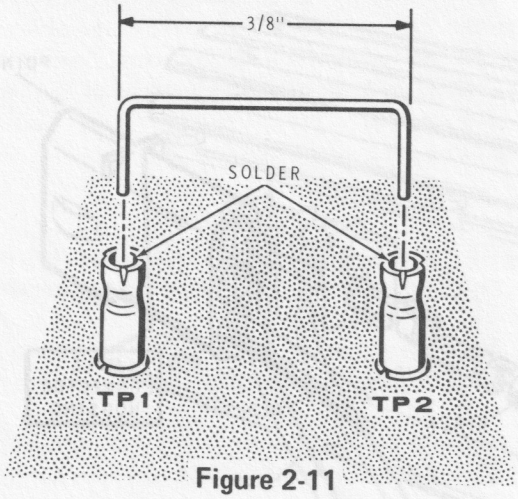


Figure 2-11

( ) Refer to Figure 2-1A (fold-out from Page 19) and solder the free lead of the 2.7 pF disc capacitor to terminal 4 of the relay. NOTE: A coaxial cable was previously soldered to this terminal.

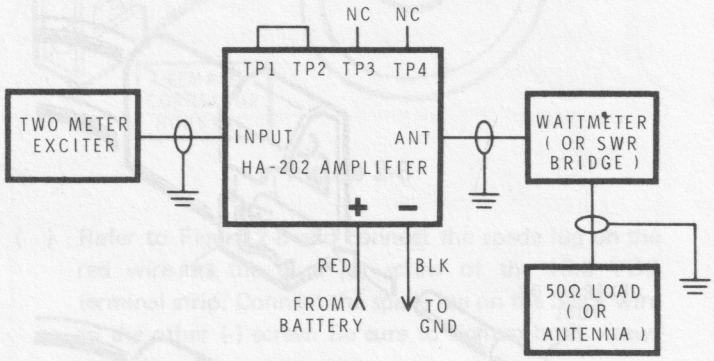


Figure 2-12

( ) Interconnect your equipment as shown in Figure 2-12. Be sure to use RG-58A/U coaxial cable for all leads which carry RF.

( ) Plug the power line connectors together.

( ) While keying the exciter 5 seconds on and 10 seconds off, use the alignment tool constructed earlier to adjust the four trimmer capacitors (Figure 2-1A) for maximum meter deflection in the sequence C2, C1, C16, C17.

( ) Repeat the trimmer adjustment at least twice to assure maximum output.

( ) Disconnect the wattmeter, the 50 Ω load, and the power line connectors.

This completes the alignment. Proceed to "Final Assembly."

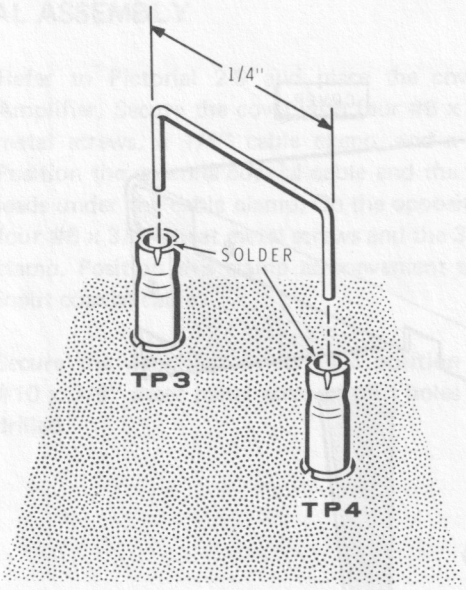


Figure 2-13

Alignment With a Voltmeter

( ) Refer to Figure 2-13 and cut a capacitor lead (laid aside earlier) to 1/2". Bend the ends down to form a U-shaped connector. Place the ends in TP3 and TP4. Use a minimum amount of solder (this connector will be removed later) and solder the connector to TP 3 and TP 4.

( ) Refer to Figure 2-1B and temporarily solder one lead of the 4700 Ω (yellow-violet-red) resistor to lug #1 of the ANT phono socket. NOTE: A coaxial cable was previously soldered to this terminal. Solder the other resistor lead to the free lead of C18, the 2.7 pF disc capacitor.

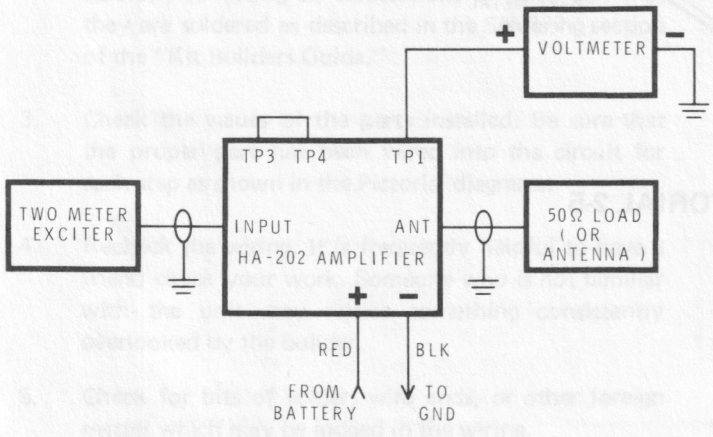


Figure 2-14

( ) Refer to Figure 2-14 and interconnect your equipment. Be sure to use RG-58A/U coaxial cable for all leads which carry RF.

( ) Plug the power line connectors together.

( ) While keying the exciter 5 seconds on and 10 seconds off, use the alignment tool constructed earlier to adjust the four trimmer capacitors (Figure 2-1A) for maximum meter deflection in the sequence C2, C1, C16, C17. Proper tuning is indicated when the voltage at TP1 is at least twice the voltage shown on the meter when the + power wire is disconnected.

( ) Repeat the trimmer adjustment at least twice to assure maximum output.

( ) Disconnect the voltmeter, the load, and the power connectors.

( ) Unsolder and remove the 4700 Ω resistor.

( ) Refer to Figure 2-1A and solder the free end of the 2.7 pF disc capacitor to relay terminal 4.

( ) Unsolder and discard the connector between TP3 and TP4.

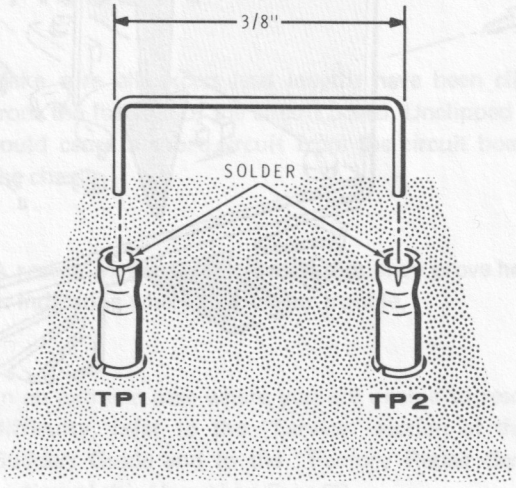


Figure 2-15

( ) Refer to Figure 2-15 and cut a capacitor lead (laid aside earlier) to 5/8". Bend the ends down to form a U-shaped connector. Place the ends in connector pins TP1 (S-1) and TP2 (S-1).

This completes the alignment. Proceed to "Final Assembly."

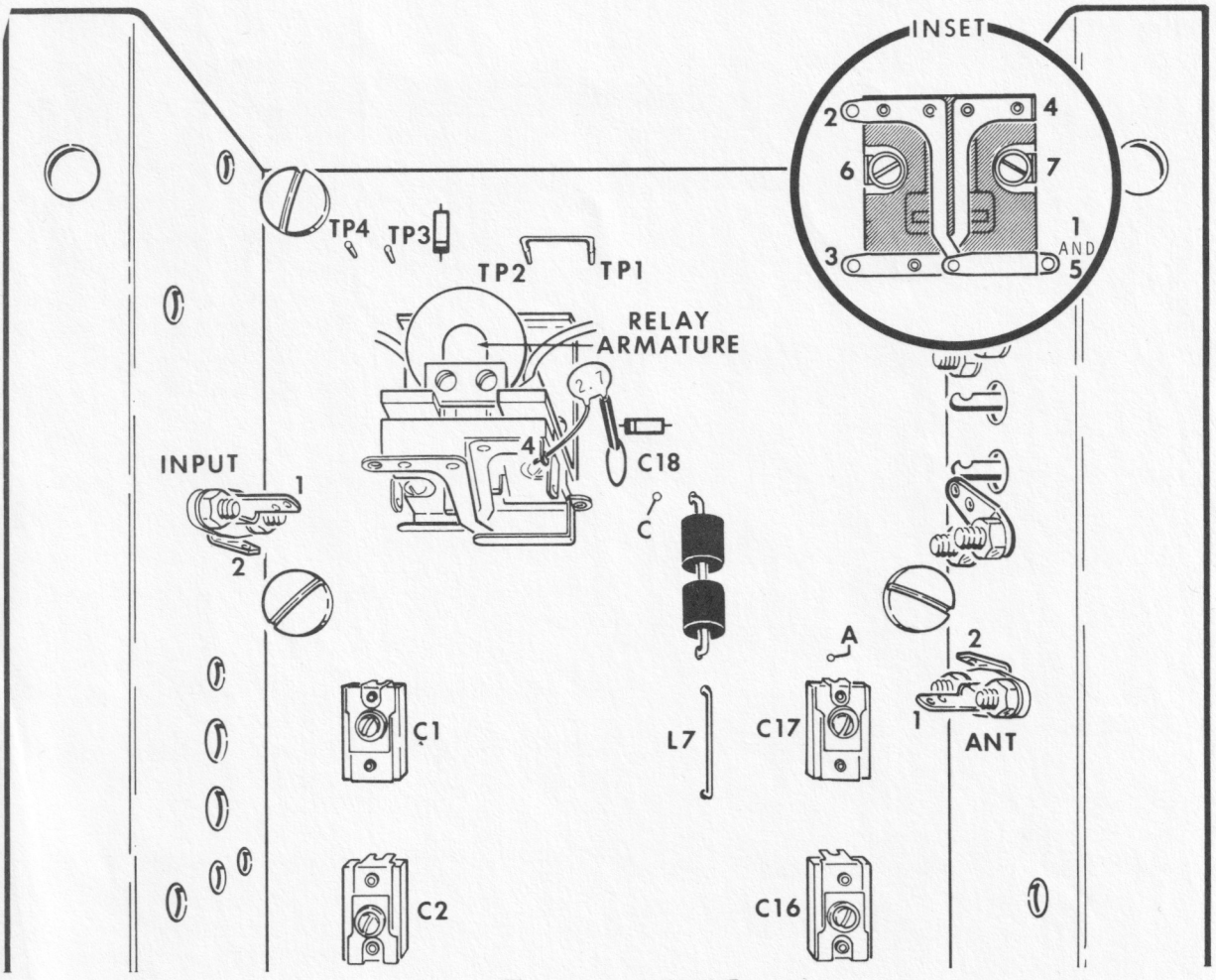


Figure 2-1A

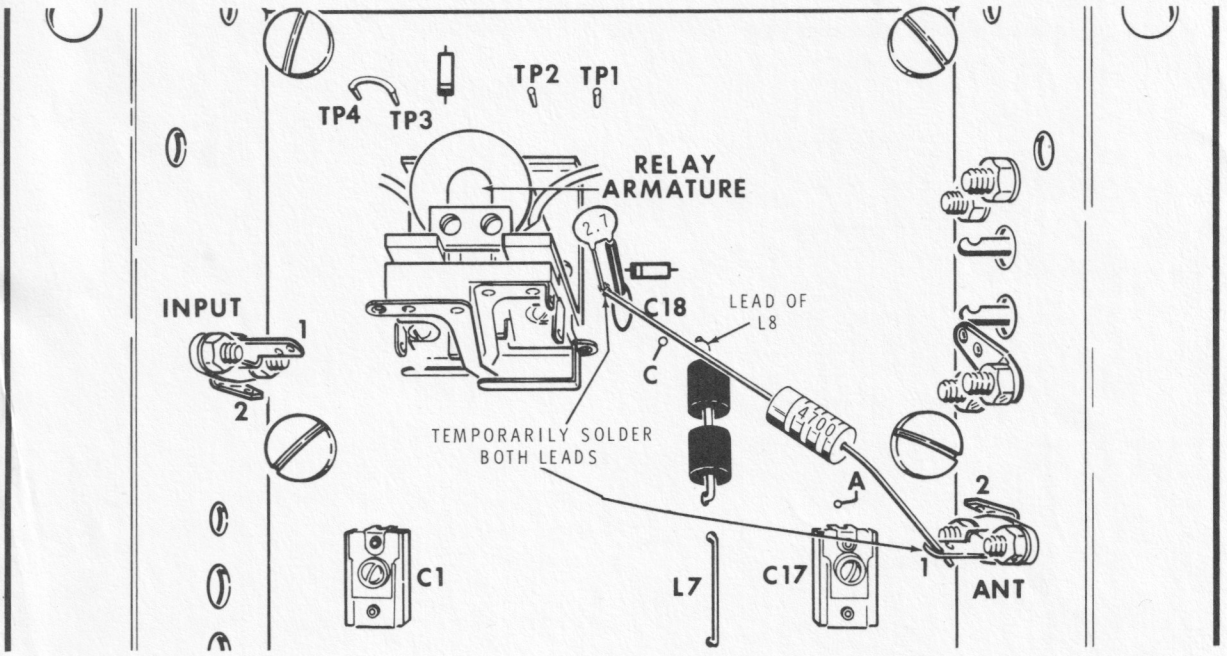


Figure 2-1B