

# PHILCO AM/FM TUNER—MODEL RT-300

(Continued on page 110, over)

This tuner is equipped with a front panel and mounting board and is intended for quick installation in the space provided in the "H" line Philco Hi-Fidelity Phonographs.

## AM ALIGNMENT PROCEDURE

The AM alignment should be completed before the FM alignment is performed. Before beginning the alignment, allow the receiver and test equipment to warm up for fifteen minutes.

**Dial Pointer**—With the gang fully closed, adjust the pointer to coincide with the first small index mark to the left of the "54" (540 kc) on the scale.

**Tuner Controls**—Set the function switch to the AM position and the AM tuning control as indicated.

**Output Indicator**—Connect a scope to output jack, J1.

**Signal Generator**—Use an AM r-f signal generator with 30% modulation.

1. Connect generator, through a .05  $\mu$ fd condenser, to the signal grid, pin 7 of the AM converter, S6 (6BE6). Connect the ground lead to chassis.
2. Set generator to 455 kc. Fully open tuning gang. Adjust, in order given, top of T7, bottom of T6, bottom of T7, and top of T6 for maximum output. Repeat until no further gain is indicated.
3. Connect generator to radiating loop. Set generator to 1600 kc. Set receiver to 1600 kc as indicated by pointer. Adjust VC6A (osc. trimmer) for maximum output.
4. Set generator to 1400 kc. Tune receiver to signal and adjust VC5A (antenna trimmer) for maximum output.

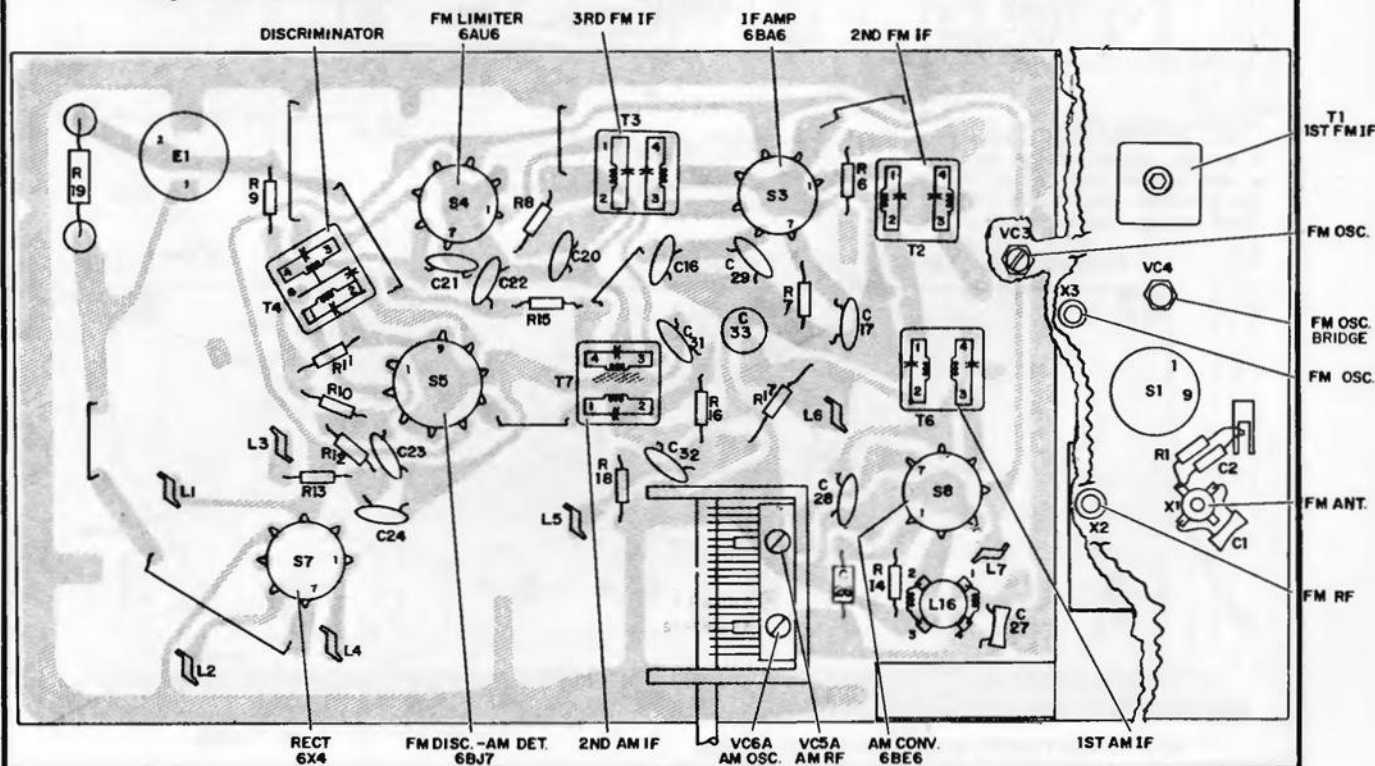
## FM ALIGNMENT PROCEDURE

The AM alignment should be completed before the FM alignment is performed.

1. With the gang fully closed, adjust the pointer to coincide with the first small index mark to the left of the "88" (88 mc) on the scale.
2. Set the function switch to the FM position and the FM tuning control as indicated.

3. Connect an oscilloscope, through a 100,000 ohm isolating resistor, to junction of R8 and C20. Connect the oscilloscope ground lead to the chassis.
4. Connect the signal generator to the cathode of the FM, RF amplifier, pin 8 of S1. Connect the ground lead to the chassis.
5. Inject a 10.7 MC marker signal and a 10.7 MC sweep signal, approximately 150 KC total deviation (do not over sweep). Adjust cores in top and bottom of T3, T2 and T1 for maximum-amplitude, symmetrical curve with the 10.7 MC marker at the top of the curve. Adjust input signal to maintain output, as indicated on scope, below 2 volts peak during alignment. Repeat this step until no further gain is obtained.
6. Change scope connections to the output connector J1. Inject a 10.7 MC, 30% AM modulated signal to the grid of the 6AU6, pin 1 of S4. Adjust top of T4 for minimum indication between peaks. Inject 10.7 MC sweep signal, approximately 150 KC total deviation, to pin 1 of S4 and adjust bottom of T4 for maximum-amplitude, symmetrical output. Adjust input signal to maintain output, as indicated on scope, below 5 volts peak during alignment. (See NOTE below.)
7. Open tuning capacitor. Insert a 6-mil, non-metallic shim between stator and rotor of the FM gang and then close the capacitor against the shim. Inject 108.5 MC sweep signal (approx. 150 KC total deviation), through an antenna matching network, to the receiver antenna terminals. Adjust VC3 for maximum output.
8. Close (mesh) the tuning capacitor. Inject 87.75 MC sweep signal (approx. 150 KC total deviation) through an antenna matching network, to the receiver antenna terminals, and adjust X3 for maximum output (see NOTE below).
9. Set pointer to 91 MC and inject a 91 MC sweep signal. Adjust X2 for maximum output. (See NOTE below).
10. VC4 is the oscillator bridge capacitor used to minimize oscillator radiation. This is a factory adjustment and should not require further adjustment in the field.

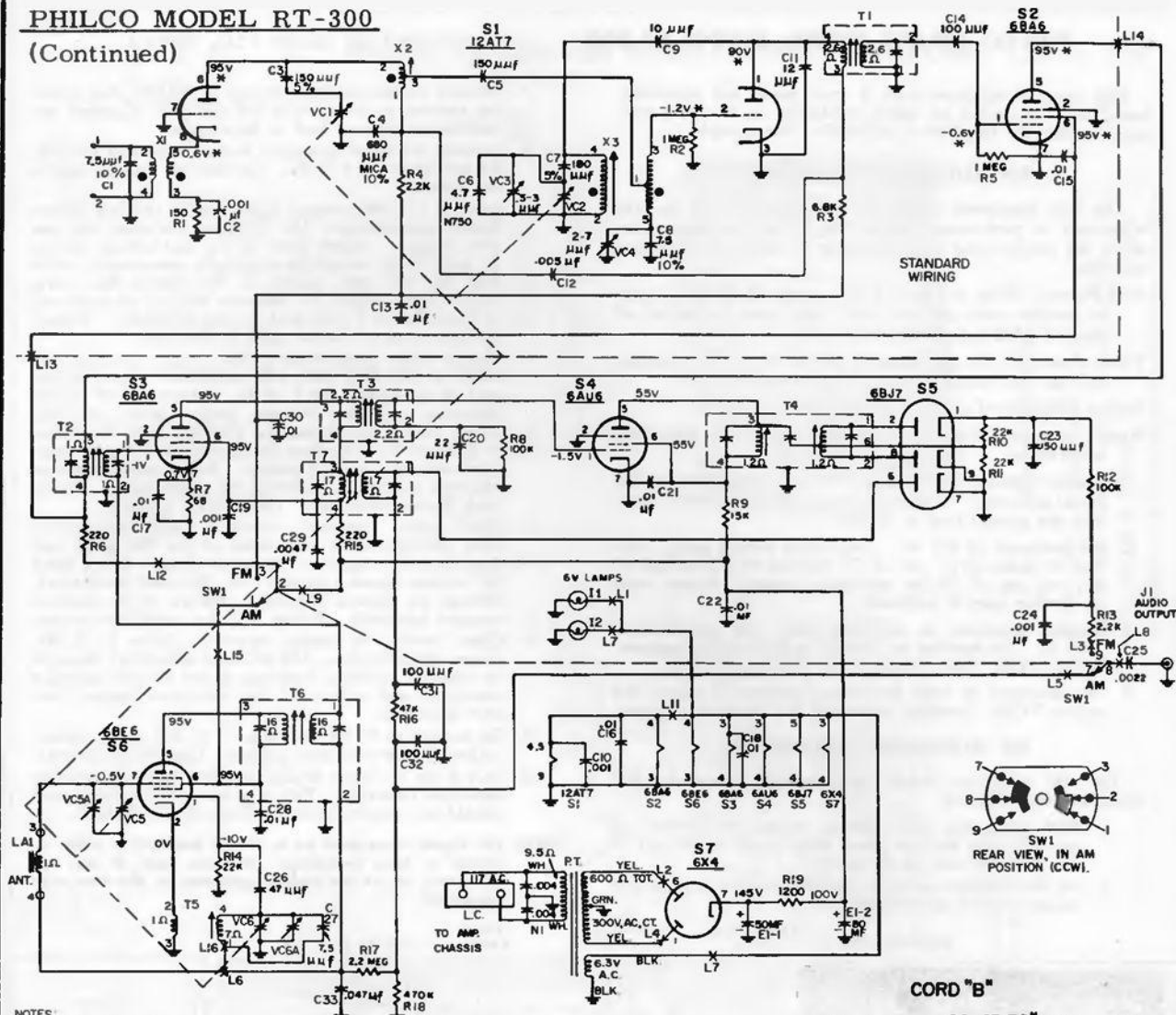
**NOTE:** The signal input must be as low as possible in order to obtain a sharp indication. In some cases it may be necessary to set the signal generator to the first sub-harmonic.



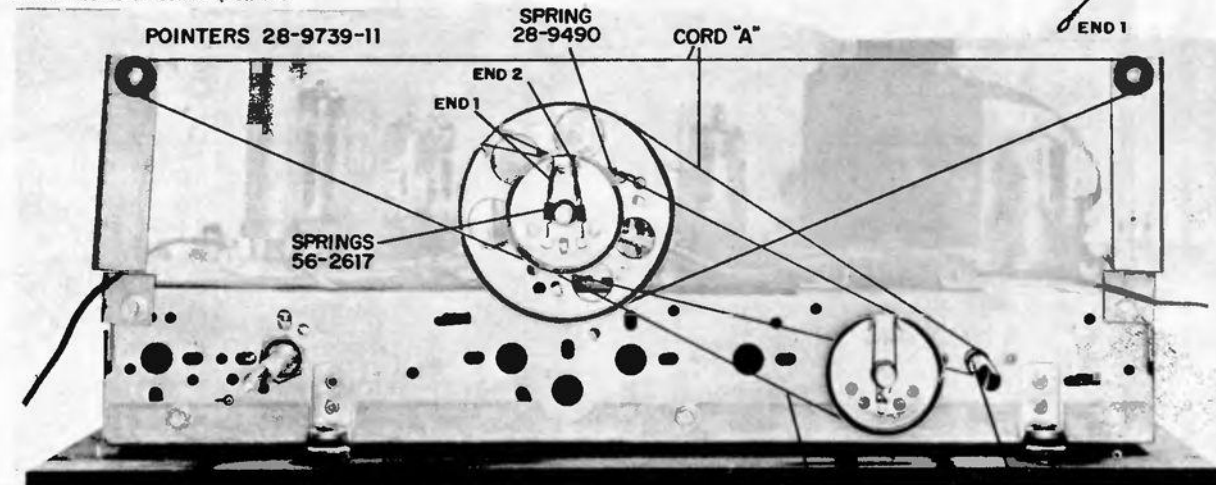
Top View—Showing Alignment Points, Tube Locations, Tie Lugs and Components

# PHILCO MODEL RT-300

(Continued)



NOTES:  
VOLTAGES MEASURED WITH A VTVM AT 117V, 60~ LINE UNDER NO SIGNAL CONDITION.  
\* INDICATES VOLTAGES READ IN "FM".  
● INDICATES A RESISTANCE OF LESS THAN 1.0.  
COIL RESISTANCES READ WITH COIL IN CIRCUIT.  
SWITCH POSITIONS: CCW-AM; CW-FM.



NOTE- ILLUSTRATED WITH BOTH GANGS CLOSED.

CORD 'B' 3 1/2 TURNS

Drive Cord Installation Details