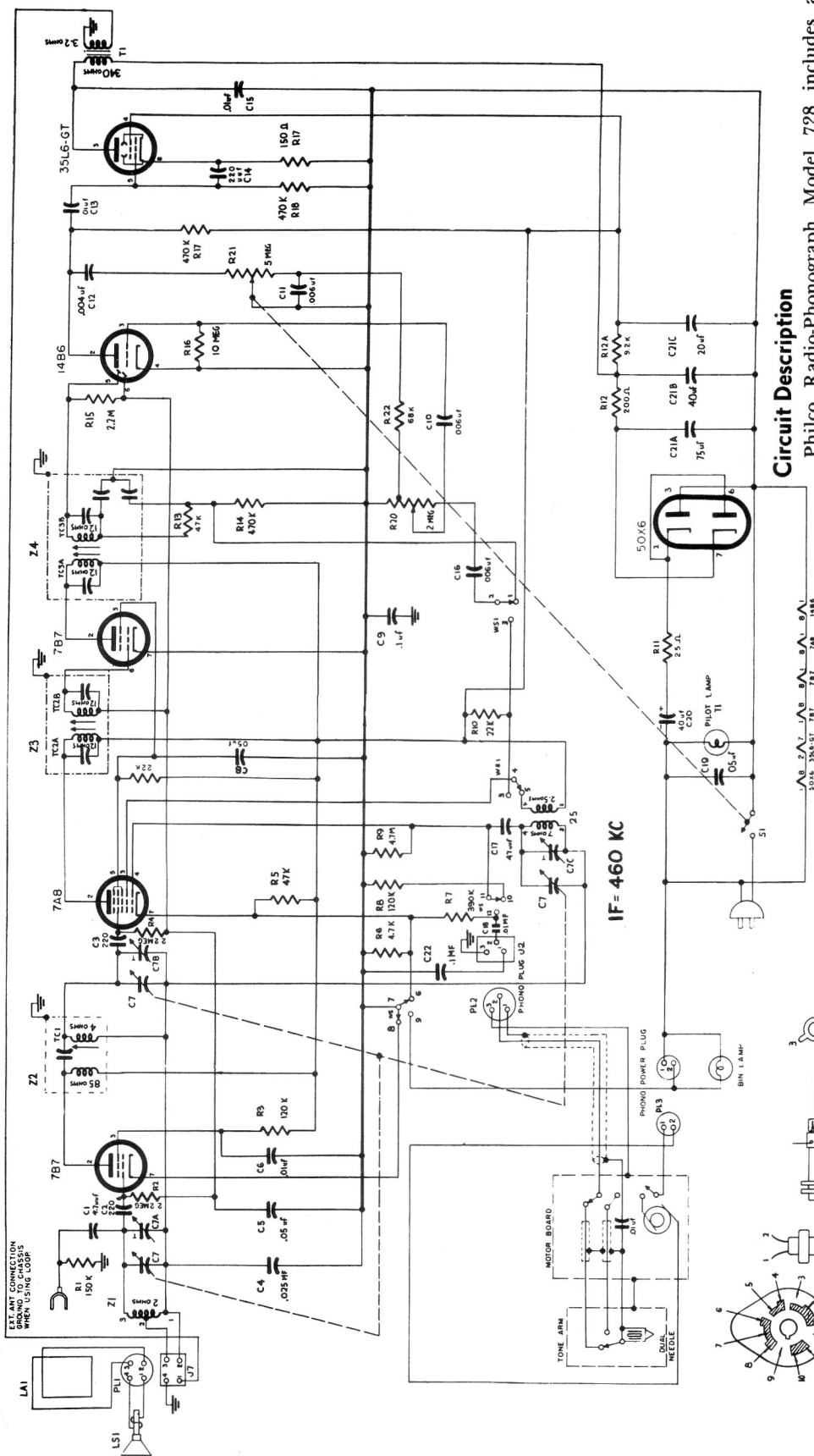


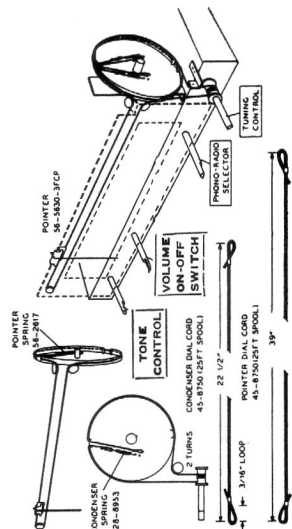


Circuit Description

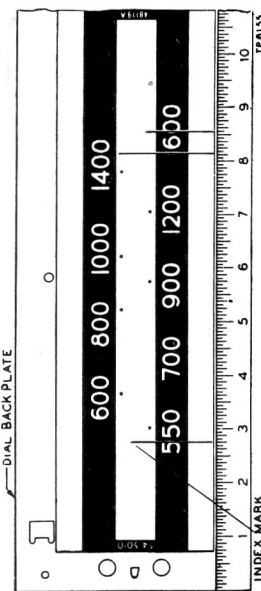
Philco Radio-Phonograph Model 728 includes a Philco Automatic Record Changer Model M 20 and 6-tube superheterodyne which provides reception in the standard broadcast band.

A tuned r-f amplifier stage using a 7B7 provides good sensitivity and selectivity. A 7A8 is used as a converter and phono pre-amplifier.

The low impedance loop aerial normally gives adequate signal pickup, if greater signal pickup is required, an external aerial may be connected. High-gain transformers are used for coupling in the i-f and r-f circuits. The diode section of the 14B6 provides detection and a-v-c action. The triode section of this tube functions as the first audio amplifier, and is resistance coupled to the 35L6GT output tube. The loud speaker is a permanent magnet, dynamic type. The power supply employs a 50X6 full wave voltage double rectifier, and a resistor, condenser filter network.



Drive-Cord Installation Details



Calibration Measurements for Dial Backplate

RADIO CONTROLS — Set volume controls to maximum, turn tone control fully counterclockwise, and set radio-phonograph switch to radio position.

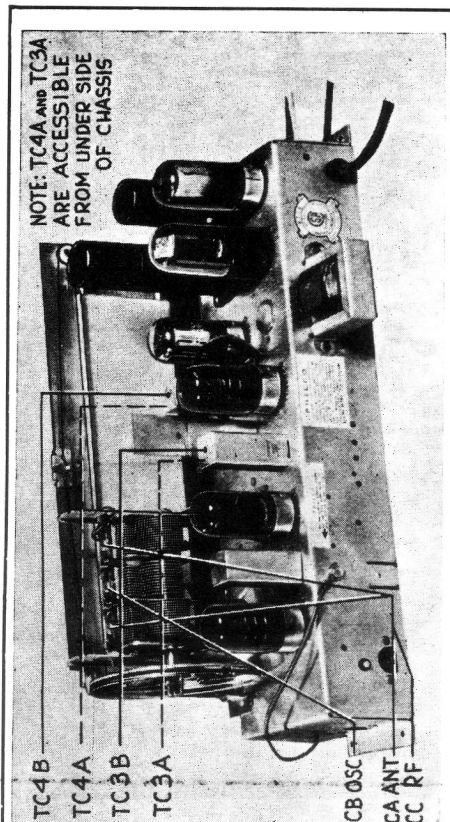
OUTPUT LEVEL—During alignment, adjust signal-generator output to maintain output-meter indication below 1.25 volts.

DIAL — Calibration and pointer-index measurements are shown in figure 7. With tuning condenser fully meshed, set pointer to index mark.

OUTPUT METER—Connect across voice coil.
SIGNAL GENERATOR—Connect as indicated in chart. Use modulated output.

Step	SIGNAL GENERATOR		RADIO	
	Connection to Radio	Dial Setting	Dial Setting	Special Instructions
1	Ground lead to B-; output lead through .1 mf. condenser to mixer grid (pin 6 of 7A8).	460 kc.	540 kc.	Adjust tuning cores, in order given, for maximum output.
2	Radiating loop (see note below).	1600 kc.	1600 kc.	Adjust trimmer for maximum output.
3	Same as step 2.	1500 kc.	1500 kc.	Adjust trimmer for maximum output.

RADIATING LOOP: Make up a 6—8 turn, 6-inch diameter loop from insulated wire; connect to signal-generator leads and place near radio loop aerial. The loop aerial must be connected.
NOTE: If RF Transformer is replaced, it is necessary to adjust for maximum output at 600 kc.

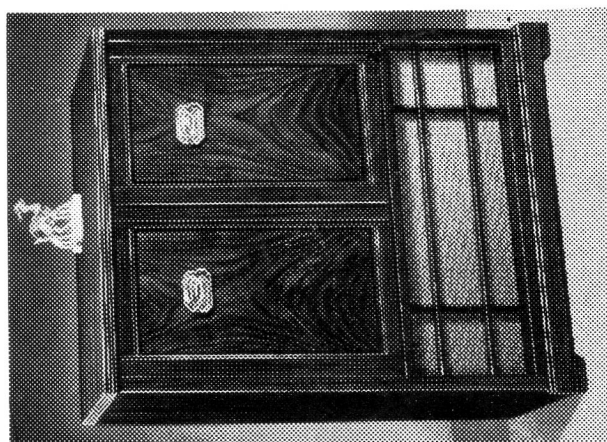


Top View, Showing Trimmer Locations

Philco TROUBLE-SHOOTING Procedure

For rapid trouble-shooting.

After isolating the trouble to a single stage, the defect is located by: first, testing the tube; second, measuring tube electrode voltages; third, measuring circuit resistances; fourth, substituting condensers. The trouble revealed should be corrected before testing further.



Preliminary Checks

To avoid possible damage to the radio, the following preliminary checks should be made before it is turned on:

1. Inspect both the top and the bottom of the chassis. Make sure that all tubes are secure in the proper sockets, and look for any broken shorted connections, burned resistors, or other obvious sources of trouble.
2. Measure the resistance between B+ (pin 2 of 50X6 rectifier) and B-, test point B. When the ohmmeter test leads are connected in the proper polarity, the highest resistance reading will be obtained. If the reading is lower than 8000 ohms, check condensers 21A and C21B for leakage or shorts. The resistance value given is much lower than normal, and is not intended as a quality check of these condensers; the value given is the lowest at which the rectifier will operate safely while the voltage checks of power supply are performed.

SPECIFICATIONS

CABINET	Wood Console
CIRCUIT	6-tube superheterodyne
FREQUENCY RANGE	540—1620 kc.
AUDIO OUTPUT	3 watts
OPERATING VOLTAGES	115—120v., 60 cycle 728-2—115-120 v., 25 cycle
POWER CONSUMPTION	Radio—65 watts Phono—30 watts
TUBES	7B7(2), 7A8, 14B6, 35L6GT, 50X6
PHONOGRAPH	Model M20.