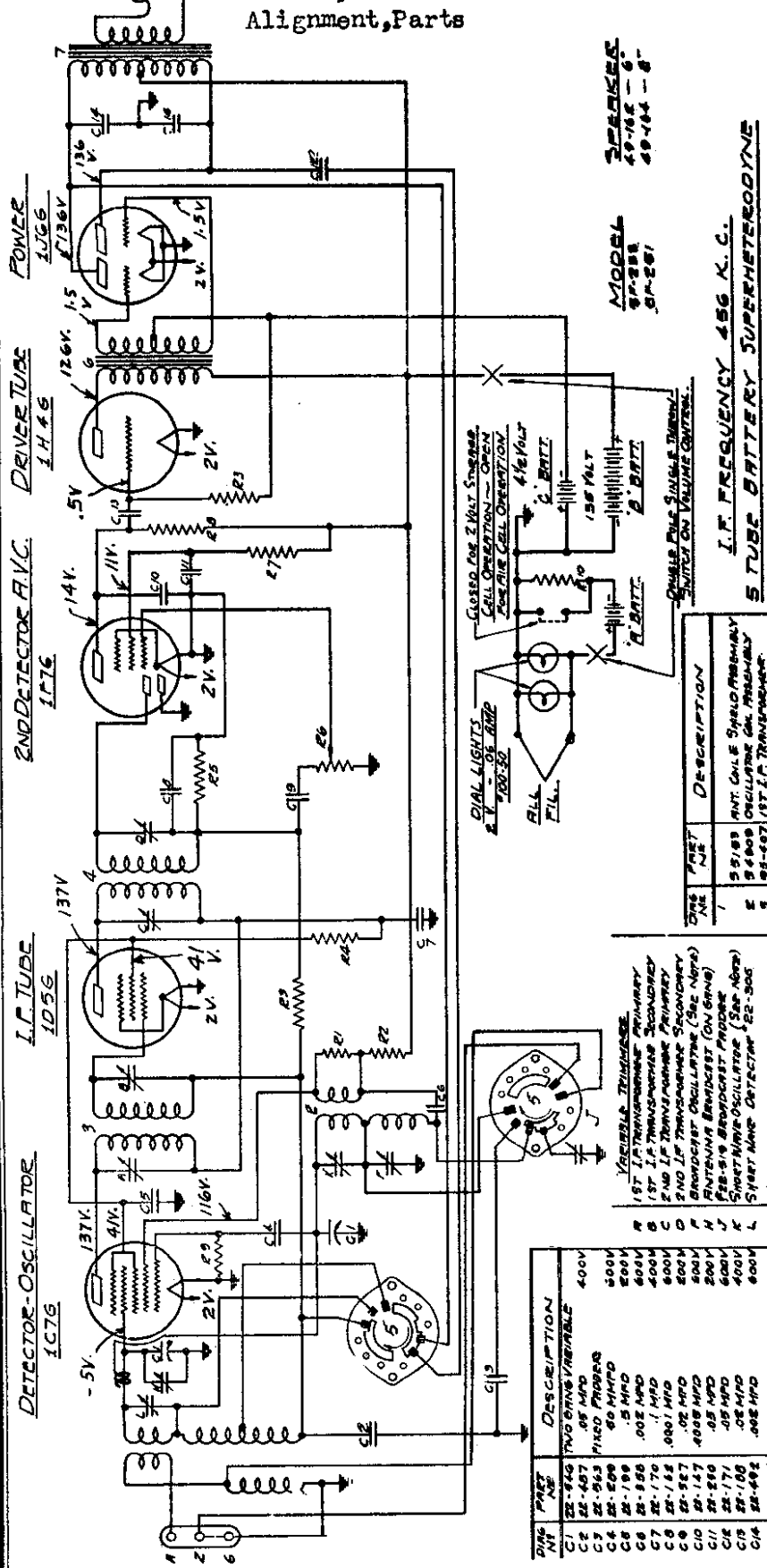


ZENITH RADIO CORP.

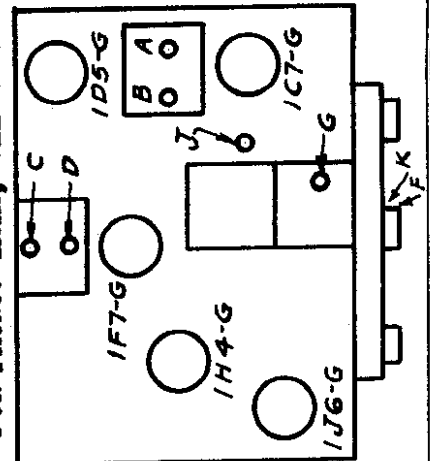
MODELS 5P233, 5P251
Chassis 5522
Schematic, Voltage

Socket, Trimmers
Alignment, Parts



MODEL SPEAKERS
5P-233 49-162 - 6"
5P-251 49-164 - 8"

FOR PHONO. DATA, SEE INDEX



ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to—	Dummy Antenna	Set Test Osc. to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	1/2 Mfd.	456	Br'dc1	600	ABCD	I. F. Alignment
2	Rec. Ant. Lead	200 Mmfd.	1500	"	1500	F	Set Osc. to Scale
3	"	"	1500	"	1500	G	Align of Ant.
4	"	200 Mmfd.	600	"	600	J	Rock gang & adj. for max. output
5	"	"	18000	"	18000	FG	Repeat 3 & 4.
6	Rec. Ant. Lead	400 Ohms	16500	S.W.	16500	K	Set Osc. to Scale
7	"	400 Ohms	16500	S.W.	16500	L	Rock gang & adj. for max. output

ONE PART NO.	TWO PART NO.	DESCRIPTION
1	5P-233	ANT. COIL SHIELD ASSEMBLY
2	5P-233	OSCILLATOR COIL ASSEMBLY
3	5P-233	1ST I.F. TRANSFORMER
4	5P-233	2ND I.F. TRANSFORMER
5	5P-233	3RD I.F. TRANSFORMER
6	5P-233	2ND I.F. TRANSFORMER
7	5P-233	SPEAKER TRANSFORMER (ON 5P-233)

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Philco 38-2

For 25-cycle operation, the following parts must be changed in addition to the power transformer: the 0.25-mf condenser, No. 98 on the schematic on page 8-55 of *Rider's Volume VIII*, is removed and replaced with a 1 mf-0.5 mf, part No. 30-4549. The white wires of this condenser are connected across the choke, No. 99, and the red wire to the junctions of Nos. 59, 60, and 66 (in the plate circuit of the 1st a-f tube). Also remove the 8-mf electrolytic condenser, No. 96, and replace it with a 16-mf electrolytic condenser, Part No. 30-2200.

Beginning with Run No. 2, the i-f circuit has been changed to use permeability-tuned i-f transformers. These changes and the locations of the compensators are shown on the accompanying partial schematic and layout. Note that the schematic numbers of parts differ from those in the schematic on page 8-55. The wires from each circuit, however, have been marked indicating the connecting points on the schematic in *Rider's Volume VIII*.

The compensators are adjusted as follows: The range switch of the receiver is set in the broadcast position; the volume control at maximum; the magnetic tuning switch, to "off"; and the tone control in the first position. The signal generator is set at 470 kc.

Using a 0.1-mf condenser as a dummy antenna, connect the signal generator to the grid of the 6A8G detector-oscillator tube and connect the cable ground to the set chassis. Set the attenuator of the signal generator for maximum output and adjust the i-f compensators as follows:

1. Turn compensator 1XB in until the output meter reading decreases almost to zero.

2. Now adjust the compensator 1XA and 1XC for maximum output; then readjust 1XB for maximum output.

3. Turn compensator 2XC in about three turns; then adjust 2XA and 2XB for maximum output. The adjustment procedure for 2XC is the same as that given at the bottom of page 8-56 in *Rider's Volume VIII* headed "Magnetic Tuning Circuit Adjustments."

In Run No. 3, a 250-mmf condenser, Part No. 30-1032, was connected from the screen of the 6U7G to ground to prevent parasitic oscillations.

Beginning with Run No. 4, the 6U7G r-f tube was replaced with a 6K7G to eliminate parasitic oscillations. In addition to the tube change, the green wire connecting the screen contact of the 6U7G and condenser 6 (0.05 mf) was increased in length. This wire should circle around the 6U7G socket towards the front of the r-f unit and then back to condenser No. 6. Place the wire as close to the base as possible.

The 250-mmf condenser that was added in Run No. 3 (see above) was removed in this run.

Philco 38-9, Code 121

In Run No. 2, a 20-ohm resistor was connected in series with the cathode of the 6A8G detector-oscillator tube to provide uniform performance of the oscillator circuit. The next run, this resistor was removed. See schematic on page 8-65 of *Rider's Volume VIII*.

Stromberg 150L

Complaints have been received now and then about there being too little bass response in this receiver. If more bass is desired, the following changes in the bass control circuit can be made:

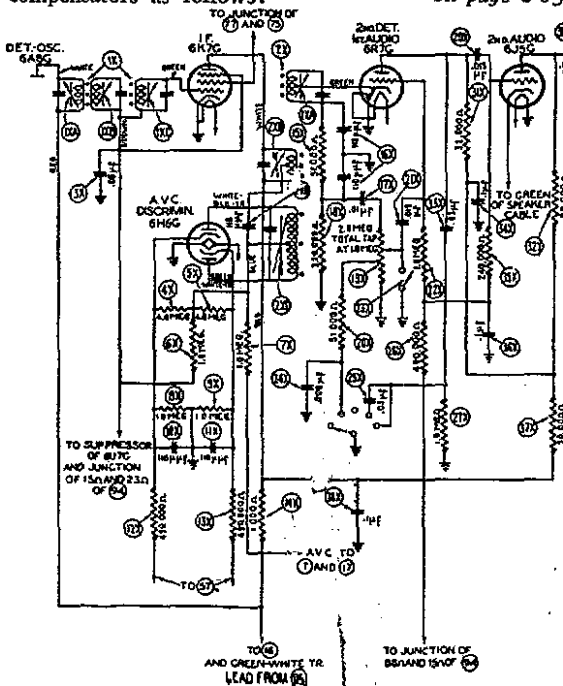
Remove the 10,000-ohm resistor, No. 189 in the schematic on page 8-7, 8 in *Rider's Volume VIII*, and replace it with a 47,000-ohm unit, Part No. 26353. Also replace the 0.04-mf condenser, No. 110 in the volume control circuit, with one having a capacity of 0.01 mf, Part No. 25149.

Note that these changes are not essential except when more bass response in this model is requested.

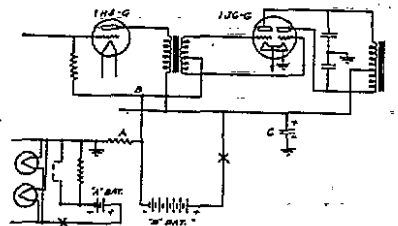
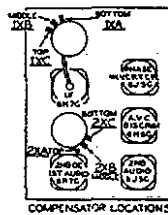
Zenith 5F233, 5F251

Complaints of short B-battery life or poor tone quality in 4- and 5-tube 2-volt receivers can be corrected by eliminating the C battery and converting the circuit to automatic bias and by by-passing the plate voltage in the set with an electrolytic condenser. The partial schematic diagram shown herewith shows where the changes are made in the chassis No. 5522 (used in the models mentioned above) as an example. See page 8-5 in *Rider's Volume VIII*.

Disconnect the negative B-battery yellow lead where it connects to the chassis inside the chassis base. Connect a 300-ohm resistor (1/4-watt) in series with this lead to ground. See "A" in schematic. Run the bias lead from the grid of the 1H4G and the grid of the 1J6G to the yellow B lead under the chassis. Disregard the green lead as the C-battery is omitted. See "B" in schematic.



The circuit of the Philco model 38-2 was changed when permeability tuned i-f transformers were substituted for those previously used. Note that the parts numbers in the revised partial schematic at the left, do not correspond with the numbers on the schematic on page 8-55 of *Rider's Volume VIII*, but that the loads going to the parts of the circuit not shown, employ the original numbering.



Partial schematic of Zenith 5F233, 5F251

Connect an 8-mf, 150-volt electrolytic condenser from +B to ground after the B circuit switch so that it is not connected across the B batteries when the receiver is turned off. See "C" in schematic.

These changes allow the bias voltage to drop automatically as the B voltage decreases and thereby preserves the tone quality. Originally the bias voltage remained constant when the B voltage dropped. The batteries should be useable down to about 50 volts or a 135-volt drop.