INSTRUCTIONS

for

PHILCO Model 088
All-Wave
SIGNAL GENERATOR
(Fundamental Frequency)

PHILCO

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PARTS AND SERVICE DIVISION

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Instructions

PHILCO MODEL 088 SIGNAL GENERATOR

Features

The PHILCO Model 088 Signal Generator covers a range of 110 to 20,000 K.C. in five (5) accurately calibrated bands.

Although this instrument was designed to meet every requirement of the serviceman, such as portability and convenience of operation, the foremost consideration has been the attainment of performance which would facilitate highly accurate adjustments to all types of receivers, so that the original performance obtained through factory adjustments by means of extremely expensive equipment could be maintained. Through the use of a single type 1C6 tube as oscillator and modulator, any chance of a confusing series of additional signals on the higher frequency bands has been prevented. The application of sufficient voltage to the electrodes of this tube ensures the highest stability in operation at all frequencies. Additional segments in the waveband switch maintain uniform modulation on all bands.

Most important of all, permanent reliability is assured through the use of high-quality materials characteristic of PHILCO construction, such as temperature-proof compensating condensers, non-drift solenoid type oscillator coils and rugged micrometer drive ball-bearing tuning condenser.

Operation

Refer to the illustration on the cover of this folder. The on-off switch is combined with the waveband switch and disconnects both filament and plate voltage when turned to the "off" position. Through this arrangement, operation of the signal generator can be discontinued or resumed at the same frequency and attenuation level without disturbing any of the adjustments.

The switch located on the front panel just under the waveband switch is used to provide an unmodulated signal as required in aligning radios such as the Philco Models 200 and 201. For the usual modulated signal the switch should be thrown to the "Mod. on" position, and to the "off" position for an unmodulated signal.

The attenuator affords a continuous stepless control of output which makes possible throughout most of the ranges of the signal generator a ratio of change as great as 20,000 to 1.

Every Model 088 signal generator is equipped with a special cable for connecting it to the Radio Receiver. The part number of this cable is 38-5105.

Two separate connections for the antenna are provided on the panel, so that maxinum efficiency in aligning both R.F. and I.F. circuits, will be obtained.

For aligning R. F or antenna circuits, use the post marked "medium", which gives a low impedance output.

For aligning I. F. circuits, use the post marked "high".

Batteries

Philco Model 088 signal generator is supplied without batteries. The following batteries are required to operate this instrument:

2 No. 2 flashlight cells

1 45 volt "B" battery—dimensions—5⅞" high, 2½" deep, 4¼" wide.

1 22½ volt horizontal type "B" battery, dimensions 4" long, 2½" wide,

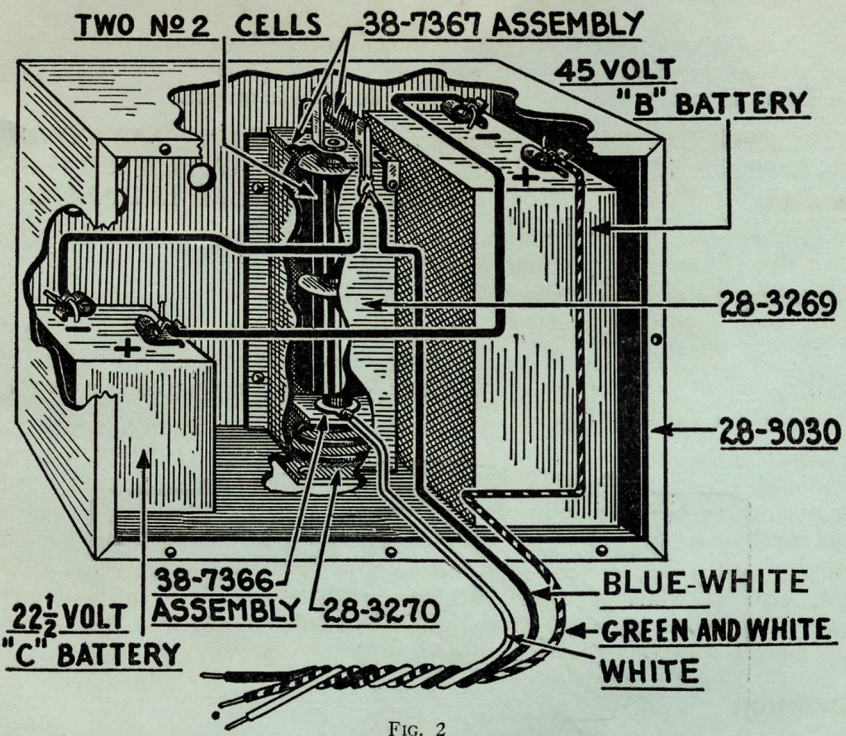


FIG. 2

2¾" high. (This is marked "C" battery on the illustration as it is the type used for "C" voltage on battery operated radios.)

The batteries are connected as shown in Fig. 2, and are installed in the following manner.

(Make sure the wave band switch is in "off" position before attempting to install batteries.)

Remove the "A" battery case end, also the spring and insulator, slide the No. 2 cells in, one at a time, with their positive terminal (brass tip) going in first. Replace the spring, insulator, and "A" battery cover plate.

Mount the "B" batteries as shown in Fig. 2 by means of the two clamps provided. Before clamping the batteries in place, use the 12" jumper wire to connect the negative (—) terminal of the 45 volt "B" battery to the positive (+) of the 22½ volt "B" battery.

Fold one of the paper insulators around each clamp before mounting, with the long section of the insulator around the long section of the clamp. Also place the flat fibre insulator on top of the 22½ volt "B" battery.

Connect the green and white wire to the positive (+) terminal of the 45 volt "B" battery. Connect the jumper wire from the resistor mounted on the end of the "A" battery case to the negative (—) terminal of the 22½ volt "B" battery.

Replaceable cabinet and mounting parts are listed below.

Part No.	*Description*
29-3030	088 cabinet
29-3269	Battery case for "A" batteries
29-3270	Battery case cover
29-1843	22½ volt "B" battery clamp
29-3278	45 volt "B" battery clamp
27-7967	Cabinet feet

Part No.	*Description*
38-7366	"A" battery end contact ass'y (Neg.)
38-7367	"A" battery end contact ass'y (Pos.)
27-7567	Paper insulators for battery clamps
27-7963	Fibre insulator for 22½ volt battery top
W-578	Battery clamp screw—6/32x1¾"
W-136B	Battery clamp screw—6/32x ⅜"
W-613	Battery clamp screw—6/32x2"

The A and B batteries should be tested periodically. Deterioration of the A cells will first have the effect of stopping oscillation on the high-frequency scales, while a reduction in B voltage will be indicated by a decrease in output.

BEFORE REMOVING THE PANEL FROM THE CASE TO TEST THE BATTERIES BE SURE THE WAVEBAND SWITCH IS TURNED TO THE "OFF" POSITION. OTHERWISE THERE IS DANGER OF BURNING OUT THE TUBE.

Adjusting Dial Calibration

Individual compensating condensers have been provided for adjusting the calibration of each scale. Any one of these compensators can be adjusted without affecting the calibration of any other scale. The location of compensating condensers for the various scales is shown in Fig. 3.

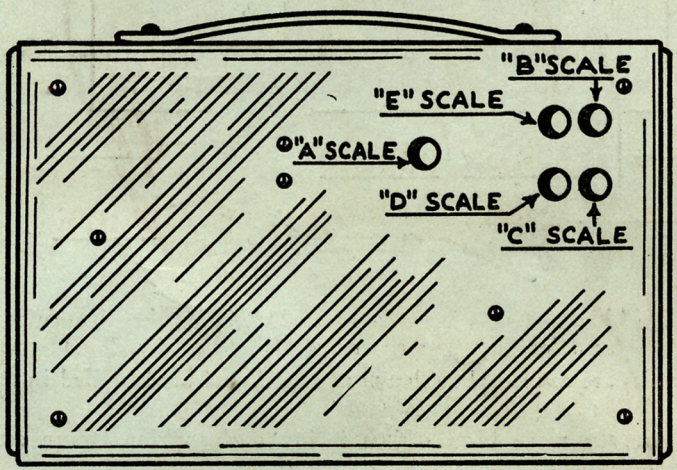
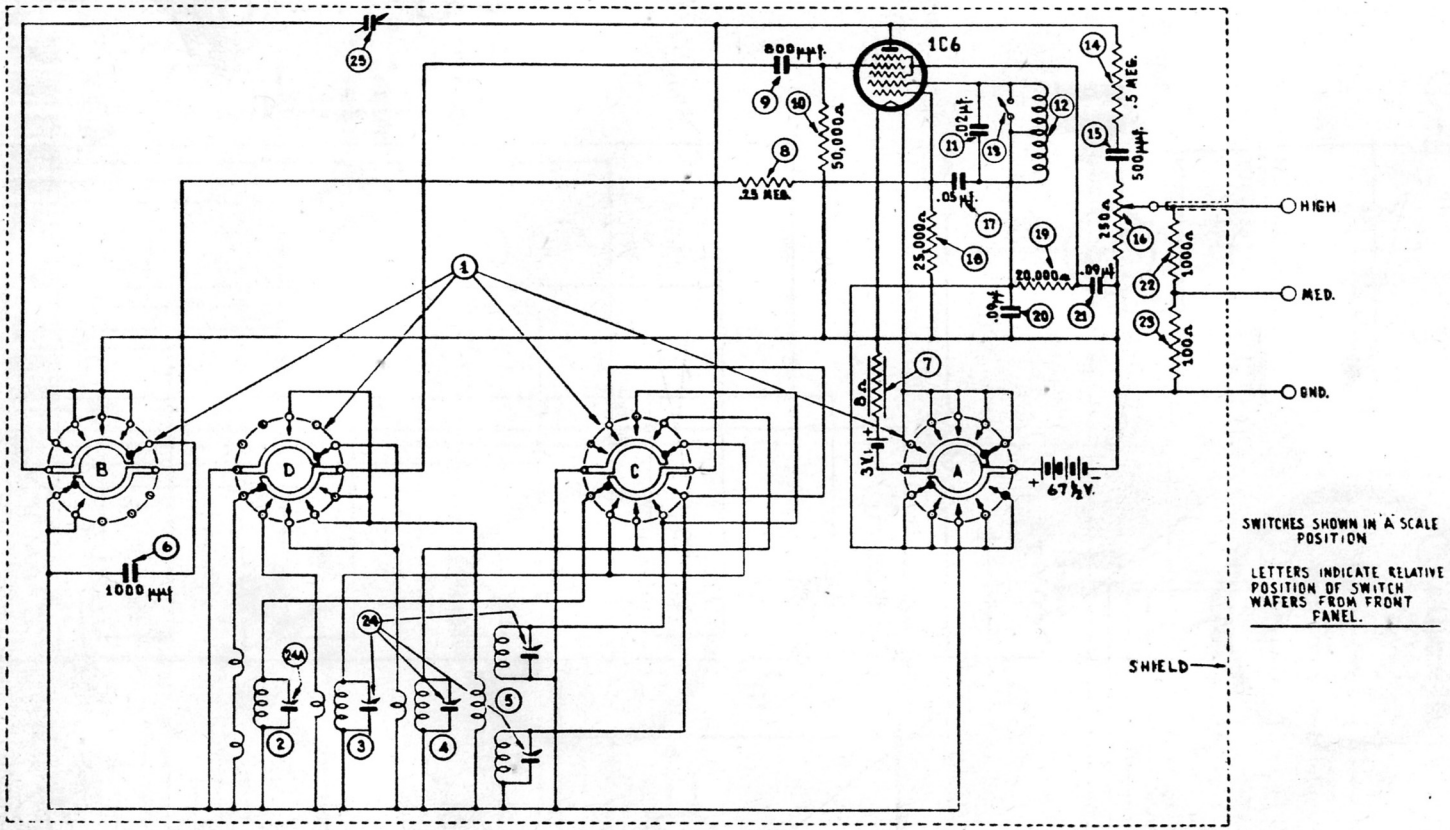


FIG. 3

Before adjusting compensators, check the adjustment of the dial indicator, as follows: Loosen the set screw in the dial-knob shaft, turn the condenser to the fully closed position. Then, with the bottom edge of the indicator needle set to arrow, tighten the set screw. This is the correct adjustment.

Readjustment of the compensators can be accomplished by connecting the signal generator to a receiver, the calibration of which has been checked against accurately controlled broadcasting stations. Corrections should always be made with the signal generator pointer at a position near the high-frequency end of the scale. It will be necessary, of course, to choose a point which coincides with the frequency of the broadcasting station used to check the calibration of the receiver.

In making the adjustments on the D and E scales it may be found that the compensating condenser has sufficient range to tune the signal generator to the image frequency of the receiver being used. It is, therefore, important to check this possibility before assuming that the adjustment has been properly made. If, for example, the E scale is being adjusted at 15 M.C. and the receiver being used for calibration purposes has an intermediate frequency of 460 K.C., a second signal will be produced by adjusting the signal generator to 15,920 K.C. To make certain that this has not been done, turn the receiver dial to 14,080 K.C., at which point a second signal should be received if the signal generator is operating at 15 M.C.



PHILCO MODEL 088 SIGNAL GENERATOR
(SCHEMATIC DIAGRAM)