

# USING VACUUM TUBE VOLTMETER FOR ALIGNING COMPENSATORS AND ADJUSTING PUSH-BUTTONS

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Precision adjustment of the compensating condensers and push buttons on automatic tuning models is obtained by the use of a vacuum tube voltmeter in the A.V.C. circuit. To set up stations or adjust compensator for best reception, a signal generator such as Philco Model 070 and vacuum tube voltmeter such as Philco Model 028 or 027 should be used. With this equipment proceed as follows:

1. Attach the negative (—) terminal of the vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A.V.C. voltage can be obtained, such as the grid of the I.F. tube, R.F. tube, or diode circuit of the A.V.C. tube. Connect the positive (+) terminal to the ground connection or chassis of the receiver. In AC-DC sets the positive (+) terminal of the vacuum tube voltmeter should be connected to (B—) of the receiver.

For aligning receivers with loktal type tubes, an aligning adaptor, Philco Part No. 45-2767 may be used with the vacuum tube voltmeter. To use the adaptor, remove the second detector tube from its socket and insert the aligning adaptor in the socket then replace the tube in the adaptor. Connect the negative (—) terminal of the vacuum tube voltmeter to the light colored wire which protrudes from the side of the adaptor. Attach the positive (+) terminal of the vacuum tube voltmeter to the black wire of the adaptor.

2. With the vacuum tube voltmeter connected to

the receiver, the signal generator is connected to the antenna and ground terminals of the receiver.

3. Manually tune in the first station to be set up on push button. After doing this, set the indicator of the signal generator to the frequency of the station to be received. As the indicator approaches the frequency of the station, a whistle will be heard; leave the indicator at this point. Press in the push button being set up. With a padding stick, turn the push button oscillator screw until the broadcast station identified by the signal generator is heard. At this point, turn the indicator of the signal generator away from the frequency of the station. Re-adjust the push button oscillator and antenna padders for maximum deflection on the vacuum tube voltmeter. When this point is obtained, the push button is adjusted for maximum signal strength. After setting up the first station, the same procedure as outlined above is used for the remaining stations.

4. When aligning the R.F. and I.F. compensating condensers of the receiver, the procedure as outlined in paragraphs 1, 2, and 3 is followed with the exception that the push buttons are not depressed. The signal generator and receiver dials are set to the frequency desired or specified in the aligning procedures given for the various radios in this manual. The R.F. and I.F. padders of the set can then be adjusted for maximum signal strength, with the vacuum tube voltmeter connected to the A.V.C. circuit.