

PHILCO SERVICEMAN



RADIO • MANUFACTURERS • SERVICE • NEWS

FEBRUARY, 1942



RADIO SERVICEMEN ENTHUSIASTIC ABOUT R.M.S. ACCOMPLISHMENTS

R.M.S. Questionnaire Brings Huge Response

Many hundreds of R.M.S. members from every corner of Canada took the trouble to fill in a questionnaire that was recently mailed to them. Typical replies were:

Wm. L. Mulligan, Toronto—"My appreciation of your mailings. I find your parts lists and circuits of real use to keep us up to date. The use of your tubes entirely promotes confidence in my work."

Normand Galipeau, St. Johns, P.Q.—"The Philco Serviceman is very useful."

Fisher Radio Service, London, Ont.—"We appreciate these mailings very much, and especially the Service Bulletins."

K. S. Dack, Carleton Place, Ont.—"R.M.S. Mailings, Philco Serviceman and Service Bulletins very helpful."

B. W. Embree, MacGregor, Man.—"I thank you for the fine information in R.M.S. mailings and hope that the organization continues to prosper, also that Philco may continue to stay at the top of fine radios and sales continue to be large."

McKeeman and London, Bathurst, N.B.—"We find the R.M.S. mailing very helpful."

Harry R. Robinson, Regina, Sask.—"I find R.M.S. service bulletins invaluable."

Wm. L. Grant, Glace Bay, N.S.—"I think your mailings are as good as they can possibly be, they are very timely and helpful."

W. J. Bruce-Marsden, Milo, Alta.—"R.M.S. mailings are a splendid help to me."

H. Smee, Vancouver, B.C.—"I think you are doing a very excellent job. The Philco Serviceman has lots of information not available otherwise."

Federal Radio Service, Toronto, Ont.—"Just keep up the good work, for which you have our deep appreciation and thanks."

New Vest Pocket R.M.S. Standard Labour Charges

Philco distributors now have available a new vest pocket size printing of the popular R.M.S. Standard Labour Charges. The size is 2½" x 6" when folded. R.M.S. members are finding these cards very handy for carrying around on service calls—making estimates etc.

The price is very nominal.

PHILCO SERVICE INFORMATION

Philco Service Information and Wiring Diagrams are available for all Philco home and automobile radios. The following list shows the contents and R.M.S. net price of each volume. Years quoted are model years.

Volume

H.R. Vol. 1 (PR-329D)—Domestic Radios up to and incl. 1936	(\$1.50 with binder \$1.00 less binder)
H.R. Vol. II (PR-329E)—Domestic Radios, 1937 and 1938	(\$1.50 with binder \$1.00 less binder)
H.R. Vol. III (PR-329F)—Domestic Radios, 1939	(\$1.00 less binder)
C.R. Vol. IA	Standard car radios up to and incl. 1938, and custom car radios up to and incl. 1937
C.R. Vol. II	Standard car radios, 1939, and custom car radios, 1938 and 1939
1940 Year Book	All domestic radios, all standard car radios, and all custom car radios issued during the calendar year of 1939
1941 Year Book	All domestic radios, all standard car radios, and all custom car radios issued during the calendar year of 1940
"Aligning Philco Receivers"—by John F. Rider—Vol. I	Gives alignment data on all U.S. Philco receivers up to and including 1937 models (147 pages) A necessary supplement to H.R. Vol. I (PR-329D), because alignment data is not given in H.R. Vol. I
"Aligning Philco Receivers"—by John F. Rider—Vol. II	Gives alignment data, etc., on all U.S. Philco Receivers up to and including the 1941 models (192 pages)
R.M.S. Course of Lessons—	A 26-Lesson course of Radio Theory and Practice especially written for R.M.S. members interested in brushing up their fundamental knowledge
U.S. 1939 Year Book—	(PR-762) All U.S. Philco Home Radios, standard car radios, etc., for model year 1939
U.S. 1940 Year Book—	(PR-795) All U.S. Philco Home Radios, standard custom car radios, for model year 1940 and custom and car radios for the model years 1938 and 1939
U.S. 1941 Year Book—	(PR-874) All U.S. Philco Home Radios and Auto Radios for Model Year 1941
R.M.S. 2 Ring Binder—	Same as used for Service Manuals
R.M.S. 3 Ring Binder—	Especially suitable for Philco Parts Catalogue

ALL PHILCO SERVICE INFORMATION AND MATERIALS ARE AVAILABLE FROM YOUR PHILCO DISTRIBUTOR

New Parts Catalog Pages

Twenty new Philco Parts Catalogue pages have just been distributed to all members of Philco's Radio Manufacturers Service, and to all Philco distributors. If you haven't received your copies yet, be sure to get them from your Philco Distributor. The new sheets cover:

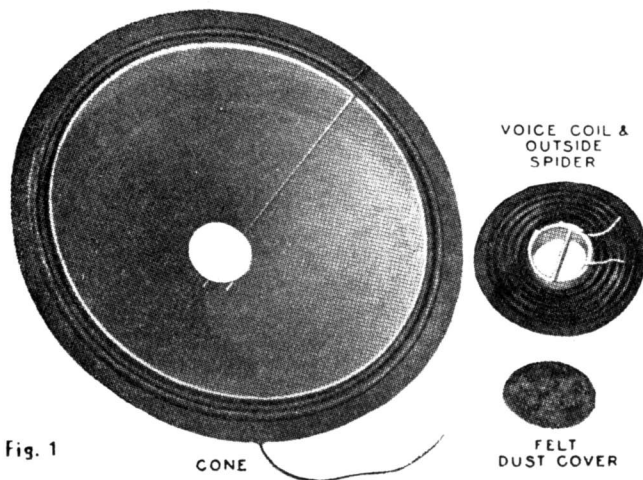
Complete listings of major parts used in all Philco Home Radios and Auto Radios announced to date.

Complete list of all tubes used in all Philco radio models announced to date—by models and years.

Average popularity of each Philco tube type—a great convenience in ordering tubes for stock.

Complete new listing of all R.M.S. materials, literature, signs, etc.

REPLACING PHILCO SELF-CENTERING



Complete information is given here for replacing a Philco self-centering Outside Spider Speaker Cone. The method used in mounting the cone assembly prevents any foreign objects or dust from collecting in the air gap of the voice coil.

The Self-Centering Cone Assembly consists of three main parts—the voice coil and outside spider assembly; the cone; and the felt dust cover. These assemblies are shown in Fig. 1.

For holding the cone in place, a tube of Philco Cement, Part No. 45-2623 should be used. The container for this cement has a special nozzle for applying cement to the cone and housing surfaces.

Different stages in the assembly of the cone are shown in Figures 2 to 6 inclusive. In Fig. 2 the cone housing, or speaker frame, is shown with the cone removed and the mounting surfaces prepared for the new cone.

The next step is the cementing of the outside spider and voice coil in place. This is shown in

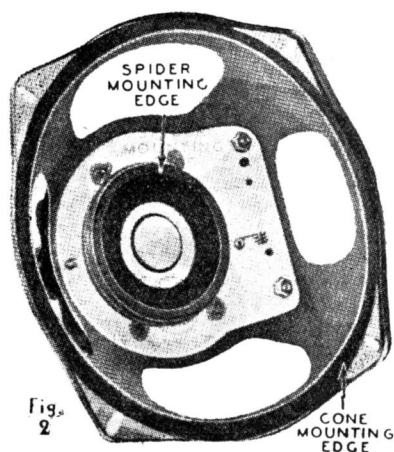


Fig. 3. Fig. 4 illustrates the cone assembled on the voice coil, and the points to be cemented or soldered. The removal of the voice coil gauge is shown in Fig. 5, and the completed cone assembled in the speaker is shown in Fig. 6.

The replacement of the Self-Centering Cone Assembly is a simple operation. However, there are a few important steps in the assembly of the cone which should be closely followed. To replace a cone, proceed as follows:

A. Unsolder the voice coil leads from the terminal panel, and remove the old cone by tearing it from the mounting frame.

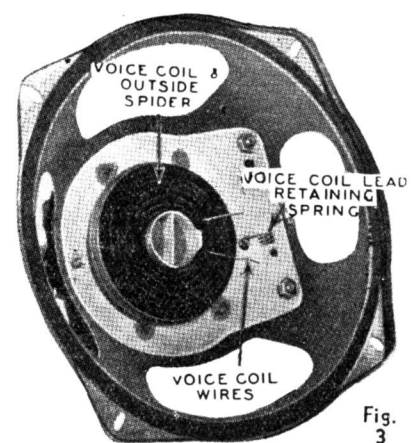
IMPORTANT—Do not scrape off the remaining paper or cement left on the speaker frame when the cone and spider are removed, as this provides an excellent cementing surface for the new cone.

If, however, the remaining paper and cement are unevenly distributed on the mounting edges, remove the large pieces of paper in order to obtain an even surface.

B. To remove any foreign objects that may have accumulated in the “air gap” when the cone was being removed, insert a small strip of friction tape into the air gap and draw it about the surfaces.

C. Apply Philco cement around the spider mounting edge of the housing (See Fig. 2). Insert the new voice coil and spider assembly into the air gap, making sure that the voice coil leads face toward the voice coil lead retaining spring or clamp (see Fig. 3).

Now press the edge of the spider so that it will adhere to the surface of the mounting edge.



OUTSIDE SPIDER SPEAKER CONES

D. With the voice coil in place, apply cement to the cone mounting edge (see Fig. 2). Insert the cone over the voice coil, with the two voice coil leads facing the two cone leads as shown in Fig. 4. When the cone is properly inserted, it will set about $\frac{3}{32}$ of an inch below the top edge of the voice coil.

Press the edge of the cone so that it will adhere to the surface of the mounting edge.

Now, in order to attach the voice coil to the cone, apply a small bead of cement at the point where the two sections meet (see Fig. 4).

When applying the cement at this point, make sure that the cement does not run over into the inside surface of the voice coil.

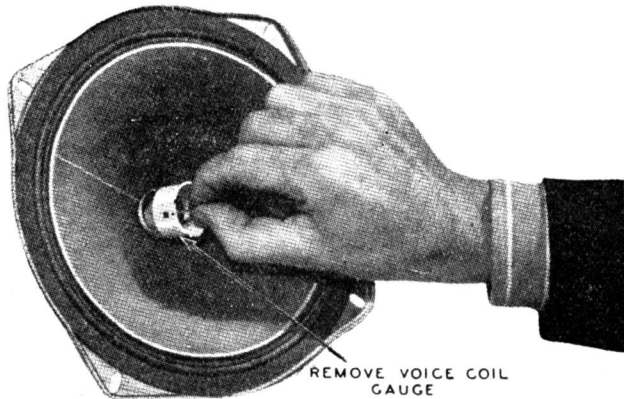


Fig. 5

After the cone is cemented into place, the speaker unit should be allowed to stand for at least one hour, and preferably longer, in order to allow the cement to dry properly.

For more rapid drying of the cement heat may be applied, but this should be done very cautiously.

After the cement has thoroughly dried on all surfaces, solder the two voice coil wires to the cone leads at the points shown in Fig. 4, and continue with the next step.

Also insert the voice coil leads into the retaining spring and solder to the terminals of the transformer or terminal panel.

E. Tear the two perforated tabs from the voice coil (see Fig. 4). With these tabs removed, grasp the paper centering gauge with the thumb and forefinger and pull directly out of the voice coil (see Fig. 5).

Caution—Before the gauge is removed, be sure that the cement is dry on all cemented surfaces.

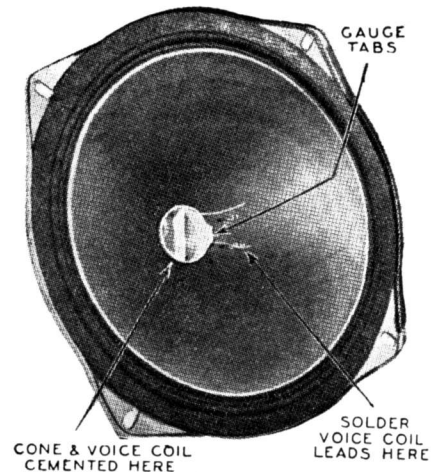


Fig. 4

F. The small felt dust cover is now attached to the cone as shown in Fig. 6 by applying a small ring of cement around the felt about $\frac{1}{8}$ " from edge. With felt dust cover in place, the speaker is ready for use.

When a voice coil gauge is not supplied, as in the case where the voice coil, cone, and spider are already glued together, the new cone and voice coil assembly is placed in position on the freshly glued spider mounting edge and cone mounting edge. Then three or four stiff paper spacers about $\frac{1}{4}$ " x $1\frac{1}{2}$ " x .006" are curved to fit the air-gap and immediately slipped into place around the core between the inside of the moving coil and the steel core. The paper spacers are removed after the assembly has completely dried.

Be certain that the flexible leads from the voice coil allow sufficient slack for free movement of the voice coil in its normal operation. Be certain also that the flexible leads do not contact the frame or housing at any time while the voice coil is in motion.

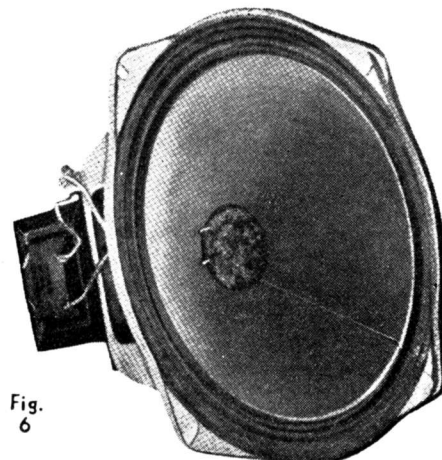


Fig. 6

Questions and Answers

1. Q. A Philco Mystery Control Model 39—3116RX works perfectly except on remote control. After the battery pack was changed, and the type 30 tube replaced, the control operated perfectly for changing stations, but was completely unreliable for either increasing or decreasing volume. What is the cure for this?

A. Probably the 2A4G tube has lost considerable of its emission strength and is not capable of sustaining emission steadily for the period of time necessary to operate the volume control motor. Try replacing the 2A4G tube with a new one.

2. Q. What is the simplest solution for slipping drives on models such as the Philco 46T where the drive cord passes over a small pulley on the drive shaft and seems to slip at that point?

A. Tightening of the tension spring is not the answer in these cases. The best solution is to increase the friction of the drive cord against the

small pulley by rubbing a little Philco Dial Cord dressing, part No. 45-6118 on the drive cord. Increasing the spring tension will only result in bending the dial bracket, or pulling the cord out of line so that it rubs on the edge of the chassis.

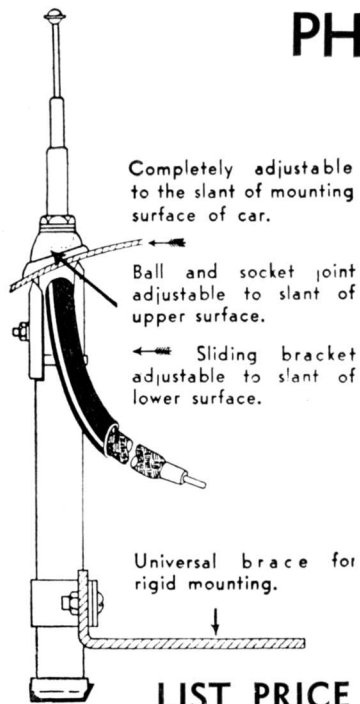
3. Q. What is the quickest method of finding the cause of vibrator hash in Philco Auto radio model C1608?

A. The source of hash may be localized by removing the tubes in order starting with the 78E R.F. tube, followed by the 6A7E, next the 78E I.F., and finally the 75 audio and 42E output. If the noise disappears when the 78E R.F. tube was removed, it would of course indicate that the noise was either caused by a fault in this circuit, or was being picked up by this circuit because its wiring was too close to wires actually carrying the noise. A continuance of the noise after the first tube is removed would indicate that there is no fault in this circuit. After the trouble has been localized in this manner, it will be necessary to test the tube and the other components in

the circuit to determine the exact cause.

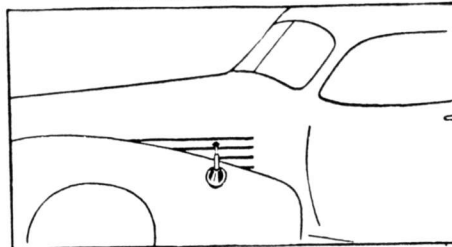
4. Q. What is the probable cause of bad tone on a Philco Model 810 auto radio that when first turned on has a distorted fuzzy sound which clears up in about one-half hour? All plate and screen voltages are very much lower on this set than on most auto radios.

A. The description indicates a thermal condition of some kind, that is the defective part is only defective while it is cold, and resumes correct operation as soon as a certain temperature is reached. We have found that this condition may sometimes be caused by a defective 2nd I.F. transformer. The filter condensers should also be checked. A satisfactory method for locating trouble of this type is to use a pair of earphones in series with a .01 mfd. condenser and check back at various points through the set until a section is found that is free of distortion. This will indicate the approximate location of the defective part causing the distortion.

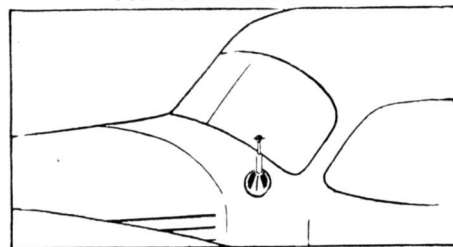


PHILCO HIDEAWAY AERIAL

FOR FENDER INSTALLATION



FOR COWL INSTALLATION



High "Q" lead-in includes additional 18 inch waterproof section covered with heavy rubber sleeve for fender installations. No adapter kits, lead-in extensions, etc., to buy! Three section aerial rod extends to 45 inches. Concealed portion of aerial projects only 15¼ inches below the surface of fender or cowl.

Part No. 91-0227.

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