

Loudspeaker Service Data

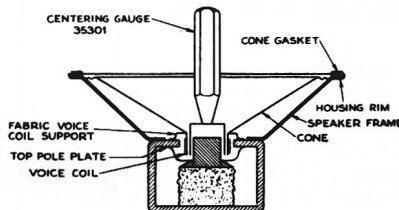
REPLACING CONES

In Speakers with Cemented Voice-Coil Support:

In some types of speakers, the fabric voice-coil support is cemented to the top-pole plate. This design provides more accurate and permanent centering, by eliminating possible strain and movement that may occur in tightening the screws on speakers that have adjustable-type voice-coil supports.

If the voice coil scrapes in the gap, it may be caused by:

- (1) A bent speaker frame. This condition can usually be corrected by bending the frame in the required direction.
- (2) A warped voice coil, or a warped voice coil support. This condition requires installation of a new cone, as follows:
 - (a) Remove old cone by cutting around the cone rim and the voice coil support.
 - (b) See that the air gap is uniform and clean. Cover the gap with a piece of "scotch tape" to prevent entry of dirt and metallic particles.
 - (c) Remove all paper and cement from rim of cone housing and from the top-pole plate.
 - (d) Apply a ring of cement (Household) on top-pole plate and around rim of speaker frame.
 - (e) Carefully insert centering gauge (Stock No. 35301) into the voice coil of the replacement cone, handle first, from winding end. Remove scotch tape from



In Speakers with Cemented Voice-Coil Support, the Voice-Coil must be centered while cementing the support.

the air gap and insert the cone into the speaker, with the voice coil leads in correct position with respect to the terminals. Press cone rim onto the housing rim.

- (f) Apply cement on top outer edge of cone and lay the large cardboard cone gasket in place. Set the speaker in an inverted position on a smooth flat surface that has a $\frac{1}{2}$ inch hole for the gauge handle to clear, until the cement is dry (about 15 minutes). See that the voice coil support is pressing against the cement on the top-pole plate.
- (g) Work additional cement around the outer edge of the fabric voice-coil support, to insure positive grip

all around between the support and the top-pole plate.

- (h) Remove gauge from voice coil, using a rotary motion. Solder the voice coil leads in place, allowing sufficient slack to permit free motion of the cone. Dress the leads in the plane of motion, taking care that the leads do not strike against the cone, or cone housing. Cement dust cap on cone center.

REPLACING ELLIPTICAL CONES

In Speakers with Cemented Voice-Coil Supports:

- (a) Remove old cone. Clean housing thoroughly.
- (b) Apply a thick bead of household cement to yoke plate where cone centering support will fit.
- (c) Apply a thin coat of household cement to housing where cone edge will fit.
- (d) Put cone in position using several thin strips of paper to center voice coil.
- (e) Press cone edge and centering support down in cement and allow to dry.
- (f) After cement is dry remove cone centering strips.
- (g) Solder voice coil leads to proper terminals.
- (h) Cement center dust cap in position.

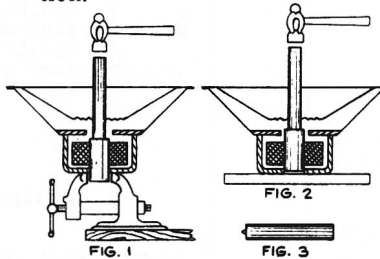


Fig. 1—Removing Field Core.

Fig. 2—Replacing Field Core.

Fig. 3—Tool to Facilitate Removal and Replacement of Core.

REPLACING FIELD COIL

In Speakers with Pressed Core:

Many RCA electrodynamic speakers have the field core pressed into the yoke. To replace the field coil in these speakers proceed as follows, **BEING VERY CAREFUL NOT TO DAMAGE THE VOICE COIL OR CONE:**

- (a) Carefully remove the front dust cover by means of a razor blade or a sharp knife.
- (b) Drive the core completely out of the yoke using a suitable piece of round steel rod as shown in Fig. 1.
- (c) Replace the field coil. Be sure that all spacers, washers, hum coil, and other parts are replaced in their original positions.
- (d) Insert the core down through the cone and field coil, and drive it in position as shown in Fig. 2.
- (e) If core is not centered in voice coil it can be driven from side to side, as necessary, with a center punch.
- (f) Cement a new dust cover in position on speaker cone.

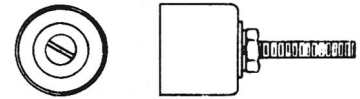
- (g) If desired a special tool for this purpose can be made locally with the end shaped as shown in Fig. 3. It should be made of drill rod or cold rolled steel and hardened.

- (h) An alternative method of removing the core is to use a gear puller and press it out from the back of the yoke.

CONE CENTERING GAUGE

For BP-10 Speaker:

A cone centering gauge for the BP-10 speaker (Stock No. 36504), is available. The gauge is carried as Stock No. 70003.



Stock No. 70003—Cone Centering Gauge

REPLACING CONES

In Speakers with (Metal) Cone

Suspension:

The installation of the cone in loudspeakers employing a (metal) cone suspension assembly, may be accomplished readily by use of centering gauges. Stock No. 35300 for cones with $\frac{3}{4}$ " voice coils, and Stock No. 35301 for cones with $\frac{1}{2}$ " voice coils. For best results in replacing a cone, it is essential that the following step by step procedure be used:

- (1) Remove original cone and all surplus cement, paper and foreign material from rim of housing and voice coil suspension bracket. See that air gap is uniform and clean.
- (2) Apply a liberal coating of household cement to the rim of speaker housing and to voice coil suspension bracket.
- (3) Carefully insert the centering gauge into the voice coil from the voice coil end, handle first; this is important in order to prevent possible damage to the voice coil form. With a twisting motion pull centering gauge into the voice coil leaving $\frac{3}{32}$ inch of gauge protruding beyond voice coil end. Be sure to inspect the inside of voice coil form for any foreign matter such as excess cement, etc., before inserting the gauge, otherwise damage to gauge may result if forced into coil form.
- (4) By pushing centering gauge over pole piece, cone can be lowered into contact with cemented surfaces. Smooth wrinkles from cemented surfaces. Be sure that voice coil leads are in correct position with respect to output transformer terminals.
- (5) After cone rim and voice coil suspension have been cemented in place allow ten minutes for cement to dry. Pee-wee or alligator clips may be used to clamp cemented surfaces together while drying.
- (6) Remove gauge from voice coil, with a rotary motion. This will facilitate its removal without undue force.
- (7) When not in use, keep gauge in shipping container to protect it from damage.