OVER THE SOLDERING IRON

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CAMDEN, N. J.

PREPARED FOR THE INFORMATION AND USE OF RCA VICTOR DISTRIBUTORS' SERVICE MANAGERS

ELECTROLYTIC CAPACITORS - WET TYPE

It is highly important that cartons containing replacement electrolytic capacitors be stored upright in a standing position. This is essential in order to prevent slow leakage of electrolyte through the venting outlet if the unit is left inverted or lying on its side for an appreciable time.

All instruments in shipment or in storage should likewise be kept with their top sides upward. Shipping cases and cartons are marked "This End Up" as an instruction for proper storage. This should be definitely followed.

The average type of wet electrolytic will freeze at temperatures of plus 15 degrees Fahrenheit and below. It is advisable, therefore, to refrain from storing or installing receivers under such conditions. Freezing is generally not harmful unless the receiver is operated before allowing the capacitors to thaw.

LOW SENSITIVITY - 1936-37 MAGIC BRAIN RECEIVERS

The molded toothpick type capacitor C-43, a 4700 mmfd. connected from screen grid of the 6L7 to chassis develops low resistance leakage or completely short circuits on some instruments of early production. Its initial effect is reduction of short-wave sensitivity and as the resistance becomes lower, the longer-wave bands are affected. Occasionally, the receiver may be intermittently insensitive due to this cause.

AUDIO SQUEAL - 6T, 6K, 6T2, 6K2, 7U and 7U2

Tendency to oscillate at high settings of the volume control may be due in some cases to proximity of the speaker cable to the 6F5 control grid lead. The cable should be dressed away from the tube and tied to the electrolytic case or tacked with an insulating staple to the side of the cabinet.

SERVICE DIVISION - RCA MANUFACTURING CO., INC.

HOWL AND MICROPHONISM - SHORT WAVE

Howl which develops on some receivers when they are used for reception on 13, 16 and 19 meters is brought about by vibration of the circuit elements of the heterodyne oscillator stage. This vibration, which is excited by acoustic energy from the loudspeaker, produces periodic variations of the oscillator constants and thereby causes a low-frequency modulation which appears in the output as howl. The greater tendency to howl on the shorter waves is due to the fact that at these higher frequencies, smaller changes of capacitance bring about greater changes of frequency. Table type receivers are generally more affected by howl, since the chassis and loudspeaker are in closer proximity. In servicing receivers of the present Magic Brain type (1936-37), certain operations may be performed in order to minimize or correct the howl. These operations are:-

(1) See that all packing materials, blocks, rear chassis clamps, gang condenser retaining tape, chassis and wedges, tube supports, etc. are removed. Also, see that chassis is not touching cabinet.

(2) Loosen chassis mounting screws slightly to increase flexibility of shock-proof supports. Also loosen the three nuts of the tuning capacitor mounting a small amount to increase flexibility.

(3) Replace 6J7 oscillator tube and re-align C-band trimmer (C-13). It is sometimes necessary to carefully select a replacement tube. Exchange of this tube usually reduces howl to a satisfactory minimum.

Should Howl Persist After The Above
Remove Magic Brain Under Cover And

(4) Shorten RED lead which connects from oscillator coil lug L-7 to band switch contact lug S-3-C, pulling it taut under band switch support rod, and keeping it separated from other leads and objects as far as possible.

(5) Shorten the leads of the C-band coupling capacitor C-19 so that it may be re-connected under tension and dressed as far away from adjacent capacitors, chassis and surrounding parts as possible.

(6) Apply Household Cement or melted wax by means of a brush to the small leads (ends of windings) on the inside of the oscillator coil form to prevent them from vibrating.

(7) Shorten leads of oscillator output coupling capacitor C-44 so that it may be re-connected taut between the 6L7 socket and band switch.

(8) Dress blue lead which connects from 6J7 plate to D-oscillator coil so that it has maximum separation from chassis, other leads and parts.

(9) Dress green and blue leads, which connect from lugs L-8 and L-9 to band switch, away from each other, nearby leads and objects.

(10) See that all screws, mounting nuts holding parts associated with oscillator circuit are tight.

(11) Carefully re-align oscillator circuits after re-arranging leads and parts.

MAGNETIC PICKUP:- Models 9-U, 9-U2, D-11-2, D-22, etc.

In servicing the pickup units for these instruments, more stable adjustment may be obtained by replacing the centering spring clamp with an improved type which has its surface knurled to provide a secure hold on the spring. The replacement clamp is stocked by the RCA PARTS DIVISION together with the hex-head special screw in packages of 10 as #14297 - List Price $0.30. Pickups which are properly centered but continue to cause distortion or rattle, should be closely inspected to see that the armature blade does not strike the coil or its form. Inspect the viscoloid damper also, to make sure it is properly and tightly attached to the armature shaft.

REFINISHING 5T7 BLONDE MAPLE CABINET

When it becomes necessary to re-finish sections of or to touch-up minor blemishes on this cabinet, the following line of procedure should be carried out.

Clean the surface to be refinished thoroughly. Using a spray gun, apply a thin coat of white lacquer surfacer, consisting of one part surfacer and two parts thinner. Allow this first coat to dry for about ten minutes. Spray on a second coat, using waxing lacquer and allow to dry for an hour. Sandpaper down with #220 grade paper, dust off and apply a spray coat of water white flat lacquer.

Fine scratches and surface blemishes may be rubbed out by using a fine rubbing abrasive and a cleaner composed of seven parts rubbing oil and one part V.M. & P. Naptha.

MODEL 8-U MOTOR

On some instruments of this type, a synchronous motor is used in place of the variable speed type covered in Service Notes and Instruction sheets, Replacement parts are available as follows:-

Stock #8989 - Motor Complete - 105-125 volts, 60 cycle -- List Price.....$18.52
Stock #8993 - Rotor and Shaft - for Motor #8989..... 7.00
Stock #3398 - Spring - Motor Mounting Spring Assembly..... 0.48
Stock #3817 - Stud - Motor Mounting Stud - Package of 3..... 0.18

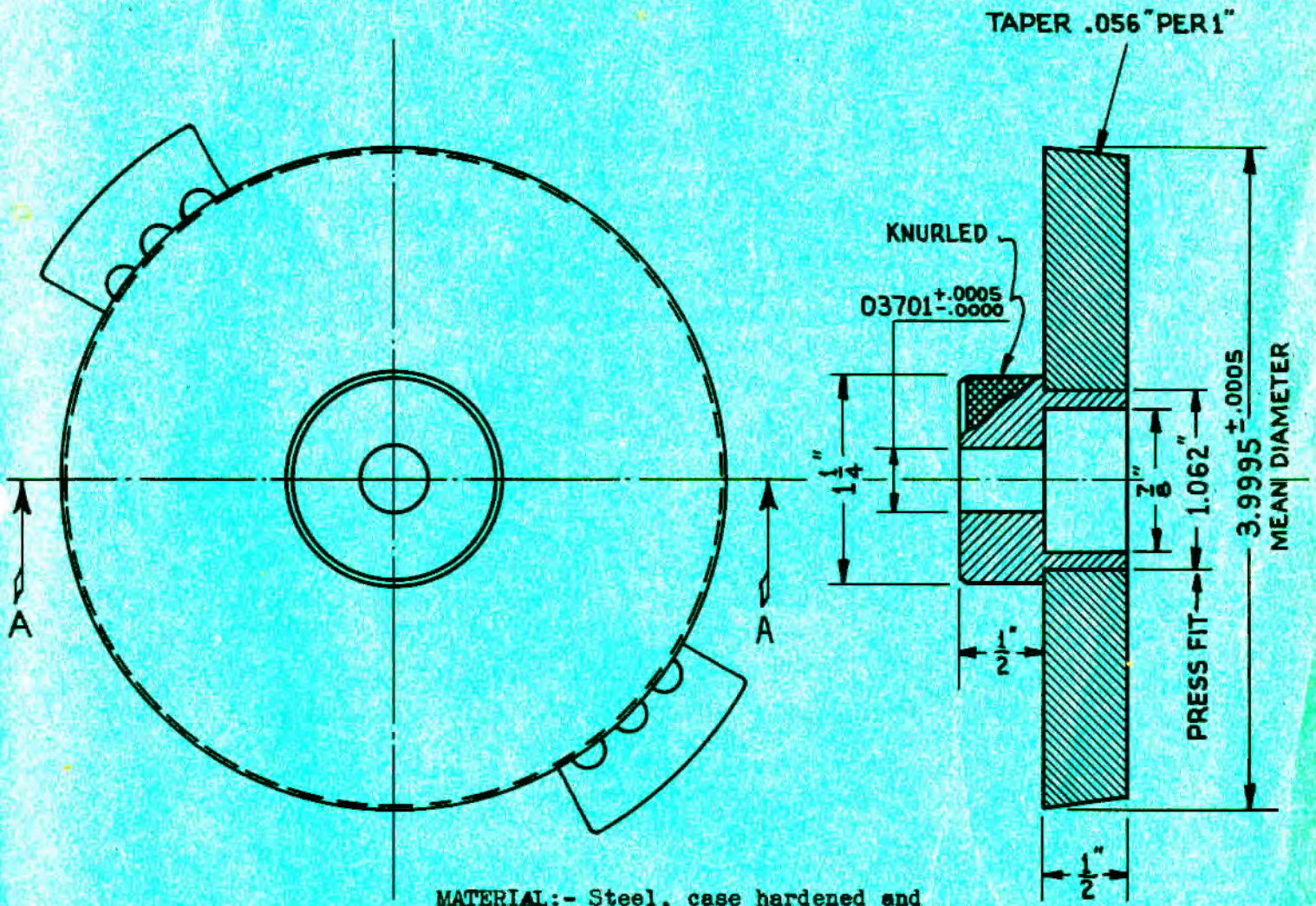
PHONOGRAPH VOLUME - MODELS 9-U and 9-U-2

Additional audio gain may be obtained on these instruments at a slight sacrifice of fidelity by increasing resistor R-42 of the input compensator pack from 2200 ohms to about 5000 - 6000 ohms. This change permits greater volume from the older low level recordings and is not recommended except in cases where the customer requires extra volume. Some distortion will be obtained on the higher level recordings when the volume control is advanced to full, after increasing the resistor. The customer should, therefore, be instructed not to use the control above the distortion point.

Resistor R-42 is located under the terminal board of the input transformer pack, hence it will be necessary to bend back the clamping tabs and lifting the board to reach it. Exercise caution not to break other leads from strain.

ROTOR CENTERING TOOL * R-93, R-95, 5-U and 7-U MOTORS

Proper centering of the rotor laminations on the turntable assembly must be maintained in order to minimize hum and rumble effects. The air gap between the rotor and stator should be held uniform to a dimension of .012 inches. This adjustment can usually be accomplished with satisfaction by placing three .012 inch feelers at equal intervals in the gap, adjusting the rotor ring, and re-tightening the clamping screws. However, when more precise adjustment is desirable and the time element is important, a special centering gauge may be employed. Such a gauge, which may be made by a competant local machinist, is shown below with all dimenaions and constructional information.



MATERIAL:- Steel, case hardened and ground to dimensions.

SECTION A-A

To Use The Tool-Remove rotor and turntable assembly from motor. Take a piece of fine sandpaper and smooth the salient poles of the stator and rotor to remove all burrs, being careful not to allow sand particles to get into the spindle bearings. Loosen three clamping screws of rotor. Slide centering gauge over spindle and press with hand snugly into rotor ring. Use rubber or wooden mallet to gently tap the top-center of gauge to force it into mesh with rotor. Also, tap the outer edge of rotor ring during this operation. When the gauge has become seated and only a small part protrudes, tighten the rotor ring screws securely and remove gauge with care, so as not to bend spindle. Apply oil to inner and outer spindle bearings on stator assembly. Check rubber mountings and adjust for maximum flexibility. Re-install turntable and test operation. The R-93 or R-93-2 type Duos should not be placed on a table or cabinet which haa a top so large and thin that the motor vibration will be amplified by a "sounding board" effect.