

Califone phonographs provide trouble-free service if lubricated at regular intervals. Lubricate at the following intervals depending upon type of usage.

1. Moderate Use - Every 12 months
2. Heavy Use - Every 6 months
3. 6 to 8 Hours a Day - Every 3 months

Lubricants to be used are:

1. SAE 10 Motor Oil (i.e., Wynn's Mechanic Deluxe or equivalent)
2. Lubriplate (light grease)

Be **CAREFUL** to keep oil and grease away from these friction drive surfaces:

1. Idler wheel circumference
2. Drive-bushing end of motor shaft
3. Inside rim of turntable

Speed variation may occur if lubricant comes in contact with drive surfaces. To clean these surfaces, use isopropyl alcohol or trichlorethylene.

Lubricate all points in Fig.'s 1, 2, and 3 as follows:

1. Remove turntable retaining clip and remove turntable.
2. Remove all deck panel screws and remove deck panel from case.
3. Remove motor mounting screws and disconnect all linkage. Remove motor from deck plate.
4. Inspect for wear, rubber deterioration, and soiling. Rubber particles and grime from usage are another cause of speed variation. If motor is dirty, disassemble and clean with non-oily solvent (Tri-clean) or isopropyl alcohol.
5. Lubricate as shown in Fig.'s 1, 2, and 3. The dots indicate points lubricated with SAE 10 Oil. One dot equals one drop of oil; two dots equal two drops of oil. The circled numbers indicate areas to be lubricated with grease. The grease should be applied sparingly to the bearing surfaces of the speed change cam, detents, and plates. **DO NOT OVER-LUBRICATE.**
6. After lubrication, reassemble in reverse order of assembly. When replacing turntable, guide idler wheel and brake pad into place under rim with fingertips. Do not force turntable down; rotate it clockwise and let it drop gently.

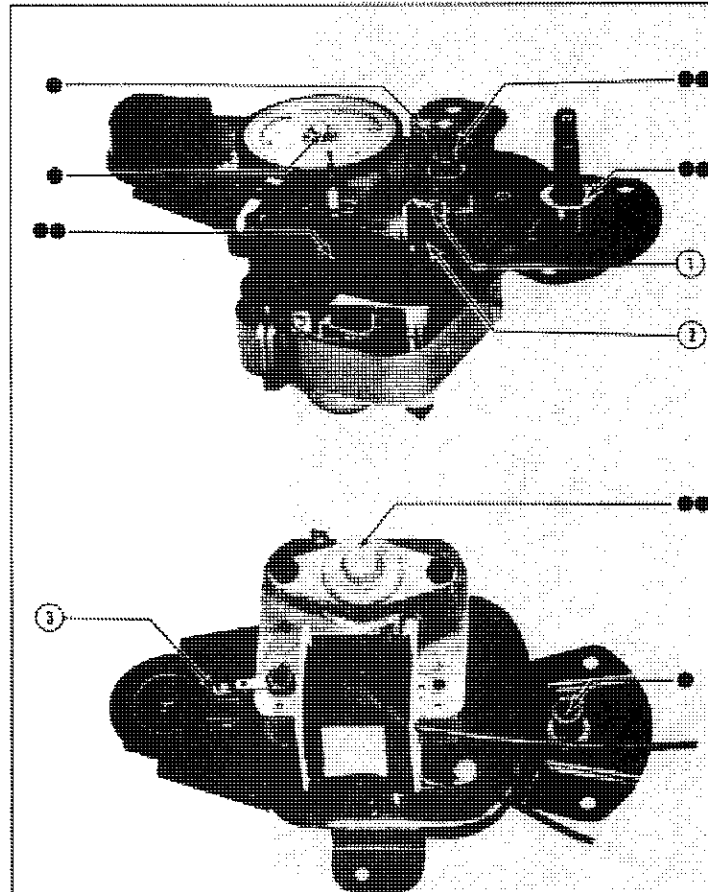


Figure 2. 30-110, 30-111, & 30-112 Motors

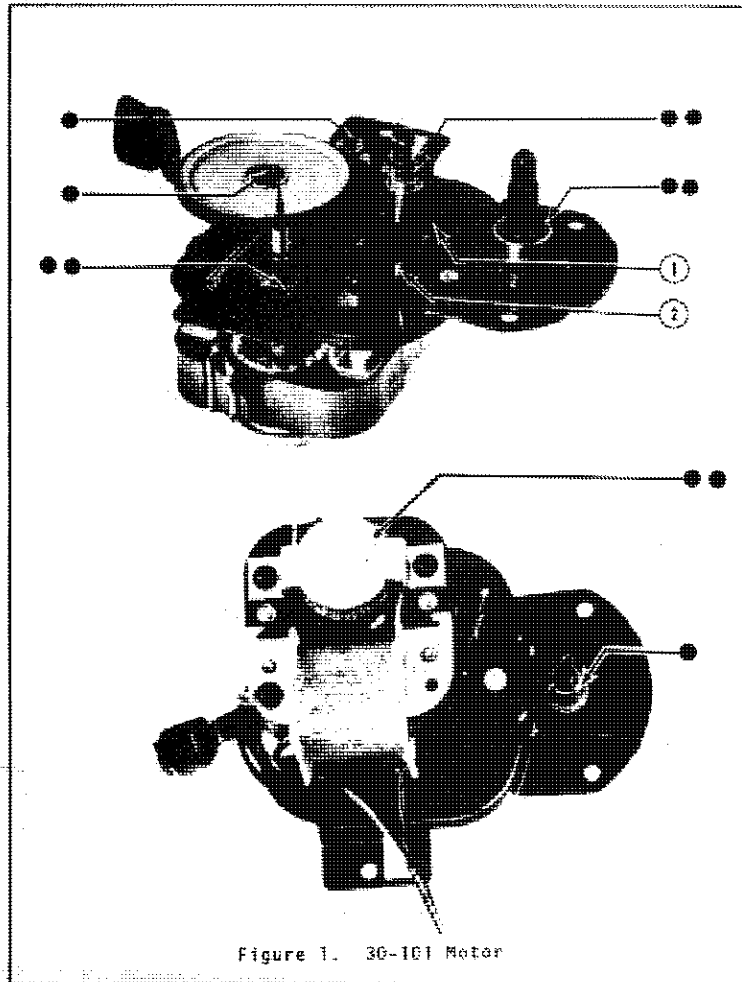


Figure 1. 30-161 Motor

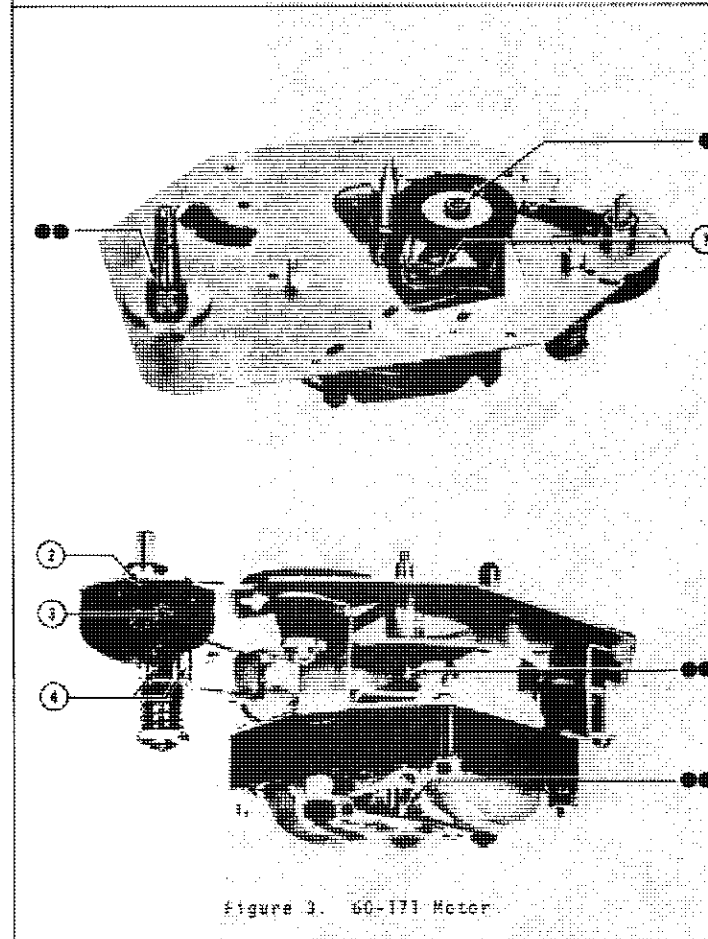


Figure 3. 60-171 Motor

October, 1990

CALIFONE SERVICE BULLETIN # 13A

MODEL: All Califone phonographs designed as "C" series which incorporate a DC motor.

PURPOSE: To replace motor assemblies using a plastic idler wheel and plastic idler wheel support with a metal idler wheel and metal idler wheel support.

PARTS

REQUIRED: 1 ea. 009-0117-06 phono idler wheel and metal support assembly.

REPAIR

- PROCEDURE:**
1. Remove the E-ring clip securing the turntable platter to the metal spindle. Remove the platter from the spindle.
 2. On the phono models which incorporate the brake arm, unhook the brake tie rod from the idler wheel support notch.
 3. Shift speed lever to the 78 rpm position. Remove the E-ring clip which secures the tension spring holding down the cam follower link. To prevent losing the spring and cupped washer during this operation, grasp them securely.
 4. Remove the idler wheel, wheel support, and cam follower link assembly from the motor frame. Unhook the small tension spring attached to the wheel support from the hook on the main motor frame. Save all parts. Disassemble the E-ring clip securing the cam follower to the wheel support.
 5. Replace the idler wheel and its support assembly with a new part (Califone #009-0117-06). Replace the cam follower link onto the new wheel support using the E-ring clip previously removed.
 6. Attach the tension spring (previously removed) to the idler wheel support and hook it over the frame hook. Slide the cam follower link over the pivot post on the frame. Replace the tension spring, cupped washer, and E-ring clip as installed previously on the pivot post.
- 6A. Note:** in some cases you have to adjust the speed when you replace the idler. Adjust the semi fixed resistor on the motor with a flat blade screw driver from under the tone arm side. Use 60 hz strobe to obtain the correct speed adjustment.

7. Operate speed change arm and mechanism to assure that the idler wheel tire aligns properly with the four speed stops on the motor pulley. Small alignments variations can be corrected by adjusting the thickness and quantity of flat washers used above and below the idler wheel. Make certain the idler wheel moves freely in the "park" or "0" position.
8. Re-attach the brake arm tie rod (if used) into the notch on the idler wheel support. Using alcohol and paper "wipe", clean the inside surface of the rim of the turntable platter. Also clean the outer edge of the idler wheel tire using a cotton swab dipped in alcohol. Replace the turntable platter. Check all operations with the motor powered. If satisfactory, replace the E-ring clip to secure the turntable platter.
9. Finally, verify the speed accuracy at 33 rpm or 45 rpm by using a stroboscope card. If necessary, the speed can be corrected by adjusting the small trim potentiometer on the motor pc board.

CONVERSION AC PHONO MOTOR TO DC MOTOR

October, 1990

Model: 1420K, 1430K, 1435K, 1450K, 1455K, and 1815K

Problem: AC phonomotor is defective and requires replacement (AC phonomotor assemblies are no longer manufactured by General Industries).

Solution: Replace AC motor with DC phonomotor. Note: This phonomotor works equally well on either 60 or 50 Hz.

Parts

Required: 1 ea. 030-0138-00 DC phonomotor assembly.
 * 1 ea. 018-0458H-00 power transformer (1430K, 1435, 1450K, 1455K, and 1815K) or transformer in unit
 * 1 ea. 018-0498-00 power transformer (1420K only)
 1 ea. 014-0783-00 1000 uF/25V electrolytic capacitor
 1 ea. 025-0103-15 1/2A fuse w/pigtail leads
 1 ea. 010-0032-00 5-lug wiring strip
 6 ea. 002-0528-00 # 8B x 1/2" sheet metal screw
 6 ea. 028-9120-00 #8 speed nut

Parts required for 1435K, 1455K, and 1815K only:

1 ea. 005-1027-00 56 Ohm 1/4w resistor
 1 ea. 013-1204-00 100 Ohm potentiometer
 1 ea. 028-9002-00 Hex nut 3/8-32 x 1/2
 1 ea. 025-0353-00 knob 1.1" dia.

Repair

Procedure: 1. Remove phonograph metal deck from case. (Save all hardware.)

2. Drill out 4 rivets securing AC phonomotor.

3. Disconnect and remove AC phonomotor.

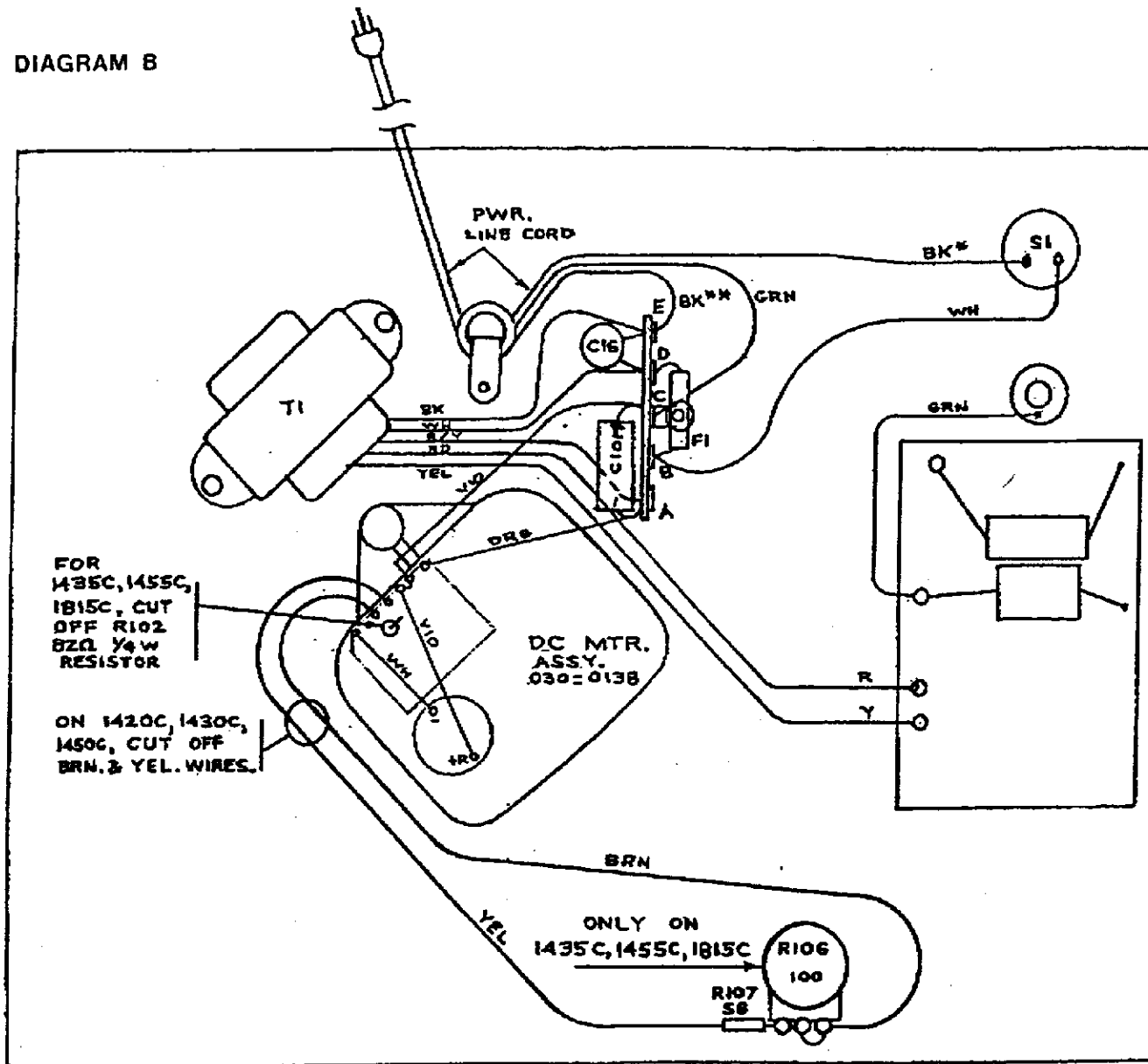
4. Install the new DC phonomotor assembly using 4 pc. #8B x 1/2" sheet metal screws (#002-0528) and 4 pc. #8 speed nut (#028-9120). (Diagram A)

1420C ONLY:

- 4A. To install 018-0498-00 transformer use template supplied. Drill two 7/6 4" holes and fasten transformer to deck with two 8B x 1/2 sheet metal screws and two 8B speed nuts. Wire transformer leads as per schematic supplied page # 4.
5. On the top side of the phono metal deck, connect the steel tie rod previously removed in step #3 to the metal brake arm and new idler-wheel support platform. (Diagram A)
6. Install the 5 lug wiring strip with 2 #8B x 1/2" sheet metal screws and #8 speed nuts into the hole between the DC phonomotor and brake tie rod as shown on the attached diagram B.
7. Attach the pigtail fuse on lugs B & D and C16 .01 uF ceramic capacitor onto lugs D & E of the wiring strip as shown in diagram B.

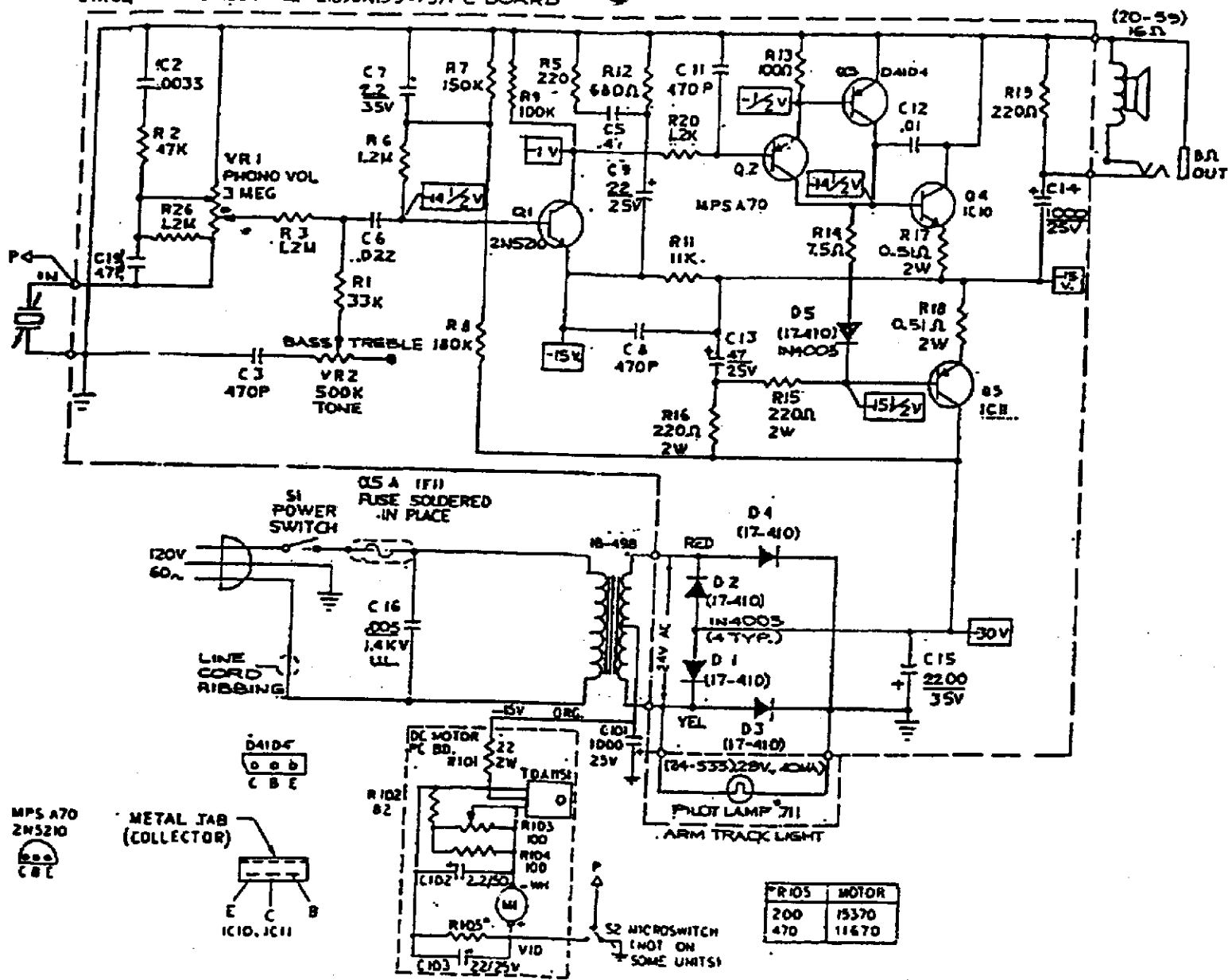
8. Attach C101 1000 uF 25V electrolytic capacitor to lugs A & C on the wiring strip as shown in diagram B. Make certain that the + lead goes on lug C.
9. Attach the orange wire from the phonomotor to the end lug A of the wiring strip (see diagram B). Also attach the Red/Yellow wire from the transformer to this same lug A.
10. Attach the heavy white wire from S1 power switch to lug B on the wiring strip.
11. Attach the green ground terminal lead from the power line cord to the ground post C on the wiring strip. Attach a green wire from this post C to the ground lug on the amplifier PC board. Also, attach the violet lead from the phonomotor to ground post C.
12. Attach the white primary lead from the power transformer T1 to lug D on the wiring strip (the fuse F1 and UL capacitor are also connected to this lug.)
13. Attach the black primary lead from the power transformer T1 to lug E on the wiring strip. Also, attach the black line cord wire w/ridges from the AC power cord to this same lug E.
14. Apply solder to the 5 lugs and their wires on the 5 lug wiring strip.
15. Attach the Red and Yellow wires from the power transformer T1 to the pads of the Amplifier PC board indicated in diagram B. Verify that the small twisted track light wires are connected to the pad w/the red secondary leads and the ground pad (w/green wire).
16. The phonograph should now be ready to test. Plug the AC line cord into 120V, 50-60Hz and turn the power switch to pause. The tracklight on the phono arm should glow.
17. Turn the power switch to play. The DC motor should now operate.
18. Verify proper alignment of the idler wheel tire and the four steps of the motor pulley at the four different speed settings.
19. Replace the phono turntable on the spindle. Replace the E-ring on the spindle.
20. Verify that the amplifier is operating properly.
21. Replace the phonograph metal deck assembly back into it's wooden case using the screws removed previously.

DIAGRAM B



Symbol	Callfone Part No.	Description
FI	025-0103-15	1/2A Fuse
SI	013-1016-01	Power Switch
TI	018-0458H-08	Power XFMR
R107	005-1027-00	58 Ohm 1/4W
R106	013-1204-00	100 Ohm Pol.
C16	014-0750-00	.01pF Cap.
C101	014-0783-00	1000pF/25V.
-	010-0032-00	5 Lug Strip
5 PCS.	002-0528-00	#8 x 1/8SMS
5 PCS.	028-0120-00	#8 Speed Nut

BK* Line-Cord Black
(Lead with Ridges)
BK* Line-Cord
(Smooth Black Plastic Lead)



- Notes: Unless otherwise specified.
1. All resistors rated at 1/4W and $\pm 5\%$
 2. All capacitors rated at 35V. min.
 3. All voltages $\pm 10\%$ Tol.

SCHEMATIC.—1420C 120V.
 WITH DC PHONOMOTOR
 CALIFONE INTERNATIONAL, INC.
 DWG. NO. A-1206-07

CIRCUIT BOARD ASS'Y (7-24) FOR MODELS 1430C & 1435C (MOS-73) PC BOARD
 CIRCUIT BOARD ASS'Y (7-24) FOR MODELS 1450C & 1455C (MOS-73) PC BOARD

