



SLT-12

SERVICE MANUAL



marantz

MARANTZ
MODEL SLT-12 TURNTABLE
SERVICE MANUAL
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SECTION I - SPECIFICATIONS

SPEEDS -- 33-1/3 and 45 RPM

FLUTTER AND WOW -- Better than 0.04%

TRACKING ERROR -- Non-existent (0 degrees/inch)

SKATING FORCE -- Non-existent

FREQUENCY RESPONSE -- 20 to 20,000 cps.

COMPLIANCE -- 30×10^6 cm/dyne

STYLUS -- Diamond Elliptical (.0002 x .0009 radius)

OUTPUT -- 6 mv; recommended load -- 47,000 ohms

DRIVE PRINCIPLE -- Precision uscothane belt

RUMBLE -- Virtually non-existent

MOTOR -- Hysteresis Synchronous

LEVELING -- Precision bubble level adjustment

DIMENSIONS AND WEIGHT -- 18-1/4" wide x 14" deep x 6-1/2" high
(including Walnut Base); 27 lbs.

POWER REQUIREMENTS -- 117 V, 60 cycles, 12 W (50 cycles available)

SECTION II - MECHANICAL CHECK OUT PROCEDURE

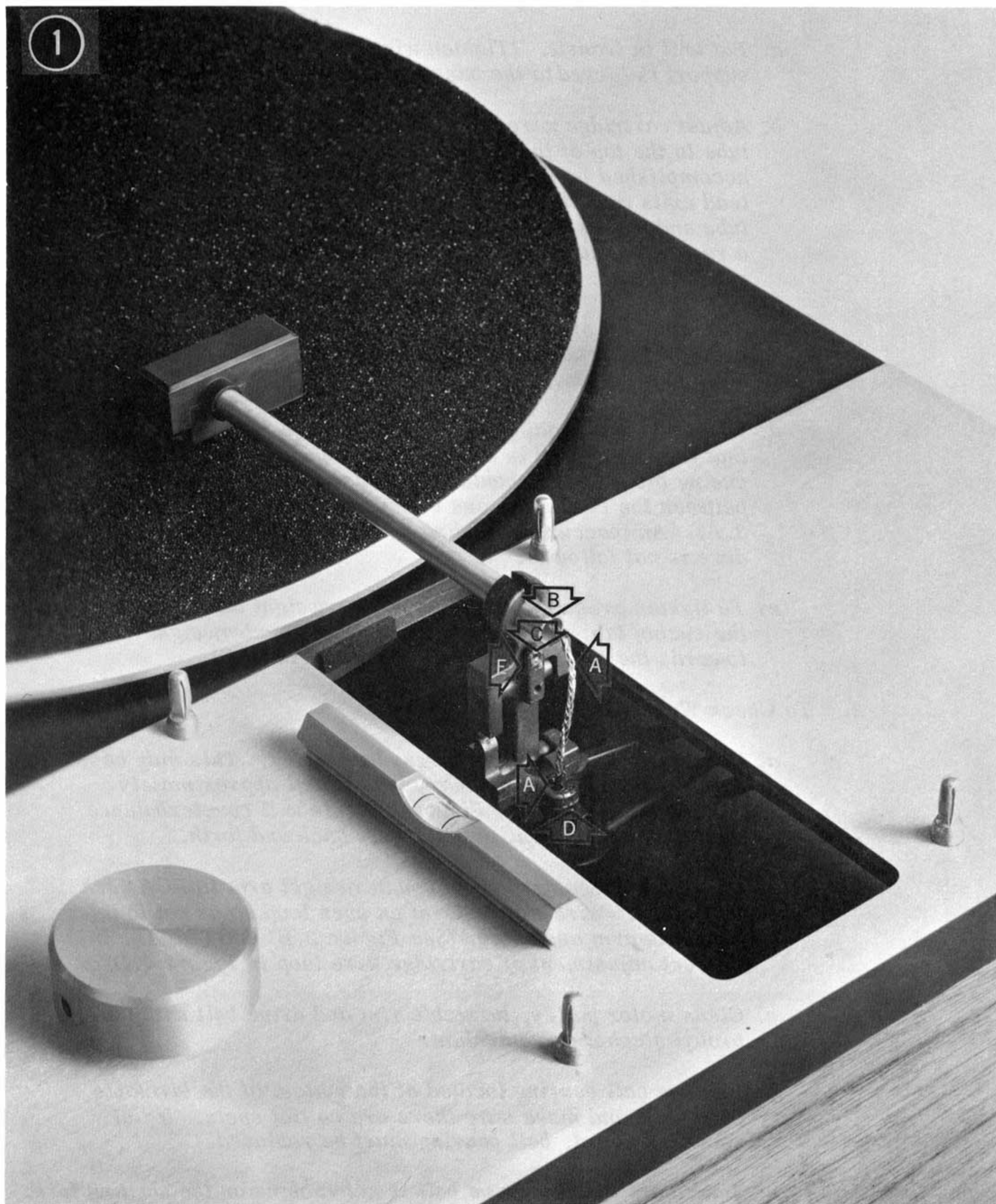
1. To Check Stylus Pressure:

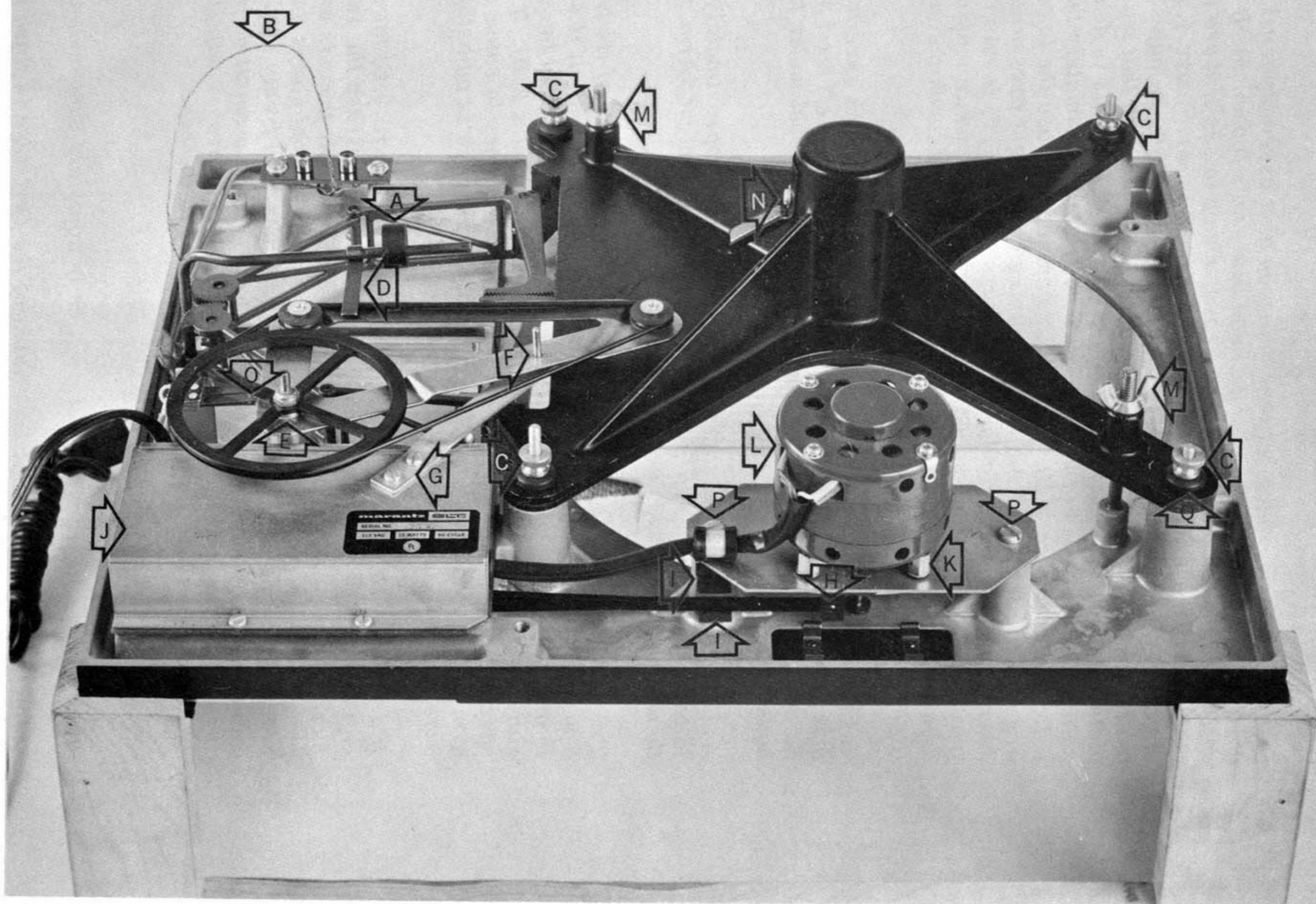
- a. Put unit in transit. (Tighten wing nuts until turntable support is locked to the base) (See figure 2.M)*
- b. Adjust cartridge wire running from back of tone arm tube to the top of the counterweight arm tube. This is accomplished by making sure that the counterweight lead exits in a right angle curve from the tone arm tube and enters the counterweight arm. When playing a record the cartridge wire should not touch the side of the tubing.*
- c. Take unit out of transit. (Loosen wing nuts to the very end of the threads until the turntable support is in complete suspension.)*
- d. When taking a reading on the stylus gauge make sure that the cueing belt is completely disengaged from the cueing tab. There should be at least 1/16" separation between the cueing tab and the cueing belt. (See figure 3.A). An inaccurate reading will result if this procedure is not followed.*
- e. To lighten pressure move the counterweight away from the cueing tab. To add pressure move counterweight towards the cueing tab. (See figures 2.A and D).*

2. To Check Wow and Flutter:

- a. Check arm assembly for torque or binding. This may be done by inserting an ordinary lead pencil approximately 6" long into Point A of Figure 1. This will counterbalance the arm so that it will move freely back and forth.*
- b. Check cartridge wire from counterweight arm to RCA Jack for twists. Wire should form an even loop so as not to interfere with arm assembly. (See Figure 2.B) (NOTE: The incorrect adjustment of cartridge wire loop in Figure 4.D)*
- c. Clean motor pulley, turntable rim and drive belt with isopropyl alcohol or equivalent.*
- d. Remove ball bearing located at the bottom of the turntable shaft well and make sure there are no flat spots. If flat spots are found, ball bearing must be replaced.*
- e. Make sure that the drive belt is not rubbing on the shifting fork.*

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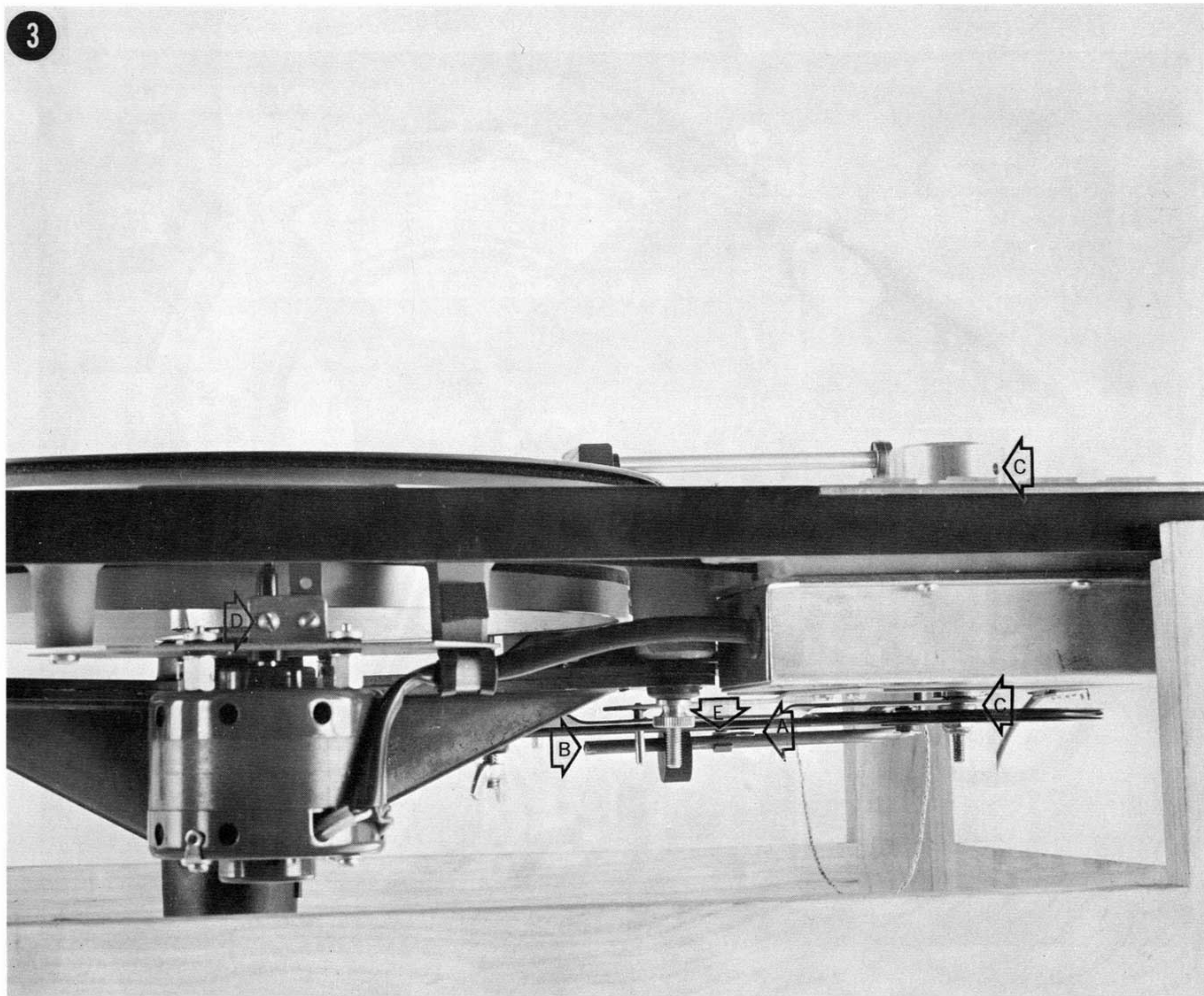
SECTION III - MECHANICAL ADJUSTMENT PROCEDURE

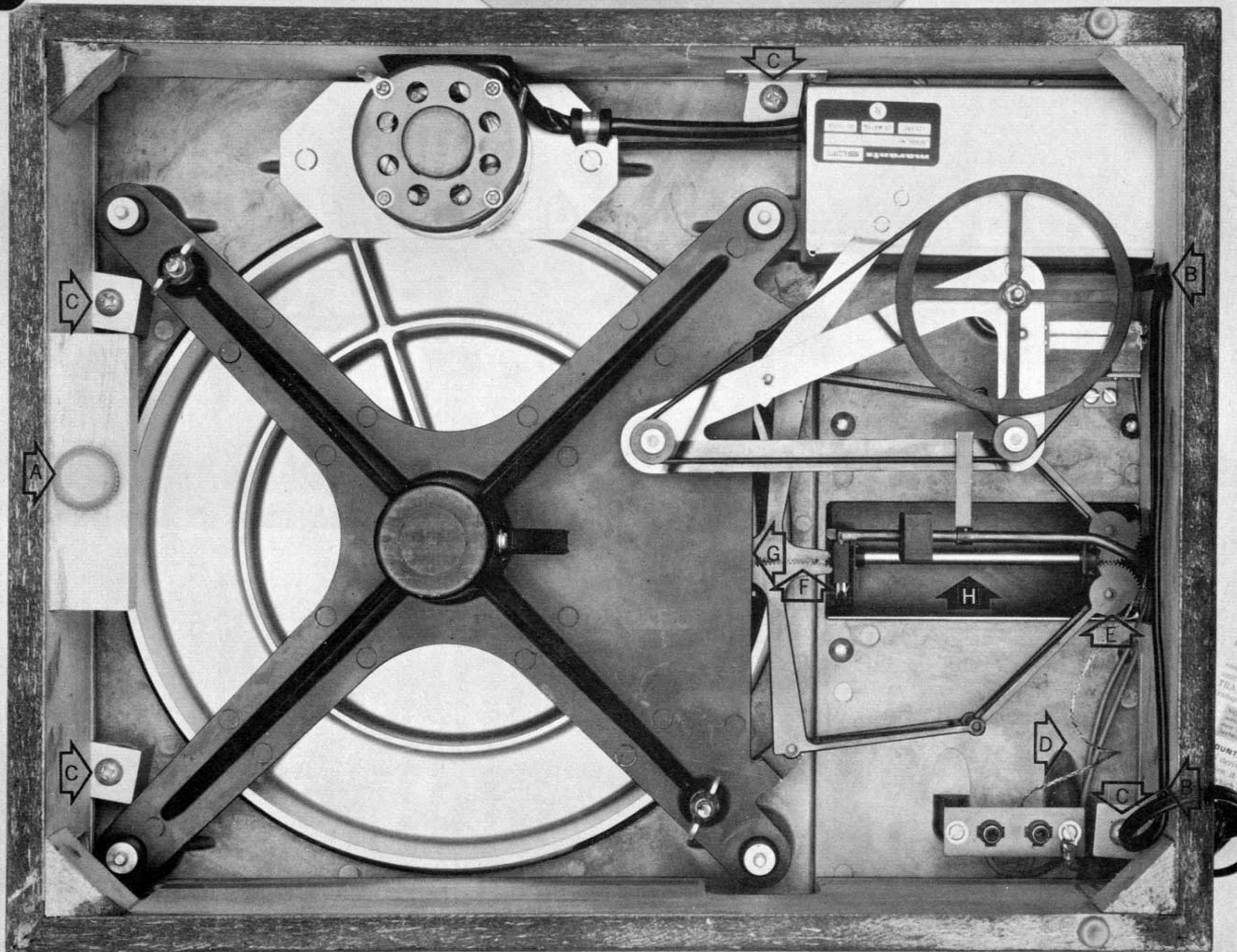
1. Checking for Clearance and Torque in Arm Assembly:

- a. Setting of the clearance between gears on arm assembly must be done with unit in complete suspension (wing nuts loosened). If arm will not track toward end of the record, check to see if there is clearance between the upper (figure 4.E) and lower (figure 4.F) set of gears. This should be approximately .015/.025". To adjust clearance, the arm assembly may be placed in the position that will completely expose the lower set of gears (figure 4.F). This is done by setting the upper set of gears (figure 4.E) at approximately the point indicated in (figure 4.H). This will completely expose the lower set of gears (figure 4.F). Adjust by applying very slight pressure up or down as needed on the lower set of gears (figure 4.F) to eliminate friction. The turntable support must be held rigid while making this adjustment. Be sure the lower set of gears do not touch the support (figure 4.G).*
- b. Take unit out of transit (see Section II, 1-C) and make sure that the unit is level by using leveling device located on the left hand side of the wooden base. (See figure 4.A) (Check bubble level under tone arm housing).*
- c. Add a counterweight such as an ordinary pencil approximately 6" long to back of tone arm until arm lifts to maximum height. Arm should then move freely back and forth.*
- d. Try positioning the arm in several different positions of its travel. The arm should stay within 1/4" of each position tried. If it skates to one side or the other make sure there are no twists in the cartridge lead. It should be adjusted as shown in (Figure 2.B). If the wire is not adjusted properly it will have a tendency to cause the arm to skate back or forth. A slight bit of practice in adjusting this wire loop will bring forth the proper results.*
- e. If arm still skates, the four (4) battery nuts (Figure 2.C) may need adjustment. Remove the red seals with acetone. Grasp the rubber support bushing (Figure 2.Q) and pull until the bolt threads are exposed. Grasp the bolt at this point with a long nosed pliers and turn adjusting nut to break seal. The nut will then turn freely to allow adjustment. Experiment with all four nuts within a small degree until the skating tendency has been eliminated. After proper adjustment the turntable should be reasonably parallel to the base.*

2. No Control on Cueing:

- a. Take unit out of transit. Unit must be in complete suspension.*
- b. Adjust cueing tab so that the bottom of the cartridge is flush with top of pad. (See figure 3.A).*





- c. *Make sure retaining screw on cueing tab is tight. (Figure 3.E)*
- d. *If cueing contact is lost towards the end of the record, this will probably be due to a bent cueing bracket. Make sure that the cueing bracket is parallel with the underside of the unit and the cueing tab retains even pressure on the cueing belt throughout the entire swing.*
- e. *The space between cueing tab and cueing belt when in playing position should be .060 to .100 of an inch for its entire travel. (See figure 3.A).*
- f. *The cueing tab must not contact cueing belt during normal tracking of a record.*
- g. *Check maximum height of cartridge with tone arm cover in place and tone arm fully retracted. Make sure that the top of the cartridge cover is not touching the magnet inside the tone arm housing. There should be approximately .010" space between the cartridge cover and magnet. The height adjustment is located on the tab of the arm assembly riser (below and to the rear of tone arm). (Figure 1.C) Use a .035" Allen wrench.*

3. Loss of Damping on Cue Knob:

- a. *Put unit in transit (tighten the two wing nuts).*
- b. *Loosen set screw (Figure 1.D) for counterweight arm with .035" Allen wrench. Swing counterweight arm clockwise until tab is completely clear of cueing bracket.*
- c. *Remove cueing knob with 5/64" Allen wrench.*
- d. *Pull cueing bracket out of bushing.*
- e. *Regrease cueing bushing and shaft with Dow Corning Silicone Compound No. 11 and replace. (Wipe off excess grease).*
- f. *Make sure teflon washer is in place under cue knob, push up on large cueing pulley and down on cueing knob, then tighten the set screw in knob so that cueing assembly moves as a unit. There should not be a separation between large pulley and cueing bracket when knob is depressed.*

4. Cueing Knob Returning too Slowly or Binding:

- a. *Check to see if cueing bracket is binding on anti-rotate pin.(Fig.2. F) Cueing bracket must be parallel with cutout opening in base casting.*

- b. Grease should be applied to anti-rotate pin. (Dow Corning DC-11).
- c. If pin on anti-rotate bracket still binds in hole, move bracket slightly by loosening the two screws on circuit board housing. (See figure 2. G). When working properly, cueing knob should return smoothly and fully in three to four seconds.
- d. If anti-rotate bracket is properly adjusted and cueing device still returns too slow or not all the way, remove cueing device and check spring to see that it is 1.5" long. If not, stretch spring to its proper length of 1.5".

5. End of Record Lift (Slow or Weak lift):

- a. The Allen screw located at the end of the counterweight arm can be turned counter-clockwise (1/16" Allen wrench) in order to bring it closer to the magnetic field (Figure 3.B). The magnet bracket mounted for end of record lift may be adjusted up or down. (Figure 2.N). This should be set for maximum lift. IMPORTANT: The Allen screw must not make contact with the magnet.

6. Unit not Changing Speeds Properly:

- a. Remove turntable belt and check for oil contamination.
- b. Clean belt with isopropyl alcohol or equivalent.
- c. Clean motor pulley and turntable rim with isopropyl alcohol and replace turntable belt.
- d. If speeds still do not shift properly, it may need adjustment of the speed shifting arm. Put unit in transit and remove turntable, belt and ball. Turn unit up-side-down and place on four (4) padded blocks approximately 6" high, remove staples on ac cord and four screws that hold unit to the wood base. (Figure 4.B & C). Turn unit right-side-up and replace ball, turntable and belt.
- e. Take unit out of transit, connect to AC and turn on. If adjusted properly, belt should ride in the center of the shifting fork.
- f. If adjustment is needed, loosen the two screws located on the front of the motor mounting plate (Figure 3.D) and adjust detent plate. (Make sure that the drive belt does not make contact with the shifting fork or it will cause wow and flutter.).

- g. *If the speed shifting arm does not set firmly in the hole of the detent plate the boss on circuit board must be readjusted. To do this the circuit board must be removed. The boss to which the speed shifting arm is attached is then turned in a counter-clockwise direction. The circuit board is replaced and the screws retightened. Make sure that the ball is firmly seated in the detent hole. (See figure 2.H).*
- h. *If the foam rubber tapes used as stops need replacing use 3M Pressure Sensitive Foam Tape (1/4" x 1/2"). (Figure 2.I).*

7. On-Off Button Operating Improperly:

- a. *If unit shuts off when button is depressed but continues to run when released, the Primary lever may be loose.*
- b. *The primary lever is located inside the power supply housing on the circuit board.*
- c. *Put unit in transit.*
- d. *Remove turntable, belt and ball.*
- e. *Place unit up-side-down on four padded blocks about 6" high on each corner.*
- f. *Remove wood base.*
- g. *Loosen set screw (Figure 1.D) and swing counterweight arm free from cueing bracket. (See figure 2.D).*
- h. *Loosen set screw and remove cue knob and bracket. (Figure 3.C)*
- i. *Remove the two screws holding the power supply housing, remove the four screws holding the circuit board and bottom of power supply housing.*
- j. *Remove the circuit board assembly, tighten screw holding on/off primary lever until it stays in the desired position.*
- k. *When replacing circuit board and power supply housing adjust neon lights for even lighting on all three buttons.*
- l. *Before tightening screws in circuit board make sure ball in shifting arm sets in center of detent bracket holes (See Figure 2.H).*

8. Light on 33-1/3 or 45 Button inoperative:

- a. *Remove circuit board and power supply housing assembly. (Fig. 2.J).*

- b. Check primary lever for proper 33-1/3 and 45 light switching.*
- c. If loose, tighten until lever will hold when depressed.*
- d. Check switch adjustment (.015/.020 gap).*
- e. Check the light leads to circuit board.*

9. Noisy Motor:

- a. Remove wood base.*
- b. Take unit out of transit.*
- c. Tap the motor, bells and housing lightly (Figure 2.L) - also tap the motor pulley very very lightly. This will align and properly seat the end bearings.*
- d. The four motor mounting nuts should also be slightly loosened or tightened until a minimum amount of noise results. (Figure 2.K). A slight amount of practice will give best results. If none of these procedures are effective the motor should be replaced.*

SECTION IV - DAMAGE:

1. Points to Check for Damage:

- a. Put unit in transit.*
- b. Remove turntable.*
- c. Make sure that the shaft is flush with the top of the turntable. This can be ascertained by pressing lightly around the center spindle through the turntable pad. Any irregularities can be felt by touch.*
- d. Remove ball bearing, clean and check for flat spots.*
- e. Check all the pivoting points on arm assembly for breakage.*
- f. Check the tab on the riser of arm assembly for breakage. (Figure 1.E)*

SECTION V - ELECTRICAL CHECK OUT

1. Dead Channel:

- a. Check muting switch -- points should open .015/.020" when cueing knob is in playing position. (Figure 2.O).*

- b. Check continuity of all cartridge leads with an ohm meter.
- c. Check all solder joints.

2. Unit Will not Run:

- a. Carefully check copper-clad on circuit board for cracks or breaks. (Optical loupe should be used).
- b. Check primary lever for proper operation of on/off switch.
- c. Check switch adjustment.
- d. Check for broken motor leads and check motor shaft for binding.

SECTION VI - REASSEMBLY PROCEDURE

1. Circuit Board and Motor:

- a. When replacing circuit board and power supply housing, make sure lights and bottom of buttons are evenly spaced. Before tightening the screws that hold circuit board and power supply housing make sure that the ball in the shifting arm sets in the center of the hole in the detent bracket. The two screws that hold the motor mount to the base may be loosened for a slight adjustment of the speed shifting arm. (Figure 2. P)

2. Arm Assembly and Cueing Mechanism:

- a. Replace the support and arm assembly. Lock the support assembly in place with the two transit wing nuts. (Figure 2. M). Replace the four rubber suspension bushings being sure they are properly seated in the support holes. Replace the four adjusting nuts. (Figure 2. Q & L).
- b. Grease the cueing shaft and base bushing with Dow Corning Silicone Compound No. 11 and replace. (Wipe off excess grease). Make sure teflon washer is in place under cue knob, push up on large cueing pulley and down on cueing knob at the same time you tighten the set screw in knob so that cueing assembly moves as a unit. There should not be a separation between large pulley and cueing bracket when knob is depressed. (Figure 3. C).
- c. Swing counterweight arm back into position and tighten set screw. Check cueing tab to be certain that it is making proper contact with cueing belt. Resolder cartridge lead to RCA Jack as follows: Left channel, green to shield and white to positive. Right channel, black to chassis ground and red to positive.

3. Turntable, Ball and Drive Belt:

- a. Turn unit right-side-up. Insert .281" diameter ball in support well. Add approximately 3/4 cc of Moly Spindle Oil No. 95 Manufactured by Allube Corporation of America. Clean turntable rim, drive belt and motor pulley with isopropyl alcohol or equivalent.*
- b. Depress 45 button and place drive belt over the motor shaft holding the two sides together with the thumb and forefinger. Turn shaft to 33-1/3 position. Fold belt back of turntable base. Caution -- Turntable must be lowered slowly into bushing so as not to damage the ball when contact is made. Place drive belt over the outside rim of turntable being sure there are no twists in it. Spin turntable two or three revolutions to set belt properly.*



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