

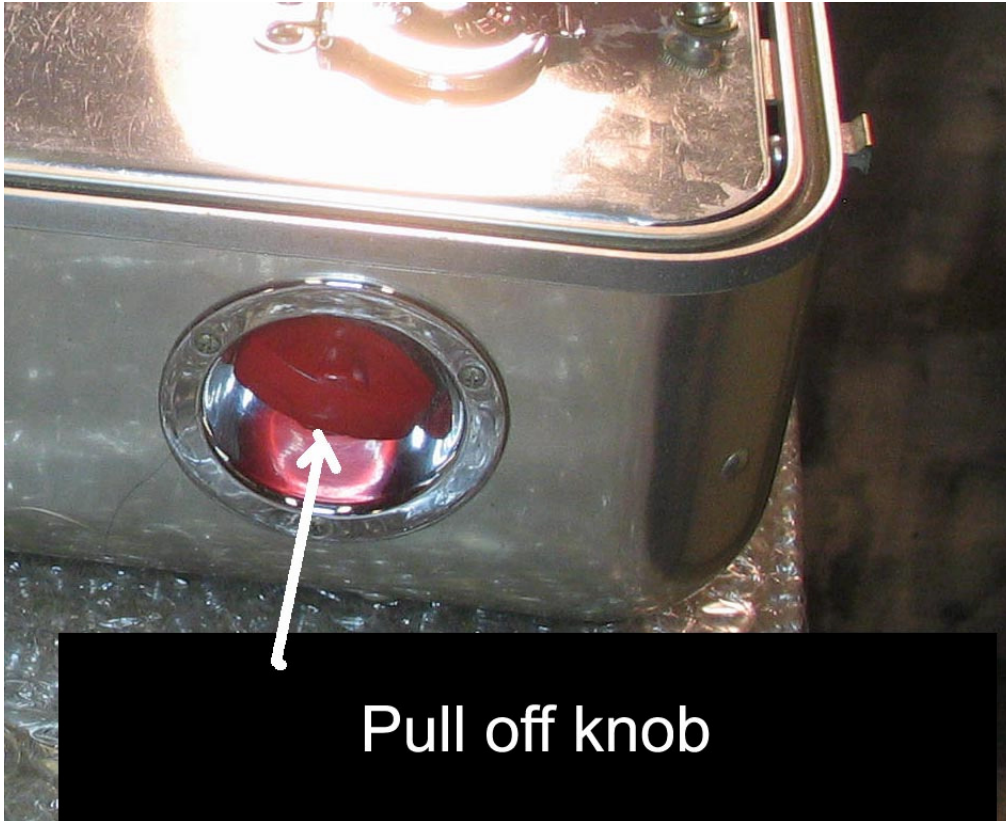
RCA VICTOR SPECIAL MODELS

RESTORATION TIPS

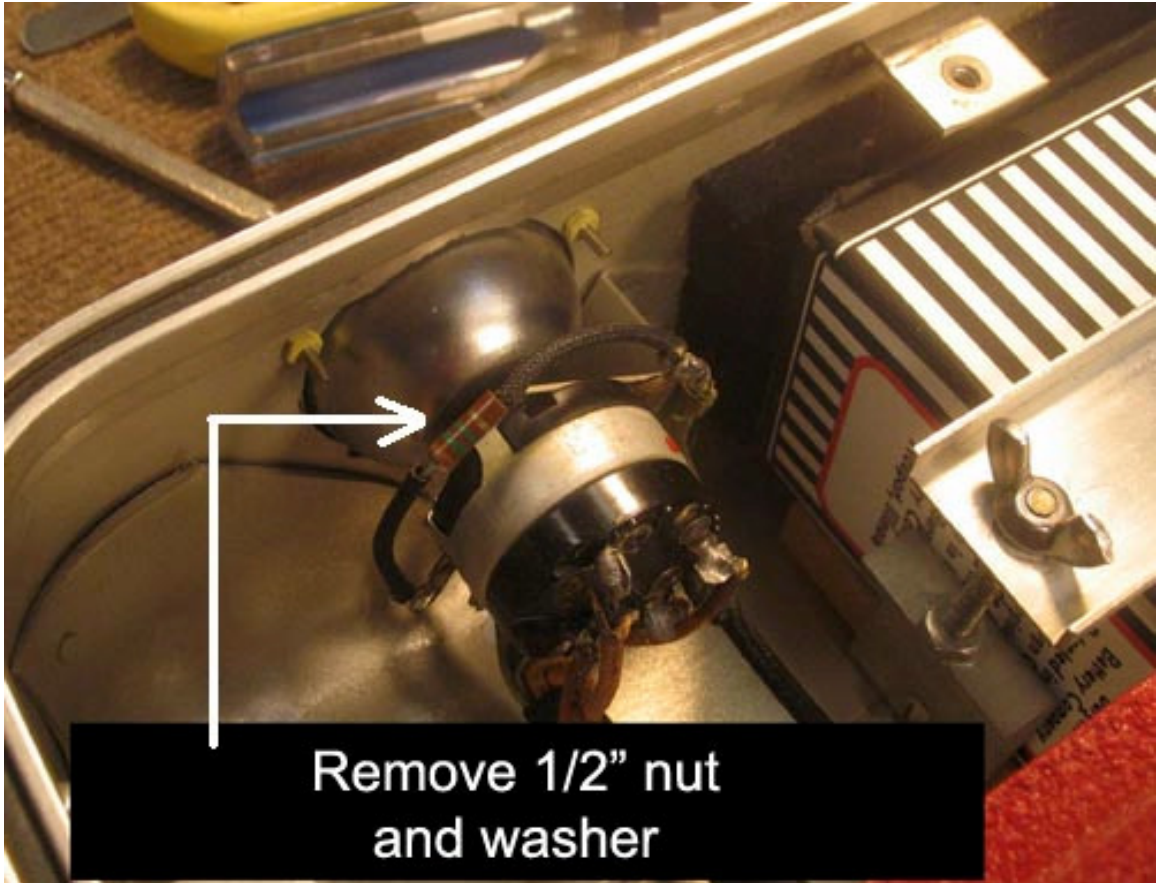
Take good close up photos of everything or make sketches and notes so you can put everything back just as it is now.

AMPLIFIER REMOVAL

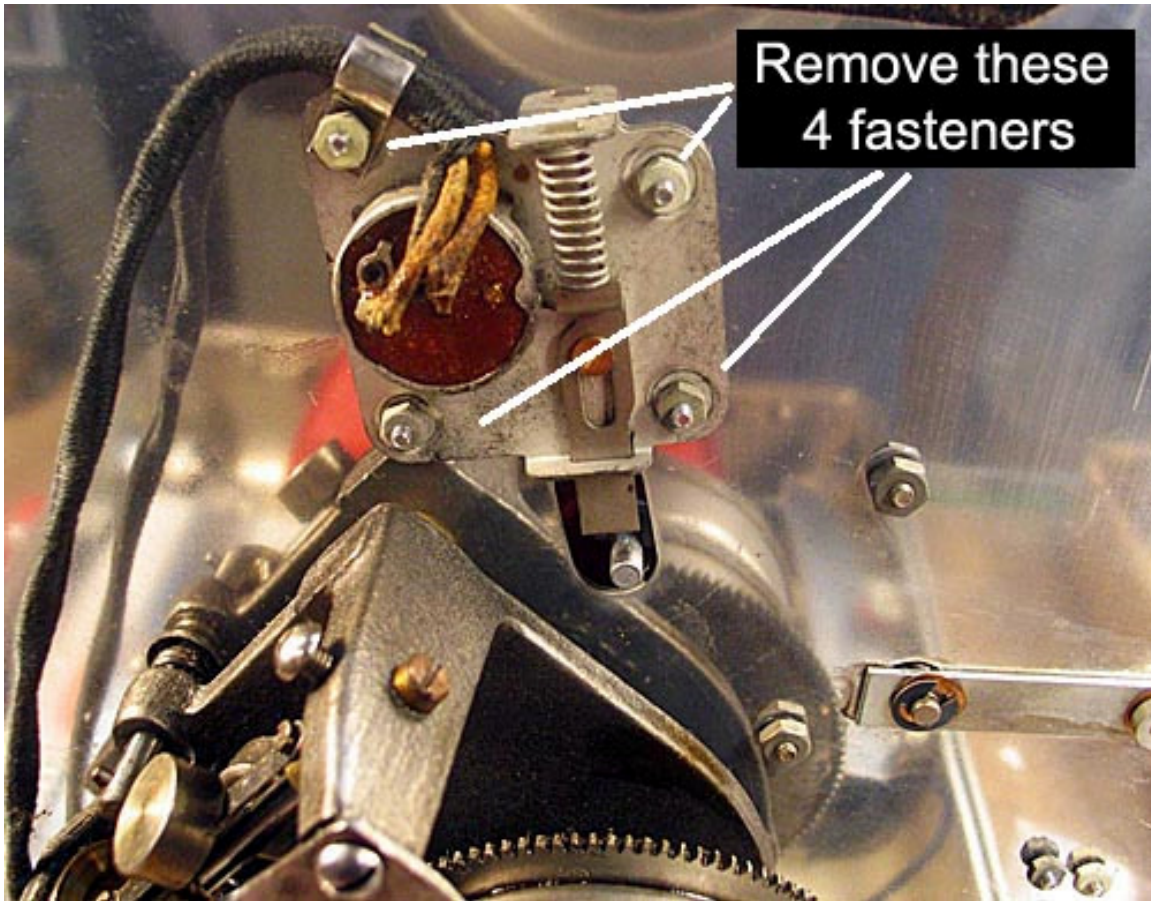
1. Remove the turntable platter. Unscrew the spindle and gently lift the platter off the motor shaft. There may be a washer until the spindle nut. Don't lose it. The platter may be tight. Work it off carefully to avoid damaging the bushing inside the platter shaft opening. It will be dry and will crumble easily, causing significant turntable wobble when re-installed.
2. Disconnect the wiring harness from speaker. The small black plug pulls straight out. It is not easy as there is not much room to get a grip, but sometimes getting a tiny screw drive blade between the plug and socket and gently prying can help.
3. Remove the volume control. Remove the knob from the outside of the cabinet. It just pulls off. It may be very tight if it's never been off. A plastic auto upholstery pry tool may help. They are available at auto parts stores. Be careful not to mar the cabinet.



4. Back off the nut on the inside volume control shaft and pull the volume control out of its mount. Use the thinnest 1/2" open end wrench you can find. A thin stamped 1/2" wrench like those that used to come with bicycle tool kits works well. If necessary, buy a cheap wrench and grind it down until it fits. There is a washer with the nut. Keep those in a safe place.



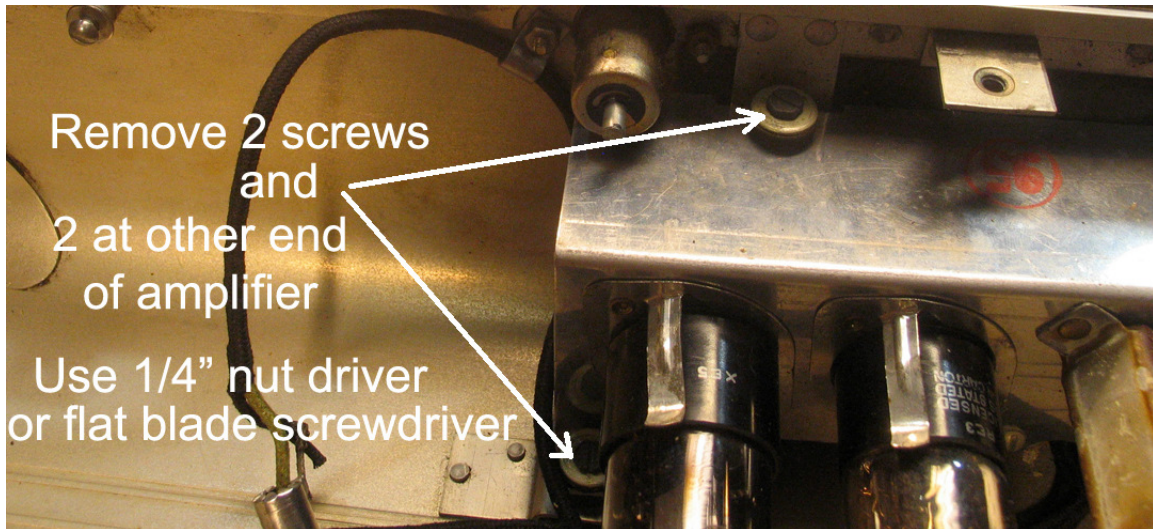
5. Remove the brake switch assembly. It is held on with four machine screws with nuts and tiny washers. Make sure to note how it is mounted. Keep the screws and nuts and the cable clamp in a safe place.



6. Tone arm connector. The lead from the amplifier output to the tone arm has a connector that twists and pulls apart like a fuse holder. Be careful not to lose the tension spring inside. White vinegar will remove oxidation from the connector.



7. Remove the four screws holding the amplifier in place. The slotted hex head screws can be removed with a 1/4" nut driver or flat bladed screwdriver. Carefully lift out the amplifier and wiring harness.



AMPLIFIER RESTORATION

1. Download the amplifier schematic from the Resource Page of my website. Replacing capacitors and resistors on this amplifier is fairly simple, although some are difficult to reach.

2. You will need to replace the following capacitors:

C2 .1uF/630v

C4 .001uf/630v

C5 10uf/150v electrolytic (be sure to install with correct polarity. The negative end goes to B-)

C6 .0025uF/630v

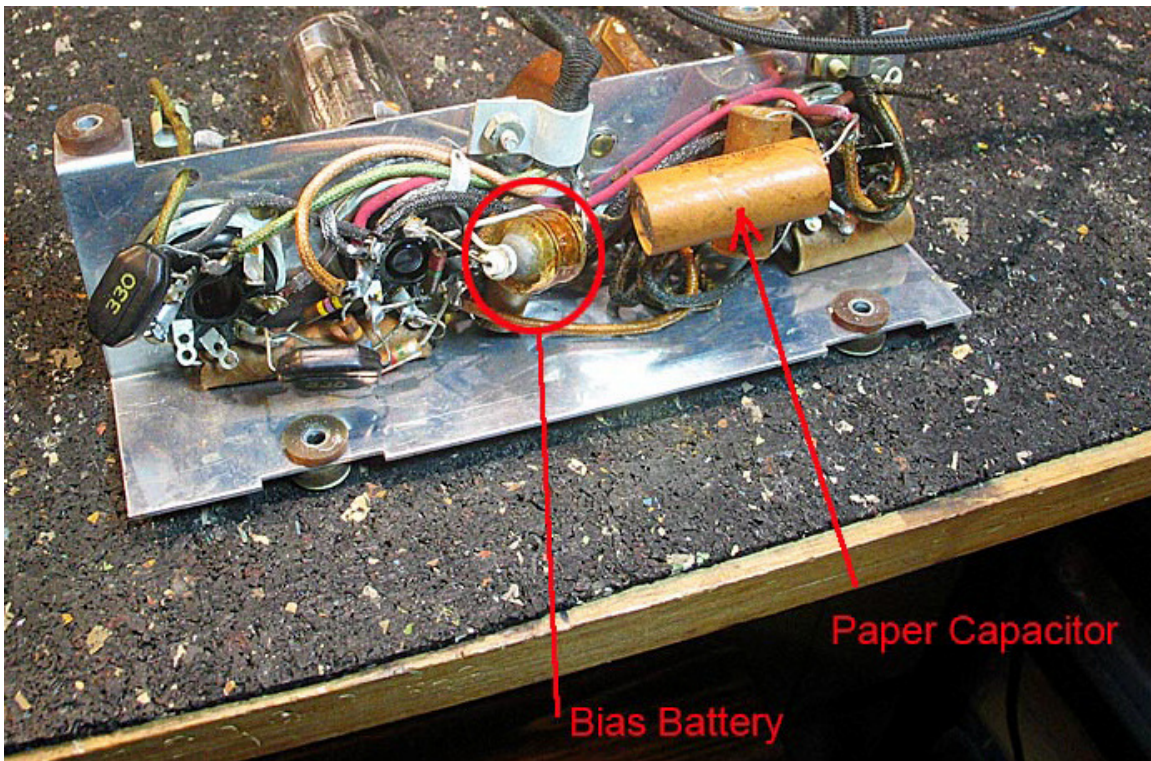
C7 .002uF/630v

3. Resistor R1, located on the volume control, almost always needs to be replaced. Most of the remaining high

value resistors may be out of tolerance. Replace any that measure more than 10% above value. All resistors are 1/2 watt.

- R1 1 meg Ohm
- R3 2.2 meg Ohm
- R4 470 kOhm
- R5 2.2 meg Ohm
- R6 68 kOhm
- R7 2.2 meg Ohm

4. Replace the bias battery with a 1 mOhm resistor. Remove the bias battery, or clip one lead and insulate the clipped lead to avoid a short.



SERVICING CONTROLS

1. The volume control switch is well sealed, but try to work in some electronic contact cleaner and work the control back and forth several times to clean and lubricate the contacts. An ohmmeter can be used to check the 250K volume control potentiometer is working and that the on/off switch works for the 90 volt supply and the A supply, which passes through the brake switch assembly (see schematic).

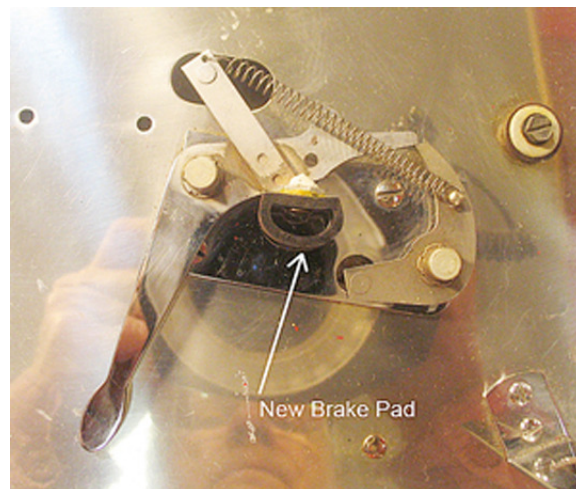
When re-installing the volume control, be sure to fit stud in the hole in the switch frame.



2. Brake Switch Assembly. The switch rarely requires repair. Clean oxidation off the assembly, and lightly lubricate the sliding cam with lithium grease or Phono-Lube. Squirt some electronic contact cleaner into the switch mechanism and work the mechanism to clean the contacts. Use an ohmmeter to verify the switch opens and closes the circuit when actuated by the cam.

BRAKE SERVICE

1. Service of the turntable brake consists of removing oxidation, lubricating, and replacing the brake pad if needed. If the brake doesn't stop the turntable quickly and smoothly, or metallic screeching is heard when the brake is activated, the pad needs replaced.
2. Use white vinegar to remove oxidation.
3. Apply Phono-Lube or white lithium grease to sliding parts of the brake mechanism. Test that the mechanism releases when the lever is pushed counter clockwise, and resets, stopping the turntable, when the button on the right side of the cabinet is pushed.
4. If the brake pad is worn or missing, a new pad can be fabricated from a variety of materials. A piece of weather stripping works well. Unsolder the pad retaining pin, replace the pad, and re-solder. If the pad and pin are both missing, a thumbtack can be used.



STONE ARM AND CARTRIDGE SERVICE

1. Remove the tone arm assembly by disconnecting the cartridge lead from under the motor board (see instructions and photo in amplifier removal section). Remove the large nut, washer, and lock washer. Lift off the tone arm, pulling the shielded lead up through the motorboard hole.

2. Carefully unsolder the leads at the cartridge and note how the positive and negative leads are connected. The metal shielding is usually the negative lead. Use a low power soldering pencil, 20 to 30 watts, and avoiding overheating the terminals as this can ruin the cartridge.

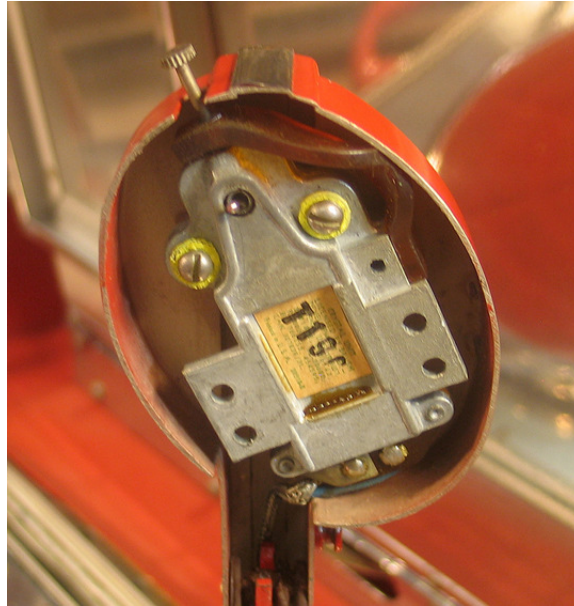
3. Remove the cartridge. The original crystal Astatic cartridges are almost always dead unless they have been recently serviced. The cartridge can be tested with a signal generator if available. Connect the leads from the signal generator to the negative and positive terminals of the cartridge. With a steel phonograph needle installed in the cartridge, touching the needle should produce a robust response from the signal generator speaker.

4. If the cartridge is dead, and it is an original Astatic cartridge like the one shown below, it can be rebuilt by Gib Epling at West-Tech Services. The 2021 cost is \$65, but check with West-Tech for the latest price.

West-Tech Services

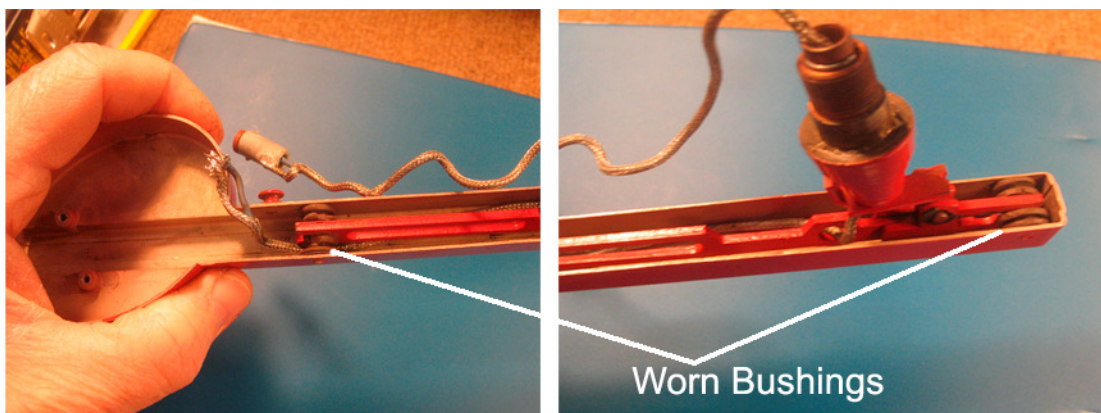
1227 Morrow Rd.
Kent, Ohio 44240

Phone: 740-581-0945
westtechservices@yahoo.com



5. Re-install the rebuilt cartridge by carefully re-soldering the leads, observing correct polarity. Use a low power soldering pencil to avoid damaging the cartridge.

6. Inspect the bushings in the tone arm. They are usually dry and crumbling, causing the tone arm to flop to one side when playing a record. There is a set at either end.



Replace the bushings with grommets of similar size. Purchase a grommet assortment set from Amazon or Harbor Freight. Experiment to find the right size to keep the center

stabilizing frame firmly upright in the tone arm. To remove the bushings, carefully inspect the pins that hold the stabilizer and bushings in the tone arm. One end of each pin should be milled and/or slightly larger, and the other end smaller and plain. Use a very small punch to drive out each pin from the smaller, plain end. Note which side of the tone arm has the pins with the milled or larger end. Drive the pins back in from the that side. Work carefully to avoid damaging the tone arm.

7. The large bushing in the motor board tone arm mounting hole is often dried and crumbling. Replace it with a grommet that will fit the hole. Re-install the tone arm and make sure it pivots freely.



8. Test that the tone arm sits level and pivots freely when playing a record, with good audio quality.

MOTOR SERVICE AND PITCH ADJUSTMENT

1. Motor problems consist of dried grease and weak or broken springs. Test the motor by giving it a full wind. Wind gently and count the turns. Anywhere from 60 to 100 turns is normal for a full wind.

Dried grease causes thumping while winding and playing. A broken spring (there are two springs in the motor) results in endless winding. Weak springs will cause the motor to slow down or come to a stop while playing a record.

2. A motor in good condition will play both sides of a 78 record at the correct speed on a full wind. If the motor winds and plays smoothly, leave it alone.

Wipe off leaked grease and splatter from the motor with a rag and alcohol or carburetor cleaner. Cover the bottom of the cabinet to protect the labels.

3. If the motor requires service, unscrew the winding crank from the motor and the three retaining screws from the top of the motorboard. Don't lose any of the screws, washers, or shims. Note how they are installed before removing and make notes.

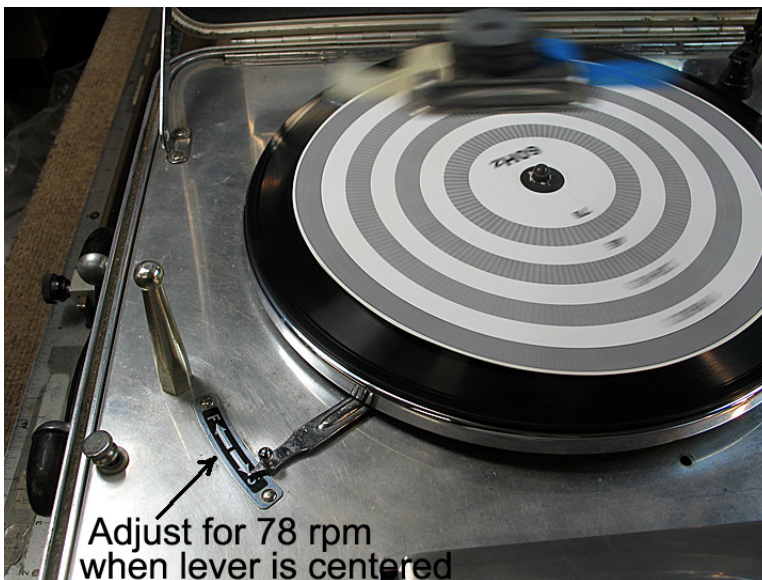
For motor rebuilding and current price, contact Dwayne Wyatt at Wyatts Musical Americana.
<https://www.wyattsmusical.com/>

Contact him by telephone at (707) 530-5130. Ship your motor by UPS or FedEx to

Wyatts Musical Americana
4190 Highland Springs Rd, Lakeport, CA 95453

4. Inspect the motor mount grommets. If dried, cracked, and collapsed, replace them with new grommets of the correct size to fit the motor mount holes in the motorboard. Avoid using grommets that are thicker than the originals, or the motor mount screws, which are quite short, will not screw securely into the motor.

5. Adjusting the pitch control. The speed of the motor is controlled by a governor. These are seldom in need of repair, but the friction pad that controls the pitch is often worn, and the speed indicator may be way off. If the motor was serviced by Wyatt's Musical Americana, minimal adjustment, if any, should be needed.

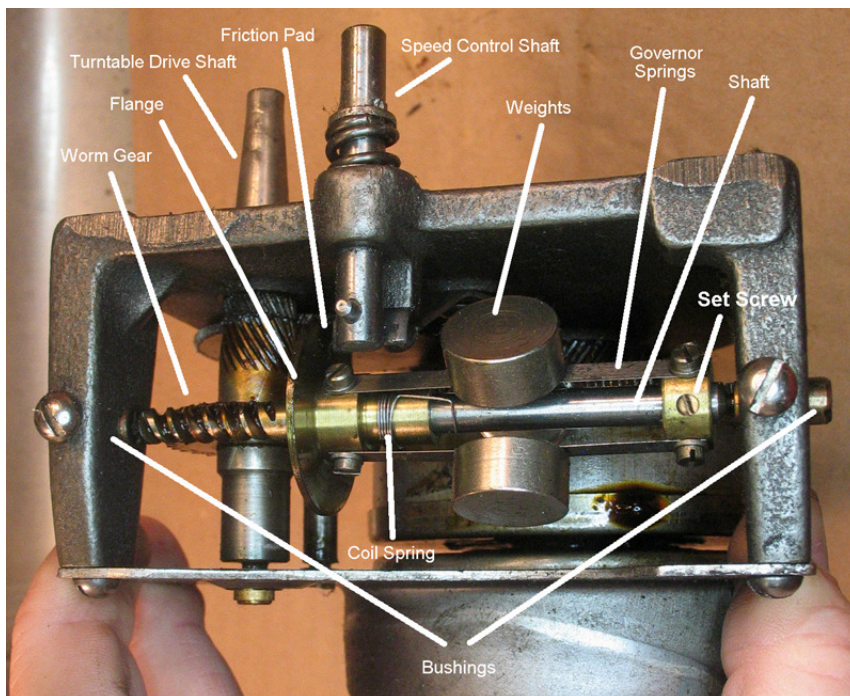


6. To set the pitch, or speed, correctly, use a strobe disc to set the speed at 78 rpm. Print the disc on the last page of this PDF, and glue it to a piece of light cardboard. Place it on the platter, and start the motor (fully wound). While viewing the spinning disc, move the speed control lever in either direction until the 78 rpm tick marks appear to stand still. Neon or LED light helps seeing the tick marks. A LED

night light in an extension cord held over the disc work well. Place black vinyl tape over the sensor.

7. Without disturbing the speed control lever, remove the platter and loosen speed control clamp. Making sure the governor shaft doesn't move, set the speed control indicator to the center of the speed dial, and tighten the clamp. Replace the platter, and test again. It may take several attempts to get the lever centered at the correct speed.

8. If the correct speed cannot be set, it may be necessary to adjust the pressure of the friction pad against the flange. Set the speed control lever to the center of the dial. Loosen the set screw on the worm gear drive shaft and slide the assembly so that it is in contact with the friction pad. Tighten the set screw. Repeat steps 6 and 7. It may take several attempts repeating steps 6, 7, and 8 to get the speed control lever aligned with the dial at 78 rpm.



TURNTABLE WOBBLE

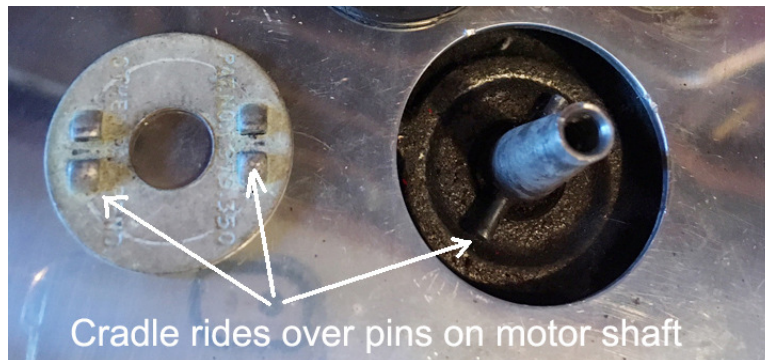
1. A certain amount of turntable wobble is to be expected as the bushing in the platter opening has dried and worn.

Excessive wobble will cause the platter to scrape against the speed control lever or brake mechanism, and may interfere with operation of the brake.

The motor shaft is tapered, as is the opening in the platter. A fix is often a matter of experimentation and trial and error.

2. Avoid damaging the bushing in the platter as much as possible when removing and replacing the platter while servicing the other components of the record player.

3. Make sure that the platter is correctly mounted on the turntable shaft. Note how the cradle meshes with the horizontal drive pins at the base of the motor shaft.



4. If the bushing in the platter isn't too worn, the best fix I have found is to cut and place a piece of shrink tubing over the drive shaft and heat in place. This step should only be taken after all other repairs and adjustments have been made and the platter is ready for final installation. If wobble is still excessive, a small grommet sliced in half and placed

around the motor drive shaft under the spindle nut may help. It's unlikely that all wobble can be eliminated.

STROBE DISC AND INSTRUCTIONS

On the next page, cut out the strobe disc and glue it to a piece of lightweight cardboard. The speed of the motor is adjusted by moving the speed control lever in either direction until the tick marks on the 78 rpm ring appear to stand still or nearly so.

The effect is best viewed under neon or LED light, which cycles at 60 Hz on household current. Fluorescent lights work reasonably well, too.

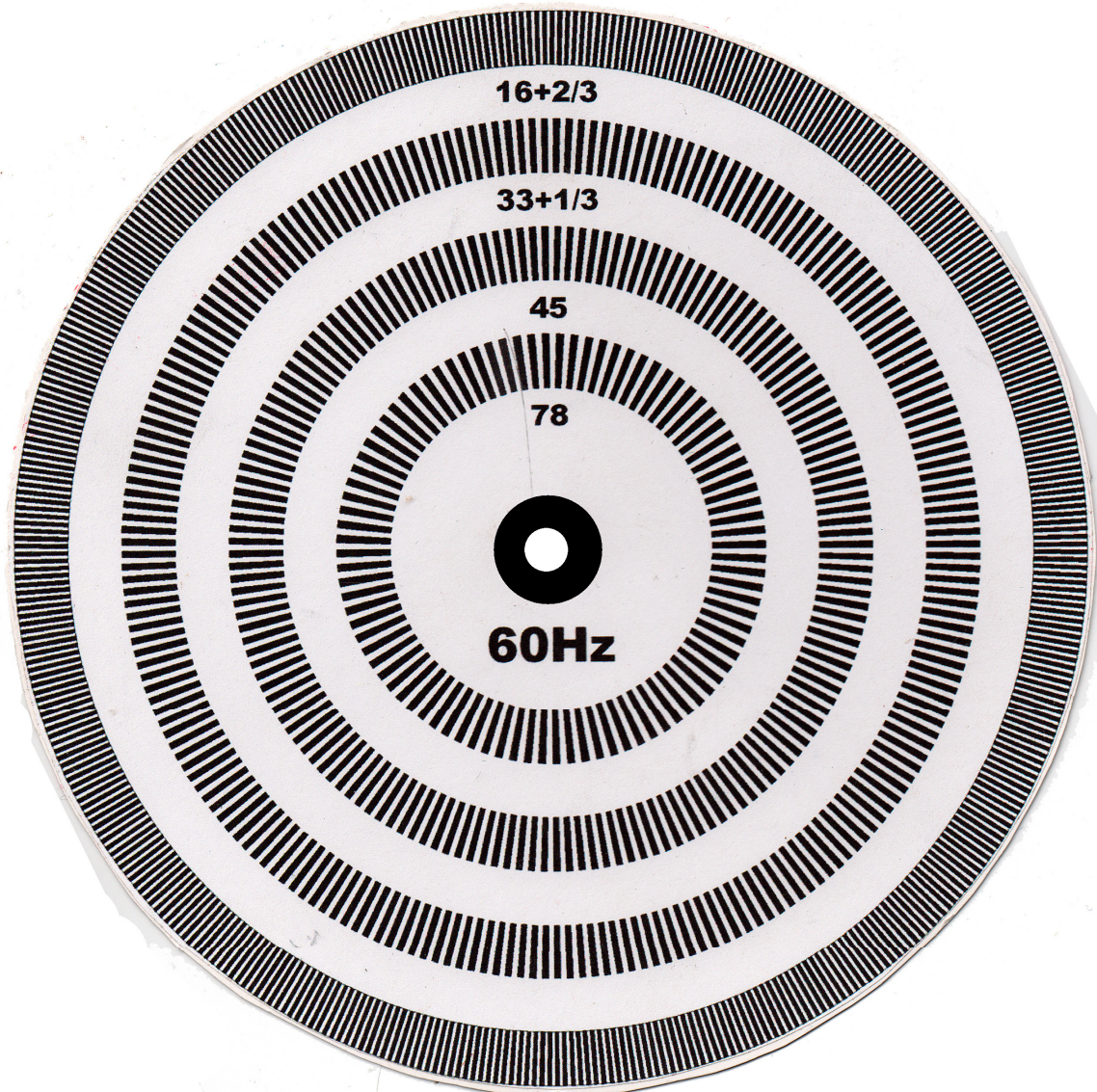
A strobe light can be made by plugging a LED night light into an extension cord and placing black vinyl tape over the sensor, causing the night light to turn on. Hold the light so it illuminates the strobe disk as it spins on the platter.

Watch the 78 rpm ring, and when it appears to be stationary, or nearly so, the motor is spinning at 78 rpm.

Remove the platter and loosen the clamp on the speed control lever and set the pointer on the dial's center line, and retighten the clamp. The governor drive shaft must not move while this is done. It may take a couple tries to get it right.

More resources may be found on the Resource Page at

www.edsantiqueradios.com



1. Cut out disc and paste to light weight cardboard
2. Cut spindle hole
3. Place disk on platter, select proper speed, and start motor
4. View under 60 cycle AC neon or led light
A LED night light in an extension cord works well. Cover the sensor with black vinyl tape
5. Adjust the speed or pitch control until the tic marks of the desired speed ring appear stationary or nearly so.