The Garrard RC88/4 Record Changer

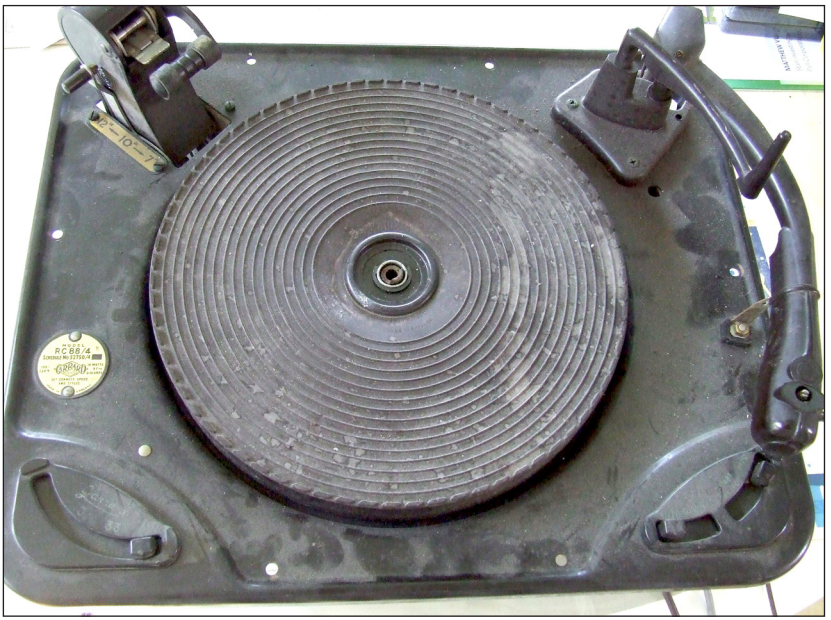
BY JOHN VUOLO

The operation of the Garrard RC88/4 is straightforward. At each loading, it will play automatically any number of records up to eight, of any one of the following types: 10- or 12-inch records at 78 rpm, 10- or 12-inch records at 33 1/3 rpm, 7-inch records at 45 rpm; disks can also be played at 16 2/3 rpm. Records can be played manually as well, and there is a setting for that on the turntable.

Voltage and Frequency

The Garrard RC88/4 Record Changer is suitable for use on either 100/130 volts or 200/250 volts AC, 50 or 60 cycles, according to the motor pulley fitted. A motor driving pulley can be supplied for 50 or 60 cycle power supply as required. The links in the power supply terminal block should be set to correspond to the voltage of the power supply, as shown in the accompanying diagram. The motor should be grounded by connecting a lead from the ground tag (located under one of the end cover screws) to a good earth connection. The molded cover on the terminal block is colored according to type of motor as follows:

BROWN — motor for AC only
BLUE — motor for DC only



The Garrard RC88/4 in its original condition

GREEN — low-voltage DC motor only
RED — universal motor for AC or DC

Power Consumption

The maximum current consumption of the RC88/4 on AC should not exceed 0.26 amp AC on 100/130 volts 50/60 cycles or 0.13 amp on 200/250 volts 50/60 cycles. On the RC88/4/ Universal, the current should not exceed 0.14 amps AC and 0.18 amps DC on 100/130 volts or 0.2 amps AC and 0.25 amps DC on 200/250 volts. On the RC88/4/ DC, the current should not exceed 0.18 amps on 100/130 volts or 0.25 amps on 200/250 volts. On the low-voltage 12-volt model, the current should not exceed 1.1 amps, or on the 6-volt model 2 amps.

Speed Variation

Should the speed vary during playing, remove the turntable and examine the motor pulley intermediate wheel and the inside of the turntable rim for traces of oil and, if necessary, wipe thoroughly with a clean cloth. Also check that the motor pulley is in its correct position on the motor shaft. So do so, switch the changer on and see that the inter-wheel runs in the center of the appropriate step on the pulley and that it does not foul the side of the adjacent step. If necessary, loosen the screws holding the pulley to the shaft and move it to its correct position.

Pickup Height

The distance the pickup lifts can be adjusted by turning the screw on top of pickup arm with a small screwdriver. Eight 12-inch 78-rpm (coarse groove) records should be placed on the turntable and the pickup height adjusted so that as the pickup returns to the rest on completion of the top record the tip of the pickup stylus clears the record surface by 1/8 inch. If necessary, further adjustment may be obtained by turning the screw, which is accessible underneath the changer.

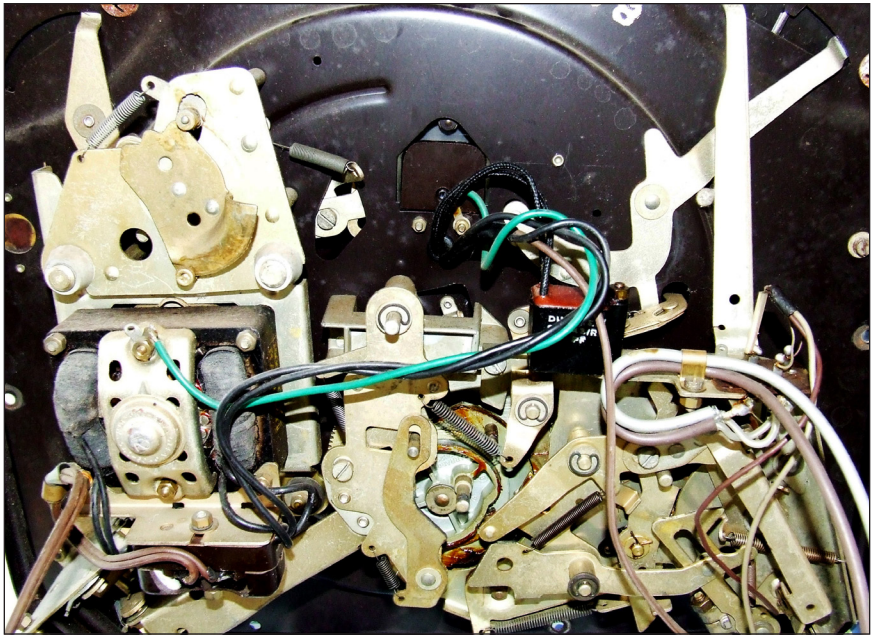
Pickup Stylus Pressure

The recommended stylus pressure for playing records (with the RC2 cartridge) is 10 grams, and it is strongly recommended that an occasional check of this be made with a pressure gauge. To adjust the stylus pressure, turn the screw at the rear of the pickup arm clockwise to reduce pressure and counterclockwise to increase it. (Most modern record changers usually use a tracking pressure of 3 grams or less).

Pickup Tracking

Should there be a tendency for the pickup to track incorrectly, especially on the first record, check the stylus pressure and adjust it if necessary. If the pickup does not run into the record groove after alighting on the record edge, check that the record changer is level by placing a spirit level on a record on the turntable. Also make sure that the flexible wire leading to the pickup is not twisted or held in such a manner as to prevent the free movement of the pickup arm, also making sure that the associated levers are free.

This cartridge is the GE RPX and not the original GC2 cartridge



The undercarriage of the Garrard RC88/4

Garrard 88/4 Condition Issues

I received the Garrard RC88/4 as you see it in the first picture in this article, full of dust and dirt. The original GC2 cartridge was replaced with a GE RPX. It also appears that someone at some point during its life rewired the turntable for a left and a right output (originally, the Garrard 88/4 was designed for mono operation). The original cartridge has only two wires coming down the arm and under the chassis, so I will have to take a look at that to see what was done. The rubber idler wheel looks OK. I suspect it was replaced because the rubber is not brittle or mushy. I checked all the springs and they all look fine and none are missing. It was also extremely fortunate that none of the actual changer mechanism parts were missing or broken, as today it would be almost impossible to replace them. Some of the lettering has worn off the top of the turntable, but it is still legible enough to read. The tone arm holder was broken off and someone replaced it with a small metal clip, so the tone arm still has a resting place. The turntable has no base for it to sit on, however.

The Restoration Process

Prior to cleaning a piece of equipment I like to apply heat (with a hairdryer or a heat gun at the low to medium setting) to the underside of the chassis and soften any grease that may be caked on before using a cleaner/degreaser. If a hairdryer or heat gun is not handy, another method is to put the item in your car and leave the car in the sun for a few hours. It sounds funny but it does work!

After giving the RC88/4 a thorough wash down with a mild cleaner/degreaser, I used compressed air to blow out any remaining old grease and cleaning solution. For the top of the turntable, I used a cotton cloth with a very mild soap solution to remove the dust and grime. For lubricating the mechanical parts restorers can use phono lube, lithium grease, or a synthetic lube. I have all three, and I used the synthetic lube on the motor bearings and checked performance. I then used some phono lube on the idler wheel and other places I could easily get to. Lastly, I used white lithium grease on the rest of the mechanism, which is easier to spray into tight places. Lithium grease also saved me from having to completely tear down

the changer mechanism as I was able to clean out all the old, dried-up lube. After that I slowly operated the entire changer mechanism by hand and looked for any binding or mauling of the gear and slide parts. I was fortunate that I had no problems there.

Next, using a VTVM I checked the motor, all the wiring, and the power switch for any shorts or open connections before applying power. I had to rig up a temporary base using two pieces of two by four blocks so the player would sit level on the table. After powering it up I could see the speed at the 78-rpm setting was slow. I applied some more synthetic lube to the top and bottom bearings of the motor and let it run for an hour or so without the idler and the turntable to give the motor a chance to spin freely. I next cleaned the brass pulley on the motor so the idler wheel had a clean surface to run against. I also cleaned the inside of the turntable itself to remove all the built-up dirt so the idler wheel had a good surface to make contact with.

I reassembled the turntable and found that it was now running at good speed on the 78-, 45-, 33-, and 16-rpm settings. I then began to operate the changer in the MANUAL setting and found some binding of the mechanism caused by old, dried-out grease that just had to work itself out. I did this by running the changer cycle for several days while using the white lithium grease to continue lubricating it. The key with older turntables like this one is to exercise the changer cycle as much as possible while lubricating it. After several days, the turntable changer cycle now operates well at 78, 45 and 33 rpm.

The next step was to set the turntable to the AUTO position and test it. It dropped the records properly, the tone arm moved freely back and forth, and the auto shutoff worked so I only needed to order replacement needles for the GE RPX cartridge and install them.

In looking at the wiring, I saw that someone went to the trouble of running a second lead up through the tone arm and then just bridged it against the original leads. Even though there are two RCA output jacks on the turntable it is still a mono output. Someone on eBay was parting out a Garrard 88 so I was able replace the tone arm holder and get another original spindle.

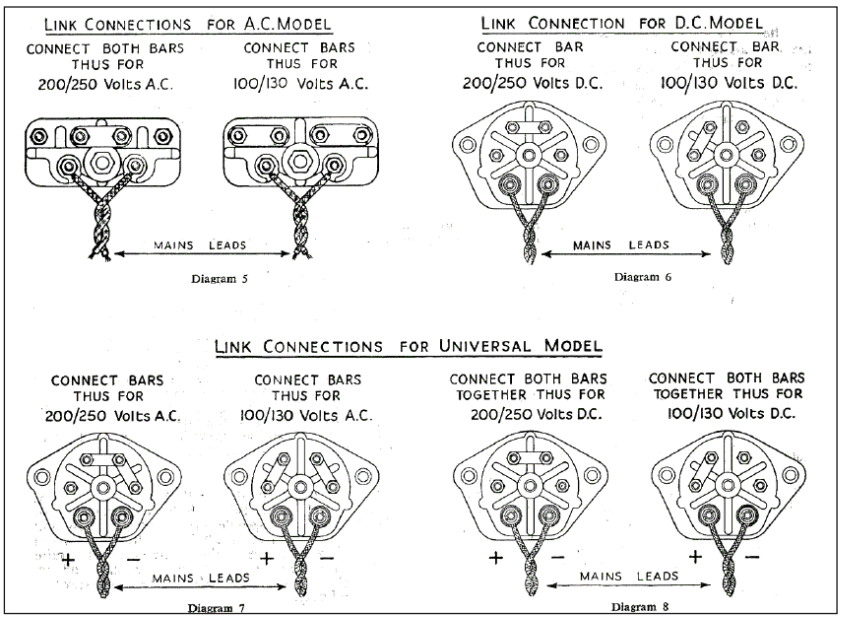


Diagram showing the various motor wiring options available on the Garrard RC88/4

The Garrard RC88/4 after a good cleaning...

Final Steps in Restoration

After completing repairs and replacing the needles on the cartridge, it was time to finally test it. I used a 78-rpm record and connected the turntable to an old amplifier I have that supports ceramic as well as a magnetic cartridge input. While the Garrard was now playing, the speed still seemed a bit off. After re-oiling the motor and checking a few other things, I finally have it working to my satisfaction. The turntable still needs a base and the suspension springs, but it plays well set up on blocks on an even surface. These turntables definitely need to be used regularly to keep the changer mechanism running smoothly.

John Vuolo has been working in the telecommunications industry for 34 years. He has been restoring and collecting antique radios, tube amplifiers and receivers, TVs, phonographs, and reel-to-reel machines for 40 years.

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