

Chapter 11 – Cleaning and Playing Cylinders

Last updated: 28 April 2008

Cylinder recordings were produced from 1877 to 1929. The earliest ones were tinfoil (until about 1888). Then brown wax was used until about 1904 and black wax from about 1902 until about 1912 (these had a 2 minute playing length). Four minute wax Amberols were made between about 1908 and 1912 but were discontinued because the wax was too soft for the thin stylus. Blue Amberols were made from celluloid, a much more wear resistant material, from 1912 until 1929. For much more detailed information on dating cylinders, see references 1 and 2.

I've looked at several references on cleaning cylinders and I think the ones recommending just water for wax cylinders and water and dish detergent for celluloid make the most sense because I've had good results cleaning 78s, 45s and LPs this way.

Wax cylinders can be cleaned with a soft, damp cloth but be very careful to not get the plaster core wet! There is no point in attempting to remove mold or mildew because these growths eat into the wax surface. If you have wax cylinders in this condition, your best action is to try to get the sound transferred to another medium as soon as possible.

The following was written by Bill Cahill [3]. I decided to just quote it in its entirety because he said it very well.

While mold quickly destroys the earlier two-minute wax cylinders, it takes mold longer to damage celluloid cylinders. Many times cleaning will restore celluloid cylinders to nearly new condition.

Here is the procedure I use:

I add a mild dish detergent to a bowl of lukewarm water. Never put a cylinder directly under the water as you could easily destroy the plaster of Paris core. Never allow that core to get wet at all unless you are doing a plaster repair. I use soft paper towels. I get one paper towel wet. I wring it out real good. I then put several drops of the dish detergent on the towel.

Hold the cylinder from the inside with your index and middle fingers of your unused hand. Gently but firmly take the wet towel in your other hand. Wipe the cylinder across the grooves in a circular pattern several times.

After you finish this, use the non-soapy side of the wet towel to remove as much of the soap as you can. Dry the cylinder with the dry towel, gently polishing the record in a circular pattern. This should make the surface much cleaner.

Another problem with cylinders is warping, usually a combination of the plaster warping and the celluloid shrinking. If you see cracks in the celluloid on either or both ends, the best thing to do is to insert a tiny bit into an electric drill such as a Dremel motor tool with speed control. Drill at a slow speed, because you don't want to overheat the celluloid, which is highly flammable. Drill two or three very small holes through the celluloid, not the plaster. Or, use a razor blade to create another open groove in the edge. This relieves some of the pressure on the shrinking celluloid.

If the plaster is warped, you can do it in one of two ways. Personally, I use a light grade of sandpaper, and, in a circular motion, lightly sand only the high spots of the plaster. You will need to eyeball it, checking it several times. What you are looking for is a one-inch gap between the edge of the cylinder with the title and the end of the mandrel, the tapered metal cylindrical part on the machine. All cores of cylinders had a matching taper when produced at the factories so records would fit properly.

The other thing you want is to get the record as straight as you can all the way across to cut down on record bouncing, which produces terrible sounding music.

If you are nervous about following these steps, experiment on junk cylinders. The other way, which doesn't work as well, is to purchase a record reamer from one of the cylinder phonograph parts dealers.

I hope this helps you to enjoy your cylinder recordings better.

The original acoustic players used a lead screw that was geared or belted to the cylinder rotation to move the stylus and reproducer (and in some cases, the horn) because the cylinder grooves were much too fragile to accomplish this. Electronic reproduction can be done by replacing the original stylus and mechanical reproducer with a modern pickup cartridge. This approach requires keeping the lead screw to move the cartridge along the groove.

The “prime source” site for people interested in the electrical playing of cylinders is run by Christer Hamp in Sweden [4]. He has links to everyone he knows about worldwide who is working on this so there is a tremendous amount of info here. I’ll touch on a couple of the more interesting sites and leave it up to you to explore whatever looks good.

The “long tonearm” method (with a low tracking force) is both fairly simple and effective. The tonearm is pivoted so the cartridge stylus “pulls” the cartridge along the groove. This has the advantage of providing a very small angular tracking error across the length of the cylinder but at the cost of some minimal wear to the groove. A very good discussion of this is on Glenn Sage’s web site[5]. He uses a three foot long tonearm counterbalanced to track at 1 to 4 grams. He also designed a motor drive system that uses a micro-stepped stepping motor to rotate the cylinder. Please see this site for photos and more details. He prefers doing the playback with “flat” turnover and rolloff.

The “moving mandrel” method is very elegant and is described (without too much detail) on Joe Pengelly’s site [6]. Two motors are used: one to rotate the cylinder and the other to move the carriage holding the cylinder-motor, mandrel and cylinder. Although the tonearm is pivoted, the pickup cartridge and stylus basically remains stationary as the cylinder is moved under it. This has the advantages of no groove wear and no tracking error (at least in theory). Both motors are DC with servo control. You can find some additional information on this system in a review written by Gary Galo and published in the November 2002 issue of *AudioXpress* magazine. The review is of a CD “Sounds Cylindrical” produced by Mr. Pengelly of cylinders recorded between 1900 and 1929. This CD is available from Old Colony Sound Laboratory [7].

Playback speeds (revolutions per minute) varied from about 120 to 160 RPM depending on the recording date. (See reference 1 for some details.) And if all else fails, adjust the speed until it sounds right.

REFERENCES:

1. <http://www.tinfoil.com/trc-do.htm>
2. <http://www.cylinder.de/guide.html>
3. <http://thepalomar.blogspot.com/2007/12/restoring-cylinder-records.html>
4. <http://www.christerhamp.se/phono>
5. <http://www.tinfoil.com/xferpics.htm>
6. <http://www.christerhamp.se/phono/pengelly.html>
7. AudioXpress, PO Box 876, Peterborough, NH 03458. <http://www.audioXpress.com>

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