

Appendix I - Needles

by Carsten Fischer

For your reference you should look in the 1941 Riders Manual of Recorders and Automatic Changers. In the RCA section, there is a whole page about what needles to use.

Now, for the early 16-E changers the company recommended Full-Tone Tungstones.



These were replaced in the mid-thirties by chromium, and towards the end of the thirties by osmium tipped jukebox needles. Jewel tipped needles are mostly a post-war development.

Now the practical aspect: Tungstone is definitely the gentlest way of playing, also cactus needles may work with a well-rebuilt pick-up. And I heard of one collector who prefers cactus.



For the Feather Touch crystal pick-up, osmium can be recommended because of the low weight. With the magnetic pick-up, osmium is going to cause some wear, but it may still work.

For osmium needles, bent shank needles should be give preference to straight shank. I know collectors who really like osmium needles with a half-round nylon shank, because it reduces scratch.

Below are discussed some main types of osmium multi-play needles with an evaluation of their sonic and wear qualities. These osmium needles were produced by many manufacturers (other than the ones shown) for use in commercial jukeboxes and home changers

Pfanstiehl - a straight shank needle, probably the loudest, but concern of record wear.



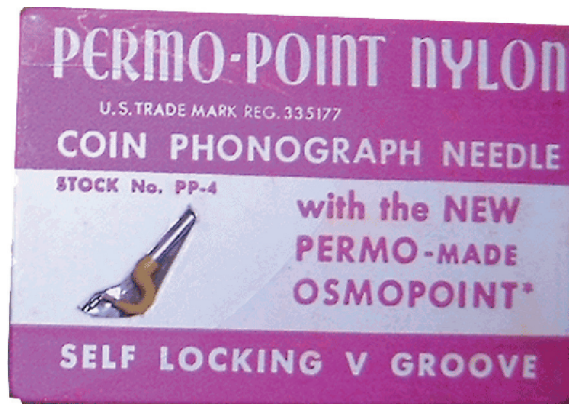
Jensen - a thin, not tapering bent shank needle: effectively filters scratch and gentle on records, but in my experience produces unpleasant resonance and some loss in volume.



Aeropoint - a tapering bent shank needle: Sounds best in my experience, good treble without resonance.



Permo Point Nylon: Some collectors swear by this needle: Very effective scratch removal, nice tone, perhaps a little loss of treble. Since this one is a little longer, a re-adjustment of pick-up elevation may be required.



And again, all jewel tips are strongly advised against. Osmium tips must never be taken out of the pick-up and re-inserted later, because the tip is shaped by the groove, and would damage if inserted in a different position.

Chromium should be avoided at any cost, because it just causes awful record wear.

Jewel tip is totally unsuitable, because the jewel rips the record apart, and may even shatter under the weight.

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For the post war 41-E, the original cartridge was a special General Electric Variable Reluctance cartridge with a special double shell and longer body. The sapphire tip stylus is soldered in and was only factory replaceable.

The 33 rpm cartridge was a General Electric VR RPX cartridge with push out stylus (customer replaceable). It may be advisable to upgrade the GE VR to a GE VR RPX cartridge for the 78 rpm side to solve the needle replacement problem. Also, the hum shielding is better.

Replacement RPX styli are available from needle dealers, but the 78 rpm needles are almost exclusively sapphire or ruby, which is ok for the 78 rpm geometry. Microgroove needles should always be diamond, because sapphire and ruby wear too quickly and are reputed to leave deposits in vinyl records.