Record clamps & anti-static mats

are they any good?

We have just had a look at two turntable mats and two record clamps to see whether they justify the claims made for them. Can they reduce static, rumble factor, stylus stall and improve stylus tracking and overall clarity? Read on.

At right is the Pod and below is the Michell record clamp. Both use a collet system to grip the turntable spindle.

The two mats we looked at were the Premierphile "Acoustic" mat and the Genie anti-static mat. And the two clamps were the Pod disclamp and the Michell record clamp. All except the Pod are made in England. The Pod is made in Canada but is promoted as a product of Monitor Audio Ltd, an English firm.

Let's have a look at each product in turn. Ostensibly, the Genie mat is just a disc of plain black felt about 3mm thick and 302mm in diameter. It is fairly light and weighs just 50 grams. To give it its anti-static properties, carbon fibres are woven through it.

By contrast, the Premierphile mat is much more substantial, weighing about 225 grams. It has a laminated construction with a solid rubber base and black felt top. It is about 5.5mm thick and has a diameter of 289mm which makes it easy to pick up the record. The Premierphile also has a slightly recessed centre section to allow for the extra thickness of records in the area of the label.

The Premierphile, like the Genie, is claimed to be anti-static. That meant that it had to be at least slightly conductive and we tested this with a 100VDC power supply and a digital voltmeter. This revealed that the Genie is relatively highly conductive and has a resistance from any two points on the mat of just a few megohms.

The Premierphile is much more of an insulator with resistances from any two points on the mat normally being in the range of several thousand megohms. Still, that is far more conductive than the average rubber mat and is evidently sufficiently conductive to remove static charges from one side of a record.

And in practice we were able to confirm that both mats do reduce static buildup on records. When you pick the record off the mat after playing there is not the characteristic "crackle" of static and the record does not grab the sleeve with alacrity as you slide it in.

What about the other claims though? The Genie, for example, claims to improve the rumble factor of the turntable by up to 70% and to "reduce stylus stall by gripping the record tighter than a conventional mat when the stylus is moving across the groove at a higher rate than along it".

The Premierphile claims are a little more vague but "the laminate construction ensures a reduction in lateral distortion and greatly improves stylus tracking" while tests have shown that the mat "improves the clarity of sound from the bass to treble".

While at first sight one tends to discount such claims as being outrageous, a little interpretation shows that there might be some basis in fact for the claims. The claim about improving rumble factor seems unlikely in that the mat would have to decouple the record from the platter. Frankly it seems that since the felt mat supports the record over its entire surface the effect would be just the opposite.

But what about the possibility of acoustic feedback via a direct air path from the loudspeakers to the record surface? Or from the speakers to the turntable base and thence to the record? Would the fact that the felt mats evenly support the record over its whole surface, rather than via a few concentric ribs on a conventional rubber mat, damp any tendency to acoustic feedback "howl".

If such a damping process did occur, the effect would be to reduce audible rumble somewhat and it would indeed improve the overall clarity of the sound reproduction.

It proved easy to test such a hypothesis and no special equipment was required, as we shall see.

No special claims are made for the two record clamping devices but, as we subsequently found, any benefit conferred by using either of the mats is augmented by the use of a clamp.

Both clamps make use of a collet arrangement to grip the turntable spindle and thus apply downward pressure on the record, to hold it more intimately in contact with the turntable mat. By doing so it can effectively flatten slightly warped records but it can do nothing for badly warped ones which have ripples.

The Pod is a plastic injection moulding with a sliding cylindrical section which tightens the collet. Its three feet are rubber tipped to avoid scratching the record label.

The Michell record clamp is a much more substantial affair consisting of a turned aluminium disc 86mm in diameter and slightly recessed on the underside. It has a knurled knob to tighten the collet and is easier to take on and off the record than the Pod.

Our method to test the mats and their effect on acoustic feedback (together with the clamps) was as follows. We used a typical domestic hifi system which had the loudspeakers mounted well away from the turntable in a large room. Nevertheless, as in most systems, it is possible to promote acoustic feedback if the volume and bass controls are sufficiently advanced although this is far above the level at which the system would normally be used.

By disconnecting the turntable from the mains supply and placing the cartridge stylus on the stationary record it is possible to test for the onset of acoustic feedback oscillation (howl) without being deafened by the program. So what we did was to make comparisons between the original rubber mat and the two anti-static felt mats, with and without record clamps.

We first set up the test with the original rubber mat which had concentric ribs. We advanced the volume control until the system was just on the verge of breaking into a continuous howl, as judged by thumping the system stand, walking heavily on the floor or tapping on the turntable base. Then without altering the settings, we repeated the test for one of the other mats and noted just how far the volume control could be advanced to produce the same condition.

We repeated each test with the bass control fully advanced, which produced slightly different results although the same trends were evident.

We found that both felt mats gave a significant improvement in reducing the apparent acoustic feedback for a given volume and bass control setting and, perhaps not surprisingly, the heavier Premierphile mat was the better of the two. We also tended to favour the heavier mat as it gives a better flywheel effect, particularly for the lighter turntables.

Next, we tried the effect of adding the clamps. Here we must note that for most turntables which have relatively short centre spindles, it is not possible to use the thicker Premierphile mat and the Pod clamp, because the collet will not grip the spindle. So in effect we tried three possible combinations: Genie mat with Pod or Michell clamp and Premierphile mat with the Michell clamp.

With the Genie mat both clamps gave an improvement but the Michell clamp was slightly better. The Michell clamp with the Premierphile mat was the best combination of the lot, by a clear margin.

We then followed the above round of tests by listening tests and while the results were less clear cut we can report that the same overall trend was clearly apparent. The higher threshold for acoustic feedback oscillation translates to quite audible improvements in the clarity of sound reproduction. This was not confined to the bass region but extends well above the midrange and even into the treble regions.

Finally, we should make some comment on the claim concerning "stylus stall". We have never experienced a record slipping on a ribbed rubber mat solely due to the drag introduced by the cartridge stylus although we think it is possible for some under-powered turntables to slow down ever so slightly on heavily modulated passages of a record. Again, we have not observed this effect.

However, if you are using a manual record cleaner and relying on the turntable to spin the record rather than doing it by hand, the record will stall when using either of these mats. So there is some slight inconvenience when using these felt mats. Also we would be inclined to use the vacuum cleaner occasionally on the mats to remove dust.

Both mats use carbon fibres to provide conductivity.

To sum up, using either of these felt mats with or without one of the clamps is likely to be a worthwhile addition to most high fidelity systems. And we preferred the Premierphile mat and Michell clamp as being the most effective combination and the better engineered.

Prices are as follows. The Genie mat, which will be sold under the Hunt brand name in future, is $12 while the Premierphile mat is $29.95. The Pod clamp is $25 while the Michell clamp is $35. We should add that we regard these prices as dear when the likely cost of manufacture is considered.

Our sample mats and clamps were supplied by Audio One, 71 Military Road, Neutral Bay, NSW. Phone (02) 90 6001. (L.D.S.)