FEATURE - CARTRIDGE SETUP TWEAKS

INTO THE GROOVE

Jon Marks looks at how to squeeze the very best sound from your cartridge, whether MM or MC.

Over the last three months, weíve looked at how LPs are made, which audiophile reissues provide top sound quality and where to buy the beloved black disc. But thereís little point shelling out the folding stuff if your cartridge isnít giving its best. So hereís a few handy hints on how to set your cartridge up to get it really singing.

SET-UP PROCEDURE

1) After bolting the cartridge loosely into the armís headshell, the first thing you need to do is set Vertical Tracking Force (VTF). This is usually done by setting the armís VTF dial to zero, moving the counterweight so the arm balances parallel to the record surface, and then dialling in the necessary VTF.

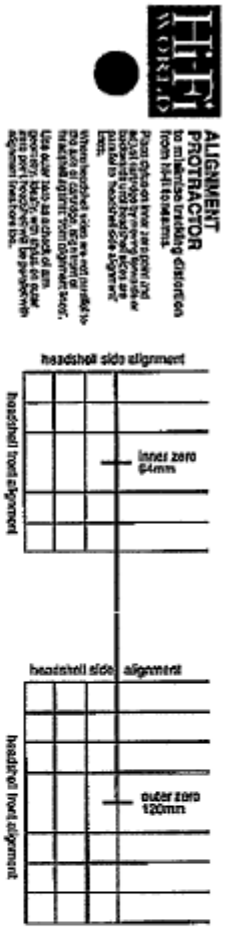
You can get better sound quality and generally more accurate VTF by using a stylus pressure gauge, like Shureís SFG-2 (£20 from Veda Products, tel: 01279 501111, works from 0.5gm to 3gms) or Ortofonís Stylus Tracking Force Gauge (£4.95 from Henley Designs, tel: 01753 889949, works from 0.8gm to 3gms).

Set the arm up as before but donít use the armís VTF dial to set tracking force. Instead, move the counterweight in towards the arm pivot and set VTF with the stylus pressure gauge. This improves sound quality because moving the counterweight closer in to the armís pivot point reduces the counterweightís inertia. This means the arm can move to follow the record grooves more quickly and easily.

The benefits are a more solid, realistic sound with better cartridge tracking across the frequency band. Bass becomes firmer and more detailed and treble smoother and more natural.

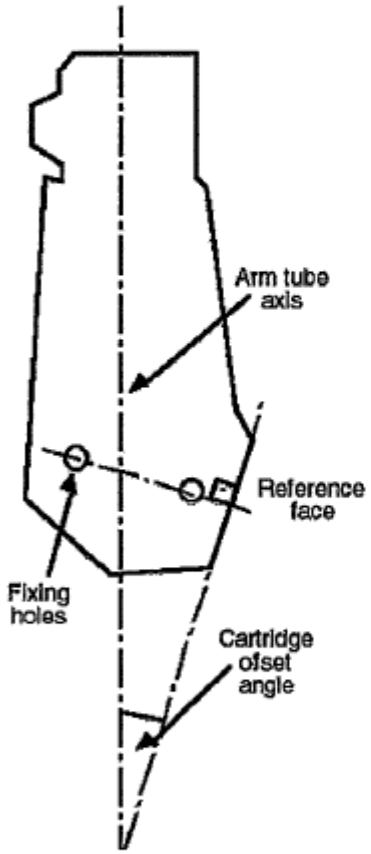
Owners of some arms already know about these benefits. There is an extra-heavy counterweight available for SMEís Series V, and Wilson-Beneschís carbon-fibre ACT 2 tone-arm has an ingenious counterweight which gets in very close to the armís pivot.

2) Always align your cartridge in the armís headshell using a quality protractor like the one printed here (this is full size, and can be cut out and glued to a piece of thin cardboard for use). Carefully punch small holes (with a pin) in the inner and outer zero positions for more accurate stylus positioning.



The cartridge must be aligned so that its body is parallel to the reference face, itself always at right angles to the cartridge mounting holes. Avoid skewing the cartridge in the headshell, since angular misalignment here raises tracing distortion considerably.

Tighten the cartridge mounting bolts after alignment, and then re-check alignment. Cartridges have an annoying habit of moving in the headshell after youíve spent 20mins getting them spot on! At this point VTF should also be measured again.



If youíre using an arm like Naimís Aro or SMEís Series 300/4/5, make sure the cartridgeís front is at right angles to the headshellís centre line (printed on SMEís own alignment gauge). This can be done by lowering the arm gently on to the gauge and holding it in position with a finger on the lift/lower lever. Then place a normal school protractor on the headshell and move the cartridge accordingly. Cartridges which have box-shaped bodies are the easiest to align - those with curved edges can be a nightmare to set-up.

3) Bias is normally set to match VTF on arms where you can dial it in, and to manufacturerís guidelines with thread-and-pulley systems. If youíve set VTF as above, youíll probably find you can use a slightly lower bias than usual. This yields a more fluid, rhythmic bass.

Generally, too high a bias gives a wooden, uninvolving sound while too little will cause mistracking. But get the bias right by changing it in small increments and music will really flow. Experimentation is the order of the day.

TWEAKY CORNER

Even two cartridges of the same make and model will require slightly different set-ups. This is because cartridges are electro-mechanical devices built to a certain, necessarily imperfect tolerance. If you want to get top sound quality from a given cartridge, you need to find its ësweet spotí where it operates at its best.

You can try changing alignment in VERY small increments by loosening the armboardís mounting bolts and tapping the armboard backwards and forwards with a small piece of wood and a light hammer. Alternatively, if you use an arm (like SMEís Series 4 and 5) which is

bolted into a carriage, move the carriage backwards and forwards.

Arm height is another parameter worth experimenting with - even very small changes here can make a big sonic difference. VTA should first be set to give a cantilever angle of 22-24degrees to the recordís surface. With most cartridges, this will mean setting the arm close to parallel to the record before tweaking VTA.

Some cartridges though, like DNMís Aciore reviewed in July, are unusual in their VTA - over 30degrees in the DNMis case. Lowering the arm pillar to get closer to a normal VTA will give the wrong stylus rake angle, which is not a good idea, and the bottom of the cartridge will probably scrape the record on warped passages. Optimising arm height is about stylus rake angle as much as VTA.

Unfortunately, delicately tweaking VTA is a problem for owners of arms like Regas which rely on shims for setting height. In this case, just set the arm to the correct initial height for the cartridge and leave it at that.

Headphones provide the quickest and easiest means of finding the sweet spot - you can hear very subtle changes in sound quality through íphones that would be lost on a pair of loudspeakers.

One little device which brings a surprising improvement is the Head-Q-Damper from A. R. T., an Italian company. This little beastie is a block of graphite cut across its grain (according to the Itanglish on the pack) and is designed to reduce the effect of vibrations in the cartridgeís body.

This is supposed to clean up lower midrange and bass, and it does. Bass in particular becomes firmer and better defined. The Head-Q-Damper costs £18 from Audiophile International (tel: 01276 855530). The only problem is that it adds mass at the cartridge end of the arm, so the counterweight will need to be moved back, but the next trick can help here.

To get the counterweight in as close as possible to the armís pivot point, you need to add mass to it. The best way to do this is to get a new counterweight made by a local machine shop, but there is an alternative. Simply blu-tack small change (penny pieces, for example) onto the existing counterweight. It doesnít look pretty and it takes a while, but as long as the coppers donít foul the armís movement, it can work spectacularly well.

The main area of improvement is in the bass, which gains great punch, solidity and detail. This mod also makes the midrange and treble smoother, more transparent and more dynamic. Tracking at all frequencies is improved too. The end result is a more substantial, open sound.

If you try all these tweaks, you should find your vinyl front end sounds like a completely new turntable. It might take a while, but it doesnít cost much and the improvements are well worth it. Tweak on!