stylus balance

This project, first published in the April 1976 issue, is amongst the choice of boards in our free printed circuit board offer. Provided the assembly instructions are followed correctly, this project is positively guaranteed to work first time!

A stylus balance is an invaluable aid for any Hi-Fi enthusiast, since the correct tracking force is essential for good disc reproduction. The Printed Stylus Balance (P.S.B.) is simply a lever balance made from a piece of copper laminate board, the weight of board on one side of the pivot being balanced by the stylus force on the other side. The smaller the tracking force, the further away from the pivot must the stylus be placed to achieve equilibrium, so the balance can be calibrated accordingly. The pivot is made from two dome-headed furniture tacks, which are pushed through the board from the plain side and the points cropped off. To use the P.S.B., first check that the turntable is level and set the pickup bias compensation to zero. Place a flat sheet of material, the same thickness as an average record, on the turntable mat, place the P.S.B. on top of this and gently lower the stylus onto the P.S.B. Move the stylus along between the calibrations on the P.S.B. until equilibrium is obtained, when the tracking force will be indicated by the P.S.B.

A pocket mirror is an ideal platform for the P.S.B., since it is about the same thickness as a record, flat and smooth, and the equilibrium condition is easy to judge from the reflection in the mirror.

It should be noted that the calibration accuracy of the P.S.B. depends on the mass per unit area of the board material, and is guaranteed only for boards supplied by the Elektor p.c. board service (EPS 9343). ⏮

Figure 1. The printed stylus balance.