ABSTRACT:

METHODS OF MONITORING OPERATING TEMPERATURES IN DISC DRIVES TO PREVENT THERMAL MISTRACKING

A thermal test track (-3) is provided outside the user-accessible area on the disc. A track complete of a known frequency is then written on either side of this thermal test track, preferably half the usual track separate distance away. To develop a thermal compensation constant, the transducer (10) is moved to the thermal test track with no compensation applied. This way, any thermally induced off-track error, which would affect seeks to user-accessible data tracks, will be reflected in the off-track from the nominal position of the thermal test track. The transducer is now moved in a series of defined increments (e.g. 5) smaller than normal track-to-track steps, or "micro-steps", away from the uncompensated position of the thermal track toward one of the tracks written with the known frequency. When the data on the written track to the side of the thermal test track is detected, a note is made of the number of micro-steps the transducer has been moved. The transducer (10) is then micro-stepped incrementally in the opposite direction until the data written on the other side of the thermal test track is detected. A simple comparison of these two micro-step counts will yield the existing thermal shift, which can be converted into a thermal compensation constant for the transducer positioning mechanism by means of a simple look-up table.

(Figure 2 to accompany Abstract when published)