

ABSTRACT

Retraction of a Disc-Drive Actuator

For low velocity retraction of a disc drive actuator during a parking operation, a system comprising a voltage generator circuit (84) generates a plurality of discrete dc voltage levels, a timing circuit (86) provides a series of timing pulses, and a selection circuit (88) responsive to the voltage generator and timing circuit outputs a voltage profile of increasing voltage steps from the voltage levels and the timing pulses. The voltage profile is provided to a driver circuit (54) that drives a voice coil motor (36,20) which, in turn, positions the actuator (30) with respect to the discs (16) of the disc drive. The application of the voltage profile during the parking operation causes the driver circuit (54) to act as a voltage source for the voice coil motor (36,20). External bias forces upon the actuator tending to force the actuator towards the park position generate a back EMF in the coil (36) opposing the voltage source of the driver circuit (54) and the motion of the actuator (30) towards the park position. The coil (36) is thus velocity limited and the voltage profile is selected to bring the actuator (70) to the park position at a terminal velocity sufficiently decreased as to generate acoustic noise below predetermined, acceptable limits.

[Figure 3] and [Figure 2]

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