

A MAGNET DESIGN FOR ACTIVE DAMPING

ABSTRACT

When an actuator of a hard disk drive is controlled, a butterfly phenomenon caused by the warpage of an actuator arm (8) and a breathing phenomenon caused by the deformation of a flat coil (10) configuring a voice coil motor (VCM) arise. By detecting the deformation of the actuator arm (8) with a sensing element and performing control for damping the deformation, in the conventional configuration of VCM, a phase at the of breathing resonance becomes opposite depending on a rotary position of the actuator. Therefore, it is impossible to perform always stable control at all the rotary positions. An additional slim south pole (16d) is located so that the same magnetic pole may act on a peripheral part (10c) of a flat coil (10) configuring a VCM without depending on a rotary position of an actuator arm (8).

FIG 2