DUAL COIL ROTARY ACTUATOR

ABSTRACT

An actuator assembly (100) having two coils (102, 104) disposed between the poles of a voice coil motor (VCM) magnet for improved dynamic performance during settling and tracking operations in a disk drive is disclosed. The two coils (102, 104) in the VCM are connected to separate current sources to allow the current flow in the two coils (102, 104) to have the same sense (clockwise or counterclockwise) or the opposite sense with respect to each other. When the current flows in the opposite sense, excitation of the principal in-plane bending mode resonance of the actuator assembly (100) is suppressed allowing the use of an increased servo bandwith for settling and tracking operations of the disk drive. During seek operations of the disk drive, where maximum torque on the actuator (100) is desirable, the currents in each coil (102, 104) are selected such that the forces on the actuator (100) from the two coils (102, 104) are additive.

FIG.4b