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LOAD/UNLOAD DISK DRIVE WITH MULTISTAGE RETRACT CIRCUIT FOR PARKING THE HEAD CARRIERS ON POWER DOWN

ABSTRACT

A data recording disk drive uses a circuit responsive to the removal of power to the spindle motor (12) to generate a two-stage torque to retract the actuator (14) and move it to a parking ramp (30). The spindle motor power removal circuit (200) sends an initial signal to a first switch (202) connected to a full-wave rectifier retract circuit causing only a portion of the available current from the spindle motor windings (110, 112, 114) to reach the actuator (14), moving the actuator (14) with an initial low-level torque which is sufficient to bring the actuator (14) to the disk OD under all circumstances. After a predetermined delay time, a second signal to a second switch (204) also connected to the rectifier circuit is activated allowing all available current to reach the actuator (14), moving the actuator (14) with a high-level torque which is sufficient to properly park the sliders (20) on the load/unload ramp (30) under all conditions.

Fig. 6

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