

ABSTRACT

**ELECTRIC SPINDLE MOTOR WITH MAGNETIC BEARING
AND HYDRODYNAMIC BEARING**

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An electric spindle motor for use in precision instruments such as hard disk drives comprises a stationary sub-assembly and a rotary sub-assembly movable relative to the stationary sub-assembly for carrying magnetic disks. The electric spindle motor has an integrated bearing system including a hydrodynamic journal bearing for providing desired radial load and a magnetic bearing for reducing friction resistance during starting/stopping and running of the electric spindle motor. The rotary sub-assembly is suspended from the stationary sub-assembly by the activation of the magnetic bearing during the rotating of the electric spindle motor. The electric spindle motor having integrated hydrodynamic journal bearing and magnetic bearing of the present invention is capable of high speed and high accuracy running, providing increased radial load and stiffness, and reduces the friction resistance therefore improves the performance and power saving.

(Figure 1)

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