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COMPOSITE RAMP STRUCTURE FOR DATA STORAGE DEVICES

ABSTRACT

A ramp structure (51) designed to reduce thermal expansion induced misalignment between load/unload ramps (32) and data storage disks (30) of a data storage device is disclosed. The ramp structure (51) has a rigid support structure (52) and ramp units (51) attached to the rigid support structure (52). The ramp units (51) are made of plastic that is particularly suited for use as load/unload ramps (32). The ramps (32) are mechanically connected by means of attachment to the rigid support structure (52). The data storage disks (30) are attached to a spindle (26). The rigid support structure (52) is made of a material that has a thermal expansion coefficient equal to the thermal expansion coefficient of the spindle (26) and any other parts to which the disks (30) are attached. As a temperature change causes the spindle (26) to expand and the spacing between the disks (30) to change, the rigid support structure (52) expands at the same rate, thereby maintaining alignment between the ramps (32) and the disks (30).

FIG 3