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IMPROVED SHRINK-FIT DISK-CLAMP FOR HARD DISK DRIVES

ABSTRACT

A ring shaped-disk clamp (44) for clamping a disk stack (38) to a spindle motor. The ring-shaped disk clamp (44) is referred to as a shrink-fit disk clamp (44) and must be expanded by heating prior to being inserted onto the hub (33) of a spindle motor. Once inserted onto the hub (33) of the spindle motor, an external axial load is applied to the disk clamp (44). As the disk clamp (44) cools while applying the external load, the clamp (44) contracts and provides a gripping force on the hub (33) of the spindle motor. Subsequently, the external load is removed. The ring-shaped disk clamp (44) includes a top surface, a bottom surface for contacting the disk stack (38), and an inner circumferential surface (408) for contacting the hub (33). The inner circumferential surface (408) contacts the hub (33) at a hub contact area (406) that is optimized to provide a localized gripping force on the hub (33).

Fig. 2

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