

ABSTRACT OF THE DISCLOSURE (FIG. 1)

"PERPENDICULAR MAGNETIC DISK APPARATUS"

According to one embodiment, there is provided a perpendicular magnetic disk apparatus including a perpendicular magnetic recording medium including a nonmagnetic substrate having a surface roughness (Ra) of 0.35 nm or less, a soft underlayer, a nonmagnetic intermediate layer having a perpendicular orientation ($\Delta\theta_{50}$) of 4° or less, and a perpendicular recording layer made of a magnetic material having perpendicular anisotropy, and a magnetic head including a write head and a magnetoresistive read head, the write head having a main pole, a return yoke, and an exciting coil, wherein a flying height (f) of the magnetic head and an average surface roughness (Ra) of the perpendicular magnetic recording medium satisfy the following relationship: $f > 0.61Ra^2 - 3.7Ra + 5.9$.



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