

DISK DRIVE HEAD ASSEMBLY

ABSTRACT

5 A data recording disk drive a low-flying air-bearing slider that
is also able to be in contact and near contact with the lubricant film
on the disk. The slider has a front air-bearing surface in the form of
a pair of equally-spaced air-bearing pads 25, 27, a rear air-bearing pad
29, and a central nonair-bearing recessed surface 28 which separates the
front and rear air-bearing pads. The two front pads have a surface area
greater than that of the rear pad and thus provide a positive pitch up
10 of the slider. This causes the rear pad to also be pitched up so that
air can flow beneath the rear pad to generate an air bearing in the rear
portion of the slider. The presence of the central nonair-bearing
region eliminates any lift in the central part of the slider, which
allows for the low-flying height. The flying height of the rear pad of
15 the slider above the disk is controlled by the width of the rear air-
bearing pad. The rear pad has its leading edge 31 wider than its
trailing edge 33 so that it is able to withstand contact with the
lubricant film on the disk, typically at the lower disk velocities near
the disk inside diameter, without generating unacceptable drag forces or
20 depleting the lubricant from the disk. The rear pad also has a skewed
leading edge which compensates for skew of the slider to minimize the
flying height variation from the disk inside diameter to outside
diameter.

This Sheet Has Been Replaced

