

SIDE BIASED DATUM SCHEME FOR INKJET CARTRIDGE AND CARRIAGE

ABSTRACT OF THE DISCLOSURE

An ink jet printer (10) includes a movable carriage (12) supported above an ink-receiving medium (24) by a rail (14) defining a carriage axis, with a cartridge holder (16) mounted on said carriage having a plurality of cartridge compartments (18) each receiving a respective thermal ink jet printer cartridge (20). Each cartridge is provided with three datum surfaces (54, 56, 58) located on the perimeter of a sidewall of the cartridge, and sufficiently spaced apart from each other and from the center of gravity of the cartridge to provide accurate and stable alignment. More particularly, the nozzle plate (30) of the cartridge is attached to a lower surface of snout portion (74) such that the Y axis of the nozzle plate is substantially parallel to the first sidewall, with the first and second datum surfaces (54, 56) at the front and rear of a lower end of the ink reservoir portion (70) straddling the snout and the third datum surface (58) at an upper end of the ink reservoir portion. At least the first and second datum surfaces are spaced from the Y axis within a predetermined tolerance by a first predetermined spacing. The cartridge is also provided with a forwardly facing fourth datum surface (44) on a lower end of the ink reservoir portion in front of the snout portion, and with a downwardly facing fifth datum (40) surface on the perimeter wall (64) of the ink reservoir portion adjacent the fourth datum surface and above said snout portion, so as to establish a pivot axis above and in front of the snout, and with a rearwardly facing sixth datum (46) surface on an upper end of the ink reservoir portion of said perimeter wall. The fourth datum surface is spaced from the X axis of

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the nozzle plate within a predetermined tolerance, while the locations of the fifth datum surface (which is used to determine the spacing of the nozzle to the print medium) and the sixth datum surfaces (which is used to determine angular orientation of the cartridge about the pivot point) are somewhat less critical.

(Fig. 3A)

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