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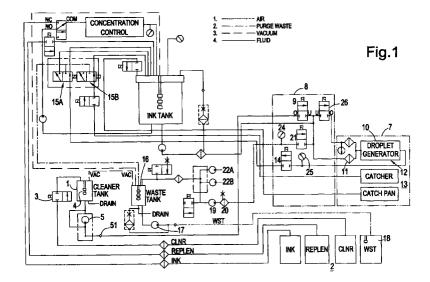
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(54) Cooling of high voltage driver chips

(57) A compact cooling technique is provided for cooling an ink jet printer or printhead electronics. A cooling plate (18) is held in good thermal contact to the integrated circuits (12) to be cooled. Fluid passing through the cooling plate then cools the electronics. The cooling plate is typically an aluminum plate embedded with thin walled stainless steel tubing through which fluid flows to provide cooling. The cooling plate has a compliant pad (26) which is thermally conductive, and electrically insulated. The plate and pad combination is held against the

integrated circuits for controlling the high voltage to the charging electrodes, which are mounted on the charge driver board. The integrated circuit is packaged in a cavity down ball grid array (BGA) package which provides low thermal resistance to the cooling plate. Variations in the height of the charge driver chips is compensated for by the compliant thermal pad. The fluid is routed through the printhead frame into the cold plate where heat is transferred to the fluid which returns to the printhead frame to exit the printhead. The fluid is ported into the printhead to where the drops will be generated.





EUROPEAN SEARCH REPORT

Application Number EP 99 30 9507

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