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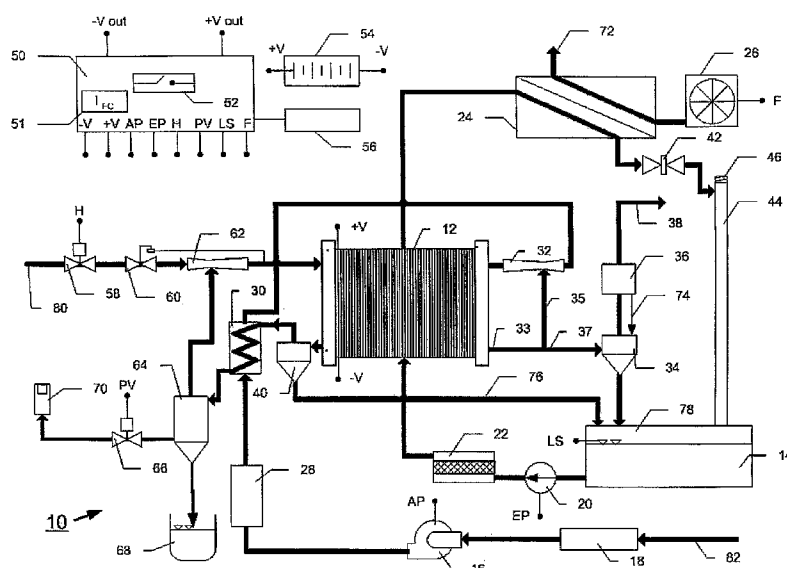
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(54) Title: **ALKALINE FUEL CELL SYSTEM**



(57) Abstract: An alkaline fuel cell system includes an alkaline fuel cell stack, a source of fuel gas, an oxidizer gas pump for oxidizer gas, an electrolyte tank, an electrolyte pump, an auxiliary electric storage device, and an electronic controller. The oxidizer gas pump is controlled by the electronic controller to deliver an oxidizer gas flow to the alkaline fuel cell stack which varies proportionately with the amount of electrical current drawn from the stack under any load conditions. At zero load, a minimal oxidizer gas flow is delivered to the fuel cell stack. The oxidizer gas pump may be a positive displacement pump such as a vane pump, a lobe pump, or a screw pump; or it may be a controlled blower. Also provided is a back pressure valve in the electrolyte flow circuit to maintain positive pressure in the electrolyte if the electrolyte is flowed through the fuel stack.