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(54) **CAVITIES FOR CENTER-PINNED ACTUATOR COOLING SYSTEMS**

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(57) **ABSTRACT**

A flow chamber having an upper chamber, a lower chamber, and an actuator is described. The upper chamber includes a top wall. The actuator is located distally from the top wall. The lower chamber includes a bottom wall and a sidewall. The lower chamber receives a fluid from the upper chamber when the actuator is activated. The bottom wall has orifices and at least one cavity therein. The orifices are vertically aligned with a portion of the actuator and allow the fluid to exit the lower chamber. The at least one cavity is proximate to the sidewall and distally located from the orifices.