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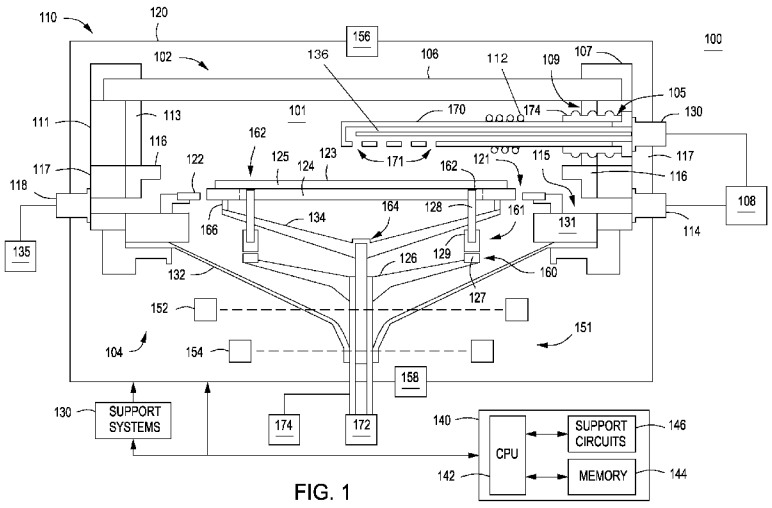


FIG. 1

(57) Abstract: Methods and apparatus for delivering process gases to a substrate are provided herein. In some embodiments, an apparatus for processing a substrate may include a gas distribution conduit disposed in a processing volume of a process chamber above a substrate support to distribute a process gas to a processing surface of the substrate when disposed on the substrate support; and an actuator coupled to the gas distribution conduit to move the gas distribution conduit with respect to the substrate support. In some embodiments, a method of processing a substrate may include introducing a process gas to a process chamber through a gas distribution conduit disposed above a substrate having a processing surface; and moving the gas distribution conduit within the process chamber and with respect to the substrate to distribute the process gas across the processing surface of the substrate.

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