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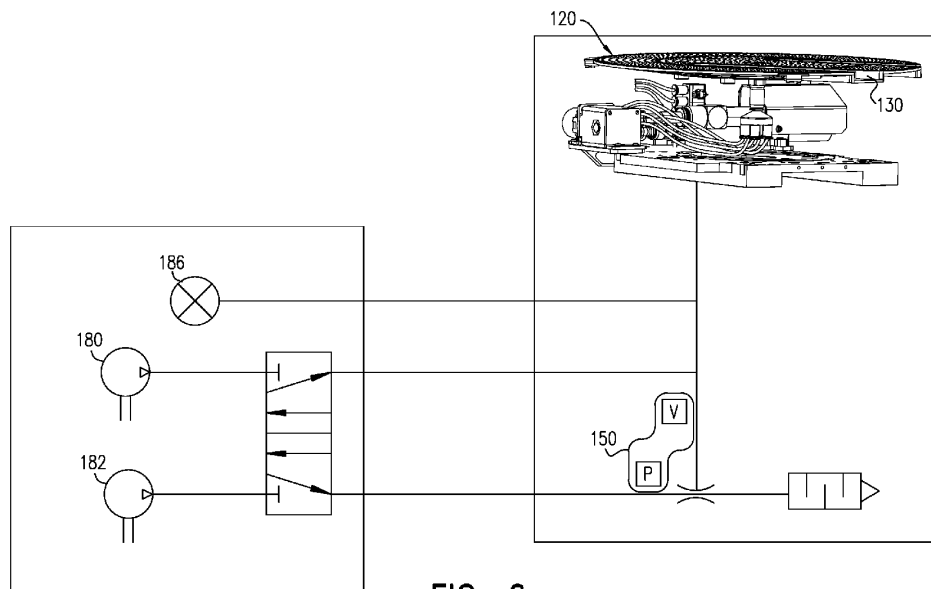


FIG. 6

(57) Abstract: Vacuum hold-down apparatus suitable for retaining a wafer in a desired position and orientation, the apparatus including a vacuum chuck assembly defining a vacuum chuck surface having a vacuum communication aperture, a venturi vacuum generator fixed with respect to the vacuum chuck assembly and communicating with the vacuum chuck surface via the vacuum communication aperture and a positive pressure fluid line communicating with the venturi vacuum generator.

[Continued on next page]

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