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- (71) Applicant: MKS INSTRUMENTS, INC. [US/US]; 2
Tech Drive, Suite 201, Andover, Massachusetts 01810
(US).
- (72) Inventors: CHAMBERLAIN, David Brian; 7 Gosselin
Avenue, Hooksett, New Hampshire 03106 (US). DAVID-
KOVICH, Vladislav; 906 Gazebo Circle, Reading, Massa-
chusetts 01867 (US). BENEDICT, Scott; Two Clocktower
Place, Apartment 2, Nashua, New Hampshire 03060 (US).
HILL, Gordon; 175 Lowell Street, Arlington, Massachu-
setts 02474 (US).
- (74) Agent: MILLS, Steven M. et al.; Burns & Levinson LLP,
125 Summer Street, Boston, Massachusetts 02110 (US).
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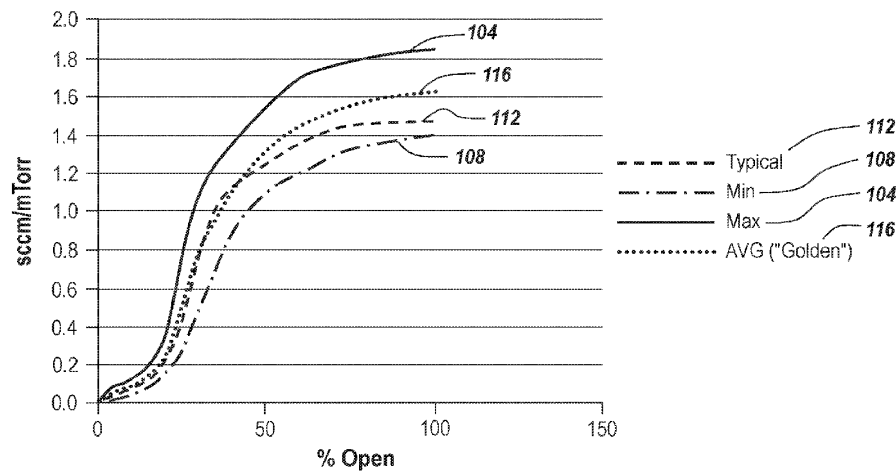


Fig. 1

(57) **Abstract:** Calibration of a valve in a vacuum system and providing a diagnostic indication in the vacuum system using the calibration includes measuring conductance of the valve as a function of angular valve position and generating a conductance calibration map or function for use during operation of the valve. An actual angular valve position is set based on the received set point angular valve position and a difference between the measured valve conductance and a predefined metric of conductance versus angular valve position. An actual system conductance and a difference between the actual system conductance and a reference system conductance for the system are determined. The diagnostic indication of a fault in the system is generated based on the actual angular valve position of the valve and the difference between the actual system conductance and the reference system conductance for the system.

[Continued on next page]

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