Title (en)

Method and apparatus for abrasive slurry distribution in mechanical polishing of substrate

Title (de)

Verfahren und Vorrichtung zur Abgabe von Poliermittel -Aufschlämmung im mechanischen Polieren von Substraten

Title (fr)

Dispositif et procédé de distribution de suspension abrasive pour le polissage mécanique de substrat

Publication

EP 0980741 A1 20000223 (FR)

Application

EP 99401715 A 19990708

Priority

FR 9810508 A 19980818

Abstract (en)

The apparatus for distribution of abrasive suspension or slurry comprises a reservoir (1) in a recirculation contour (40) with pumps (5,6) and a filter (8), and a flow control system including a pressure sensor (80) and a proportional integral-differential (PID) block (81) electrically connected to pumps. The apparatus also includes a refilling reservoir (42), a reservoir (44) for an inert gas under pressure as e.g. nitrogen (N2) of high purity, and valves (70,71,72) in lines to user terminals. The flow velocity in the distribution system is within the limits 0.2-10 m/s, preferably 0.5-2 m/s or 1-1.2 m/s. The two pumps (5,6) are connected in parallel, each operating at 50 % of power with possibility of 100 % in the case of breakdown of one pump. The distribution system also contains the means for vaporization of deionized water in gas under pressure to prevent blockage of filters. In another embodiment, the apparatus comprises two reservoirs for abrasive suspension connected in parallel, and a control system with the pressure sensor, the PID block, and additional controlled valves and level sensors.

Abstract (fr)

Appareil de distribution de suspensions abrasives comportant: un réservoir (1) contenant une suspension abrasive (2), une boucle de distribution (3,7,9,40) de la suspension abrasive (2) reliée au réservoir (1), des moyens de circulation (5,6) pour faire circuler la suspension abrasive (2) à boucle et assurer son retour dans le réservoir (1), des moyens de récupération (1) pour récupérer la suspension abrasive (2) après circulation dans la boucle, des moyens de régulation (81) des moyens de circulation de manière à maintenir une circulation continue de la suspension (2). <IMAGE>

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CPC (source: EP KR US)

B24B 37/04 (2013.01 - EP US); **B24B 57/00** (2013.01 - KR); **B24B 57/02** (2013.01 - EP US); Y10T 137/4673 (2015.04 - EP US); Y10T 137/469 (2015.04 - EP US); Y10T 137/4807 (2015.04 - EP US)

Citation (applicant)

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