

Abstract

A method for supplying a specified quantity Q of processing gas while dividing at a desired flow rate ratio Q_1/Q_2 accurately and quickly from a gas supply facility equipped with a flow controller into a chamber. When a specified quantity Q of gas is supplied while being divided at a desired flow rate ratio Q_1/Q_2 from a gas supply facility equipped with a flow controller into a reduced pressure chamber C through a plurality of branch supply lines and shower plates fixed to the ends thereof, pressure type division quantity controllers FV_1 and FV_2 are provided in the plurality of branch supply lines GL_1 and GL_2 . Opening control of both division quantity controllers FV_1 and FV_2 is started by an initial flow rate set signal from a division quantity control board FRC for fully opening the control valve CV of the pressure type division quantity controller having a higher flow rate and pressures P_3' and P_3'' on the downstream side of the control valve CV are regulated thus supplying a total quantity $Q = Q_1 + Q_2$ of gas while dividing into the chamber C through orifice holes (3a, 4a) made in shower plates (3, 4) at desired division quantities Q_1 and Q_2 represented by formulas $Q_1 = C_1 P_3'$ and $Q_2 = C_2 P_3''$ (where, C_1 and C_2 are constants dependent on the cross-sectional area of the orifice hole or the gas temperature on the upstream side thereof).



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