

ABSTRACT

FLUID FEEDING APPARATUS

A fluid feeding apparatus for use in a gas supply system, as in semiconductor manufacturing facilities, which permits high-precision control of the flow of fluid without causing transient overshooting phenomena of fluid at the start of fluid feeding or fluid changeover.

The fluid feeding apparatus of the present invention comprises a pressure flow controller to regulate the flow of fluid, a fluid changeover valve to open and close the fluid passage on the secondary side of the pressure flow controllers, and a fluid feeding control unit to control the actuation of the pressure flow controller and the fluid changeover valve, said pressure flow controller including: an orifice 5, a control valve 1 provided on the upstream side of the orifice 5, a pressure detector 3 provided between the control valve 1 and the orifice 5, and a calculation control unit 6 which inputs in a drive 2 for said control valve 1 a difference between a flow rate signal Q_c and a flow rate specifying signal Q_s as control signal Q_y , said flow rate signal Q_c calculated with flow rate $Q_c = KP_1$ ($K =$ constant) on the basis of a pressure P_1 detected by the pressure detector 3, wherein the flow rate on the downstream side of the orifice 5 is controlled by regulating the pressure P_1 on the upstream side of the orifice 5 through the opening and closing of said control valve 1.

Fig. 1

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