

PRESSURE TYPE FLOW RATE CONTROL APPARATUS

ABSTRACT OF THE DISCLOSURE

A pressure type flow rate control apparatus (1) controls flow rate of a fluid in an environment where a ratio of P_2/P_1 between an absolute pressure P_1 at an upstream side of an orifice and an absolute pressure P_2 at a downstream side of the orifice is maintained at a value less than about 0.7. The apparatus comprises: a plate for forming the orifice (5); a control valve (2) positioned upstream of the orifice; an orifice corresponding valve (9) positioned downstream of the orifice (5); a primary pressure detector (3) positioned between the control valve (2) and the orifice (5); a secondary pressure detector (11) positioned downstream of the orifice (5); a calculation control device (6) for calculating flow rate Q_c on the basis of the measured pressure P_1 of the primary pressure detector (3) by a formula $Q_c = KP_1$ (K being a constant) and for outputting as a control signal Q_y a difference between a flow rate command signal Q_s and the calculated flow rate signal Q_c to a drive unit (14) of the control valve 2; and a pressure comparing, calculating apparatus (10) for calculating the ratio of P_2/P_1 between the detected pressure P_1 of the primary pressure detector (3) and the detected pressure P_2 of the secondary pressure detector (11). The pressure P_1 upstream of the orifice is adjusted by opening and closing the control valve by the control signal Q_y , thereby controlling the flow rate downstream of the orifice.

(FIG.1)