

ABSTRACT

A compact valve using a shape memory alloy comprises: a moving valve body 3 that contacts an inner periphery of a guide pipe 1 having an built-in orifice 2, is freely movable and has a sealing portion 5 to seal the orifice 2; a biasing coil 8 provided between the orifice 2 and the moving valve body 3; and a wire 9 formed of a shape memory alloy and held between a stationary electrode 11 of the guide pipe 1 and a moving electrode 12 of the moving valve body 3. The orifice 2 is sealed by moving the moving valve body 3 due to transformation of the shape memory alloy by heating the wire 9. The moving valve body 3 is enabled to be elastically deformable by providing a coil spring 7 to reduce a stress, so that an overload to the moving valve body 3 due to contraction of the wire 9 is absorbed by elastic deformation of the moving valve body 3. Thereby, the overload to the shape memory alloy is reduced to prevent deterioration of repeatability of memorized shape, to increase durability and reliability of the valve.