

STEAM SUPPLY SYSTEM AND CHECK VALVE USED FOR SAME

ABSTRACT

The accuracy of controlling steam by a pressure reducing valve is enhanced. A steam supply passage 1 incorporates a pressure reducing valve 3 and the passage 1 further incorporates a steam ejector 4 downstream of the pressure reducing valve 3. A suction portion 4a of the steam ejector 4 is connected to a re-evaporation tank 2 for re-evaporating steam condensate D1 via a suction passage 9. Passage steam S' of the pressure reducing valve 3 is used as a driving steam for the steam ejector 4. In operation, re-evaporated steam FS within the re-evaporation tank 2 is suctioned by the steam ejector 4 to be mixed with the passage steam S'. The suction passage 9 incorporates a check valve 10 for preventing reverse flow of steam to the re-evaporation tank 2. The steam supply system described above is configured such that a valve opening ratio of the pressure reducing valve 3 is adjusted in accordance with the temperature or the pressure of the steam on the downstream side of the steam ejector 4 in the steam supply passage 1 and the check valve 10 has an inherent flow characteristics that an increase ratio of a flow rate associated with increase of its valve opening ratio is equivalent between a small opening ratio range with small valve opening ratios and a large opening ratio range with large valve opening ratios or an inherent flow characteristics that the increase ratio is smaller in the small opening ratio range than in the large opening ratio range.

Figure 1