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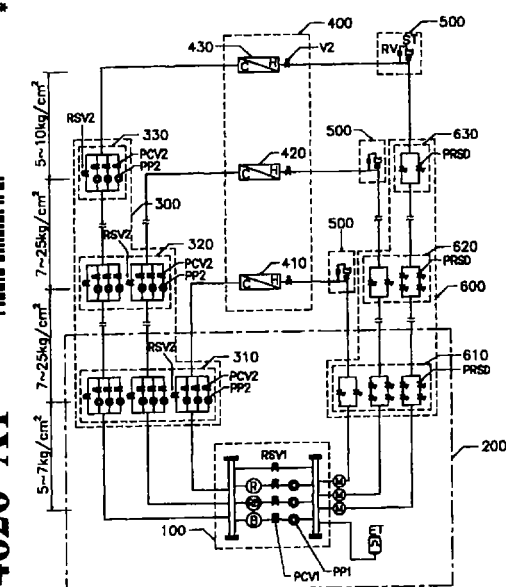
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(54) Title: SYSTEM AND METHOD OF PRESSURE DISTRIBUTION AND PRESSURE REGULATION FOR HEATING AND AIR-CONDITIONING UNITS, AND A VERY HIGH-RISE BUILDING UTILIZING THE SAME



(57) Abstract: The present invention relates to a multi-stage pressure distribution and pressure regulation system for heating and air conditioning piping units, a pressure control method of the same, and a very high-rise building utilizing the same, wherein head pressure that is critical in heating and air conditioning piping units of a n very high-rise building can be stably and correctly controlled. According to the present invention, there is provided a multi-stage pressure distribution and pressure regulation system for heating and air conditioning piping units, comprising: one or more heating and cooling loads 400 for areas vertically zoned depending on head pressure; a heat source supply system 100 for supplying thermo-fluid to the respective heating and cooling loads 400 for the vertically zoned areas; one or more booster pumping system 300 which are provided between the heat source supply system 100 and the respective heating and cooling loads 410, 420, 430 and each of which includes booster pumps PP2 for transferring the thermo-fluid from the heat source supply system 100 to the respective heating and cooling loads 400 and pump control valves PCV2 for maintaining a predetermined head pressure; and one or more pressure regulating system 600 which are installed between output side return lines of the respective heating and cooling loads 410, 420, 430 and the heat source supply system 100 and each of which includes at least one pressure reducing and sustaining device PRSD for reducing the pressure of the thermo-fluid outputted from each heating and cooling load 400 and sustaining it at the predetermined head pressure, wherein the

head pressure acting in proportion to the heights of stories of a building is distributed in a multi-stage manner within a head pressure range for safe use. Therefore, high head pressure in heating and air conditioning piping units of the very high-rise building can be accurately and stably controlled, and building space can be efficiently available since there is no need for immediate stories for installing thermal equipment therein contrary to the prior art. Further, there are advantages in that a lightweight building structure and a saving of construction expenses can be achieved and in that energy consumption can be reduced.

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