

Heat pump operation method includes the stages where the operating mode of the heat pump is selected using a control device; the circulation pump ensures circulation of the coolant along the external circuit. The refrigerant contained in the circulation circuit is heated in the heat exchanger-evaporator by heat from the coolant circulating in the external circuit; the refrigerant converted into gas is compressed using a compressor. The heat generated as a result of the compression of the refrigerant is used to heat the coolant circulating in the heating circuit using a heat exchanger-condenser. The residual heat of the refrigerant in the heat exchanger-heater is used to heat the coolant circulating in the external circuit. The refrigerant is throttled, the heat pump operation cycle is repeated, and a working agent is used in the circulation circuit of the heat pump. Wherein the working agent is an environmentally safe natural refrigerant isobutane with a positive boiling point, which circulates in a closed circuit and boils in the evaporator, taking heat from low-potential natural energy sources: from the outside air, natural water bodies, soil or groundwater, turning from a liquid state into a gaseous state. The resulting steam in the evaporator is then superheated by the return heat of the liquid agent in the superheater, which comes from the condensate cooler. Next, the superheated steam is sucked into the compressor, which is driven by an electric motor, and then the gaseous agent is compressed in the compressor and fed to the condenser, in which it is cooled, giving up heat to the coolant for heating and turns into a liquid state. Next, the agent condensate is cooled in the cooler with the removal of the agent cooling heat, after the cooler and superheater, the agent is throttled through the throttle and enters the evaporator, and then the thermodynamic cycle of the heat pump operation is repeated again.