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FEATURES OF REFRIGERATION SCREW COMPRESSOR OPERATION AT AMBIENT TEMPERATURE DECREASE

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With a decrease in ambient temperature, the heat gain on the refrigeration machine and condensation pressure decrease, which requires a decrease in cooling capacity and geometric compression ratio of the screw compressor. A condensation pressure decrease below a certain value disrupts the stable operation of throttling devices. The article describes the operation scheme of the refrigeration machine with a screw compressor and a liquid pump before the throttling devices, which allows it to work at a decreased condensation pressure. The dependences of changes in net efficiency, cooling capacity, power consumption and cooling coefficient at full and partial capacity with co-regulation of cooling capacity and geometric compression ratio are given. The experimental and calculated characteristics of a screw compressor operating with R22 freon are used.

Keywords: oil-flooded screw compressor, condensation temperature decrease, co-regulation of cooling capacity and geometric compression ratio, liquid pump before throttling devices.

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