COMPARED PERFORMANCE OF REFRIGERATION SYSTEMS USING OZONE-FRIENDLY REFRIGERANTS

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ABSTRACT
A vapor compression simulation model was developed. Simple mathematical models were employed for each component of the cycle. They resulted in a set of nonlinear equations, which was solved numerically. The model is capable of predicting the operating point of the system (including condensing and evaporating pressures) as a function of equipment characteristics (for example, compressor swept volume, speed and clearance ratio, and heat exchanger overall conductances) and prevailing thermodynamic conditions (such as heat source and heat sink temperatures with the mass flow rates of their fluids). As an application, a comparative analysis is made on the thermodynamic performance of a domestic refrigeration system running on three different refrigerants: HCFC-22, R-410A and R-407C.

REFERENCES