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Paper Withdrawn

SMALL SCREW COMPRESSOR APPLICATION TO TRANSIT  
AIR CONDITIONING SYSTEMS

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Abstract

Transit agencies through the U. S. have experienced poor reliability, high maintenance costs and excessive fuel consumption penalty of bus air conditioning systems.

This paper discusses an advanced design air conditioning system utilizing a rotary screw compressor and modified control system. A review of the design, laboratory testing and field testing on a modified advanced design bus demonstrates the advantages of the screw compressor over the presently used reciprocating air conditioning compressors. The reduction of wearing components, elimination of separate oil pump, reduction of vibration, and the use of refrigerant 12 (for lower system pressures) are factors in improving system reliability and reduced maintenance. A temperature control system that eliminates "re-heat" utilizes the inherent unloading capacity of a screw compressor, and controls humidity, maintains satisfactory passenger comfort while reducing vehicle fuel usage attributed to the air conditioning system.

"Life cycle costing" is used to compare economic factors of both a reciprocating and rotary screw compressor applied air conditioning system.

Topic Classification - Screw Compressors