

1984

# An Investigation on Reciprocating and Rotary Refrigeration Compressors

H. Kaiser

H. Kruse

Follow this and additional works at: <https://docs.lib.purdue.edu/icec>

---

Kaiser, H. and Kruse, H., "An Investigation on Reciprocating and Rotary Refrigeration Compressors" (1984). *International Compressor Engineering Conference*. Paper 428.

<https://docs.lib.purdue.edu/icec/428>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact [epubs@purdue.edu](mailto:epubs@purdue.edu) for additional information.

Complete proceedings may be acquired in print and on CD-ROM directly from the Ray W. Herrick Laboratories at <https://engineering.purdue.edu/Herrick/Events/orderlit.html>

AN INVESTIGATION ON RECIPROCATING AND  
ROTARY REFRIGERATION COMPRESSORS

H. Kaiser  
H. Kruse  
University of Hannover  
West Germany

Abstract

In addition to reciprocating compressors which are the traditional working machines in refrigeration cycles, a growing number of different types of rotary compressors are being used; especially for air conditioning purposes.

In an experimental investigation, various reciprocating and rotary compressors were analyzed concerning their thermodynamic and mechanical losses. All the compressors investigated are nearly of the same size and designed for automotive air conditioning systems. They were chosen for this comparative investigation since, at this time, nearly all systems of positive displacement compressors are being used for automotive air conditioning purposes.

A 2-cylinder-in-the-line reciprocating compressor and two types of swash-plate reciprocating compressors were experimentally tested in addition to different types of rotary compressors, i.e., stationary-vane, rotary-vane, wankel-type, screw-type, etc. In this paper the test results will be presented and compared with simplified computer models for the various designs.

Topic: Performance, capacity control and efficiency

(abstract edited and retyped from telex)