COMPARISON STUDY OF WEAR RESISTANCE IN RECIPROCATING COMPRESSORS FOR SMALL COOLING MACHINES

JEHAD S. RADAIDEH

Department of Mechanical Engineering, Al-Huson University College Al-Balqa Applied University, Irbid-Jordan

ABSTRACT

In this paper, we analyzed the corrosion resistance indicators for (HR) category compressors in comparison of other types of open compressors indicators (open type) and half open (semi-hermetic sealed) that used for the same purpose. An experimental test for corrosion resistance components of these compressors was used. These tests were conducted on the various compressors in similar conditions which allowed achieving this comparison.

The different effects of wear resistance on compressor components in terms of design parameters and operating parameters were studied, such as the Frequency of the shaft, number of cylinders, the type and location of the shaft, the specific pressure, the sliding speed of the compressor, type of main bearing, the initial roughness of surfaces friction, the initial clearance in the fits, the type of refrigerant and lubricating oil.

HR type compressors generally possess a higher degree of resistance to wear, which provides operational life about 37,000 hours. However, in these compressors, they cannot meet equal wear resistance in Plug-arm and rotating column. The increase in wear resistance in friction surfaces allows an increase in the operational life of the compressor.

KEYWORDS: Reciprocating Compressor, Wear Resistance & Refrigerators