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Waste Heat Recovery Management from Condenser Coil

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Abstract: *The potential of heat recovery systems to improve energy efficiency and lower operating costs in a variety of industrial applications has drawn a lot of interest in recent years. This study examines the design, working principles, and uses of condenser coils in relation to heat recovery management in refrigerators. It's possible that household refrigerators run constantly to preserve the ideal conditions for food preservation. This equipment uses more electrical energy when it is operating continuously. Therefore, waste heat recovery should be the focus of a major and tangible energy conservation initiative. The refrigerator's condensers reject a large quantity of waste heat. Therefore, an effort has been made to use the waste heat from a refrigerator's condenser. Waste heat from home refrigerators is usually used for water heating and space heating with the least amount of upkeep and operating expenses. A residential refrigerator was equipped with a cabin, and the condenser coils of the refrigerator were used as heating coils within the cabin. Convection currents caused the condenser coils to heat a known amount of water, raising the refrigerator's total coefficient of performance. In addition, if there is no heat sink, the refrigerator can be utilised like a regular refrigerator by leaving the cabin door open.*

Keywords: Domestic refrigerator, Waste heat recovery, Condenser Coil, COP

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