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Development of a circulating system for a jet refrigeration cycle

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Abstract: This paper proposed a workless-generator-feeding (WGF) system for a jet refrigeration cycle, using R141b. This feeding system does not require any mechanical power. The liquid refrigerant from the condenser was fed to the vapour-generator by means of the generator pressure and gravitational force. The system was tested and compared with a conventional system using a mechanical pump. It was found that this system was workable. The heat input to the generator was slightly higher than that for a system using a mechanical pump. The jet refrigeration cycle employing this new feeding system provided a slightly lower coefficient of performance (COP) compared to a system using a mechanical pump. However, this new system did not require any mechanical energy. Therefore, the jet refrigeration system employing this WGF system is truly a heat-power refrigeration cycle. (C) 2007 Elsevier Ltd and IIR. All rights reserved.

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