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A NEW COMPACT HEAT ENGINE

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ABSTRACT

The Differential Cylinder Heat Engine (DCHE) reported consists of two different size cylinders with pistons where four passages (channels) enable fluid communications between cylinders. The pistons are connected in opposition to share the work. As the channels are open and closed by movement of pistons the working fluid passing through the adequate channel is heated, cooled or let adiabaticaly flown from one cylinder to the other. The arrangement enables different thermodynamic cycles to be performed. Here the Brayton cycle is chosen by adequate choice of volume ratio and by positioning the channel apertures. During isobaric parts of the cycle the gas is adequately heated or cooled when passing through corresponding channel. During these process temperatures remain constant (and different) in each cylinder. The performance of the engine is analyzed and the parameters and efficiency determined.

KEYWORDS

heat engine

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