

Title (en)
PLANE TYPE HEAT EXCHANGER

Title (de)
EBENER WÄRMETAUSCHER

Title (fr)
ÉCHANGEUR DE CHALEUR DU TYPE À TUBES PLATS

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Application
EP 08846441 A 20081022

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Abstract (en)
[origin: WO2009061087A2] The present invention relates to a plane type heat exchanger that has a simple structure and can be easily manufactured by substituting a rectangular plane type for a spiral cylindrical type of the structure of a heat exchange pipe according to the related art which is used for a heat exchanger using combustion gas that is heated by a burner and makes laminar flow. According to the present invention, the plane type heat exchanger having heat exchange pipes, through which heating water flows, and makes heat exchange by contacting with laminar-flow combustion gas, the plane type heat exchanger, includes: a plurality of heat exchange pipes that have a rectangular cross section with a larger width of a side, which contacts with the combustion gas, than the height, and are arranged at regular intervals in parallel with each other; inner plates where both ends of the heat exchange pipes are inserted to be fixed at regular intervals; and outer plates that are communicated with the heat exchange pipes through the inner plates and form spaces covering the outer surfaces of the inner plates.

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Citation (search report)
• [X] JP 2001097029 A 20010410 - CALSONIC KANSEI CORP
• [X] DE 2117222 A1 19720518
• [X] DE 4226875 A1 19930218 - VAILLANT JOH GMBH & CO [DE]
• See references of WO 2009061087A2

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