

Title (en)

Modular cross-flow heat exchanger and method of manufacturing it.

Title (de)

Kreuzstromwärmetauscher als Modul und Verfahren zur dessen Herstellung.

Title (fr)

Echangeur de chaleur modulaire à flux croisés et son procédé de fabrication.

Publication

EP 0054796 A1 19820630 (FR)

Application

EP 81110157 A 19811204

Priority

FR 8027098 A 19801219

Abstract (en)

1. A countercurrent-flow exchanger module of the type consisting of alternating planar exchange plates and corrugated spacer plates disposed so that their corrugations alternately extend in two orthogonal directions, the edges of two succeeding exchange plates which extend in a direction parallel to the corrugations of the spacer plate therebetween being sealingly joined to each other at each level, characterized by the fact that each exchange plate (6) is rectangularly shaped and is provided in each corner thereof with an unsymmetrical notched portion (3, 4) in such a manner that after folding two end flanges (2b) along fold lines (5) parallel to the shorter sides the assembly defined by the two opposite fold lines (5) and the two edges (1) perpendicular there to is substantially inscribed in a square area and the remaining portion of the corner notched portions is symmetrical ; and that the spacer plates (7) are rectangularly shaped, having a width greater than the distance between two notch edges (3 or 4) by twice an offsetting amount (d), and a length equal to the width plus twice said distance (d) ; the width of the flanges (2b) of the exchange plates (6) beyond the fold lines (5) being at most equal to the length of the side (3 or 4) of the remaining symmetrical notched portion minus twice said distance (d) whereby each of these flanges (2b) can be turned down over the edge (1b) of the overlying exchange plate and pressed both against it and against the underlying plate without crushing therebetween the spacer plate (7) located between these two exchange plates, while remaining spaced from the corrugation ends of the next upper spacer plate (7).

Abstract (fr)

Echangeur de chaleur modulaire à flux croisés et son procédé de fabrication. Procédé de fabrication d'un module d'échangeur, caractérisé par le fait que dans une première opération, les divers éléments, plaques d'échange (6) et plaques entretoises (7) sont empilés avec des directions alternées entre des profilés d'angle (10) ou des profilés d'outillage ayant un profilage similaire du côté en regard de l'empilement, puis que dans une deuxième opération on procède à la finition par enduction de colle sur les faces internes des rebords (2b), rabattage de ceux-ci sur les bords (1b) correspondants de la plaque d'échange susjacente, et écrasement de l'ensemble (1b, 2b) contre la face de la plaque sousjacente (6), ceci de préférence à l'aide d'un outillage évolutif (32, 34) à déplacement rectiligne opérant successivement aux divers niveaux voulus et sur les quatre faces de l'empilement.

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