

Title (en)
Plate type heat exchanger

Title (de)
Plattenwärmetauscher

Title (fr)
Echangeur de chaleur à plaques

Publication
EP 1229294 A1 20020807 (EN)

Application
EP 01200331 A 20010131

Priority
EP 01200331 A 20010131

Abstract (en)
An evaporator (20) of the stacked plate, straight flow type achieves multi pass flow while locating the inlet (28) and outlet (30) adjacent to one another, without the use of embedded inlet or outlet pipes, and with only two basic plate shapes. A standard plate (32), included in all plate pairs but for the last plate pair at the far end, has a pair of identical protruding cups (34, 36), one of which (34) is open to the flow tube formed by the pair of facing plates, and the other of which, (36) is discrete from both the flow tube and the other cup (34). When stacked and aligned, the main cups (34) make up a header pipe (48) that is open to the flow tubes, one at both the top and bottom. Each header pipe (48) is adjacent to an entirely discrete transfer pipe (50). A next to last special plate (40) has an identical pair of cups (34, 36) at the bottom end, but a single, wider cross over cup (42) at the top end, which is open to the header pipe (48) and transfer pipe (50) at the top side. At the far end of the evaporator (20), the ends of both the top and bottom side header pipes (48) and transfer pipes (50) are closed off by a flat end plate (24). At the near end of the evaporator (20) the ends of the bottom side header pipe (48) and transfer (50) are closed off by a flat end plate (22), but left open at the top, to provide a refrigerant outlet (30) and inlet (28). Refrigerant entering the top side transfer pipe (50) at the near end runs to the cross over cup (42) at the far end, into the top side header pipe (48) at the far end, and then through a multi passed pattern back out the top side header pipe (48) at the near end. <IMAGE> <IMAGE>

IPC 1-7
F28D 1/03; **F28F 9/04**

IPC 8 full level
F28D 1/03 (2006.01); **F28F 9/04** (2006.01)

CPC (source: EP)
F28D 1/0333 (2013.01); **F28F 9/0246** (2013.01)

Citation (applicant)
• US 5101891 A 19920407 - KADLE PRASAD S [US]
• US 4274482 A 19810623 - SONODA NORIAKI
• US 4712612 A 19871215 - OKAMOTO MASAYOSHI [JP], et al
• US 5062477 A 19911105 - KADLE PRASAD S [US]
• US 5024269 A 19910618 - NOGUCHI ICHIRO [JP], et al
• US 4589265 A 19860520 - NOZAWA KAZUO [JP]

Citation (search report)
• [E] US 6216773 B1 20010417 - FALTA STEVEN R [US]
• [DA] US 4274482 A 19810623 - SONODA NORIAKI
• [DA] US 4589265 A 19860520 - NOZAWA KAZUO [JP]
• [A] PATENT ABSTRACTS OF JAPAN vol. 015, no. 232 (M - 1124) 13 June 1991 (1991-06-13)

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
EP 1229294 A1 20020807; **EP 1229294 B1 20031029**; DE 60101082 D1 20031204; DE 60101082 T2 20040513

DOCDB simple family (application)
EP 01200331 A 20010131; DE 60101082 T 20010131