

Title (en)  
Stacked-type multi-flow heat exchangers

Title (de)  
Mehrstromwärmetauscher in Stapelbauweise

Title (fr)  
Echangeur de chaleur du type empilé à passage multiple

Publication  
**EP 1310757 A3 20040506 (EN)**

Application  
**EP 02257053 A 20021010**

Priority  
JP 2001343199 A 20011108

Abstract (en)  
[origin: EP1310757A2] A heat exchanger has a laminating tube group communicating between a first tank (31) and a second tank (32). The heat exchanger includes a first heat exchange portion (46), a second heat exchange portion (48), and a third heat exchange portion (47). The first heat exchange portion (46) is disposed at a downstream side of an air passing through the heat exchanger and has a first group of tubes (6) forming a first route of a heat exchange medium. The second heat exchange portion (48) is disposed at an upstream side of the air and at a back side of the first heat exchange portion (46). The second heat exchange portion has a second group of tubes (7) forming a second route of the heat exchange medium. The third heat exchange portion (47) is disposed at both the upstream and the downstream sides of the air and at adjacent to the first (46) and the second heat exchange portions (48). The third heat exchange portion (47) has a third group of tubes (8) forming a third route of the heat exchange medium. <IMAGE>

IPC 1-7  
**F28D 1/03**

IPC 8 full level  
**B60H 1/32** (2006.01); **F25B 39/02** (2006.01); **F28D 1/00** (2006.01); **F28D 1/03** (2006.01); **F28F 9/02** (2006.01)

CPC (source: EP KR)  
**F28D 1/00** (2013.01 - KR); **F28D 1/0333** (2013.01 - EP)

Citation (search report)  
• [X] EP 0769665 A2 19970423 - DENSO CORP [JP]  
• [X] US 4589265 A 19860520 - NOZAWA KAZUO [JP]  
• [X] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 21 3 August 2001 (2001-08-03)

Cited by  
EP1515104A3; US8413715B2

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