

Title (en)  
HEAT EXCHANGER

Title (de)  
WÄRMETAUSCHER

Title (fr)  
ECHANGEUR DE CHALEUR

Publication  
**EP 0800048 A4 19990707 (EN)**

Application  
**EP 95902945 A 19941214**

Priority  
• BR 9408636 A 19941214  
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Abstract (en)  
[origin: EP0800048A1] A heat exchanger formed so as to enable a large amount of fluid to be heat exchanged efficiently, and the construction thereof to be simplified. A heat exchange flow passage (10) is provided on the inner side of a heat exchange vessel into and from which liquefied nitrogen, a heat transfer medium is supplied and discharged. The heat exchange flow passage (10) includes a plurality of stages of annular pipes (18) in which adjacent annular pipes (18) communicate with each other at a plurality of portions thereof, which are staggered circumferentially in different sets of stages, via communication pipes (19), tanks (20, 21) being provided so as to communicate with a supply port and discharge port respectively of the flow passage. The tank (20) communicates with a supply pipe (11), and the tank (21) with a discharge pipe (12). Since the positions of inlet ports and outlet ports of the annular pipes (18) are staggered circumferentially, a fluid is introduced in a turbulent state into the heat exchange flow passage (10) as it impinges repeatedly upon wall surface of the passage (10), in such a manner that the fluid is influenced much by the temperature of the same wall surface. <IMAGE>

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**F28D 1/06**

IPC 8 full level  
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CPC (source: EP)  
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Citation (search report)  
• [A] GB 191401364 A 19140326 - SCHROEDER KARL [DE]  
• [A] DE 9406183 U1 19940707 - KRANTZ TKT GMBH [DE]  
• [A] EP 0445337 A1 19910911 - ZEHNDER VERKAUF VERWALTUNG [CH]  
• See references of WO 9618859A1

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**EP 0800048 A1 19971008; EP 0800048 A4 19990707; EP 0800048 B1 20030416;** AU 1200295 A 19960703; AU 705772 B2 19990603; BR 9408636 A 19971223

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