

Title (en)
Heat exchanger

Title (de)
Wärmetauscher

Title (fr)
Echangeur de chaleur

Publication
EP 0479012 B1 19960117 (DE)

Application
EP 91115619 A 19910914

Priority
DE 4031577 A 19901005

Abstract (en)
[origin: EP0479012A1] 2.1. In heat exchangers, in particular water-to-air cooling heat exchangers, it is known to arrange corrugated rib elements between flat tubes which end at a distance from the tube plates. This distance serves inter alia for the application of a silicone layer on the opposite tube plates after the hard/soft soldering process. 2.2. In the new heat exchanger (1a, 1b, 1c), spacers (14, 15, 30, 60) are provided in the gap region between the ends of the corrugated rib elements (9) and the tube plates in order to avoid widening the flat tubes (6). The novel heat exchanger is also able to withstand relatively high overpressure stresses of, e.g., approx. 4 bars. 2.3. Water-to-air cooling heat exchangers for motor vehicles.
<IMAGE>

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F28F 9/00; **F28D 1/053**; **F28F 1/12**

IPC 8 full level
F28D 1/053 (2006.01); **F28F 1/12** (2006.01); **F28F 9/00** (2006.01); **F28F 9/013** (2006.01)

CPC (source: EP)
F28D 1/05366 (2013.01); **F28F 1/126** (2013.01); **F28F 9/0131** (2013.01); **F28F 2225/00** (2013.01); **F28F 2240/00** (2013.01)

Cited by
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DE ES FR IT

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