

Title (en)  
Vehicle radiator

Title (de)  
Fahrzeugkühler

Title (fr)  
Radiateur de véhicule

Publication  
**EP 0590945 B1 19980225 (EN)**

Application  
**EP 93307701 A 19930929**

Priority  
SE 9202819 A 19920930

Abstract (en)  
[origin: EP0590945A1] A vehicle radiator consists of a heat exchanger assembly (1) comprising at least two rows of flat liquid-conducting tubes (9) and fin units (8) which are arranged between each pair of tubes in the respective row and are adapted to guide air flow through the heat exchanger assembly in the transverse direction of the rows of tubes; an inlet tank (2) connected to a first end of the heat exchanger assembly for receiving heated liquid from the engine block of the vehicle and for distributing this liquid to the tubes; and an outlet tank connected to a second end of the heat exchanger assembly for receiving cooled liquid from the tubes and discharging it into the engine block, said inlet and outlet tanks each having a connecting plate (2, 3) with a number of connecting holes (5) for the tubes. The connecting plates (2, 3) are provided at the location of each hole (5) with a connecting piece (6) projecting from the tank. The ends of the tubes have a widened portion (7) for receiving the corresponding connecting pieces of the connecting plates. The tubes of the first row are disposed close to the corresponding tubes of the second row along the tube portion located between the widened tube end portions. <IMAGE>

IPC 1-7  
**F28D 1/02**; **F28D 1/053**; **F28F 9/04**

IPC 8 full level  
**F01P 3/18** (2006.01); **F28D 1/053** (2006.01); **F28F 1/02** (2006.01); **F28F 9/00** (2006.01)

CPC (source: EP)  
**F28D 1/05383** (2013.01); **F28F 1/025** (2013.01)

Citation (examination)  
WO 9014571 A1 19901129 - CARBONE AG [DE]

Cited by  
EP0798531A1; EP0908691A1; FR2769697A1; US6263570B1; US6510870B1; US6957487B1; EP1061319A1; US6935418B1; DE102012008843A1

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