

Title (en)

HEAT EXCHANGER PACKAGE WITH SPLIT RADIATOR AND SPLIT CHARGE AIR COOLER

Title (de)

WÄRMETAUSCHERPAKET MIT ZWEIGETEILTEM KÜHLER UND ZWEIGETEILTEM LADELUFTKÜHLER

Title (fr)

ENSEMBLE ECHANGEUR THERMIQUE A RADIATEUR DIVISE ET REFROIDISSEUR D'AIR DE SURALIMENTATION DIVISE

Publication

EP 1706609 A4 20121226 (EN)

Application

EP 04800894 A 20041109

Priority

- US 2004037275 W 20041109
- US 72388103 A 20031126
- US 93633104 A 20040908

Abstract (en)

[origin: WO2005054639A1] A combined radiator and charge air cooler package includes a radiator having upper and lower portions for cooling engine coolant and a charge air cooler having upper and lower portions for cooling charge air. The upper charge air cooler portion is disposed in overlapping relationship and adjacent to the upper radiator portion, and the lower charge air cooler portion is disposed in overlapping relationship and adjacent to the lower radiator portion. The upper radiator portion and the lower charge air cooler portion are aligned in a first plane, and the lower radiator portion and the upper charge air cooler portion are aligned in a second plane, behind the first plane. Ambient cooling air may flow in series through the upper radiator portion and the upper charge air cooler portion, and also through the lower charge air cooler portion and the lower radiator portion.

IPC 8 full level

F01P 1/00 (2006.01); **F01P 3/00** (2006.01); **F02B 29/04** (2006.01); **F28D 1/04** (2006.01); **F28F 9/02** (2006.01); **F28F 9/26** (2006.01)

CPC (source: EP)

F02B 29/0431 (2013.01); **F02B 29/0456** (2013.01); **F28D 1/0435** (2013.01); **F28F 9/02** (2013.01); **F28F 9/26** (2013.01); **F01P 2003/182** (2013.01); **F28D 2021/0082** (2013.01); **F28D 2021/0084** (2013.01); **F28D 2021/0094** (2013.01); **Y02T 10/12** (2013.01)

Citation (search report)

- [XY] EP 0522471 A1 19930113 - DAIMLER BENZ AG [DE]
- [Y] DE 4122899 C1 19920903
- [YD] US 6619379 B1 20030916 - AMBROS PETER [DE], et al
- [Y] US 6189604 B1 20010220 - YAMAUCHI YOSHIYUKI [JP], et al
- See references of WO 2005054639A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2005054639 A1 20050616; AR 048994 A1 20060621; AU 2004295677 A1 20050616; AU 2004295677 B2 20100218; CA 2547164 A1 20050616; CA 2547164 C 20110510; EP 1706609 A1 20061004; EP 1706609 A4 20121226

DOCDB simple family (application)

US 2004037275 W 20041109; AR P040104278 A 20041119; AU 2004295677 A 20041109; CA 2547164 A 20041109; EP 04800894 A 20041109