

Title (en)

Heat exchanger with flat finned tubes, more particularly radiator, cooler, condenser or evaporator for automotive vehicle

Title (de)

Wärmetauscher mit verrippten Flachrohren, insbesondere Heizungswärmetauscher, Motorkühler, Verflüssiger oder Verdampfer, für Kraftfahrzeuge

Title (fr)

Echangeur de chaleur avec tubes plats ailetés, en particulier radiateur, refroidisseur, condenseur ou évaporateur pour véhicule automobile

Publication

**EP 0964218 A3 20000830 (DE)**

Application

**EP 99109324 A 19990528**

Priority

DE 19825561 A 19980608

Abstract (en)

[origin: EP0964218A2] The vehicle heat exchanger assembly has ribbed flat tubes (2) with collectors (8a,8b) connected to the tube interiors, with one collector at each end of the tubes. The flat tubes (2) alternate, singly or in groups, with one end at a collector (8a), and the other end at the other collector (8b), using different heat exchange fluids. Each collector (8a,8b) has an inflow (30) and a backflow (32) for each of the fluids. The ends of the flat tubes (2), away from the collectors (8a,8b), have a U-shaped flow deflection (22).

IPC 1-7

**F28D 1/03**; **F28D 1/053**

IPC 8 full level

**F24H 3/08** (2006.01); **F28D 1/03** (2006.01); **F28D 1/04** (2006.01); **F28D 1/053** (2006.01); **F28F 9/02** (2006.01)

CPC (source: EP US)

**F24H 1/009** (2013.01 - EP US); **F24H 3/0429** (2013.01 - EP US); **F24H 3/0435** (2013.01 - EP US); **F24H 3/081** (2013.01 - EP US); **F24H 3/085** (2013.01 - EP US); **F24H 9/1872** (2013.01 - EP US); **F28D 1/035** (2013.01 - EP US); **F28D 1/0391** (2013.01 - EP US); **F28D 1/0426** (2013.01 - EP US); **F28F 9/0202** (2013.01 - EP US); **F28F 9/0212** (2013.01 - EP US); **F28F 9/0224** (2013.01 - EP); **F28F 9/0263** (2013.01 - EP US)

Citation (search report)

- [XY] GB 583814 A 19461231 - JAMES FRANK BELAIEFF, et al
- [Y] DE 19515528 A1 19961031 - THERMAL WERKE BETEILIGUNGEN GM [DE]

Cited by

US6810952B2; FR2864610A1

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

**DE 19825561 A1 19991209**; BR 9901800 A 20000314; DE 59908225 D1 20040212; EP 0964218 A2 19991215; EP 0964218 A3 20000830; EP 0964218 B1 20040107; ES 2213943 T3 20040901; US 6328100 B1 20011211

DOCDB simple family (application)

**DE 19825561 A 19980608**; BR 9901800 A 19990608; DE 59908225 T 19990528; EP 99109324 A 19990528; ES 99109324 T 19990528; US 70832200 A 20001108