

Title (en)

Heat exchanger, in particular exhaust gas heat exchanger

Title (de)

Wärmetauscher, insbesondere Abgaswärmetauscher

Title (fr)

Echangeur thermique, en particulier échangeur thermique de gaz d'échappement

Publication

**EP 1870656 A3 20120321 (DE)**

Application

**EP 07008049 A 20070420**

Priority

DE 102006028578 A 20060622

Abstract (en)

[origin: EP1870656A2] The exchanger has a bundle of pipes (2) that is inserted into a housing (11), where exhaust gas flows via the pipes, and a coolant channel (5) is arranged between the pipes. The bundle of pipes has a lattice-like, metallic retaining device (10) that reinforces the bundle to the housing. The retaining device is formed as a single piece with resilient cantilevers (12a) that are deformed against an insertion direction, where an elastic force is directed against the housing. Elongation and deformation induced by alternating a thermal stress load are provided by an elastic device (20).

IPC 8 full level

**F28D 7/16** (2006.01); **F01N 5/02** (2006.01); **F28F 9/013** (2006.01)

CPC (source: EP US)

**F28D 7/1684** (2013.01 - EP US); **F28F 9/013** (2013.01 - EP US); **F28D 21/0003** (2013.01 - EP US); **F28F 2265/26** (2013.01 - EP US); **F28F 2265/30** (2013.01 - EP US); **F28F 2280/02** (2013.01 - EP US)

Citation (search report)

- [XY] DE 19721132 A1 19971127 - USUI KOKUSAI SANGYO K LTD [JP]
- [Y] DE 10312788 A1 20040930 - BEHR GMBH & CO KG [DE]
- [I] EP 0661509 A1 19950705 - PHILLIPS PETROLEUM CO [US]
- [Y] DE 3242619 A1 19830601 - SERCK INDUSTRIES LTD [GB]
- [Y] US 5644842 A 19970708 - COLEMAN RICK L [US]
- [Y] EP 1544564 A1 20050622 - MODINE MFG CO [US]
- [Y] WO 03104733 A1 20031218 - HINO MOTORS LTD [JP], et al

Cited by

EP2522943A1; DE102011011117A1; WO2012152860A1; DE102008002430C5; DE102013011061B3; DE102008049252A1; DE102008049252B4; DE102011076800A1; DE102011011117B4; US9400143B2; WO2019101498A1; WO2019101497A1

Designated contracting state (EPC)

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

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

**EP 1870656 A2 20071226; EP 1870656 A3 20120321; EP 1870656 B1 20130619**; CN 101093153 A 20071226; CN 101093153 B 20130612; DE 102006028578 A1 20071227; DE 102006028578 B4 20200312; ES 2425572 T3 20131016; US 2008006398 A1 20080110; US 8033323 B2 20111011

DOCDB simple family (application)

**EP 07008049 A 20070420**; CN 200710106787 A 20070622; DE 102006028578 A 20060622; ES 07008049 T 20070420; US 76449107 A 20070618