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 B1 20130619 (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)

Cited by

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

Designated contracting state (EPC)

DE ES FR GB IT

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