

Title (en)

Heat exchanger having tubes of oval or oblong cross section and method of assembling the same

Title (de)

Wärmetauscher mit Rohren mit ovalem oder länglichem Querschnitt und Verfahren zur dessen Herstellung

Title (fr)

Echangeur de chaleur à tubes de section ovale ou oblongue et son procédé d'assemblage

Publication

**EP 0772019 B1 20000830 (FR)**

Application

**EP 96117254 A 19961028**

Priority

FR 9512949 A 19951102

Abstract (en)

[origin: EP0772019A1] The heat exchanger consists of a series of oval-section tubes (12) with fins (14) and ends which pass through apertures in collector plates (20) with compressible seals (30) forming collars (34) round the ends of the tubes. The longer axis of each tube oval cross-section is the same along the whole of the tube, while the shorter axis is greater at the end of the tube, caused by an expansion of the tube as it passes through the collector plate aperture and seal. The expansion is produced by a tool (48) with a shaped tip (50) which is driven into the end of each tube after it has been assembled with the collector plate, compressing the seal against the sides of the aperture. The compression of the seal in a lengthwise direction is carried out before the tubes are fitted.

IPC 1-7

**F28F 9/14**

IPC 8 full level

**F28F 9/16** (2006.01)

CPC (source: EP US)

**F28F 9/165** (2013.01 - EP US); **Y10T 29/49375** (2015.01 - EP US); **Y10T 29/49378** (2015.01 - EP US); **Y10T 29/49391** (2015.01 - EP US); **Y10T 29/53122** (2015.01 - EP US)

Cited by

FR2825458A1; DE10123675B4; FR2782157A1

Designated contracting state (EPC)

DE ES GB IT

DOCDB simple family (publication)

**EP 0772019 A1 19970507**; **EP 0772019 B1 20000830**; BR 9605375 A 19980728; DE 69610059 D1 20001005; DE 69610059 T2 20010412; FR 2740869 A1 19970509; FR 2740869 B1 19971219; MX 9605319 A 19970830; US 5901784 A 19990511; US 6044554 A 20000404

DOCDB simple family (application)

**EP 96117254 A 19961028**; BR 9605375 A 19961031; DE 69610059 T 19961028; FR 9512949 A 19951102; MX 9605319 A 19961101; US 20795098 A 19981209; US 74197596 A 19961031