

Title (en)

TUBULAR HEAT EXCHANGER FOR CONTROLLING A WIDE PERFORMANCE RANGE

Title (de)

ROHRBÜNDEL-WÄRMETAUSCHER ZUR REGELUNG EINES BREITEN LEISTUNGSBEREICHES

Title (fr)

ÉCHANGEUR DE CHALEUR À FAISCEAU TUBULAIRE DESTINÉ À LA RÉGULATION D'UNE LARGE PLAGE DE PUISSANCE

Publication

EP 2326905 B1 20130717 (DE)

Application

EP 09748948 A 20090918

Priority

- DE 2009001317 W 20090918
- DE 102008048405 A 20080923

Abstract (en)

[origin: WO2010034292A2] The invention relates to a tubular heat exchanger comprising heating surface pipes (2), the ends of which are held in pipe plates (3, 4), and a pressure shell (6) surrounding the heating surface pipes (2) and forming a shell space (5), wherein a cooling medium flow (8) for cooling a first medium flow (7) conducted through the heating surface pipes (2) can be conducted through the shell space (5), further comprising at least one pipe inlet chamber (9) from which the first medium flow (7) is introduced into the individual heating surface pipes (2), and at least one pipe outlet chamber (10) in which the first medium flow (7) conducted through the heating surface pipes (2) is collected and removed, further comprising two connectors (11, 12) for the inflow and outflow of the cooling medium flow (8) which are disposed at the rear end (15) of the pressure shell (6) adjoining the pipe outlet chamber (10), comprising two connectors (13, 14) for the inflow and outflow of the cooling medium flow (8) which are disposed at the front end (16) of the pressure shell (6) adjoining the pipe inlet chamber (9), further comprising a feed line (17) and a first three-way valve (19) which is disposed thereon and from which a first bypass line (21a) is connected to the first connector (11) at the rear end (15) of the pressure shell (6) and a second bypass line (21b) is connected to the first connector (13) at the front end (16) of the pressure shell (6), and comprising a discharge line (18) and a second three-way valve (20) which is disposed thereon and from which a third bypass line (22a) is connected to the second connector (14) at the front end (16) of the pressure shell (6) and a fourth bypass line (22b) is connected to the second connector (12) at the rear end (15) of the pressure shell (6), wherein one of the two three-way valves (19, 20) is designed so it can be controlled and it conducts the cooling medium flow m0 (8) through the shell space (5), or as controlled partial mass flows m1, m2 of the cooling medium flow m0 (8) through the shell space (5) and through the bypass line(s) (21a, 21b, 22a, 22b) and wherein by means of the further three-way valve (19, 20) the cooling medium flow (8) can be conducted through the shell space (5) in a co-current flow or reverse flow with respect to the first medium flow (7).

IPC 8 full level

F28D 7/16 (2006.01); **F28F 27/02** (2006.01)

CPC (source: EP US)

F28D 7/16 (2013.01 - EP US); **F28F 27/02** (2013.01 - EP US); **F28F 2250/102** (2013.01 - US)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)

WO 2010034292 A2 20100401; **WO 2010034292 A3 20101202**; CA 2735836 A1 20100401; CA 2735836 C 20150915; CN 102150003 A 20110810; CN 102150003 B 20121114; DE 102008048405 B3 20100422; EP 2326905 A2 20110601; EP 2326905 B1 20130717; JP 2012503169 A 20120202; JP 5528458 B2 20140625; US 2011186275 A1 20110804; US 9170055 B2 20151027; ZA 201102100 B 20120627

DOCDB simple family (application)

DE 2009001317 W 20090918; CA 2735836 A 20090918; CN 200980134812 A 20090918; DE 102008048405 A 20080923; EP 09748948 A 20090918; JP 2011529445 A 20090918; US 99803409 A 20090918; ZA 201102100 A 20110322