

Title (en)

Heat exchanger for cooling hot process gas

Title (de)

Wärmetauscher zum Kühlen eines heißen Prozessgases

Title (fr)

Echangeur de chaleur pour refroidir un gaz de traitement chaud

Publication

**EP 0974803 A3 20001220 (DE)**

Application

**EP 99113759 A 19990714**

Priority

DE 19833004 A 19980722

Abstract (en)

[origin: EP0974803A2] Heat exchanger has a horizontal transfer line (4) feeding hot process gas connected to the process gas generator (1). A connecting pipe (22) is arranged coaxially to each cooling pipe (11), so that on one side the connecting pipe (22) engages the cooling pipe (11) and leads out from the transfer line (4) on the other side. Heat exchanger for cooling a hot process gas produced in a gas generator (1) or a reactor comprises several cooling pipes (11) each surrounded by an outer tube (12). Each cooling pipe (11) and each outer tube (12) are welded at both ends to a water chamber (13, 14) for introducing and removing a cooling medium. The water chamber (13, 14) consists of a massive strip-like piece, into which circular recesses (15) are inserted corresponding to the number of cooling pipes (11). Each recess surrounds a cooling pipe (11) and has a diameter that is the same or is larger than inner diameter of the outer tube (12). The recess (15) has a thin annular base (16) having a low residual wall thickness. A horizontal transfer line (4) feeding hot process gas is connected to the process gas generator (1). A connecting pipe (22) is arranged coaxially to each cooling pipe (11), so that on one side the connecting pipe (22) engages the cooling pipe (11) and leads out from the transfer line (4) on the other side.

IPC 1-7

**F28D 7/10**; **F28F 9/02**; **F28F 9/18**; **C10G 9/00**

IPC 8 full level

**F28F 9/013** (2006.01); **C10G 9/00** (2006.01); **F28D 7/10** (2006.01); **F28F 9/02** (2006.01); **F28F 9/18** (2006.01)

CPC (source: EP US)

**C10G 9/002** (2013.01 - EP US); **F28D 7/106** (2013.01 - EP US); **F28F 9/02** (2013.01 - EP US); **F28F 9/18** (2013.01 - EP US); **F28D 2021/0075** (2013.01 - EP US)

Citation (search report)

- [DA] DE 4445687 A1 19960627 - BORSIG BABCOCK AG [DE]
- [A] US 5690168 A 19971125 - CIZMAR LLOYD EDWARD [US], et al
- [A] FR 1590170 A 19700413
- [A] GB 2057666 A 19810401 - TOYO ENGINEERING CORP

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US7758823B2; WO2008033193A1

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)

**EP 0974803 A2 20000126**; **EP 0974803 A3 20001220**; **EP 0974803 B1 20030115**; AT E231233 T1 20030215; DE 19833004 A1 20000127; DE 59904023 D1 20030220; ES 2191388 T3 20030901; JP 2000065487 A 20000303; US 6148908 A 20001121

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