

Title (en)

Method of manufacturing a heat exchanger with annularly mounted water tubes.

Title (de)

Verfahren zur Herstellung eines Heizkörpers mit ringförmig angeordneten Wasserrohren.

Title (fr)

Procédé de fabrication d'un corps de chauffe à nappe cylindrique de tubes d'eau.

Publication

EP 0076724 A1 19830413 (FR)

Application

EP 82401723 A 19820923

Priority

FR 8118073 A 19810925

Abstract (en)

1. A method for the making of a heating unit for domestic gas boilers comprising a screen of longitudinal stainless steel tubes with an elongated cross section disposed along the generatrix of a cylinder between a lower annular header and an upper annular header to form an internal cylindrical combustion chamber, in accordance where with the tubes (3) are cut to the desired length, the ends (6) of tubes (3) are trimmed, a bulge (7) is formed on the external and possibly internal part at each end of the tubes, the ends (6) of tubes (3) are bent back towards the inside to give them a conical profile, tubes (3) are disposed between the two annular headers (1, 2) by inserting them in the corresponding openings (8), the projecting end (6) of tubes (3) are expanded towards the outside to form a crimped rim on the annular headers (1, 2), the bore of tubes (3) is simultaneously finished, circular brazing layers (9) are deposited in each annular header tangentially to the ends of the tubes and the consolidated unit is disposed without special tools inside a brazing furnace, characterised in that the stainless steel used for the tube is a niobium stabilised ferritic steel and in that the brazing is performed in a vacuum furnace at a temperature below or equal to 1000 degrees C for approximately 15 minutes by means of a brazing metal with a very high percentage of nickel and chrome with flux additives compatible with the stainless steel used.

Abstract (fr)

Le procédé consiste à disposer les tubes d'eau (3) entre les deux collecteurs annulaires (1-2) en les introduisant dans des orifices (8) correspondants, puis à sertir les extrémités des tubes sur les collecteurs annulaires et enfin à disposer l'ensemble compact dans un four de brasage dans des conditions adaptées pour réaliser le brasage. Application aux chaudières domestiques à gaz du type à condensation.

IPC 1-7

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IPC 8 full level

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Citation (search report)

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