

Title (en)  
RADIATOR TUBE AND METHOD AND APPARATUS FOR FORMING SAME

Title (de)  
RADIATORROHR, VERFAHREN UND VORRICHTUNG ZU DESSEN HERSTELLUNG

Title (fr)  
TUBE DE RADIATEUR, PROCEDE ET DISPOSITIF DE FABRICATION

Publication  
**EP 0711399 A4 19970702 (EN)**

Application  
**EP 94924586 A 19940804**

Priority  
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Abstract (en)  
[origin: WO9505571A2] A radiator tube having a flattened oval shape has pairs of opposed turbulator dimples formed in its principal heat transfer surfaces, which dimples extend inwardly and meet in the tube interior to define a plurality of pillars. First and second generally continuous curved surfaces interconnect and are integrally formed with the principal heat transfer surfaces. In a method of forming a radiator tube having a flattened oval shape, turbulator dimples are formed in a generally planar metal strip in a pattern which is symmetric about a longitudinal line. The strip is roll formed into tubing having a circular cross section, with its opposed side edges abutting and in alignment. The side edges are simultaneously compressed and welded together by heating at the melting point of the parent metal using a high frequency induction current, to form a solderless joint between them. Finally, the tubing is transformed by reduction and breakdown rolls to a flattened oval cross section. Apparatus for forming the tubing includes first and second modular cylindrical rolls mounted respectively on first and second parallel shafts. The first roll includes disks with male punches formed thereon, while the second roll includes disks with female dies or sections formed therein in alignment with the male punches. The male punches and female sections are maintained in alignment by phasing gears on the shafts.

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• [A] GB 2223091 A 19900328 - CALSONIC CORP [JP]  
• [A] DE 3323622 A1 19840112 - NIPPON DENSO CO [JP]  
• [A] US 4595135 A 19860617 - WALLIS BERNARD J [US]  
• See references of WO 9505571A2

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