

Title (en)
TUBE JOINING

Title (de)
ROHRVERBINDUNG

Title (fr)
ASSEMBLAGE DE TUBES

Publication
EP 3688398 A2 20200805 (EN)

Application
EP 18816214 A 20180926

Priority
• US 201762563382 P 20170926
• IB 2018001190 W 20180926

Abstract (en)
[origin: WO2019064067A2] Joining thin heat exchanger tubes to manifold header tanks is improved by extruding thick tubes having channels or microchannels. Tube material is removed from spaced areas of central portions, leaving finned thin heat exchanger central portions and thicker header portions. The tubes are curved, twisted and tilted. The tubes are aligned horizontally, vertically or angularly, and the header portions are welded together. Tube material is removed from the ends of the header portions to form end faces with projections extending from the end faces and surrounding the channels or microchannels. End plates with openings to receive the projections are attached and sealed to the projections and end faces by welding or brazing. The face plates are attached and sealed to openings in the header tanks by welding or brazing. Tube ends are flattened. Rings are added. Ends and rings are friction welded, avoiding areas around channel openings, and polished.

IPC 8 full level
F28F 9/18 (2006.01); **F28D 1/02** (2006.01); **F28D 1/047** (2006.01); **F28D 1/053** (2006.01); **F28F 1/02** (2006.01); **F28F 1/26** (2006.01); **F28F 1/34** (2006.01)

CPC (source: EP KR)
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Citation (examination)
• WO 2011088426 A1 20110721 - SKYVENTURE INTERNAT LTD [BS], et al
• US 2014041843 A1 20140213 - LINDELL ERIC [US], et al
• See also references of WO 2019064067A2

Designated contracting state (EPC)
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