Title (en)

LASER BEAM JOINING METHOD AND LASER MACHINING OPTICS

Title (de)

LASERSTRAHLFÜGEVERFAHREN UND LASERBEARBEITUNGSOPTIK

Title (fr)

PROCÉDÉ DE JONCTION PAR FAISCEAU LASER ET OPTIQUE D'USINAGE LASER

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2016150425A1] The invention relates to a method for joining workpieces (12, 13) using a laser beam (7), wherein the laser beam (7) is focused onto a focal plane downstream of the machining plane in the beam propagation direction and subdivided into a plurality of partial beams (19) by means of a beam dividing device (6). The subdivision is effected in a geometric manner, i.e. the partial beam cross sections emerge from a division of the geometric form of the beam cross section of the laser beam (7). The partial beams (19) are guided onto the machining plane (8) in a crossed manner and with an offset from one another in such a way that an extended laser focus (18) is formed. The radiation intensity distribution of the superposed partial beams (19) in the machining plane (8) along a line perpendicular to the seam joint respectively has a maximum at the end regions thereof. As a result thereof and as a result of the spatially extended region of high radiation intensity on both sides along the seam joint compared to the prior art, there is, firstly, an improvement in the edge connection and hence in the quality of the seam joint and, secondly, an increase in the process efficiency.

IPC 8 full level

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Citation (search report)

See references of WO 2016150425A1

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