

Title (en)

PROCESS FOR INDUCTION HEATING USED USED IN A DEVICE INCORPORATING MAGNETICALLY COUPLED INDUCTORS

Title (de)

INDUKTIONSGEIZUENGVERFAHREN BEI EINER VORRICHTUNG VERSEHEN MIT MAGNETISCHEN GEKOPPELTER INDUKTOREN

Title (fr)

PROCEDE DE CHAUFFAGE PAR INDUCTION MIS EN OEUVRE DANS UN DISPOSITIF COMPRENANT DES INDUCTEURS COUPLES MAGNETIQUEMENT

Publication

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Application

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Priority

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Abstract (en)

[origin: WO2011048316A1] The invention relates to an induction heating method implemented in a device for heating a metal part, the device including magnetically coupled inductors (Ind1, Ind2, ..., Indp), each inductor being powered by a dedicated inverter (O1, O2, ..., Op) combined with a capacitor (C1, C2, ..., Cp) such as to form an oscillating circuit (OC1, OC2, ..., OCp). The oscillating circuits have at least approximately the same resonance frequency, each inverter is controlled by a control unit (M1, M2, ..., Mp) such as to vary the amplitude and the phase of the current passing through the corresponding inductor, the device also including a means for determining said current as well as a means for determining an actual temperature profile (?1 mes, ?2 mes, ..., ?n mes) of said part. The method includes the following steps: a) comparing said actual temperature profile with a reference temperature profile (?1 ref, ?2 ref, ..., ?n ref) and calculating a profile of the reference power density (Dpref 1, Dpref 2, ..., Dpref n) which the heating device must inject into said part; b) calculating the target currents which the inverters must produce in order for the currents of the inductors to reach target values (I1 ref, I2 ref, ..., IP ref) that are suitable for injecting said reference power density profile into said part; c) determining the currents passing through the inductors in order to compare said currents with said target values and determine current deviations (dI1 corr, dI2 corr, ..., dIp corr) to be corrected, and sending correction instructions to said control units (M1, M2, ..., Mp) in accordance with said current deviations.

IPC 8 full level

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