

Title (en)

Process for applying internal compressive stresses in a shaft, in particular in shaft chamferings

Title (de)

Verfahren zum Einbringen von Druckeigenspannungen in eine Welle, insbesondere in Wellenkerben

Title (fr)

Procédé pour la mise en place des contraintes de compression internes sur un arbre, en particulier sur les chanfreins d'un arbre

Publication

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Application

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Priority

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Abstract (en)

The manufacture of shafts useful in steam turbine, comprises arranging diameter transitions (3) and/or notch area between neighboring steps (2) of the shaft, controllably quenching the diameter transitions and/or notch area within a framework of a thermal treatment of the shaft, spraying the diameter transitions and/or notch area for quenching purposefully with a quenching medium, and cooling the diameter transitions and/or notch area by a dipping procedure. The shafts are implemented as stepped shafts with sequential steps of different diameter. The manufacture of shafts useful in steam turbine, comprises arranging diameter transitions (3) and/or notch area between neighboring steps (2) of the shaft, controllably quenching the diameter transitions and/or notch area within a framework of a thermal treatment of the shaft, spraying the diameter transitions and/or notch area for quenching purposefully with a quenching medium, and cooling the diameter transitions and/or notch area by a dipping procedure. The shafts are implemented as stepped shafts with sequential steps of different diameter. The diameter transitions and/or notch area are manufactured with an oversize (8) provided on a final end contour (7) and have a radius of 25-50 mm in its thermal treatment contour. The thermal treatment contour (6) is removed during the production of the final end contour and/or after quenching. The oversize has a value of 10-40 mm related to the final end contour of the wave.

Abstract (de)

Die Erfindung betrifft ein Verfahren zum Herstellen von Wellen (1), die als gestufte Wellen mit aufeinander folgenden Stufen (2) unterschiedlichen Durchmessers (D) ausgeführt sind. Zwischen jeweils zwei benachbarten Stufen (2) sind Durchmesserübergänge (3) bzw. Kerbbereiche angeordnet. Die Durchmesserübergänge (3) bzw. Kerbbereiche werden im Rahmen einer Wärmebehandlung der Welle (1) kontrolliert abgeschreckt.

IPC 8 full level

C21D 9/28 (2006.01); **B23P 25/00** (2006.01)

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Citation (search report)

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- [A] EP 0282822 A1 19880921 - SIEMENS AG [DE]
- [A] DE 2209945 A1 19730913 - MASCHF AUGSBURG NUERNBERG AG
- [X] PATENT ABSTRACTS OF JAPAN vol. 008, no. 162 (C - 235) 26 July 1984 (1984-07-26)
- [X] PATENT ABSTRACTS OF JAPAN vol. 017, no. 540 (C - 1115) 29 September 1993 (1993-09-29)
- [A] PATENT ABSTRACTS OF JAPAN vol. 004, no. 190 (C - 037) 26 December 1980 (1980-12-26)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1996, no. 09 30 September 1996 (1996-09-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 2002, no. 10 10 October 2002 (2002-10-10)

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