Title (en)

HONING METHOD AND MACHINE TOOL FOR CONTOUR HONING

Title (de)

HONVERFAHREN UND BEARBEITUNGSMASCHINE ZUM KONTURHONEN

Title (fr)

PROCÉDÉ DE RODAGE ET MACHINE D'USINAGE POUR LE RODAGE DE CONTOURS

Publication

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Application

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Abstract (en)

[origin: WO2020011541A1] The invention relates to a honing method for machining the inner surface of a borehole in a workpiece by means of at least one honing operation, wherein, during a honing operation, an expandable honing tool coupled to a spindle is moved back and forth inside the borehole in the axial direction of the borehole in order generate a stroke movement and, at the same time, is rotated in order to generate a rotational movement superimposed on the stroke movement. A borehole shape that is rotationally symmetrical with respect to a borehole axis and deviates from the circular cylinder shape is generated with an axial contour profile. In order to generate an axially varying material removal, a stroke length and/or a stroke position of the stroke movement is varied in at least one stroke variation phase. Before the honing operation is started, an axial target contour profile is defined, which represents the dependence of the target diameter on the axial position in the borehole to be machined. Based on the target contour profile, a stroke variation profile is specified for the stroke variation phase. During the stroke variation phase, a measurement of the actual diameter of the borehole is carried out in order to determine a diameter measurement signal, which represents the actual diameter of the borehole in a measured borehole section, and a target-actual comparison is carried out between the determined actual diameter and an associated target diameter in order to determine a diameter deviation. During the stroke variation phase, at least one honing parameter influencing the material removal, e.g. the stroke speed, the rotational speed, the delivery speed and/or the delivery force, is variably controlled according to the result of the target-actual comparison.

IPC 8 full level

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- EP 1815944 A1 20070808 - NAGEL MASCH WERKZEUG [DE]
- DE 102010011470 A1 20110915 - NAGEL MASCH WERKZEUG [DE]
- DE 10102628 A1 20020725 - NAGEL MASCH WERKZEUG [DE]
- DE 102016105717 A1 20171005 - GEHRING TECHNOLOGIES GMBH [DE]

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