

Title (en)  
HONING PROCESS FOR FINE MACHINING OF BORES

Title (de)  
HONVERFAHREN ZUR FEINBEARBEITUNG VON BOHRUNGEN

Title (fr)  
PROCÉDÉ DE RODAGE POUR L'USINAGE DE TROUS

Publication  
**EP 3148745 B1 20190703 (DE)**

Application  
**EP 15723914 A 20150519**

Priority  
• DE 102014210012 A 20140526  
• EP 2015060928 W 20150519

Abstract (en)  
[origin: WO2015180994A1] In a honing method for machining the inner face of a bore (122) in a workpiece (120) by means of at least one honing operation, an expandable honing tool is used in a honing operation, said expandable honing tool having an expandable annular cutting group (220) having a plurality of cutting material bodies distributed around the circumference of the tool body in an end region of the tool body that is remote from the spindle, the axial length of said cutting material bodies being less than the effective outside diameter of the cutting group with the cutting material bodies fully retracted. The method is characterized by the following steps of: rigidly coupling the honing tool to a work spindle of a machine tool; positioning the honing tool and the bore relative to one another such that a tool axis (212) of the honing tool is coaxial with a setpoint position (SB) of the bore axis of the bore; introducing the honing tool into the bore, with the cutting material bodies retracted, as far as an insertion end position in which the cutting group is located in an end region (123), remote from the entry, of the length to be machined of the bore; rotating the honing tool and simultaneously expanding the cutting group, at or in the region of the insertion end position, as far as a first radial position of the cutting material bodies such that, by material-removing engagement of cutting material bodies with the inner side of the bore, a cylindrical widening (121) of the bore is produced in the end region of the bore, said cylindrical widening (121) being centred substantially with respect to the setpoint position of the bore axis; withdrawing the honing tool from the bore while simultaneously rotating the honing tool such that the bore is widened, starting from the cylindrical widening, successively in the direction of the entry side.

IPC 8 full level  
**B24B 33/10** (2006.01); **B24B 33/02** (2006.01)

CPC (source: EP US)  
**B24B 33/02** (2013.01 - EP US); **B24B 33/025** (2013.01 - EP US); **B24B 33/105** (2013.01 - EP US)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**DE 102014210012 A1 20151126**; EP 3148745 A1 20170405; EP 3148745 B1 20190703; ES 2747366 T3 20200310; HU E045034 T2 20191230; JP 2017516669 A 20170622; JP 6345275 B2 20180620; SI 3148745 T1 20191129; US 10160087 B2 20181225; US 2017190015 A1 20170706; WO 2015180994 A1 20151203

DOCDB simple family (application)  
**DE 102014210012 A 20140526**; EP 15723914 A 20150519; EP 2015060928 W 20150519; ES 15723914 T 20150519; HU E15723914 A 20150519; JP 2016569873 A 20150519; SI 201530927 T 20150519; US 201515313756 A 20150519