

Title (en)

DIAMOND-COATED MACHINING TOOL AND METHOD FOR PRODUCTION THEREOF

Title (de)

DIAMANTBESCHICHTETES SPANABHEBENDES WERKZEUG UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

OUTIL DE TRAVAIL PAR ENLÈVEMENT DE COPEAUX RECOUVERT DE DIAMANT ET SON PROCÉDÉ DE FABRICATION

Publication

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Application

EP 15733363 A 20150602

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Abstract (en)

[origin: WO2015185555A1] The present invention relates to a machining tool comprising at least one diamond-coated functional region having a substrate surface composed of a hard metal or a ceramic material arranged beneath the diamond layer, wherein the substrate surface contains hard material particles on the basis of carbide and/or nitride and/or oxide, which are embedded in a cobalt-containing binding matrix, wherein the diamond layer is directly arranged on the substrate surface without cobalt having been removed by means of chemical or physical methods in substantial amounts out of the binding matrix of the substrate surface. Such a tool can be produced according to the invention by pretreating a hard metal substrate surface with a positively charged ion beam followed by conventional CVD-diamond coating directly onto the ion beam-pretreated cobalt-containing substrate surface. The ion-underlying atoms thereby largely remain in the substrate. The tools according to the invention have good diamond layer bonding to the substrate and a high wear resistance.

IPC 8 full level

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