

Title (en)

DEVICE AND METHOD FOR MACHINING THE SURFACE OF A WORKPIECE, IN PARTICULAR A NATURAL STONE SLAB

Title (de)

VORRICHTUNG UND VERFAHREN ZUR OBERFLÄCHENBEARBEITUNG EINES WERKSTÜCKS, INSBESONDERE EINER NATURSTEINPLATTE

Title (fr)

DISPOSITIF ET PROCÉDÉ D'USINAGE DE SURFACE D'UNE PIÈCE, NOTAMMENT D'UNE PLAQUE EN PIERRE NATURELLE

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Application

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Abstract (en)

[origin: WO2021116176A1] The invention relates to a device for machining the surface of workpieces of different sizes, in particular natural stone slabs, having a laser beam source for generating a laser beam, an optical machining system for focusing and deflecting the laser beam, and an optical detection unit for three-dimensionally measuring the workpiece. The invention additionally relates to a method for machining the surface of a workpiece, having the following steps: providing a workpiece, in particular a natural stone slab; three-dimensionally measuring the workpiece using an optical detection unit; focusing and deflecting a laser beam of a laser beam source using an optical machining system; and machining the surface of the workpiece according to set process parameters using a laser beam. In this manner, a device and a method are provided for machining the surface of workpieces, in particular natural stone, said device and method preventing the disadvantages of the aforementioned prior art, thereby reducing tool and machine wear as well as overall costs in particular. In the process, the range of possibilities, complexity, flexibility, and individualization of the natural stone surfaces are expanded, the production steps for producing surface characteristics on natural stone slabs of different dimensions are more flexibly and efficiently designed, and the degree of automation is increased. Different surface characteristics can be produced which differ in shape, distribution, and degree of material removal as well as in the type of interaction which produces a specific surface characteristic. In particular, the invention allows the surfaces of dolomite, Jura limestone, or similar natural stones to be machined without locally compacting the crystal structure. Furthermore, it is possible to successively machine different dimensions and/or materials.

IPC 8 full level

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