

Title (en)

Method for mechanical processing a waste gas conveying surface area of a combustion engine or crankcase component as well as combustion engine crankcase and cylinder liner

Title (de)

Verfahren zur mechanischen Bearbeitung eines abgasführenden Oberflächenbereichs eines Brennkraftmaschinen- oder Kurbelgehäusebestandteils sowie Brennkraftmaschinen-Kurbelgehäuse und Zylinderlaufbuchse

Title (fr)

Procédé de traitement mécanique d'une surface transportant des gaz d'échappement d'un composant de moteur à combustion interne ou d'un carter d'embellage ainsi que carter d'embellage de moteur à combustion interne et une chemise de cylindre

Publication

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Application

EP 11005427 A 20110702

Priority

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Abstract (en)

[origin: EP2441549A2] The method for machining an exhaust-gas-conducting surface region of an internal combustion engine or crankcase part, comprises: machining the exhaust-gas-conducting surface region produced from a corrodible material using a surface-condition-changing machining tool; bringing the exhaust-gas-conducting surface region into contact, during the machining, with a tribochemically activatable substance activated during the machining; and forming a corrosion-resistant surface as a triboreaction layer with the respective surface region, by tribochemical reaction. The method for machining an exhaust-gas-conducting surface region of an internal combustion engine or crankcase part, comprises: machining the exhaust-gas-conducting surface region produced from a corrodible material using a surface-condition-changing machining tool; bringing the exhaust-gas-conducting surface region into contact, during the machining, with a tribochemically activatable substance activated during the machining; forming a corrosion-resistant surface as a triboreaction layer with the respective surface region, by tribochemical reaction; providing a cylinder barrel (3) of an internal combustion engine crankcase or the cylinder barrel of a cylinder sleeve as the exhaust-gas-conducting surface region; activating the tribochemically activatable substance as a function of a defined contact pressure of the machining tool or a defined machining temperature generated during the machining, where the machining step is carrying out by mechanically machining and changing the exhaust-gas-conducting surface region with regard to surface condition using a mechanical machining tool as the surface-condition-changing machining tool; providing a chip-removing or chip-forming machining tool as the surface-condition-changing machining tool; providing a honing tool as the surface-condition-changing machining tool; applying the tribochemically activatable substance directly to the surface to be mechanically machined before or during the machining using the machining tool; adding the tribochemically activatable substance as an additive to a lubricant (9) supplied during the mechanical machining; applying the tribochemically activatable substance directly to the surface to be mechanically machined before or during the machining using the machining tool; forming the tribochemically activatable substance of a metal silicate; and producing the triboreaction layer in a final machining step before finishing the part. The crankcase is formed of a material consisting of an iron material, a corrodible cast iron and a corrodible steel. Independent claims are included for: (1) an internal combustion engine crankcase; and (2) a cylinder sleeve.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

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