

Title (en)

HIGHLY EFFICIENT CUTTING AND GRINDING WHEEL DESIGNED TO RETAIN ITS SHAPE

Title (de)

HOCHEFFIZIENTE SCHNEID- UND SCHLEIFSCHEIBE MIT DESIGN ZUR BEWAHRUNG IHRER FORM

Title (fr)

DISQUE DE COUPE ET DE MEULAGE À HAUT RENDEMENT CONÇU POUR CONSERVER SA FORME

Publication

EP 2805796 A4 20150923 (EN)

Application

EP 13738994 A 20130116

Priority

- CN 201210013504 A 20120117
- CN 201210013303 A 20120117
- CN 201210013305 A 20120117
- CN 2013070506 W 20130116

Abstract (en)

[origin: EP2805796A1] Disclosed is a highly efficient cutting and grinding wheel designed to retain its shape, comprising a basic body (1) and a grinding ring (2), with water outlets (2-1) uniformly distributed on the grinding face of the grinding ring (2). Within the range of the length of the arc arbitrarily set on the grinding face, the number of the water outlets (2-1) is greater than zero, and the length of the arbitrarily set arc is 1-3 times the contact length between the grinding ring (2) and a workpiece being machined (8) when grinding. The grinding face is a heteromorphic grinding face and the outside of the water outlets (2-1) is an entity machining area of the heteromorphic grinding face that is involved in grinding. The overall line length of the circumference of the entity machining area in different axial positions corresponds to the machining allowance of the workpiece being machined (8) at the same positions and the correlation therebetween is directly proportional or nearly directly proportional. Water channels in communication with the water outlets (2-1) are made inside the basic body (1), cooling water being injected from a water inlet (3) of the basic body (1) and passing through the water channel for acting in the grinding contact region to create complete cooling of the face. During operation of the present invention, deformation of the grinding face is small, the face can be quickly cooled, and chip removal is fast. The present invention is applicable to fast and high speed machining, and the machining quality of the surface of the workpiece is improved, sharpness of the grinding wheel is maintained and the service life is prolonged.

IPC 8 full level

B24D 5/10 (2006.01)

CPC (source: EP KR RU US)

B24D 5/02 (2013.01 - KR); **B24D 5/10** (2013.01 - EP KR RU US); **B24D 5/12** (2013.01 - RU)

Citation (search report)

- [XYI] US 5423717 A 19950613 - BOAZ PREMAKARAN T [US]
- [XYI] WO 2010013278 A1 20100204 - ADI S P A, et al
- [Y] DE 2851737 A1 19800710 - VER GLASWERKE GMBH
- See references of WO 2013107339A1

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)

EP 2805796 A1 20141126; **EP 2805796 A4 20150923**; **EP 2805796 B1 20180815**; CA 2861578 A1 20130725; CA 2861578 C 20210316; ES 2696648 T3 20190117; JP 2015503466 A 20150202; JP 5922798 B2 20160524; KR 20140121416 A 20141015; PL 2805796 T3 20200430; RU 2014133656 A 20160320; RU 2607062 C2 20170110; US 2014329448 A1 20141106; WO 2013107339 A1 20130725

DOCDB simple family (application)

EP 13738994 A 20130116; CA 2861578 A 20130116; CN 2013070506 W 20130116; ES 13738994 T 20130116; JP 2014551519 A 20130116; KR 20147021553 A 20130116; PL 13738994 T 20130116; RU 2014133656 A 20130116; US 201414332348 A 20140715