

Title (en)

MACHINING SYSTEM FOR CUTTING CYLINDER HEADS

Title (de)

BEARBEITUNGSSYSTEM ZUR SPANENDEN BEARBEITUNG VON ZYLINDERKÖPFEN

Title (fr)

SYSTEME D'USINAGE PAR ENLEVEMENT DE COPEAUX DE CULASSES

Publication

EP 1675706 A1 20060705 (DE)

Application

EP 04764891 A 20040907

Priority

- EP 2004009946 W 20040907
- DE 10349697 A 20031024

Abstract (en)

[origin: DE10349697A1] A manufacturing system for automotive engines incorporates a machining work station (1) for cylinder heads (3). The main work station (1) has a number of sequential work stations (2a-2f) in which the cylinder heads are presented for machining in different directions (OP20-OP120). The cylinder heads are fed to the sub-stations (2a-2f) in sequence. Each sub-station (2a-2f) has one or more identical machine tools (9-14), each with a number of spindles (7, 7') of which at least some have permanently-attached tools (8, 8').

IPC 1-7

B23Q 37/00; **B23Q 39/00**; **B23Q 41/06**

IPC 8 full level

B23P 23/06 (2006.01); **B23Q 41/00** (2006.01)

CPC (source: EP KR US)

B23P 23/06 (2013.01 - EP KR US); **B23Q 37/007** (2013.01 - KR); **B23Q 39/04** (2013.01 - KR); **B23Q 41/00** (2013.01 - EP US); **B23Q 41/04** (2013.01 - KR); **Y10T 29/49996** (2015.01 - EP US)

Citation (search report)

See references of WO 2005049268A1

Citation (third parties)

Third party :

- DE 3928139 A1 19910228 - AUDI AG [DE]
- DE 10163445 A1 20030703 - GROB WERKE BURKHART GROB EK [DE]
- DE 19744157 A1 19990408 - HELLER GEB GMBH MASCHF [DE]
- DE 10302985 A1 20031023 - GROB WERKE BURKHART GROB EK [DE]
- ELHA-MASCHINENBAU LIEMKE KG: "FM 3+X Fertigungsmodul - extrem kurze Nebenzeiten", BROSchURE, August 2002 (2002-08-01), pages 1 - 10, XP003021483
- HUIJBERS M., MESZAROS I.: "Hartgewindedreher - verkuerzt die Prozesskette", WB, 2002, pages 33 - 35, XP003021484
- FM 3+X, Zylinderkopf fuer Bremszylinder von ELHA-Maschinenbau Liemke KG
- ELHA MASCHINENBAU: "Fertigungsmodule - Vom Entwickler der Fertigungsmodule - die neue Generation der rekonfigurierbaren Werkzeugmaschinen", BROSchURE, pages 1 - 12, XP003021486
- ELHA MASCHINENBAU: "Fertigungssysteme - Hochproduktive Bearbeitungsloesungen fuer komplexe Zerspanungsaufgaben", BROSchURE, pages 1 - 8, XP003021487

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DE FR GB

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