

Title (en)
Sintered valve guide and manufacturing method thereof

Title (de)
Gesinterte Ventilschaftführung und Verfahren zur Herstellung davon

Title (fr)
Guide de soupape fritté et procédé de sa fabrication

Publication
EP 1619263 A1 20060125 (EN)

Application
EP 05015445 A 20050715

Priority
JP 2004209064 A 20040715

Abstract (en)
Disclosed is a sintered valve guide formed of a sintered alloy consisting essentially of 3.5 to 5 % copper, 0.3 to 0.6 % tin, 0.04 to 0.15 % phosphorus, 1.5 to 2.5 % carbon and the balance iron, by mass, and as occasion needs, further containing 0.46 to 1.41 % metal oxide, and MnS and/or magnesium silicate. The metallographic structure has: a matrix containing a pearlite phase, a Fe-P-C compound phase and a Cu-Sn alloy phase; pores; and a graphite of 1.2 to 1.7 % by mass of the sintered alloy. In the cross section, the ratio of the pearlite phase to the matrix is 90 area % or more, the ratio of the Fe-P-C com

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Citation (applicant)
• JP S5534858 B2 19800910
• JP 2680927 B2 19971119
• JP 2002069597 A 20020308 - HITACHI POWDERED METALS
• JP S5534853 B2 19800910

Citation (search report)
• [X] US 2002023518 A1 20020228 - CHIKAHATA KATSUNAO [JP], et al
• [XA] EP 0481763 A1 19920422 - HITACHI POWDERED METALS [JP]
• [A] EP 0420309 A1 19910403 - BRICO ENG [GB]
• [A] US 6012703 A 20000111 - HAYASHI KOICHIRO [JP], et al
• [A] EP 0621347 A1 19941026 - MITSUBISHI MATERIALS CORP [JP], et al
• [A] US 4344795 A 19820817 - ENDO HIROYUKI, et al
• [A] PATENT ABSTRACTS OF JAPAN vol. 001, no. 005 (M - 004) 11 March 1977 (1977-03-11)
• [A] PATENT ABSTRACTS OF JAPAN vol. 2002, no. 07 3 July 2002 (2002-07-03)
• [A] PATENT ABSTRACTS OF JAPAN vol. 014, no. 110 (M - 0943) 28 February 1990 (1990-02-28)
• [A] PATENT ABSTRACTS OF JAPAN vol. 014, no. 265 (C - 0726) 8 June 1990 (1990-06-08)
• [A] PATENT ABSTRACTS OF JAPAN vol. 018, no. 271 (C - 1203) 24 May 1994 (1994-05-24) & "IC engine valve guide - is sintered ferrous alloy contg. controlled amts. of carbon, copper, tin and phosphorus", DERWENT, 1980, XP002274790

Cited by
EP2488318A4; EP2474637A1; CN114466719A; AT509868A4; AT509868B1; EP2444182A1; DE102010055463C5; US9027249B2; US10232438B2; US9255575B2; US8876935B2; US9212572B2; WO2011154039A1; WO2021063653A1

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