

Title (en)
PISTON-CYLINDER ASSEMBLY OF AN INTERNAL COMBUSTION ENGINE

Title (de)
KOLBEN-ZYLINDER-VORRICHTUNG EINES VERBRENNUNGSMOTORS

Title (fr)
ENSEMBLE PISTON-CYLINDRE D'UN MOTEUR A COMBUSTION INTERNE

Publication
EP 0670960 B2 20020605 (DE)

Application
EP 93921822 A 19931012

Priority
• DE 9300977 W 19931012
• DE 4240050 A 19921128

Abstract (en)
[origin: DE4240050A1] In a piston-cylinder assembly of an internal combustion engine, especially a two-stroke engine, at least the piston-sliding surface of the cylinder is made of an aluminium alloy. Moreover, the basic material of the piston (1) is an aluminium alloy and at least 80 % of its sliding surface is given a sliding coating (3, 4). The sliding coating (3, 4) on the piston (1) is usually metallic and galvanically applied. The aim is to provide an economically producible piston coating with properties at least as good as those of the former galvanically applied coatings. To this end the cylinder sliding surface has a roughness Ra of less than 1 µm, while the piston sliding surface consist of resin-bound graphite. The piston rings (6) are made of cast iron or steel and have a convex sliding surface.

IPC 1-7
F02F 3/10

IPC 8 full level
F02F 1/00 (2006.01); **F02F 3/10** (2006.01); **F02F 5/00** (2006.01); **F02B 75/02** (2006.01)

CPC (source: EP US)
F02F 3/10 (2013.01 - EP US); **F02B 2075/025** (2013.01 - EP US); **F05C 2201/021** (2013.01 - EP US); **F05C 2201/0433** (2013.01 - EP US); **F05C 2201/0448** (2013.01 - EP US); **F05C 2203/0882** (2013.01 - EP US)

Citation (opposition)
Opponent :
• MTZ Motortechnische Zeitschrift 34(1973), S. 49-51
• ATZ/MTZ Sonderheft Fertigungstechnik 1992, S. 23-26
• Metals Handbook, Vol. 16, MACHINING, März 1989, S. 327, 473, 767-769, 777-778
• PATENT ABSTRACTS OF JAPAN vol. 16, no. 510 (M-1328) 21.10.92 & JP-A-04 189 465 (NISSAN) 07.07.92
• PATENT ABSTRACTS OF JAPAN vol. 14, no. 3 (M-915) 08.01.90 & JP-A-01 253 553 (HONDA) 09.10.89
• PATENT ABSTRACTS OF JAPAN vol. 13, no. 100 (M-805) 09.03.89 vol. 13 & JP-A-63 289 373 (HITACHI METALS LTD) 25.11.88

Designated contracting state (EPC)
DE FR GB IT

DOCDB simple family (publication)
DE 4240050 A1 19940601; DE 59303279 D1 19960822; EP 0670960 A1 19950913; EP 0670960 B1 19960717; EP 0670960 B2 20020605; JP H08503528 A 19960416; US 5560283 A 19961001; WO 9412783 A1 19940609

DOCDB simple family (application)
DE 4240050 A 19921128; DE 59303279 T 19931012; DE 9300977 W 19931012; EP 93921822 A 19931012; JP 51262594 A 19931012; US 44687895 A 19950526