

Title (en)
Piston ring for internal combustion engine

Title (de)
Kolbenring für Verbrennungsmotoren

Title (fr)
Segment de piston pour moteur à combustion interne

Publication
EP 0759519 B1 20021023 (DE)

Application
EP 96112522 A 19960802

Priority
DE 19530511 A 19950818

Abstract (en)
[origin: EP0759519A2] Piston for diesel engines consists of a heat-resistant Al alloy with a ring nut and a piston ring. The novelty is that the piston ring is coated on its reverse side lying vertically to its axis with a hard carbon layer applied by plasma CVD. The ring nut is unprotected. The doped hard carbon layer has compsn.: a-C:H (where, a = amorphous material). The Al alloy consists of 2-6% Cu, 2-6% Ni, 0.5-2.0% Mg, up to 0.7% Fe, up to 0.5% Mn, and a balance of Al. The piston ring is coated on all sides with the hard carbon layer. The piston ring is finely processed to a surface roughness of $\leq 0.1 \mu\text{m}$ before being coated with the carbon layer, the layer thickness being at least 2.5 (pref. 3 plus or minus 0.5) μm . The piston ring is made of cast iron, pref. steel. The surface of the piston ring is nitrided below the coating. The outer periphery of the piston ring is coated with Cr, Mo, ceramic, bronze, Ni, SiC, TiC, Al₂O₃ or diamond.

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F16J 9/26

IPC 8 full level
C22C 21/02 (2006.01); **F16J 9/26** (2006.01)

CPC (source: EP)
C22C 21/02 (2013.01)

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KR20140078746A; US6726216B2; EP1136730A3; CN1325822C; EP1479946A3; US9004465B2

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