

## Title (en)

Pressure cast light metal piston for internal combustion engines.

## Title (de)

Pressgegossener Leichtmetallkolben für Verbrennungskraftmaschinen.

## Title (fr)

Piston à métal léger, coulé sur pression, pour un moteur à combustion interne.

## Publication

**EP 0432810 A1 19910619 (DE)**

## Application

**EP 90202262 A 19900822**

## Priority

DE 3937616 A 19891111

## Abstract (en)

[origin: JPH03194157A] PURPOSE: To improve durability by forming a piston with high-temperature magnesium alloy, by providing its skirt with a chemically applied or electrodeposited metallic sliding layer which has given thickness and hardness, and by coating the inside surface of the piston with a plastic cracker. CONSTITUTION: A piston 1 is formed with pressure-diecast of magnesium alloy belonging to a material group Mg5Nd, a skirt reinforced by 20 vol.% of aluminum oxide fiber is coated with a chemically applied nickel layer (sliding layer) 3 which has a thickness of about 10-30 µm (preferably 16-24 µm) and a hardness of about 740-850 HV0.01. The inside surface of the piston 1 is coated with a layer 2 formed with a plastic cracker having a thickness of 15 µm. Particles of chromium oxide or similar ceramic oxide material is buried in the sliding layer 3, and the magnesium alloy 2 contains 2-6% of neodymium.

## Abstract (de)

In einen preßgegossenen Leichtmetallkolben für Verbrennungskraftmaschinen sind partiell Faserformkörper aus keramischen Kurzfasern, die parallel zu einer Ebene ausgerichtet sind, eingegossen. Zur Verbesserung der Verschleißfestigkeit des aus einer warmfesten Magnesiumlegierung bestehenden Kolbens weist der Kolbenschaft wenigstens im Bereich seiner Reibflächen eine 10 bis 30 µm dicke, eine Härte von 740 bis 850 HV0,01 besitzende metallische, chemisch oder galvanisch abgeschiedene Laufschrift auf.

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## IPC 8 full level

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## CPC (source: EP US)

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## Citation (search report)

- [A] US 4404262 A 19830913 - WATMOUGH THOMAS [US]
- [A] US 4706616 A 19871117 - YOSHIMITSU TOSHIO [JP]
- [A] DE 3216763 C1 19831020 - MAHLE GMBH
- [A] EP 0296291 A2 19881228 - NGK INSULATORS LTD [JP]
- [A] PATENT ABSTRACTS OF JAPAN vol. 8, no. 22 (M-272)(1459) 31 Januar 1984, & JP-A-58 180749 (YANMAR DIESEL K.K.) 22 Oktober 1983,
- [A] PATENT ABSTRACTS OF JAPAN vol. 14, no. 285 (M-987)(4228) 20 Juli 1990, & JP-A-02 86945 (RIKEN CORP) 27 März 1990,

## Cited by

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## DOCDB simple family (application)

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