

Title (en)

Surface hardened soft magnetic actuator part and fabrication process

Title (de)

Oberflächengehärtetes weichmagnetisches Aktuorteil und dessen Herstellverfahren

Title (fr)

Actuateur magnétique magnétiquement doux durci en surface et son procédé de fabrication

Publication

EP 1318529 A3 20040114 (DE)

Application

EP 02027301 A 20021206

Priority

DE 10160550 A 20011210

Abstract (en)

[origin: EP1318529A2] Soft magnetic actuator part has a surface hardness of at least 150 HV 0.01 increased by nitriding. The N concentration has the following deep profile: a top value of maximum N concentration of at least 0.2 wt.% in the depth region of up to 1 μ m, an N-concentration of at least 0.25 wt.% in the depth region of 1 μ m, an N-concentration of at least 0.1 wt.% in the depth region of 2 μ m and an N-concentration of at least 0.05 wt.% in the depth region of 5 μ m. <??>An Independent claim is also included for a process for the surface treatment of an electromagnetic actuator part comprising nitriding at 380-480 degrees C at a nitriding number KN of approximately 10, preferably in an oxygen atmosphere (oxynitriding) at an oxidation number KO of approximately 0.20.

IPC 1-7

H01F 7/06; **H01H 71/32**

IPC 8 full level

C23C 8/24 (2006.01); **H01F 3/08** (2006.01); **H01H 71/32** (2006.01)

CPC (source: EP)

C23C 8/24 (2013.01); **H01F 3/08** (2013.01); **H01H 71/327** (2013.01)

Citation (search report)

- [A] WO 0063454 A1 20001026 - VACUUMSCHMELZE GMBH [DE], et al
- [A] EP 0910101 A1 19990421 - KAWASAKI STEEL CO [JP]
- [DA] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 09 31 July 1998 (1998-07-31)

Cited by

DE102014213510A1; US10125734B2; US9893511B2

Designated contracting state (EPC)

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