

Title (en)  
NITRIDING PROCESS FOR MARAGING STEEL

Title (de)  
NITRIERUNGSVERFAHREN ZUR STAHLMARTENSITAUSHÄRTUNG

Title (fr)  
PROCÉDÉ DE NITRURATION POUR ACIER MARAGING

Publication  
**EP 2518177 A4 20140319 (EN)**

Application  
**EP 10839179 A 20101207**

Priority  
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Abstract (en)  
[origin: US2012241050A1] A nitriding process for a maraging steel is provided in order to increase the compressive residual stress of the maraging steel. A workpiece is made of maraging steel in which titanium is solid solved, and a partial amount of the titanium is oxidized at the surface of the workpiece so that titanium oxide is positively generated and concentrated at the surface. Then a reducing treatment is sufficiently performed as a pretreatment of a nitriding step, thereby removing oxygen. As a result, surface concentration of the titanium in an activated state is increased. Next, by performing the nitriding treatment, the reduced titanium and the solid solved titanium combine with nitrogen as titanium nitride. The titanium is in the activated state and is thereby easily nitrided. Moreover, the surface concentration of the titanium in the activated state is high, whereby a large amount of nitrogen infiltrates into the workpiece.

IPC 8 full level  
**C23C 8/26** (2006.01); **C21D 1/06** (2006.01); **C21D 1/68** (2006.01); **C21D 1/70** (2006.01); **C21D 1/72** (2006.01); **C21D 6/02** (2006.01); **C21D 9/40** (2006.01); **C22C 38/00** (2006.01); **C22C 38/08** (2006.01); **C22C 38/12** (2006.01); **C22C 38/52** (2006.01); **C23C 8/02** (2006.01); **C23C 8/50** (2006.01); **C23C 8/80** (2006.01)

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Citation (search report)  
• [YA] JP 2006124757 A 20060518 - TOYOTA MOTOR CORP  
• [YA] EP 1544317 A1 20050622 - HONDA MOTOR CO LTD [JP]  
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• [A] US 6309474 B1 20011030 - YAGASAKI TORU [JP]  
• See references of WO 2011077945A1

Designated contracting state (EPC)  
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