

Title (en)
STEEL MATERIAL FOR MECHANICAL STRUCTURE EXCELLENT IN SUITABILITY FOR ROLLING, QUENCHING CRACK RESISTANCE, AND TORSIONAL PROPERTY AND DRIVE SHAFT

Title (de)
STAHLMATERIAL FÜR MECHANISCHE KONSTRUKTIONEN MIT HERVORRAGENDER WALZBARKEIT, ABSCHRECKUNGSRISSFESTIGKEIT UND TORSIONSEIGENSCHAFT UND ANTRIEBSWELLE

Title (fr)
ACIER POUR STRUCTURE MECANIQUE EXTREMEMENT APPROPRIE POUR LE LAMINAGE, LA TREMPER, LA RESISTANCE AUX FISSURES, AYANT UNE EXCELLENTE PROPRIETE DE TORSION ET ARBRE MENANT

Publication
EP 1553197 B1 20070919 (EN)

Application
EP 02790877 A 20021226

Priority
• JP 0213564 W 20021226
• JP 2002304190 A 20021018

Abstract (en)
[origin: US2006065328A1] A machine structural steel product having superior formability of rotary-forming, torsional properties, and quenching-crack resistance is provided which is manufactured using an electric furnace instead of a blast furnace and which removes adverse influences of tramp elements. A drive shaft having a superior static strength and fatigue strength is provided. In particular, the machine structural steel product contains: on a mass percent basis, C: 0.35% to 0.50%; Si: 0.15% or less; Mn: 0.20% to 1.1%; P: 0.02% or less; S: 0.005% to 0.035%; Cr: more than 0.1% to 0.2%; Mo: 0.05% to 0.5%; Ti: 0.01% to 0.05%; Al: 0.01% to 0.05%; N: 0.01% or less; B: 0.0005% to 0.0050%; Cu: 0.06% to 0.25%; and Ni: 0.05% to 0.2%, and in addition, the composition described above is adjusted so that an LD value represented by the following equation (1) satisfies 120 or I

IPC 8 full level
C21D 9/28 (2006.01); **C22C 38/00** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/50** (2006.01)

CPC (source: EP US)
C22C 38/001 (2013.01 - EP US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US)

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Designated contracting state (EPC)
DE ES FR GB

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US 2006065328 A1 20060330; CN 1307319 C 20070328; CN 1688733 A 20051026; DE 60222595 D1 20071031; DE 60222595 T2 20080619; EP 1553197 A1 20050713; EP 1553197 A4 20060705; EP 1553197 B1 20070919; ES 2292836 T3 20080316; JP 4170294 B2 20081022; JP WO2004035848 A1 20060216; WO 2004035848 A1 20040429

DOCDB simple family (application)
US 52680205 A 20050307; CN 02829773 A 20021226; DE 60222595 T 20021226; EP 02790877 A 20021226; ES 02790877 T 20021226; JP 0213564 W 20021226; JP 2004544722 A 20021226