

Title (en)
HIGH-CARBON COLD-ROLLED STEEL SHEET AND PRODUCTION METHOD THEREFOR, AND MECHANICAL PARTS MADE OF HIGH-CARBON STEEL

Title (de)
KALTGEWALZTES STAHLBLECH MIT HOHEM KOHLENSTOFFGEHALT, VERFAHREN ZU SEINER HERSTELLUNG UND MASCHINENTEILE AUS STAHL MIT HOHEM KOHLENSTOFFGEHALT

Title (fr)
TÔLE D'ACIER LAMINÉE À FROID À HAUTE TENEUR EN CARBONE ET SON PROCÉDÉ DE PRODUCTION, ET PIÈCES MÉCANIQUES EN ACIER À HAUTE TENEUR EN CARBONE

Publication
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Application
EP 19817932 A 20191108

Priority
JP 2019043828 W 20191108

Abstract (en)
Provided is a high carbon cold rolled steel sheet which can have good impact characteristics and hardness characteristics and excellent wear resistance after rapid cooling (quenching) treatment after short-time solution treatment and low-temperature tempering treatment (quenching and tempering treatment), has little decrease in secondary workability before the quenching and tempering treatment, and has a sheet thickness of less than 1.0 mm. The high carbon cold rolled steel sheet has a steel sheet chemical composition consisting of, by mass%, C: 0.85% to 1.10%, Mn: less than 0.60%, Si: 0.10% to 0.35%, P: 0.030% or less, S: 0.030% or less, Cr: less than 0.60%, Mn + Cr satisfying less than 1.0%, Nb: 0.005% to 0.020%, and the balance being Fe and inevitable impurities. Thereby, compared with conventional steel materials, there is little decrease in the secondary workability before quenching and tempering. In addition, by adopting a steel sheet structure with an average particle diameter of carbide of 0.2 to 0.7 (μm) and a spheroidization rate of 90% or more, even with a quenching and tempering treatment in such a short time as 3 to 15 min, it is possible to provide a machine part having excellent impact characteristics with an impact value of 9 J/cm², sufficient hardness characteristics in a range of 600 to 750 HV, and excellent wear resistance.

IPC 8 full level
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CPC (source: EP KR)
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