

Title (en)

BAINITIC MICROALLOY STEEL WITH ENHANCED NITRIDING CHARACTERISTICS

Title (de)

BAINITISCHER MIKROLEGIERUNGSSTAHL MIT VERBESSERTEN NITRIERUNGSEIGENSCHAFTEN

Title (fr)

ACIER DE MICRO-ALLIAGE BAINITIQUE AYANT DES CARACTÉRISTIQUES DE NITRURATION AMÉLIORÉES

Publication

EP 2976436 A1 20160127 (EN)

Application

EP 14768272 A 20140321

Priority

- US 201313848812 A 20130322
- US 2014031398 W 20140321

Abstract (en)

[origin: US2014283954A1] A forged, microalloyed, and nitrided steel part is disclosed to have a composition including 0.20-0.40 wt. % C, 0.50-1.60 wt. % Mn, 0.40-1.50 wt. % Cr, 0.07-0.30 wt. % Al, 0.03-0.20 wt. % V, 0.10-0.40 wt. % Si, and a balance of Fe and incidental impurities. The part may be produced by heating the steel part to austenization temperature of approximately 1100 degrees C. to 1260 degrees C., hot forging the steel part, controlled air cooling the steel part after hot forging at a rate falling approximately in the range from 1 degree C. per second to 5 degrees C. per second as the steel part cools from approximately 900 degrees C. to approximately 500 degrees C. to produce a predominantly bainitic microstructure of greater than approximately 50% bainite. The steel part may then be machined to a desired configuration, and nitrided by heating in an atmosphere containing ammonia.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2014153491A1

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