

Title (en)

METHOD FOR PREVENTING EXHAUST VALVE SEAT RECESSION

Title (de)

VERFAHREN ZUR VERHINDERUNG DES VERSCHLEISSES EINES ABGASVENTILSITZES

Title (fr)

PROCÉDÉ POUR EMPÊCHER LE RETRAIT DE SIÈGE DE SOUPAPE D'ÉCHAPPEMENT

Publication

**EP 2398878 A2 20111228 (EN)**

Application

**EP 10744247 A 20100217**

Priority

- US 2010024460 W 20100217
- US 37867809 A 20090218

Abstract (en)

[origin: US2010206260A1] A method for preventing or inhibiting exhaust valve seat recession in a natural gas fueled internal combustion engine is disclosed. The method involves lubricating the engine with a lubricating oil composition comprising (a) a major amount of an oil of lubricating viscosity, and (b) a minor amount of a natural gas engine oil additive package, wherein the lubricating oil composition is substantially free of each of any zinc compounds and alkaline earth metal salts of a condensation product of an alkylene polyamine, an aldehyde and a substituted phenol.

IPC 8 full level

**F01N 3/00** (2006.01); **C10M 163/00** (2006.01); **C10N 30/06** (2006.01); **C10N 40/25** (2006.01)

CPC (source: EP US)

**C10M 141/08** (2013.01 - EP US); **C10M 163/00** (2013.01 - EP US); **F01L 1/16** (2013.01 - EP US); **F01L 1/46** (2013.01 - EP US); **F01L 3/22** (2013.01 - EP US); **F01L 3/24** (2013.01 - EP US); **C10M 2203/1025** (2013.01 - EP US); **C10M 2207/026** (2013.01 - EP US); **C10M 2207/028** (2013.01 - EP US); **C10M 2215/28** (2013.01 - EP US); **C10M 2219/046** (2013.01 - EP US); **C10N 2030/06** (2013.01 - EP US); **C10N 2030/40** (2020.05 - EP US); **C10N 2030/42** (2020.05 - EP US); **C10N 2030/45** (2020.05 - EP US); **C10N 2030/52** (2020.05 - EP US); **C10N 2040/25** (2013.01 - EP US); **F01L 2810/02** (2013.01 - EP US); **F01M 9/02** (2013.01 - EP US)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)

**US 2010206260 A1 20100819**; CA 2752334 A1 20100826; CN 102325866 A 20120118; EP 2398878 A2 20111228; EP 2398878 A4 20120718; JP 2012518075 A 20120809; JP 5583144 B2 20140903; SG 173748 A1 20110929; US 2015038383 A1 20150205; WO 2010096472 A2 20100826; WO 2010096472 A3 20101118

DOCDB simple family (application)

**US 37867809 A 20090218**; CA 2752334 A 20100217; CN 201080008158 A 20100217; EP 10744247 A 20100217; JP 2011551187 A 20100217; SG 2011059417 A 20100217; US 2010024460 W 20100217; US 201414516842 A 20141017