

Title (en)
GAS SHUTTLE VALVE PROVIDED WITH AN ANTI-CORROSIVE LAYER

Title (de)
GASWECHSELVENTIL MIT KORROSIONSSCHUTZSCHICHT

Title (fr)
SOUPAPE D'ECHANGE DES GAZ PRESENTANT UNE COUCHE ANTICORROSION

Publication
EP 1864003 A1 20071212 (DE)

Application
EP 06707539 A 20060314

Priority
• EP 2006002292 W 20060314
• DE 102005013088 A 20050318

Abstract (en)
[origin: CA2601053A1] The invention relates to a gas shuttle valve for an internal combustion engine comprising a valve cone which substantially consists of a valve shaft projected in a valve disc in such a way that a hollow cone is formed. The valve cone or at least the shaft thereof is made of a typical valve steel consisting of a nitride forming base alloy up to the hollow cone area. The aim of said invention is to improve said gas shuttle valve in such a way that even the parts made of the typical valve steel exhibit a good anti-corrosive protection. For this purpose, the valve cone is provided at least partially with an anti-corrosive layer in the form of a nitride layer, which is produced by the nitride forming base alloy conversion by plasma nitriding or plasma nitrocarburising in a nitrogenous atmosphere.

IPC 8 full level
F01L 1/32 (2006.01); **C23C 8/32** (2006.01); **F01L 3/04** (2006.01); **F01L 3/06** (2006.01)

CPC (source: EP KR US)
C23C 8/32 (2013.01 - KR); **F01L 1/32** (2013.01 - EP KR US); **F01L 3/04** (2013.01 - EP KR US); **F01L 3/06** (2013.01 - EP KR US);
Y02T 10/12 (2013.01 - EP US)

Citation (search report)
See references of WO 2006097264A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
DE 102005013088 A1 20060921; **DE 102005013088 B4 20061228**; CA 2601053 A1 20060921; CN 101142379 A 20080312;
EP 1864003 A1 20071212; JP 2008533372 A 20080821; KR 20070112287 A 20071122; NO 20075320 L 20071213; RU 2007138648 A 20090427;
US 2008149062 A1 20080626; WO 2006097264 A1 20060921

DOCDB simple family (application)
DE 102005013088 A 20050318; CA 2601053 A 20060314; CN 200680008693 A 20060314; EP 06707539 A 20060314;
EP 2006002292 W 20060314; JP 2008501214 A 20060314; KR 20077023714 A 20071016; NO 20075320 A 20071017;
RU 2007138648 A 20060314; US 88664906 A 20060314