

Title (en)

Fuel injection device for diesel engine, method for manufacturing the same, and valve unit

Title (de)

Kraftstoffeinspritzvorrichtung für Dieselmotor, Verfahren zu deren Herstellung und Ventileinheit

Title (fr)

Dispositif d'injection de carburant pour moteur diesel, son procédé de fabrication, et unité de soupape

Publication

**EP 2146087 B1 20121212 (EN)**

Application

**EP 09008133 A 20090622**

Priority

JP 2008164008 A 20080624

Abstract (en)

[origin: EP2146087A2] Wear and spalling are to be prevented at seat portions of a fuel injection device for a diesel engine. In a fuel injection device for a diesel engine wherein a needle valve is moved in the inside of a nozzle body to which fuel is supplied, to open or close seat faces through which the nozzle body and the needle valve come into contact with each other, thereby controlling injection of fuel from nozzle holes opening to the nozzle body, the portion serving as the seat portion of the nozzle body and the portion serving as the seat portion of the needle valve are formed of a nitrided alloy steel, and a compound layer and a first layer in a diffusion layer are removed from a surface of each of the seat portions. Since a second layer having high toughness serves as a seat face, both wear resistance and fatigue resistance are improved and particularly it is possible to prevent spalling of the seat portion of the nozzle body.

IPC 8 full level

**F02M 61/16** (2006.01); **F02M 61/18** (2006.01)

CPC (source: EP KR)

**F02M 61/166** (2013.01 - EP KR); **F02M 61/168** (2013.01 - EP KR); **F02M 61/1886** (2013.01 - EP KR); **F02M 61/1893** (2013.01 - EP KR); **F02M 2200/02** (2013.01 - EP KR); **F02M 2200/9061** (2013.01 - EP KR)

Cited by

JP2017528635A; DE102014218488A1; US10125734B2

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 TR

DOCDB simple family (publication)

**EP 2146087 A2 20100120**; **EP 2146087 A3 20101103**; **EP 2146087 A8 20100414**; **EP 2146087 B1 20121212**; JP 2010007466 A 20100114; JP 4686575 B2 20110525; KR 101122187 B1 20120319; KR 20100002127 A 20100106

DOCDB simple family (application)

**EP 09008133 A 20090622**; JP 2008164008 A 20080624; KR 20090054911 A 20090619