

Title (en)  
Fuel pump assembly

Title (de)  
Treibstoffpumpenanordnung

Title (fr)  
Assemblage de pompe à essence

Publication  
**EP 1413749 A3 20041027 (EN)**

Application  
**EP 03256728 A 20031024**

Priority  
GB 0224936 A 20021025

Abstract (en)  
[origin: EP1413749A2] The assembly includes a pump housing which supports pump heads (13a-13c). Each pump head has a separate insert (30a) installed to the pump housing, to define a rectangular or square cross-section guide path that guides the movement of a reciprocating shoe (24). Each pump head also has a plunger (14) that reciprocates within a plunger bore (16), to pressurize the fuel within the pump chamber of pump head housings.

IPC 1-7  
**F04B 1/04**

IPC 8 full level  
**F04B 1/04** (2006.01); **F04B 1/053** (2006.01); **F04B 53/00** (2006.01)

CPC (source: EP)  
**F04B 1/0413** (2013.01); **F04B 1/0421** (2013.01); **F04B 1/0439** (2013.01); **F04B 1/053** (2013.01); **F04B 53/007** (2013.01)

Citation (search report)

- [X] DE 19907311 A1 20000831 - BOSCH GMBH ROBERT [DE]
- [AD] EP 1223334 A2 20020717 - DELPHI TECH INC [US]
- [A] EP 1013921 A2 20000628 - DENSO CORP [JP]
- [A] US 1206453 A 19161128 - MANLY CHARLES MATTHEWS [US]
- [A] US 5752430 A 19980519 - KAWAJIRI CHIAKI [JP], et al
- [A] EP 0517991 A1 19921216 - MARTIN TIBY M [US]

Cited by  
GB2400418A; DE102013101121B4; GB2522204A; GB2522204B; CN115638094A; EP3318746A1; GB2555595A; DE102004048711A1; DE102004048711B4; CN102395788A; ITMI20081470A1; US7793867B2; US7600698B2; US7762176B2; US8191459B2; WO2007096224A1; WO2006072277A1; WO2005088125A1; DE102013101121A1; US8915232B2; WO2009098095A1; WO2010094573A1; WO2010015448A1; WO2010118903A1; US10472964B2; US10858938B2; US11008863B2

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