

Title (en)
A fuel injector and a combustion chamber

Title (de)
Kraftstoffeinspritzventil und Brennkammer

Title (fr)
Injecteur de carburant et chambre de combustion

Publication
EP 2813763 A1 20141217 (EN)

Application
EP 14171645 A 20140609

Priority
GB 201310261 A 20130610

Abstract (en)
A fuel injector (56) comprises a pilot fuel injector (59) and a main fuel injector (61). The pilot fuel injector (59) comprises at least one pilot air swirler (71,83). The main fuel injector (61) comprises a main air blast fuel injector located between an inner main air swirler (93) and an outer main air swirler (103). A first air splitter (70) is located between the pilot air swirler (71,83) and the inner main air swirler (93) and a second air splitter (88) is located between the pilot air swirler (71,83) and the inner main air swirler (93). The first air splitter (70) has a downstream portion (70B) converging to a downstream end. The second air splitter (88) has a downstream portion (88B) diverging to a downstream end. The downstream end of the second air splitter (88) is downstream of the downstream end of the first air splitter (70) and the ratio of the distance (L) from the downstream end of the first air splitter (70) to the downstream end of the second air splitter (88) to the diameter (D) of the downstream end of the second air splitter (88) is in the range of 0.22 to 0.30. The arrangement produces an "S" shaped flow of fuel from the pilot fuel injector (59) to the main combustion zone minimising NO_x, maximising combustion efficiency, enabling ignition and not overheating the second air splitter (88).

IPC 8 full level
F23R 3/34 (2006.01); **F23D 11/10** (2006.01)

CPC (source: EP US)
F23D 11/107 (2013.01 - EP US); **F23R 3/343** (2013.01 - EP US); **F23R 3/346** (2013.01 - EP US)

Citation (search report)
• [Y] EP 2592351 A1 20130515 - DELAVAN INC [US]
• [Y] US 2011072825 A1 20110331 - HICKS ROBERT A [GB], et al
• [A] US 6354072 B1 20020312 - HURA HARJIT S [US]

Cited by
GB2592254A; CN107525095A; CN107559882A; EP3176505B1

Designated contracting state (EPC)
AL 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 RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2813763 A1 20141217; GB 201310261 D0 20130724; US 2014360202 A1 20141211

DOCDB simple family (application)
EP 14171645 A 20140609; GB 201310261 A 20130610; US 201414299890 A 20140609