

Title (en)

PRECHAMBER ASSEMBLY, CYLINDER HEAD, PISTON-CYLINDER UNIT AND INTERNAL COMBUSTION ENGINE

Title (de)

VORKAMMERANORDNUNG, ZYLINDERKOPF, KOLBEN-ZYLINDER-EINHEIT UND BRENNKRAFTMASCHINE

Title (fr)

ENSEMBLE CHAMBRE DE PRÉCOMBUSTION, CULASSE, UNITÉ PISTON-CYLINDRE ET MOTEUR À COMBUSTION INTERNE

Publication

EP 4390081 A1 20240626 (EN)

Application

EP 22215376 A 20221221

Priority

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Abstract (en)

Prechamber assembly (1) for an internal combustion engine, comprising:- at least one prechamber volume (2), wherein the at least one prechamber volume (2) has at least one injector opening (7) with at least one fuel injector (5) partially inserted into or attached to the at least one injector opening (7), preferably for injecting hydrogen, wherein the at least one injector opening (7) or the at least one fuel injector (5) has an injector area (8), and- at least one riser channel (3), wherein the at least one riser channel (3) is connected to the at least one prechamber volume (2), wherein the at least one riser channel (3) has a riser channel area (9), and- at least one nozzle hole (4), wherein the at least one nozzle hole (4) is connected to the at least one riser channel (3), and to a main combustion chamber (12) when the prechamber assembly (1) is in its built-in state in a combustion engine, wherein the at least one nozzle hole (4) has a nozzle hole area, wherein the at least one fuel injector (5) is configured to inject fuel with an injection pressure and that the prechamber assembly (1) is formed such that- the ratio of the injector area (8) over the riser channel area (9) is in the range of 9 to 24, preferably 12 to 18, divided by the value of the injection pressure in bar, and/or- the ratio of the injector area (8) over the nozzle hole area is in the range of 6 to 30, preferably 9 to 21, divided by the value of the injection pressure in bar.

IPC 8 full level

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CPC (source: EP)

F02B 19/1014 (2013.01); **F02B 19/108** (2013.01); **F02B 19/12** (2013.01)

Citation (applicant)

- US 7438043 B2 20081021 - SHIRAISHI TAISUKE [JP], et al
- WO 2022226553 A1 20221103 - INNIO JENBACHER GMBH & CO OG [AT]

Citation (search report)

- [XD] WO 2022226553 A1 20221103 - INNIO JENBACHER GMBH & CO OG [AT]
- [X] EP 3536924 A1 20190911 - MITSUBISHI HEAVY IND ENGINE & TURBOCHARGER LTD [JP]
- [X] US 5024193 A 19910618 - GRAZE JR RUSSELL R [US]
- [X] EP 3118433 A1 20170118 - CATERPILLAR ENERGY SOLUTIONS GMBH [DE]
- [X] IT 201900002983 A1 20200901 - ITALTECNICA S R L [IT]

Designated contracting state (EPC)

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