

Title (en)

PISTON ASSEMBLY AND PISTON MEMBER THEREOF HAVING A PREDETERMINED COMPRESSION HEIGHT TO DIAMETER RATIO.

Title (de)

KOLBEN FÜR HUBKOLBEN-BRENNKRAFTMASCHINEN MIT EINEM BESTIMMTEN VERHÄLTNIS ZWISCHEN DER KOMPRESSIOnSHÖHE UND DEM DURCHMESSER DES KOLBEN.

Title (fr)

ENSEMBLE A PISTON ET SON ELEMENT DE PISTON A RAPPORT DE COMPRESSION PREDETERMINE ENTRE LA HAUTEUR ET LE DIAMETRE.

Publication

**EP 0393142 B1 19940119**

Application

**EP 89901632 A 19890508**

Priority

US 26145988 A 19881021

Abstract (en)

[origin: WO9004711A1] Present day diesel engines having aluminum piston assemblies are limited to combustion chamber pressures of approximately 12,410 kPa (1,800 psi) whereas the desire is to increase such pressures up to the 15,170 kPa (2,200 psi) range. To reach such levels the instant piston assembly (76) includes a steel piston member (78) having an upper cylindrical portion (96) of a diameter "D" and a compression height "CH". The ratio of the compression height "CH" to the diameter "D" being within the range of from 60 % to 45 %. The piston member (78) is preferably forged and subsequently machined to precisely controllable dimensions. Moreover, the piston assembly (78) is preferably of the articulated type and includes a forged aluminum piston skirt (80) connected to the piston member (78) through a common wrist pin (82). Engine manufacturers are also demanding a smaller engine package size while retaining power output, improve fuel consumption and decreased emissions. The subject piston member (76) provides a simple and inexpensive solution to the increased power output package size relationship. To insure a small engine package, the piston member (78) has a compression height to maximum diameter ratio within the range of from 60 % to 45 %. The piston member (78) is preferably made from a steel forging to insure a reduced porosity over that of existing standard castings.

IPC 1-7

**F02F 3/00**

IPC 8 full level

**F02F 3/00** (2006.01); **F02F 3/16** (2006.01); **F16J 1/00** (2006.01); **F02B 3/06** (2006.01)

CPC (source: EP)

**F02F 3/0069** (2013.01); **F02B 3/06** (2013.01); **F02F 2200/04** (2013.01); **F05C 2201/021** (2013.01); **F05C 2201/0433** (2013.01); **F05C 2201/0448** (2013.01); **F05C 2251/042** (2013.01)

Citation (examination)

EP 0171568 A2 19860219 - MAHLE GMBH [DE]

Designated contracting state (EPC)

BE DE FR GB

DOCDB simple family (publication)

**WO 9004711 A1 19900503**; BR 8807836 A 19901113; DE 3887344 D1 19940303; DE 3887344 T2 19940505; EP 0393142 A1 19901024; EP 0393142 B1 19940119; JP 2656640 B2 19970924; JP H03502719 A 19910620

DOCDB simple family (application)

**US 8804646 W 19881227**; BR 8807836 A 19881227; DE 3887344 T 19881227; EP 89901632 A 19890508; JP 50161388 A 19881227