

Title (en)
CYLINDER HEAD FOR AN INTERNAL COMBUSTION ENGINE

Publication
EP 0079511 B1 19850424 (DE)

Application
EP 82110057 A 19821030

Priority
US 32114181 A 19811113

Abstract (en)
[origin: ES8400795A1] An improved port liner and its method of assembly into a cylinder head of an engine such that an air insulating layer is formed between the outer periphery of the liner and the inner diameter of an exhaust passage. The liner is a thin, stainless steel member having an arcuately-shaped section and a straight section which permits it to be inserted only one way into an exhaust passage. This is important for it allows for automated machine assembly of a valve guide which must be pressed through an opening located in the outer surface of the liner. The method of assembly also limits the physical contact between the liner and the cylinder head and this in conjunction with the air layer reduces the loss of thermal energy from the passing exhaust gases.

IPC 1-7
F02F 1/42; **F02B 77/02**; **F01N 7/18**

IPC 8 full level
F01N 13/14 (2010.01); **F01N 13/18** (2010.01); **F02B 77/02** (2006.01); **F02F 1/42** (2006.01); **F02F 1/24** (2006.01)

CPC (source: EP US)
F01N 13/14 (2013.01 - EP US); **F01N 13/1805** (2013.01 - EP US); **F02B 77/02** (2013.01 - EP US); **F02F 1/4271** (2013.01 - EP US); **F02F 1/4264** (2013.01 - EP US); **F02F 2001/247** (2013.01 - EP US); **F02F 2001/4278** (2013.01 - EP US); **Y10T 29/49272** (2015.01 - EP US); **Y10T 29/49314** (2015.01 - EP US)

Cited by
FR2714112A1; EP0232953A1; US5022227A; WO8905911A1

Designated contracting state (EPC)
AT BE CH DE FR GB IT LI SE

DOCDB simple family (publication)
EP 0079511 A1 19830525; **EP 0079511 B1 19850424**; **EP 0079511 B2 19871014**; AT E12974 T1 19850515; AU 550495 B2 19860320; AU 8920182 A 19830519; BR 8206426 A 19830927; CA 1201341 A 19860304; DE 3263294 D1 19850530; ES 517313 A0 19831101; ES 8400795 A1 19831101; JP H042791 B2 19920120; JP S5891349 A 19830531; MX 157962 A 19881228; US 4430856 A 19840214; ZA 828295 B 19840627

DOCDB simple family (application)
EP 82110057 A 19821030; AT 82110057 T 19821030; AU 8920182 A 19821007; BR 8206426 A 19821105; CA 414751 A 19821103; DE 3263294 T 19821030; ES 517313 A 19821112; JP 19881982 A 19821112; MX 19483382 A 19821018; US 32114181 A 19811113; ZA 828295 A 19821111