

Title (en)
Intake system for an internal combustion engine with at least two cylinders

Title (de)
Einlasssystem für eine Brennkraftmaschine mit wenigstens zwei Zylindern

Title (fr)
Système d'admission pour moteur à combustion interne à au moins deux cylindres

Publication
EP 0930431 B1 20040908 (EN)

Application
EP 99100656 A 19990114

Priority
JP 548498 A 19980114

Abstract (en)
[origin: EP0930431A2] An internal combustion engine has throttle valves installed, each of its air intake passages connecting a surge tank with each of the cylinders. An inter-cylindrical connecting passage is formed near the air intake valves between adjacent air intake passages. An auxiliary air intake passage branches from the surge tank to bypass the throttle valve and connects to the inter-cylindrical connecting passage. An idle speed control valve is installed in the auxiliary air intake passage. Thus, stabilized combustion of the air/fuel mixture even during the low to mid-load operating ranges can be obtained to improve fuel economy and reduce NOX emissions. The invention is of particular advantage in engines using exhaust gas recirculation. <IMAGE>

IPC 1-7
F02M 35/104

IPC 8 full level
F02B 31/00 (2006.01); **F02B 31/02** (2006.01); **F02D 13/02** (2006.01); **F02D 41/02** (2006.01); **F02M 25/07** (2006.01); **F02M 35/10** (2006.01);
F02M 35/104 (2006.01)

CPC (source: EP)
F02B 31/08 (2013.01); **F02D 9/1055** (2013.01); **F02M 26/01** (2016.02); **F02M 26/20** (2016.02); **F02M 26/36** (2016.02); **F02M 35/10045** (2013.01);
F02M 35/10072 (2013.01); **F02M 35/10111** (2013.01); **F02M 35/10222** (2013.01); **F02M 35/10308** (2013.01); **F02M 35/112** (2013.01);
F02B 2031/006 (2024.05); **F02D 9/1095** (2013.01); **F02M 2026/009** (2016.02)

Cited by
CN102966473A; US9027536B2; WO2007033389A1

Designated contracting state (EPC)
DE ES FR GB IT

DOCDB simple family (publication)
EP 0930431 A2 19990721; **EP 0930431 A3 20000503**; **EP 0930431 B1 20040908**; DE 69919916 D1 20041014; DE 69919916 T2 20050120;
JP 3916313 B2 20070516; JP H11200869 A 19990727; PL 193890 B1 20070330; PL 330836 A1 19990719

DOCDB simple family (application)
EP 99100656 A 19990114; DE 69919916 T 19990114; JP 548498 A 19980114; PL 33083699 A 19990114