Title (en)

INTERNAL COMBUSTION ENGINE INLET VALVE CONTROL PROCESS

Publication

EP 0283671 B1 19901024 (DE)

Application

EP 88101222 A 19880128

Priority

DE 3708373 A 19870314

Abstract (en)

[origin: US4841923A] Methods for operating an inlet valve for internal combustion engines to improve fuel efficiency and reduce pollution, more particularly for operating electromagnetically operated inlet valves for optimum fuel-air mixture filling at low loads (up to about 20-25% of full throttle) by not holding the gas exchange (inlet) valve in the open position, but by re-attracting it immediately after its release from the closed position by the electromagnet allocated to the closed position. In a principal embodiment, this is achieved by de-energizing the closed position electromagnet but not thereafter energizing the open position electromagnet, then letting the anchor plate rebound from the spring compression on the open valve side of the anchor plate, and re-energizing the closed position electromagnet. Optimum mixing of the fuel-air mixture is achieved by timing the de-energization of the closed valve electromagnet at or slightly after bottom dead center (BDC) when the maximum pressure differential between inlet tube and cylinder interior occurs. This promotes greater utilization of the fuel energy content through better burning characteristics. Fuel consumption is reduced approximately 20%, and the exhaust gases, CO and NOx are reduced.

IPC 1-7

F01L 9/04

IPC 8 full level

F01L 9/20 (2021.01)

CPC (source: EP US)

F01L 9/20 (2021.01 - EP US)

Cited by

DE19743081A1; EP0401390A4; US5119772A; DE19712063A1; DE19712669A1; DE19712669C2

Designated contracting state (EPC)

DE ES FR GB IT

DOCDB simple family (publication)

DE 3708373 C1 19880714; DE 3860854 D1 19901129; EP 0283671 A1 19880928; EP 0283671 B1 19901024; ES 2018307 B3 19910401; JP 2545110 B2 19961016; JP S63248907 A 19881017; US 4841923 A 19890627

DOCDB simple family (application)

DE 3708373 A 19870314; DE 3860854 T 19880128; EP 88101222 A 19880128; ES 88101222 T 19880128; JP 5920388 A 19880311; US 16548488 A 19880308