

Title (en)
CONTROL DEVICE FOR AN INTERNAL COMBUSTION ENGINE

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EP 0129776 B1 19870916 (DE)

Application
EP 84106741 A 19840613

Priority
DE 3323106 A 19830627

Abstract (en)
[origin: EP0129776A1] 1. An arrangement for controlling an internal combustion engine : - comprising a fuel injection pump with a regulating rod (11) controlled by a stepping motor (16) to positions which in each case determine the quantity of injected fuel ; - comprising a position regulator (9) which determines the position of the regulating rod in dependence upon the difference between a theoretical position value and an actual position value, the position regulator consisting of a micro-computer which calculates the number of regulating steps to be executed by the stepping motor (16) for each quantity of injected fuel, each regulating step changing the quantity of injected fuel by the same amount, and where the absolute value of the quantity of injected fuel is determined by the number and direction of the regulating steps, commencing from a calibration point ; - comprising a speed of rotation indicator in the form of a toothed disc (1, 2) which is coupled to the motor (10) ; and - comprising a tooth pulse generator (3, 4) which scans the toothed disc (1, 2) and supplies rotational speed pulses (5) at a pulse frequency proportional to the speed of rotation ; characterised in that - the position regulator contains a rotational speed regulator (9) which determines the position of the regulating rod in dependence upon the difference between a speed of rotation signal (19) and a theoretical speed of rotation (18) ; - that a PLL-circuit is provided, supplied with the rotational speed pulses (5) and supplying an analogue voltage proportional to the curve of the rotational speed, as an actual rotation speed signal (n) ; - that the micro-computer determines the rotational speed and the change in speed of rotation between two injection points to determine therefrom the no-load state ; and - that in the no-load state the micro-computer calculates the quantity of injected fuel necessary to maintain a predetermined no-load speed, taking into account additional engine characteristics, such as temperature and pressure, to which speed it assigns the current position of the stepping motor as a calibration point.

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FR2658246A1; CN109139323A; CN109083791A; EP0566281A1; US5339781A

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