

Title (en)

FUEL-AIR RATIO CORRECTING APPARATUS FOR A ROTOR-TYPE CARBURETOR FOR INTERNAL COMBUSTION ENGINES

Publication

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Application

EP 86109374 A 19860709

Priority

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Abstract (en)

[origin: EP0209073A2] A rotor assembly is driven by an airstream which by a centrifugal pump forces a measured quantity of fuel through a fixed orifice in direct, and substantially linear proportion to the speed of rotation of the rotor and thus to the volume of the driving airstream. The ultimate fuel-air ratio (λ values) is corrected for optimum operation by slightly changing, in response to measure parameters, one of the constituents of the mixture. In one embodiment, the fuel discharge bore (9) of a rotor (7) is so dimensioned that the rotor-type carburetor (2) produces a lean mixture with a λ -value which is constant for all operating points of the internal combustion engine at a value of approximately 1.25. With the fuel-air ratio correction apparatus additional amounts of fuel are brought into the atomization ring (11) of the rotor (7), with which additional amounts the fuel-air ratio in the lean mixture is changed and at the operating points of the internal combustion engine the λ -values are adjusted to those most favorable with regard to fuel consumption, output and pollutant-free exhaust gases. The fuel-air ratio correction apparatus includes a regulated fuel injection pump (20) with an injection nozzle (39a) directed at the internal wall (13) of the atomization ring (11) from which pump at each pump stroke approximately 50 mm³ of fuel are delivered, and a regulating device (50) with a pulse generator (40) for driving the fuel injection pump (20) with current pulses of regulated pulse repetition frequency. The regulation of the pulse repetition frequency takes place by means of control signal generators (51, 52, 53, 54, 55) in dependence on operating parameters of the internal combustion engine such as in particular the opening of the throttle valve (18) for the correction of acceleration, the coolant temperature for the cold start fuel-air ratio correction and so on. This simple and reliable fuel-air ratio correction apparatus assures a very accurate fuel dosing. In other embodiments, the volume of air is reduced to enrich the fuel-air ratio and in another, the velocity of the same volume of air is increased to enrich the fuel-air ratio.

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