

Title (en)
Fuel delivery control system.

Title (de)
Fördermengensteuersystem.

Title (fr)
Système de commande de l'alimentation.

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Application
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Abstract (en)
A system for controlling delivery of fuel to a compression ignition engine having a predetermined characteristic ignition delay. A positive-displacement pump, typically a high-pressure, multiplunger in-line pump (12), receives fuel from a source and provides intermittent, pressurized pulses of fuel flow. A conduit (30) extends from a pumping chamber (62) to a node to which a normally-closed fuel injector (32) is operatively connected. A normally-open, solenoid-controlled bypass valve (34) has an inlet port (36) connected to the conduit node for allowing fuel to bypass the injector (32). When a signal is applied to the bypass valve (34) it rapidly closes, causing the pressure at the injector (32) to rapidly increase to a first injector-opening level to inject pilot fuel. Thereafter, following a predetermined hydraulic delay, the pressure at the injector (32) rapidly increases to a second level greater than the first to provide main fuel injection. The conduit length determines the hydraulic delay and is selected to have a predetermined time relation with the engine's ignition delay time. The hydraulic delay substantially corresponds with the ignition delay time in the preferred embodiment. The bypass valve (34) also responds rapidly in the closing direction. Part of the make-up fuel delivered by the pump (12) is provided by reverse flow of fuel through the open bypass valve (34).

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Citation (search report)
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