

Title (en)

Injection pump with constant injection pressure and predosage, and a system therefor.

Title (de)

Einspritzpumpe mit konstantem Einspritzdruck und Vordosierung und eine Anlage hierzu.

Title (fr)

Injecteur pompe à pression d'injection constante et prédosage et système dérivé.

Publication

**EP 0077235 A1 19830420 (FR)**

Application

**EP 82401738 A 19820927**

Priority

FR 8118558 A 19811001

Abstract (en)

1. An injector pump for passing a premetered amount of fuel to an injector (17) having a needle (18), of the type comprising a piston (21), a discharge chamber (20), a delivery piston (5) with mechanical control by cam or eccentric in accordance with any law of movement, said piston delivering fuel in a delivery chamber (6), and an injection piston (9) which is actuated exclusively by the pressure obtaining in the delivery chamber (6) with a return spring (13) acting there against, said piston in turn delivering the fuel in an injection chamber (12) which is intended to feed the injector (17), characterised in that it comprises a pressure regulator (19) for limiting the pressure in the delivery chamber (6) to a value which is high but preregulated and independent of the operating condition of the engine and the load thereon, that the constant pressure which is thus defined in the injection chamber (12) is transmitted to the injector (17) but at the same time to the discharge chamber (20) thereof to prevent injection as long as an electrically operated valve (26) does not suppress the application of said pressure to said discharge chamber so as to have immediate application of the preregulated constant pressure at the precise moment of injection, which is determined electrically, and that it further comprises a single three-way electrically operated valve (26) to provide both for the premetering effect, by delayed communicating of the injection chamber (12) with the feed pressure (7), and for determining the time of injection by suppressing the pressure in the discharge chamber (20) of the injector (17), the common way (28) of the threeway electrically operated valve (26) being for that purpose in communication with the discharge chamber (20) while the other two ways (27 and 29) of the valve (26) are respectively connected to the injection chamber (12) and to the feed pressure (7), excitation of said valve (26) being controlled by a single rectangular pulse per cycle, of which the two edges, the rising edge (34) and the falling edge (35), are determined by an electronic device which independently controls the injection advance and the premetered amount.

Abstract (fr)

Injecteur pompe à pression d'injection constante et prédosage et système dérivé. Injecteur pompe envoyant une quantité prédosée de carburant à un injecteur (17) à aiguille (18) du type comportant un piston (21) et une chambre (20) de décharge, caractérisé par le fait qu'il comporte un piston de refoulement (5) à commande mécanique par came ou excentrique selon une loi de mouvement quelconque, ce piston refoulant du carburant dans une chambre de refoulement (6), et un piston d'injection (9) actionné exclusivement par la pression régnant dans la chambre de refoulement (6) avec un ressort de rappel antagoniste (13), ce piston refoulant à son tour le carburant dans une chambre d'injection (12) destinée à alimenter l'injecteur (17), avec en outre un régulateur de pression (19) limitant la pression dans la chambre de refoulement (6) à une valeur élevée mais préréglée et indépendante du régime du moteur aussi bien que de la charge de celui-ci.

IPC 1-7

**F02M 59/32**

IPC 8 full level

**F02M 59/20** (2006.01); **F02M 47/00** (2006.01); **F02M 47/02** (2006.01); **F02M 59/32** (2006.01); **F02B 75/02** (2006.01)

CPC (source: EP)

**F02M 47/027** (2013.01); **F02M 59/32** (2013.01); **F02B 2075/025** (2013.01)

Citation (search report)

- [A] GB 2030222 A 19800402 - BENDIX CORP
- [A] DE 2558789 A1 19770714 - BOSCH GMBH ROBERT

Cited by

EP0240353A3; EP0629776A1; EP0962649A1; EP0724688A4; WO9963217A1

Designated contracting state (EPC)

DE GB IT SE

DOCDB simple family (publication)

**EP 0077235 A1 19830420**; **EP 0077235 B1 19850814**; DE 3265437 D1 19850919; FR 2514075 A1 19830408; FR 2514075 B1 19831223; JP H0454064 B2 19920828; JP S5874869 A 19830506

DOCDB simple family (application)

**EP 82401738 A 19820927**; DE 3265437 T 19820927; FR 8118558 A 19811001; JP 17106782 A 19821001