(11) **EP 1 234 969 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: **09.11.2005 Bulletin 2005/45**

(51) Int Cl.7: **F02D 41/16**

(43) Date of publication A2: **28.08.2002 Bulletin 2002/35**

(21) Application number: 02003894.9

(22) Date of filing: 21.02.2002

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU

MC NL PT SE TR

Designated Extension States:

AL LT LV MK RO SI

(30) Priority: 22.02.2001 JP 2001046468

(71) Applicant: Toyota Jidosha Kabushiki Kaisha Toyota-shi, Aichi-ken 471-8571 (JP)

(72) Inventor: Ito, Yoshiyasu
Toyota-shi, Aichi-ken 471-8571 (JP)

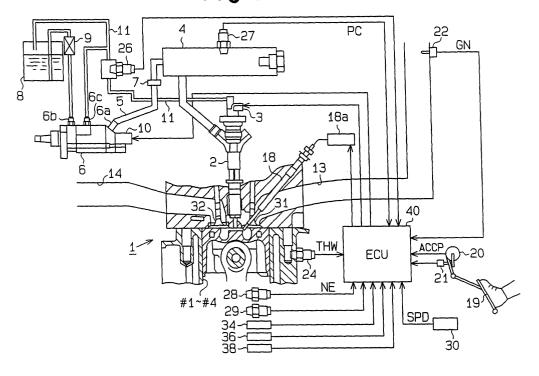
(74) Representative: TBK-Patent Bavariaring 4-6 80336 München (DE)

(54) Method and apparatus for determining fuel supply amount of internal combustion engine

(57) The amount of a change in the fuel injection amount that needs be made in accordance with a change in the target idle speed NETRG is corrected by the rotation speed correction factor QIPNT. When the engine friction is changed due to a change in the actual engine speed NE, the fuel injection amount is adjusted

by using a friction correction factor QIPBB. The friction correction factor QIPBB is obtained independently from the other correction factors and by using a specially designed map. Therefore, all the correction factors are easily computed in accordance with changes in the target idle speed NETRG, which facilitates the development of programs for controlling fuel injection.

Fig.1



EP 1 234 969 A3



EUROPEAN SEARCH REPORT

Application Number EP 02 00 3894

Category	Citation of document with indicati of relevant passages		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
Х	EP 0 547 650 A (GENERA CORPORATION) 23 June 19 * abstract * * column 1, line 16 -	993 (1993-06-23)	-20	F02D41/16	
Х	EP 0 915 245 A (TOYOTA KAISHA) 12 May 1999 (19 * column 2, paragraph paragraph 11 *	999-05-12)	-20		
A	US 4 633 839 A (YASUOK 6 January 1987 (1987-0 * column 1, line 45 -	1-06)	-20		
A	EP 0 875 673 A (SIEMEN AKTIENGESELLSCHAFT) 4 November 1998 (1998- * column 1, line 52 -	11-04)	-20		
A	EP 1 072 778 A (C.R.F. PER AZIONI) 31 January * column 1, paragraph paragraph 4 *	2001 (2001-01-31)	-20	TECHNICAL FIELDS SEARCHED (Int.Cl.7)	
	The present search report has been o	·			
Place of search Munich		Date of completion of the search 13 September 2005	Jackson, S		
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background		E : earlier patent docume after the filing date D : document cited in the L : document cited for otl	T: theory or principle underlying the invention E: earlier patent document, but published on, or		

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 02 00 3894

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

13-09-2005

	document earch report		Publication date		Patent family member(s)		Publication date
EP 054	7650	Α	23-06-1993	US	5163398	Α	17-11-19
EP 091	5245	Α	12-05-1999	DE DE JP JP	69814303 69814303 3617281 11141380	T2 B2	12-06-20 08-04-20 02-02-20 25-05-19
US 463	3839	Α	06-01-1987	DE EP JP	3568209 0156356 60204938	A2	16-03-19 02-10-19 16-10-19
EP 087	5673	Α	04-11-1998	NONE			
EP 107	 2778	Α	31-01-2001	DE DE ES IT	60005444 60005444 2207483 T0990663	T2 T3	30-10-20 06-05-20 01-06-20 29-01-20

FORM P0459

© For more details about this annex : see Official Journal of the European Patent Office, No. 12/82