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(54) **Engine control apparatus**

(57) In an air-cooled engine, the temperature of the engine is detected with high accuracy to control fuel injection in optimal conditions. In order to detect the temperature of the engine, a first temperature sensor (21) and second temperature sensor (22) are provided at two spaced portions respectively on a cylinder block (11), and based on the function of a temperature difference between temperatures T_1 and T_2 respectively detected by the first temperature sensor (21) and second temperature sensor (22) and the thermal resistance specific to the engine, a calculating circuit (34) calculates the engine temperature T_0 inside the engine. In this way, the detection (estimation) accuracy of the engine temperature is improved and the optimal engine control is performed.

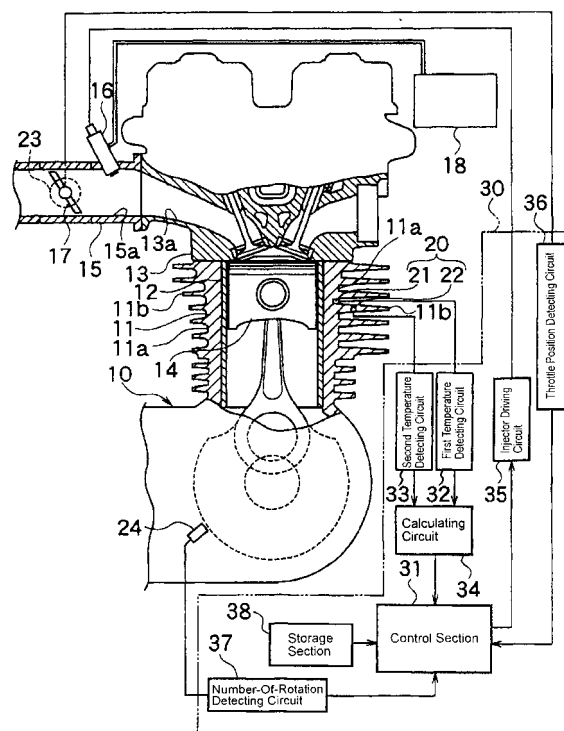


FIG. 1



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 01 1170

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	PATENT ABSTRACTS OF JAPAN vol. 016, no. 141 (M-1232), 9 April 1992 (1992-04-09) & JP 04 001436 A (MAZDA MOTOR CORP), 6 January 1992 (1992-01-06) * abstract *	1-7	F02D41/32 F02B61/02
X	----- PATENT ABSTRACTS OF JAPAN vol. 017, no. 357 (P-1568), 6 July 1993 (1993-07-06) & JP 05 052670 A (JAPAN ELECTRON CONTROL SYST CO LTD), 2 March 1993 (1993-03-02) * abstract *	1	
X	----- PATENT ABSTRACTS OF JAPAN vol. 1995, no. 05, 30 June 1995 (1995-06-30) & JP 07 034927 A (TOYOTA MOTOR CORP), 3 February 1995 (1995-02-03) * abstract *	1	
A	----- US 4 493 304 A (NAKAJIMA ET AL) 15 January 1985 (1985-01-15) * the whole document *	1-7	TECHNICAL FIELDS SEARCHED (IPC) F02D G01K
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 14 March 2006	Examiner Calabrese, N
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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EPC FORM 1503 03.82 (P04C01)

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

EP 03 01 1170

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
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14-03-2006

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 04001436	A	06-01-1992	NONE	
JP 05052670	A	02-03-1993	NONE	
JP 07034927	A	03-02-1995	NONE	
US 4493304	A	15-01-1985	JP 2040290 Y2	26-10-1990
			JP 59103235 U	11-07-1984