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(54) A valve-actuating system for an exhaust gas recirculation system of an internal-combustion engine

(57) A valve-actuating system for an exhaust gas recirculation system, in which a camshaft has main lobes (30), which are used to induce full valve opening so as to bring about the intake of the air/fuel mixture or the expulsion of the exhaust gases, and auxiliary lobes (31) used to induce partial valve opening bringing about exhaust gas recirculation. A valve clearance regulating device (35) is provided adapted to vary the clearance between at least a first lower clearance value (D1) in which the valves (7) which are caused to be opened both by the main lobes (30) and by the auxiliary lobes (31), and a second higher clearance value (D2) in which the valves (7) which are induced to open by the main lobes (30) alone, thereby rendering the exhaust gas recirculation inoperative.

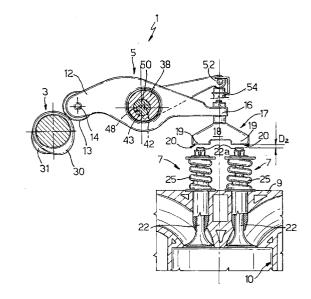


Fig.1



EUROPEAN SEARCH REPORT

Application Number

EP 03 01 0118

	DOCUMENTS CONSID				
Category	Citation of document with it of relevant pass	ndication, where appropriate, sages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
X	US 6 354 254 B1 (US 12 March 2002 (2002 * column 1, line 12 * column 2, line 22 * column 5, line 32 * column 7, line 20 * column 7, line 52	1	F01L13/06 F02M25/07		
Α	* figures 1,3 *		2,3		
Α	DE 198 07 351 A (AV 3 September 1998 (1 * column 1, line 3- * column 3, line 2- * column 3, line 61 * column 4, line 55 * column 5, line 9-	998-09-03) 10 * 8 * -66 * -31 *	2,3		
Α	US 6 244 257 B1 (HU 12 June 2001 (2001- * column 1, line 20 * column 7, line 28	06-12) -27 *	1	TECHNICAL FIELDS SEARCHED (Int.CI.7)	
Α	US 2001/027773 A1 (11 October 2001 (20 * paragraph '0002! * paragraph '0035! * paragraph '0068! * figure 1 *	1	F02M		
	The present search report has	been drawn up for all claims Date of completion of the search			
	Place of search		Examiner		
 	THE HAGUE	2 December 2003	Pac	quay, J	
X : part Y : part doci A : tech O : nor	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with anolument of the same category noological background h-written disclosure rmediate document	E : earlier patent d after the filing d ther D : document cited L : document cited	rinciple underlying the invention ent document, but published on, or ing date cited in the application cited for other reasons if the same patent family, corresponding		

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EP 03 01 0118

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.

02-12-2003

	Patent document cited in search report		Publication date		Patent fam member(s		Publication date
US	6354254	B1	12-03-2002	EP JP WO	1169558 2002541382 0061930	T	09-01-2002 03-12-2002 19-10-2000
DE	19807351	Α	03-09-1998	AT DE	1915 19807351		26-01-1998 03-09-1998
US	6244257	B1	12-06-2001	US US WO DE DE EP JP WO US	6125828 5839453 5680841 0031385 69611916 69611916 1031706 0843779 11510583 9706355 5829397	A A A1 D1 T2 A1 A1 T	03-10-2000 24-11-1998 28-10-1997 02-06-2000 05-04-2001 21-06-2001 30-08-2000 27-05-1998 14-09-1999 20-02-1997 03-11-1998
US	2001027773	A1	11-10-2001	EP WO	1242735 0146578		25-09-2002 28-06-2001

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