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(71) Applicant: **BorgWarner Inc.**
Auburn Hills, MI 48326 (US)

(72) Inventors:

- **Hunter, Douglas**
Troy, MI 48085 (US)
- **Koenig, Dennis**
Hartland, MI 48353 (US)

(74) Representative: **Lerwill, John et al**
A.A. Thornton & Co.
235 High Holborn
London, WC1V 7LE (GB)

(54) Variable displacement pump and control therefor

(57) A control system for a variable displacement pump. The control system is operably associated with an

engine control unit for passively or actively controlling the output of the pump in response to signals from the engine control unit.

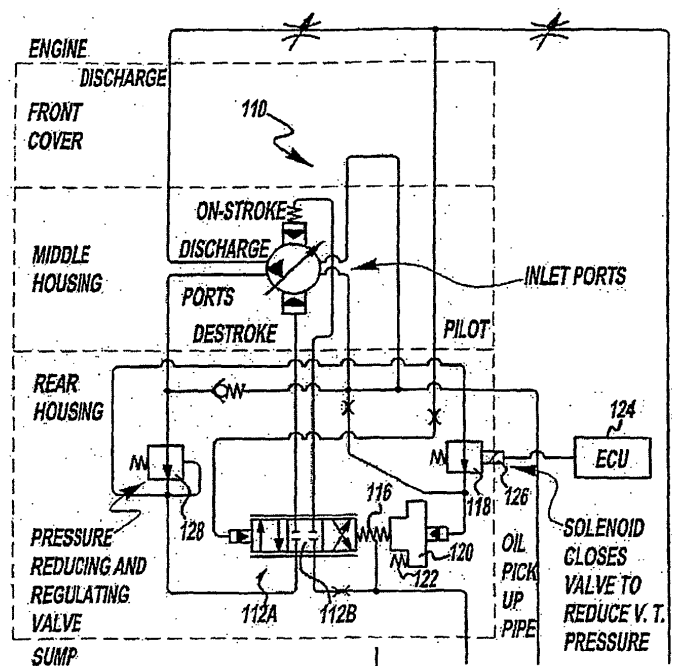


FIG-2

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European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 07 5612

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	EP 0 945 619 A (HITACHI CONSTRUCTION MACHINERY [JP]) 29 September 1999 (1999-09-29) * paragraphs [0017], [0021], [0027], [0031], [0032], [0034], [0035]; figures *	1-9	INV. F01M1/16
X	EP 1 076 194 A (EATON CORP [US]) 14 February 2001 (2001-02-14) * paragraphs [0020] - [0024]; figures *	1-3,9	
X	US 5 876 185 A (SCHIMPF JAMES E [US] ET AL) 2 March 1999 (1999-03-02) * column 2, lines 1-40 - column 3, lines 27-36; figures *	1	
A	EP 0 652 370 A (COLTEC IND INC [US]) 10 May 1995 (1995-05-10) * column 2, line 33 - column 4, line 53; figure 2 *	1,9	
			TECHNICAL FIELDS SEARCHED (IPC)
			F01M
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 13 March 2008	Examiner Vedoato, Luca
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 O : non-written disclosure P : intermediate document		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	

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

EP 07 07 5612

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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13-03-2008

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
EP 0945619	A	29-09-1999	CN	1237229 A		01-12-1999
			DE	69837877 T2		07-02-2008
			WO	9917020 A1		08-04-1999
			JP	3383754 B2		04-03-2003
			JP	11101183 A		13-04-1999
			US	6183210 B1		06-02-2001

EP 1076194	A	14-02-2001	BR	0003709 A		27-03-2001
			DE	60024935 T2		27-07-2006
			US	6202016 B1		13-03-2001

US 5876185	A	02-03-1999	NONE			

EP 0652370	A	10-05-1995	DE	69417345 D1		29-04-1999
			DE	69417345 T2		15-07-1999
			JP	3582605 B2		27-10-2004
			JP	7197888 A		01-08-1995
			US	5545014 A		13-08-1996
