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(54) Displacement control valve for use in a variable displacement compressor

(57) In a displacement control valve (10) for use in a variable displacement compressor, a valve casing (11) defines a communication passage (17) for communicating a discharge chamber (52) with a crank chamber (43) to conduct gas from the discharge chamber to the crank chamber. A valve member (18) is coupled to said communication passage and movable between an open position and a close position in a predetermined direction. The valve member is biased towards the open position

on expansion of a pressure sensitive member (12) which causes the expansion in the predetermined direction in response to a pressure in at least one of the suction chamber and the crank chamber. The pressure sensitive member is movable in relation to the valve casing in the predetermined direction. A spring (14) urges the pressure sensitive member in the predetermined direction to make the pressure sensitive member urge the valve member towards the open position.

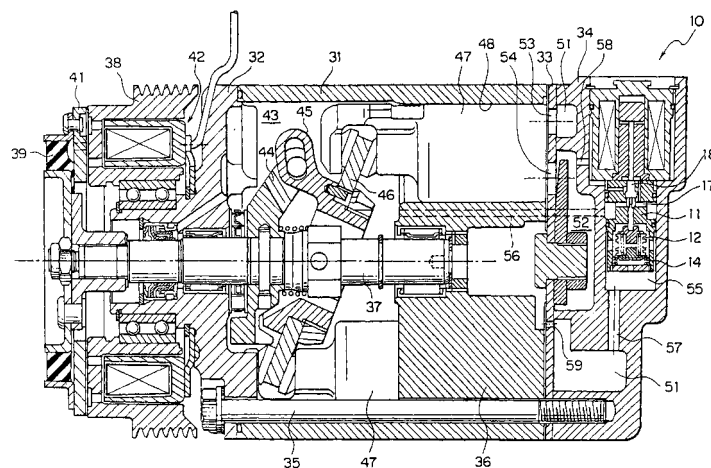


FIG. 1

EP 0 908 624 A3



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	US 5 531 572 A (KIMURA KAZUYA ET AL) 2 July 1996 (1996-07-02) * column 7, line 48 - column 14, line 19; figure 2 * * column 9, line 19 - line 36 * ---	1	F04B27/18
Y	EP 0 519 598 A (SANDEN CORP) 23 December 1992 (1992-12-23) * claim 1 * * column 1, line 6 - column 6, line 45 * ---	1	
A	WO 94 16225 A (TOYODA AUTOMATIC LOOM WORKS ;TAKENAKA KENJI (JP); TAKEICHI TORU (J) 21 July 1994 (1994-07-21) * the whole document * ---	1	
A	US 4 894 999 A (KAIJU MASAKI ET AL) 23 January 1990 (1990-01-23) * column 7, line 27 - column 9, line 45; figure 3 * ---	1	
A	EP 0 405 878 A (SANDEN CORP) 2 January 1991 (1991-01-02) * column 8, line 28 - column 11, line 35; figure 4 * -----	1	TECHNICAL FIELDS SEARCHED (Int.Cl.6) F04B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22 July 1999	Examiner Ingelbrecht, P
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 98 11 8877

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22-07-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5531572 A	02-07-1996	JP 7119642 A	09-05-1995
		DE 4436883 A	20-04-1995
		KR 123880 B	01-12-1997

EP 0519598 A	23-12-1992	JP 4342883 A	30-11-1992
		AU 646336 B	17-02-1994
		AU 1606092 A	19-11-1992
		AU 5227193 A	17-02-1994
		CA 2068569 A,C	18-11-1992
		CN 1070988 A,B	14-04-1993
		DE 69203043 D	27-07-1995
		DE 69203043 T	14-12-1995
		KR 9701756 B	15-02-1997
		US 5277552 A	11-01-1994

WO 9416225 A	21-07-1994	JP 6207582 A	26-07-1994
		DE 4490105 C	22-01-1998
		DE 4490105 T	31-07-1997
		KR 9704382 B	27-03-1997
		US 5620310 A	15-04-1997

US 4894999 A	23-01-1990	JP 1254418 A	11-10-1989
		JP 2661121 B	08-10-1997

EP 0405878 A	02-01-1991	JP 1736745 C	26-02-1993
		JP 3031581 A	12-02-1991
		JP 4023114 B	21-04-1992
		AU 636361 B	29-04-1993
		AU 5777190 A	03-01-1991
		CA 2020332 A,C	29-12-1990
		CN 1048435 A,B	09-01-1991
		DE 69006942 D	07-04-1994
		DE 69006942 T	30-06-1994
		KR 147048 B	17-08-1998
		US 5145325 A	08-09-1992

EPO FORM P0459

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