(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 065 375 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
19.12.2001 Bulletin 2001/51

(43) Date of publication A2:
03.01.2001 Bulletin 2001/01

(21) Application number: **00113702.5**

(22) Date of filing: **28.06.2000**

(51) Int Cl.[7]: **F04B 27/18**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **29.06.1999 JP 18347799**

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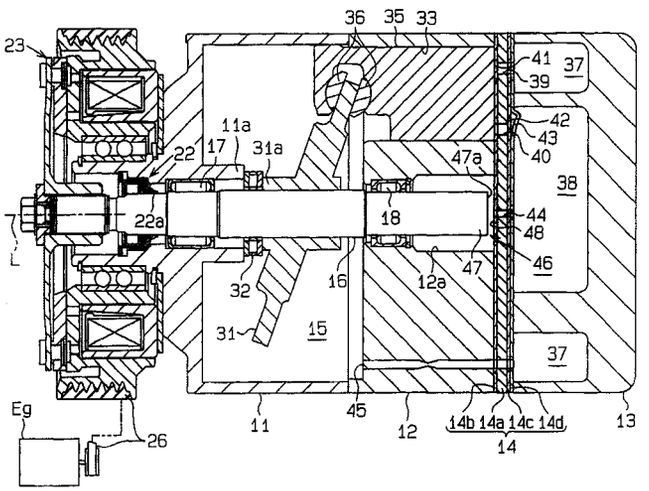
(54) Crankcase pressure control for swash plate compressor

(57) A piston-type compressor includes a crank chamber (15), a drive shaft (16), cylinder bores (33), and a valve plate (14). The drive shaft (16) passes through the crank chamber (15), and the valve plate is fixed to the rear of the cylinder bores (33). The drive shaft (16) includes a valve body (47). The rear end surface (47a) of the valve body (47) and the front surface of the valve plate (14) form a valve mechanism (46). The valve mechanism (46) is located in the pressurizing passage (18, 12a, 44). The valve mechanism (46) adjusts the opening size of the pressurizing passage (18, 12a, 44) in accordance with the axial movement of the drive shaft (16) from a reference position. This maintains an appropriate relationship between the pressure in the cylinder bores (33) and the pressure in the crank chamber (15).

Fig.1



EP 1 065 375 A3

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EUROPEAN SEARCH REPORT

Application Number
EP 00 11 3702

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.7)
A	US 5 380 161 A (TAKEICHI TORU ET AL) 10 January 1995 (1995-01-10) * column 10, line 12 - column 11, line 24; figures 4,5 *	1-6	F04B27/18
A	* column 16, line 11 - column 16, line 30; figures 10,12 *	7-9	
P,A	EP 0 952 346 A (TOYODA AUTOMATIC LOOM WORKS) 27 October 1999 (1999-10-27) * the whole document *	1-9	
A	US 5 741 122 A (KAWAMURA KOJI ET AL) 21 April 1998 (1998-04-21) * column 4, line 35 - column 5, line 23; figure 1 *	1-9	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

F04B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	22 October 2001	Pinna, S

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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22-10-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5380161 A	10-01-1995	JP 6173851 A	21-06-1994
		JP 6185460 A	05-07-1994
		JP 6193561 A	12-07-1994
		JP 6213166 A	02-08-1994
		DE 4342318 A1	16-06-1994
		KR 9701762 B1	15-02-1997
EP 0952346 A	27-10-1999	JP 11294327 A	26-10-1999
		EP 0952346 A2	27-10-1999
		US 6280152 B1	28-08-2001
US 5741122 A	21-04-1998	JP 8270552 A	15-10-1996
		DE 19612385 A1	02-10-1996
		KR 172675 B1	30-03-1999

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