



(11) **EP 1 101 952 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
13.08.2003 Bulletin 2003/33

(51) Int Cl.7: **F15B 15/20**, F15B 13/04,
F15B 13/043

(43) Date of publication A2:
23.05.2001 Bulletin 2001/21

(21) Application number: **00203870.1**

(22) Date of filing: **06.11.2000**

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

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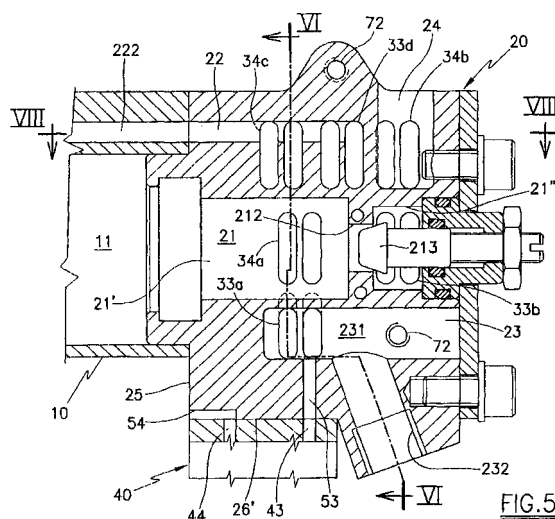
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(30) Priority: **17.11.1999 IT RE990118**

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(54) **Fluid-operated cylinder-piston unit**

(57) The cylinder-piston unit comprises a head-piece, within the body (25) of which there are provided: a pressurized fluid inlet (23) to be connected to the feed; a fluid outlet (24); at least one conduit (21) communicating with the first operating chamber; between the inlet (23) and the conduit (21), a first passage (A) having in a lateral face of the body (25) two spaced-apart ports (31a, 32a), one communicating with the inlet (23) and the other with the conduit (21); and finally, between the outlet (24) and the conduit (21), a second passage (B) having in a lateral face of the body (25) two spaced-apart ports (31b, 32b), one communicating with the outlet (24) and the other with the conduit (21). In each of said passages (A, B) there is provided a valve for opening or closing the fluid passage, comprising a lateral chamber (35) covering said communication ports (31, 32) and formed in a cover (27d, 27s) positioned on the lateral face of the body of the headpiece, and a free flexible membrane (36) separating said ports (31, 32) from the lateral chamber (35) and being arranged to assume a first position in said ports (31, 32) are closed and a second position in which they are open; thin pilot channels (51, 52) are provided to feed into the lateral chamber (35) a pilot fluid to urge the membrane (36) into the first position for closing the ports (31, 32), against the thrust of the fluid present in the ports; a pilot valve means (40) is also provided communicating with the fluid feed, to distribute, when commanded, pressurized pilot fluid to the lateral chambers (35) via said pilot channels (51, 52), to open the first passage (A) and close the second (B) and vice versa.





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 00 20 3870

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)
X	GB 1 370 768 A (BOSCH GMBH ROBERT) 16 October 1974 (1974-10-16)	1	F15B15/20
A	* page 2, line 1 - page 4, line 21; figures 1-6 *	2-6	F15B13/04 F15B13/043
A	--- PATENT ABSTRACTS OF JAPAN vol. 1998, no. 09, 31 July 1998 (1998-07-31) -& JP 10 103309 A (NEC YAMAGATA LTD), 21 April 1998 (1998-04-21) * abstract; figure 5 *	1,3,5	
A	--- PATENT ABSTRACTS OF JAPAN vol. 007, no. 237 (M-250), 21 October 1983 (1983-10-21) -& JP 58 124808 A (MITSUBISHI JUKOGYO KK), 25 July 1983 (1983-07-25) * abstract; figure 2 *	1-3,6	
A	--- PATENT ABSTRACTS OF JAPAN vol. 007, no. 246 (M-253), 2 November 1983 (1983-11-02) -& JP 58 134204 A (MITSUBISHI JUKOGYO KK), 10 August 1983 (1983-08-10) * abstract; figures 2,3 *	1-3	TECHNICAL FIELDS SEARCHED (Int.Cl.7) F15B
P,A, D	IT RE990032 A (CONDUCTOR TECHNOLOGY LTD) 18 September 2000 (2000-09-18) -----		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18 June 2003	Examiner Rechenmacher, M
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	

EPO FORM 1603 03/82 (P04C01)

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

EP 00 20 3870

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18-06-2003

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 1370768	A	16-10-1974	NONE	
JP 10103309	A	21-04-1998	NONE	
JP 58124808	A	25-07-1983	NONE	
JP 58134204	A	10-08-1983	NONE	
IT RE990032	A	18-09-2000	IT RE990032 A1	18-09-2000

EPO FORM P0459

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