(11) **EP 1 510 765 A3**

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: **31.08.2005 Bulletin 2005/35**

(51) Int Cl.⁷: **F24F 13/22**, F16L 57/00, F24F 13/20

(43) Date of publication A2: **02.03.2005 Bulletin 2005/09**

(21) Application number: 04106143.3

(22) Date of filing: 04.12.2002

(84) Designated Contracting States:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
IE IT LI LU MC NL PT SE SI SK TR

(30) Priority: **04.12.2001 GB 0129096 26.07.2002 GB 0217378**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC: 02258380.1 / 1 318 361 (71) Applicant: Aspen Pumps Limited
East Sussex BN27 3WA (GB)

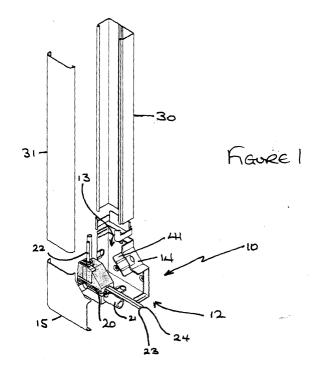
(72) Inventor: Leach, Bernard Sussex BN27 3WA (GB)

(74) Representative: Brookes Batchellor 102-108 Clerkenwell Road London EC1M 5SA (GB)

(54) Improvements in or relating to pumps

(57) The present invention relates to improvements in or relating to pumps, in particular to pumps in air conditioning installations. There is described a pump assembly (20) for use in an air conditioning system, the pump assembly (20) comprising a pump having a pump inlet (52) and a pump outlet (53), and wherein the pump inlet is in fluid communication with a reservoir (54), said

reservoir having a reservoir inlet in fluid communication with a first fluid-carrying pipe of an air-conditioning installation; wherein the pump outlet is in fluid communication with a second fluid-carrying pipe of an air-conditioning installation. In a second aspect of the invention, there is described a conduit elbow (10) having a first opening (12) and a second opening (13) and integrally housing a pump assembly as defined above.





EUROPEAN SEARCH REPORT

Application Number EP 04 10 6143

Category	Citation of document with indic		Relevant	CLASSIFICATION OF THE	
X	PATENT ABSTRACTS OF Convol. 1999, no. 01, 29 January 1999 (1999 -& JP 10 288384 A (NI NIKON:KK), 27 October	JAPAN 9-01-29) KON CORP;TOCHIGI	1,3-6	F24F13/22 F16L57/00 F24F13/20	
A	* abstract * PATENT ABSTRACTS OF 3 vol. 1997, no. 12, 25 December 1997 (1997 -& JP 09 203536 A (MI 5 August 1997 (1997-6 * abstract *	07-12-25) RAI IND CO LTD),	1,2		
A	PATENT ABSTRACTS OF 3 vol. 014, no. 447 (M- 25 September 1990 (19 -& JP 02 176327 A (TA 9 July 1990 (1990-07- * abstract *	-1029), 990-09-25) AISEI CORP),	1,3-6		
A	PATENT ABSTRACTS OF 3 vol. 1996, no. 12, 26 December 1996 (199 -& JP 08 200726 A (NI NIKON:KK), 6 August 1 * abstract *	06-12-26) KON CORP; TOCHIGI	1,3-6	F24F F25D F16L	
А	PATENT ABSTRACTS OF 3 vol. 1999, no. 12, 29 October 1999 (1999 -& JP 11 182420 A (YO 6 July 1999 (1999-07- * abstract *	9-10-29) DU CAN KK),	1		
	The present search report has bee	•			
	Place of search	Date of completion of the search	0.5	Examiner	
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		E : earlier patent after the filing D : document cite L : document cite	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		
O:non	-written disclosure rmediate document		e same patent fami		



EUROPEAN SEARCH REPORT

Application Number EP 04 10 6143

	DOCUMENTS CONSID	ERED TO BE RELEVANT		
Category	Citation of document with ir of relevant passa	ndication, where appropriate, ges	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
Α	26 September 2000 (* abstract *	1-01-03) (MIRAI IND CO LTD), 2000-09-26)	6	
A	PATENT ABSTRACTS OF vol. 1997, no. 09, 30 September 1997 (-& JP 09 112959 A (CORP), 2 May 1997 (* abstract *	1997-09-30) TOCHIGI NIKON:KK;NIKON		
				TECHNICAL FIELDS SEARCHED (Int.CI.7)
	The present search report has I	peen drawn up for all claims		
	Place of search	Date of completion of the search	1	Examiner
	The Hague	8 July 2005	Gon	zalez-Granda, C
X : part Y : part docu A : tech O : non	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with another to the same category inological background written disclosure rmediate document	E : earlier patent o after the filing d ner D : document cited L : document cited	d in the application I for other reasons	hed on, or

EPO FORM 1503 03.82 (P04C01)

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

EP 04 10 6143

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.

08-07-2005

	Patent document ed in search report		Publication date		Patent family member(s)		Publication date
JP	10288384	Α	27-10-1998	NONE			
JP	09203536	Α	05-08-1997	JP	3532718	B2	31-05-200
JP	02176327	Α	09-07-1990	JP	2610673	B2	14-05-199
JP	08200726	Α	06-08-1996	JP	3231574	B2	26-11-200
JP	11182420	Α	06-07-1999	NONE			
JP	2000266278	Α	26-09-2000	JР	3543063	B2	14-07-200
JP	09112959	Α	02-05-1997	NONE			

 $\stackrel{\circ}{\mathbb{L}}$ For more details about this annex : see Official Journal of the European Patent Office, No. 12/82