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(54) Heat pump type hot water supply system

(57) A heat pump type hot water supply system includes a hot water storage tank (3), and a circulation line (12) connecting a water outlet (10) at the lower part of the storage tank (3) and a hot water inlet (11) at the upper part thereof. The circulation line (12) is provided partway therewith along with a heat exchange line (14) to be heated by a heat pump heat source. The system is configured to return hot water heated up in the heat exchange line (14) to the hot water storage tank (3) through the hot

water inlet (11). When the heated water temperature of the heat exchange line (14) is equal to or below a set point, the return of the water to the hot water storage tank (3) through the hot water inlet (11) is hindered, and when the heated temperature of the heat exchange line (14) is above the set point, the outgoing water from the heat exchange line (14) is returned to the hot water storage tank (3) through the hot water inlet (11).



EUROPEAN SEARCH REPORT

Application Number
EP 10 00 8096

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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 (IPC)
10 X	JP H08 152193 A (KYOCERA CORP) 11 June 1996 (1996-06-11) * paragraph [0007] * * paragraph [0014] - paragraph [0018] * * figure 1 * -----	1	INV. F24D17/02 F24D19/10 F24H4/04 F24H9/20
15 A	JP 2001 263800 A (DAIKIN IND LTD) 26 September 2001 (2001-09-26) * the whole document *	1	
20 A	JP S59 147946 A (MATSUSHITA ELECTRIC IND CO LTD) 24 August 1984 (1984-08-24) * the whole document *	1	
25 A	JP H10 89795 A (DAIKIN IND LTD) 10 April 1998 (1998-04-10) * the whole document *	1	
30			TECHNICAL FIELDS SEARCHED (IPC)
			F24D F24H
35			
40			
45			
50 4	The present search report has been drawn up for all claims		
55	Place of search Munich	Date of completion of the search 27 April 2016	Examiner Arndt, Markus
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			
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ON EUROPEAN PATENT APPLICATION NO.**

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27-04-2016

10	Patent document cited in search report	Publication date		Patent family member(s)	Publication date
	JP H08152193 A	11-06-1996	JP JP	3651942 B2 H08152193 A	25-05-2005 11-06-1996
15	JP 2001263800 A	26-09-2001	JP JP	3387474 B2 2001263800 A	17-03-2003 26-09-2001
	JP S59147946 A	24-08-1984		NONE	
20	JP H1089795 A	10-04-1998	JP JP	2850882 B2 H1089795 A	27-01-1999 10-04-1998
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35					
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45					
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