

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/080137

A. CLASSIFICATION OF SUBJECT MATTER		
H01M 10/613(2014.01)i		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
H01M		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
WPI; EPODOC; CNKI; CNPAT: 三花, 热管理, 冷却, 换热, 阀体, 膨胀阀, 流道, 通道, 配合部, 定位部, 限位, 焊接, 出口, 入口, conduit, heat exchanger, expansion valve, cooling, heat management, inlet port, weld		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 108869830 A (ZHEJIANG SANHUA AUTOMOTIVE COMPONENTS CO., LTD.) 23 November 2018 (2018-11-23) description, paragraphs [0052]-[0083], and figures 1-21	1-11
X	CN 103712383 A (HANGZHOU SANHUA INSTITUTE CO., LTD.) 09 April 2014 (2014-04-09) description, paragraphs [0032]-[0050], and figures 1-11	1-11
A	CN 205939839 U (DUNAN ENVIRONMENT TECHNOLOGY CO., LTD.) 08 February 2017 (2017-02-08) entire document	1-11
A	CN 108253159 A (BYD COMPANY LIMITED) 06 July 2018 (2018-07-06) entire document	1-11
A	US 2010243200 A1 (MODINE MANUFACTURING COMPANY) 30 September 2010 (2010-09-30) entire document	1-11
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
04 June 2020		18 June 2020
Name and mailing address of the ISA/CN		Authorized officer
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Facsimile No. (86-10)62019451		Telephone No.

INTERNATIONAL SEARCH REPORT
Information on patent family members

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	108869830	A	23 November 2018	CN	110953390	A	03 April 2020
				WO	2018205746	A1	15 November 2018
				EP	3623673	A1	18 March 2020
				KR	20200006090	A	17 January 2020
CN	103712383	A	09 April 2014	CN	103712383	B	01 December 2017
				CN	104296422	B	20 April 2018
				CN	104296422	A	21 January 2015
				US	10066878	B2	04 September 2018
				US	2015276328	A1	01 October 2015
				DE	112013004804	B4	02 January 2020
				DE	112013004804	T	09 July 2015
				WO	2014048219	A1	03 April 2014
CN	205939839	U	08 February 2017	None			
CN	108253159	A	06 July 2018	WO	2018121417	A1	05 July 2018
US	2010243200	A1	30 September 2010	JP	2010249499	A	04 November 2010
				DE	102010012869	A1	30 September 2010