

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

 Further documents are listed in the continuation of Box C. 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

04 June 2020

Date of mailing of the international search report

18 June 2020

Name and mailing address of the ISA/CN

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2020/080137

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 WO 2018205746 A1 EP 3623673 A1 KR 20200006090 A	03 April 2020 15 November 2018 18 March 2020 17 January 2020
CN 103712383 A	09 April 2014	CN 103712383 B CN 104296422 B CN 104296422 A US 10066878 B2 US 2015276328 A1 DE 112013004804 B4 DE 112013004804 T WO 2014048219 A1	01 December 2017 20 April 2018 21 January 2015 04 September 2018 01 October 2015 02 January 2020 09 July 2015 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 DE 102010012869 A1	04 November 2010 30 September 2010