

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 630-76PC	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below
International application No. PCT/CA2017/051434	International filing date (<i>day/month/year</i>) 29 November 2017 (29-11-2017)	(Earliest)Priority date (<i>day/month/year</i>) 29 November 2016 (29-11-2016)
Applicant BEND ALL AUTOMOTIVE ULC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

the international application in the language in which it was filed.

a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (see Box No. II).

3. **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 7

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2017/051434

A. CLASSIFICATION OF SUBJECT MATTER
IPC: **F16K 31/68** (2006.01), **F01M 1/16** (2006.01), **F01P 7/16** (2006.01), **F16K 1/52** (2006.01), **F16K 11/04** (2006.01)

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)
IPC: **F16K-all**, **F01M 1/16**, **F01P 7/16**, **F16H-all**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

Questel-Orbit, Canadian Patent Database, Google:
Keywords: thermostat, valve, spacer, first fill*, extension

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE102005035532 (KOCH) 01-February-2007 (01.02.2007) Entire document, Figure 1	1-23, 32
A	US2011/0303295 (HOHENBOCKEN et al.) 15-December-2011 (15-12-2011) Entire document	1
A	US2017/0211715 (BALMACEDA et al.) 27-July-2017 (27-07-2017) Figure 2	1
A	US5452852 (MARKEL) 26-September-1995 (26-09-1995) Figures 8-11	1

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"I" 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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search
16 January 2018 (16-01-2018)

Date of mailing of the international search report
23 February 2018 (23-02-2018)

Name and mailing address of the ISA/CA
Canadian Intellectual Property Office
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CA2017/051434

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
DE102005035532	01 February 2007 (01-02-2007)	None	
US2011303295A1	15 December 2011 (15-12-2011)	US2011303295A1 US9194279B2 CN102278188A CN102278188B DE102010029940A1 DE102010029940B4	15 December 2011 (15-12-2011) 24 November 2015 (24-11-2015) 14 December 2011 (14-12-2011) 14 September 2016 (14-09-2016) 03 May 2012 (03-05-2012) 11 September 2014 (11-09-2014)
US2017211715A1	27 July 2017 (27-07-2017)	US2017211715A1 CN106989180A DE102017100374A1	27 July 2017 (27-07-2017) 28 July 2017 (28-07-2017) 27 July 2017 (27-07-2017)
US5452852A	26 September 1995 (26-09-1995)	None	