

PATENT COOPERATION TREATY
PCT

INTERNATIONAL SEARCH REPORT
(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 25065-1771-711652PCT	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below	
International application No. PCT/CA2020/050423	International filing date (<i>day/month/year</i>) 31 March 2020 (31-03-2020)	(Earliest) Priority date (<i>day/month/year</i>) 01 April 2019 (01-04-2019)
Applicant MAGNA POWERTRAIN INC.		

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. 1

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/CA2020/050423

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **F16D 41/12** (2006.01), **B60K 17/02** (2006.01), **B60K 17/26** (2006.01), **F16D 27/102** (2006.01),
F16D 41/16 (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, CPC: **F16D 41/12** (2006.01), **B60K 17/02** (2006.01), **B60K 17/26** (2006.01), **F16D 27/102** (2006.01),
F16D 41/16 (2006.01)

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

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)
 Questel-Orbit, keywords: outer race, inner race, one-way clutch, first coil and second one-way clutch, second coil

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A,P	US 2019/0226533 A1 (CIOC, A. ET AL.) 25 July 2019 (25-07-2019) *see entire document*	1-20
A	US 2018/0022200 A1 (TRENT, J.) 25 January 2018 (25-01-2018) *see entire document*	1-20
A	US 2011/0233026 A1 (PAWLEY, B.) 29 September 2011 (29-09-2011) *see entire document*	1-20

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 "D" document cited by the applicant in the international application "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
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Date of the actual completion of the international search
 20 May 2020 (20-05-2020)

Date of mailing of the international search report
 29 May 2020 (29-05-2020)

Name and mailing address of the ISA/CA
 Canadian Intellectual Property Office
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 Gatineau, Quebec K1A 0C9
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CA2020/050423

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
US2019226533A1	25 July 2019 (25-07-2019)	CN110067821A	30 July 2019 (30-07-2019)
		CN110067822A	30 July 2019 (30-07-2019)
		DE102019200683A1	25 July 2019 (25-07-2019)
		DE102019200684A1	25 July 2019 (25-07-2019)
		US2019226534A1	25 July 2019 (25-07-2019)
US2018022200A1	25 January 2018 (25-01-2018)	US10183566B2	22 January 2019 (22-01-2019)
		CN107640015A	30 January 2018 (30-01-2018)
		DE102017116386A1	25 January 2018 (25-01-2018)
US2011233026A1	29 September 2011 (29-09-2011)	US8720659B2	13 May 2014 (13-05-2014)
		CN102906437A	30 January 2013 (30-01-2013)
		CN102906437B	13 May 2015 (13-05-2015)
		EP2553288A1	06 February 2013 (06-02-2013)
		JP2013524105A	17 June 2013 (17-06-2013)
		JP5794647B2	14 October 2015 (14-10-2015)
		KR20130006491A	16 January 2013 (16-01-2013)
		WO2011119426A1	29 September 2011 (29-09-2011)