

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP2018/071489

A. CLASSIFICATION OF SUBJECT MATTER**F02M 61/18**(2006.01)i; **F02M 43/04**(2006.01)i; **F02M 21/02**(2006.01)i; **F02D 19/06**(2006.01)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)

F02M; F02D

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)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 0190571 A2 (BOSCH GMBH ROBERT [DE]; WUERFEL GERNOT [DE]) 29 November 2001 (2001-11-29) page 5, line 33 - page 9, line 33; figures 1-5 abstract	1-9
X	DE 102015013266 A1 (BEILNER GÜNTHER [DE]) 13 April 2017 (2017-04-13) paragraphs [0001], [0025] - [0030]; figures 2,4,6, abstract	1,4-9
X	WO 2004109095 A1 (CATERPILLAR INC [US]) 16 December 2004 (2004-12-16) page 5, line 21 - page 9, line 29; figures 2,3,4 abstract	1,2,6-9
X	EP 1900934 A1 (GM GLOBAL TECH OPERATIONS INC [US]) 19 March 2008 (2008-03-19) paragraph [0022] - paragraph [0023]; figures 1,2,3a abstract	1,3,5-9
X	FR 2860558 A1 (RENAULT SAS [FR]) 08 April 2005 (2005-04-08) abstract; figures 5,6	1,5-9

 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

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“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

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“&” document member of the same patent family

Date of the actual completion of the international search

02 November 2018

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
WO	0190571	A2	29 November 2001	CN	1380942	A	20 November 2002
				DE	10026324	A1	29 November 2001
				EP	1290339	A2	12 March 2003
				JP	2003534495	A	18 November 2003
				KR	20020019566	A	12 March 2002
				US	2002179039	A1	05 December 2002
				WO	0190571	A2	29 November 2001

DE	102015013266	A1	13 April 2017	NONE			

WO	2004109095	A1	16 December 2004	CN	1795328	A	28 June 2006
				DE	112004000939	T5	26 October 2006
				JP	2006526737	A	24 November 2006
				US	2004237929	A1	02 December 2004
				US	2006231064	A1	19 October 2006
				US	2007215099	A1	20 September 2007
				US	2008308656	A1	18 December 2008
				WO	2004109095	A1	16 December 2004

EP	1900934	A1	19 March 2008	EP	1900934	A1	19 March 2008
				US	2008210199	A1	04 September 2008

FR	2860558	A1	08 April 2005	NONE			
