

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/JP2018/023721

<p><b>A. CLASSIFICATION OF SUBJECT MATTER</b>                  Int.Cl. H02M7/48 (2007.01) i, B62D5/04 (2006.01) i                  According to International Patent Classification (IPC) or to both national classification and IPC</p>										
<p><b>B. FIELDS SEARCHED</b>                  Minimum documentation searched (classification system followed by classification symbols)                  Int.Cl. H02M7/42-7/98, H02P21/00-21/03, BH02P25/04, H02P25/08-29/68, B62D5/04</p>										
<p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched</p> <table style="width:100%; border:none;"> <tr> <td style="width:80%;">Published examined utility model applications of Japan</td> <td style="width:20%;">1922-1996</td> </tr> <tr> <td>Published unexamined utility model applications of Japan</td> <td>1971-2018</td> </tr> <tr> <td>Registered utility model specifications of Japan</td> <td>1996-2018</td> </tr> <tr> <td>Published registered utility model applications of Japan</td> <td>1994-2018</td> </tr> </table>			Published examined utility model applications of Japan	1922-1996	Published unexamined utility model applications of Japan	1971-2018	Registered utility model specifications of Japan	1996-2018	Published registered utility model applications of Japan	1994-2018
Published examined utility model applications of Japan	1922-1996									
Published unexamined utility model applications of Japan	1971-2018									
Registered utility model specifications of Japan	1996-2018									
Published registered utility model applications of Japan	1994-2018									
<p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)</p>										
<p><b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b></p>										
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.								
A	WO 2017/150638 A1 (NIDEC CORPORATION) 08 September 2017, paragraphs [0001]-[0132], fig. 1-21 (Family: none)	1-12								
A	JP 2016-019385 A (JTEKT CORP.) 01 February 2016, paragraphs [0001]-[0060], fig. 1-10 (Family: none)	1-12								
<p><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.      <input type="checkbox"/> See patent family annex.</p>										
<table style="width:100%; border:none;"> <tr> <td style="width:50%; border:none;">                 * 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             </td> <td style="width:50%; border:none;">                 "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                  "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                  "&amp;" document member of the same patent family             </td> </tr> </table>			* 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	"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 "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						
* 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	"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 "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 11 September 2018 (11.09.2018)		Date of mailing of the international search report 25 September 2018 (25.09.2018)								
Name and mailing address of the ISA/ Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan		Authorized officer  Telephone No.								

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2011-078221 A (DENSO CORP.) 14 April 2011, paragraphs [0001]-[0055], fig. 1-7 & US 2011/0074323 A1, paragraphs [0002]-[0076], fig. 1-7E & DE 102010037541 A1	1-12
A	WO 2016/152523 A1 (NSK LTD.) 29 September 2016, paragraphs [0001]-[0080], fig. 1-16 & JP 2016-181962 A & JP 2016-181963 A & EP 3242393 A1, paragraphs [0001]-[0080], fig. 1-16 & CN 107534407 A	1-12
A	JP 2011-025872 A (JTEKT CORP.) 10 February 2011, paragraphs [0001]-[0095], fig. 1-5 & US 2011/0025244 A1, paragraphs [0002]-[0105], fig. 1-5 & EP 2280477 A1 & CN 101985303 A	1-12