

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2017/015630

A. CLASSIFICATION OF SUBJECT MATTER
H01S3/036(2006.01) i, F16C32/04(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)
H01S3/00-3/30, F16C32/00-32/06

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

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Kokai Jitsuyo Shinan Koho	1971-2017	Toroku Jitsuyo Shinan Koho	1994-2017

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2000-216460 A (NTN Corp.), 04 August 2000 (04.08.2000), entire text; all drawings (Family: none)	1-21
A	JP 2002-204013 A (NTN Corp.), 19 July 2002 (19.07.2002), entire text; all drawings (Family: none)	1-21
A	JP 2005-036973 A (Ebara Corp.), 10 February 2005 (10.02.2005), entire text; all drawings & US 2004/0263011 A1 entire text; all drawings & EP 1498625 A2	1-21

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"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
"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 13 June 2017 (13.06.17)	Date of mailing of the international search report 20 June 2017 (20.06.17)
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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 2001-027238 A (NSK Ltd.), 30 January 2001 (30.01.2001), entire text; all drawings (Family: none)	1-21
A	JP 2014-082243 A (Gigaphoton Inc.), 08 May 2014 (08.05.2014), entire text; all drawings & US 2014/0105238 A1 entire text; all drawings	1-21
A	JP 2010-209691 A (NTN Corp.), 24 September 2010 (24.09.2010), entire text; all drawings (Family: none)	1-21
A	JP 2010-113192 A (Konica Minolta Business Technologies, Inc.), 20 May 2010 (20.05.2010), entire text; all drawings (Family: none)	1-21