

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/017614**A. CLASSIFICATION OF SUBJECT MATTER****F01D 17/16(2006.01)i, F01D 9/04(2006.01)i, F02C 9/22(2006.01)i, F02C 7/04(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)

F01D 17/16; F01D 17/02; F01D 17/12; F01D 17/26; F01D 9/02; H02P 9/04; F04D 29/56; F01D 15/10; F01D 9/04; F02C 9/22; F02C 7/04

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & keywords: turbine, compressor, inlet guide vane, variable vane, angular deflection, sensor, variable differential transformer, ring, and actuator

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2012-0269613 A1 (MILLS et al.) 25 October 2012 See paragraphs [0012]-[0023] and figures 1-6.	9, 13-15
Y		1-8
A		10-12, 16-19
Y	US 5190439 A (DAS, RANJAN) 02 March 1993 See column 2, line 35 - column 4, line 9 and figures 1-2.	1-8
Y	US 2003-0011199 A1 (WICKERT et al.) 16 January 2003 See paragraph [0013].	6, 8
A	US 2013-0058763 A1 (KEEGAN et al.) 07 March 2013 See paragraphs [0039]-[0043] and figure 2.	1-19
A	US 2009-0226305 A1 (WONG et al.) 10 September 2009 See paragraphs [0014]-[0019] and figure 2.	1-19

 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

"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

Date of the actual completion of the international search

24 December 2014 (24.12.2014)

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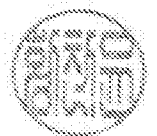
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2014/017614

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2012-0269613 A1	25/10/2012	CN 102758654 A EP 2514927 A2	31/10/2012 24/10/2012
US 5190439 A	02/03/1993	None	
US 2003-0011199 A1	16/01/2003	US 6794766 B2	21/09/2004
US 2013-0058763 A1	07/03/2013	AU 2010-344031 A1 CN 102713309 A EP 2354560 A1 EP 2499380 A1 MX 2012008746 A RU 2012136627 A WO 2011-091881 A1	19/07/2012 03/10/2012 10/08/2011 19/09/2012 31/08/2012 10/03/2014 04/08/2011
US 2009-0226305 A1	10/09/2009	US 8435000 B2	07/05/2013