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MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
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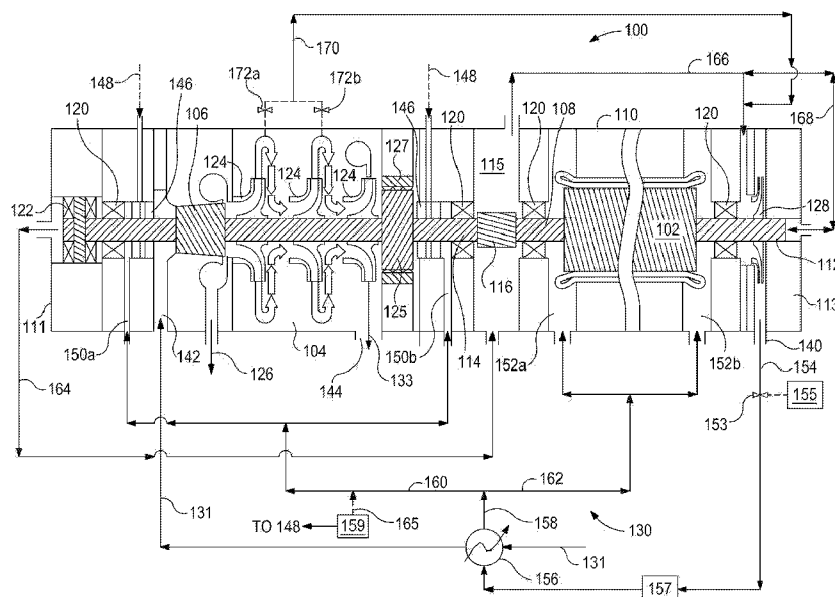
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(54) Title: SUBSEA MOTOR-COMPRESSOR COOLING SYSTEM



- (57) Abstract: A fluid compression system is disclosed having a hermetically-sealed housing with at least a motor and a compressor arranged therein. The motor may drive both the compressor and a blower configured to circulate a cooling gas throughout the housing and thereby cool the motor and accompanying radial bearings. The cooling gas may be cooled in a gas-to-gas heat exchanger fluidly coupled to the blower and configured to receive a flow of process gas to cool the cooling gas. The process gas may be the suction process gas for the compressor, or the compressed process gas as discharged from the compressor.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/038991**A. CLASSIFICATION OF SUBJECT MATTER*****F04D 13/08(2006.01)i, F04D 29/58(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)

F04D 13/08; F04B 17/00; F04B 25/00; F04D 19/02; F04D 17/12; F04B 17/03

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: compressor, motor, bearing, cooling, blower, heat exchanger

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7156627 B2 (SIEMENS INDUSTRIAL TURBOMACHINERY B.V.) 02 January 2007 See abstract; column 2, lines 7-26; column 2, line 61 - column 3, line 30; figures 1-2.	1-20
A	US 2006-0073041 A1 (SUPERCRITICAL SYSTEMS INC.) 06 April 2006 See abstract; paragraphs [0048]-[0051], [0061]-[0062]; figure 3.	1-20
A	EP 2295811 A1 (NUOVO PIGNONE S.P.A.) 16 March 2011 See abstract; paragraphs [0094]-[0101], [0111]; figures 1-2.	1-20
A	US 7144226 B2 (THERMODYN) 05 December 2006 See abstract; column 2, lines 38-47; column 3, lines 27-33; figure 2.	1-20

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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7156627 B2	02.01.2007	AT 400742 T	15.07.2008
		BR 0210169 A	27.04.2004
		BR 0210169 B1	08.02.2011
		DE 60227509 D1	21.08.2008
		EP 1392981 A1	03.03.2004
		EP 1392981 B1	09.07.2008
		EP 1942280 A2	09.07.2008
		ES 2309173 T3	16.12.2008
		JP 2004-527693 A	09.09.2004
		JP 2004-527693 T	09.09.2004
		NL1018212C2	10.12.2002
		N020035398D0	04.12.2003
		US 2004-0170505 A1	02.09.2004
		US 2007-0110601 A1	17.05.2007
		WO 02-099286 A1	12.12.2002
US 2006-0073041 A1	06.04.2006	TW 1302181A	21.10.2008
		TW 1302181B	21.10.2008
		US 7186093 B2	06.03.2007
		WO 2006-041600 A2	20.04.2006
		WO 2006-041600 A3	01.02.2007
		WO 2006-041600 A3	20.04.2006
EP 2295811 A1	16.03.2011	CA 2709238 A1	10.01.2011
		CN 101956712 A	26.01.2011
		IT MI20091235A1	11.01.2011
		JP 2011-021599 A	03.02.2011
		KR 10-2011-0005652 A	18.01.2011
		US 2011-0008186 A1	13.01.2011
US 7144226 B2	05.12.2006	AU 2003-233369 A1	11.10.2004
		EP 1604115 A1	14.12.2005
		N020054198A	07.10.2005
		N020054198D0	09.09.2005
		US 2004-0179961 A1	16.09.2004
		WO 2004-083644 A1	30.09.2004