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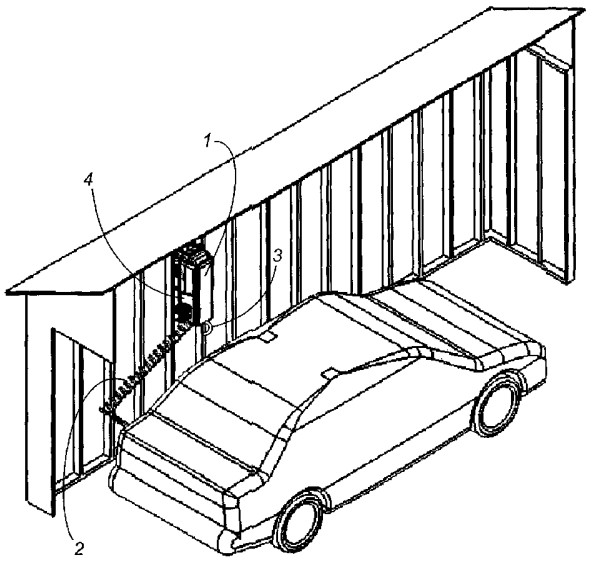
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[Continued on next page]

(54) Title: GAS COMPRESSOR WITH DRIER



(57) Abstract: A gas compressor unit according to the invention includes a single gas desiccant bed and condenser (which is inactive during the compression stage) inserted into the gas flow path of the compression cycle. In the case of a multistage compressor, the single gas desiccant bed is inserted between preferably the first and second stages. Moisture absorbed into this bed is periodically removed by exposing the bed to a regeneration cycle. The regeneration cycle employed is based on the closed re-circulation of gas present in the compressor and the desiccant bed itself, as well as other gas present in the re-circulation loop when the unit suspends delivery of compressed gas. Moisture removed from the desiccant bed is condensed and preferably evaporated into the environment through a semipermeable membrane. The motor and motor controller are located with the compressor in a common casing to minimize electromagnetic emissions.

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INTERNATIONAL SEARCH REPORT

National Application No
PCT/CA 03/01474

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B01D53/26 B60S5/02 F02B43/00 F04B39/16

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)
IPC 7 B01D B60S F02B F04B

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 practical, 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.
A	WO 01 78872 A (ATLAS COPCO AIRPOWER NV ;VERTRIEST DANNY ETIENNE ANDREE (BE)) 25 October 2001 (2001-10-25) page 8, line 12 -page 9, line 29; figure 1 ---	1-9
A	EP 0 799 635 A (ATLAS COPCO AIRPOWER NV) 8 October 1997 (1997-10-08) column 2, line 48 -column 4, line 17; figure 1 ---	1-9
A	US 6 117 211 A (CHAN ANTHONY WAI PANG ET AL) 12 September 2000 (2000-09-12) cited in the application abstract; claims 1,11; figure 1 ---	1-9

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in 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 document but published on or after the international filing date

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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

"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	Date of mailing of the international search report
2 April 2004	08/04/2004

Name and mailing address of the ISA	Authorized officer
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INTERNATIONAL SEARCH REPORT

International Application 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.
X	US 5 263 826 A (BAUMANN HEINZ ET AL) 23 November 1993 (1993-11-23) abstract; figure 1 column 2, line 13-36	10,11
X	US 4 966 206 A (BAUMANN HEINZ ET AL) 30 October 1990 (1990-10-30) abstract; figure 1 column 2, line 46 -column 5, line 22	10,11
X	US 5 029 622 A (MUTTER HEINZ) 9 July 1991 (1991-07-09) abstract; claim 1; figure 1 column 3, line 22 -column 4, line 45	10,11

1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA 03/01474

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9

   Gas compressor system operating in both drying or dryer regeneration phase.

2. Claims: 10,11

   Gas compressor system with motor drive and its controls enclosed in a sealed casing.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/CA 03/01474

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