Title: IMPROVEMENTS IN ROTARY VALVES

Abstract: There is disclosed an improved rotary valve (5), and to an internal combustion engine including such a valve (5). In internal combustion engines use of poppet valves has predominated due to an inability of rotary valves to perform reliably without excessive oil consumption. However, the invention provides an improved valve (5) for use with an internal combustion engine (10) comprising at least one cylinder (15) having a reciprocable piston (50), the valve (5) comprising a valve seat (20) having at least one inlet (80) and/or at least one outlet (90), a rotatable valve member (60) mountable within the valve seat (20) at a compression end of one of the at least one cylinders (15) and having at least one orifice (70) extending therethrough between the valve seat (20) and an interior of the cylinder (15), wherein there is provided a seal member(s), (25a, 25b, 25c) between the valve member (60) and the at least one inlet (80) and/or the at least one outlet (90).
Published: with international search report

Date of publication of the international search report: 11 July 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 99/69033

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F01L7/02 F01L7/10 F01L7/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELD SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F01L

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 pertinent, search terms used)

WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category * Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No.

X GB 738 085 A (NSW WERKE AG) 5 October 1955 (1955-10-05)

the whole document

1-3, 6-9, 12-22, 27, 31-36, 38-39, 41-43

X A


the whole document

1-4, 6-9, 13-17, 31-37, 41-44, 47

Further documents are listed in the continuation of box C.

Patient 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
'B' earlier document but published on or after the international filing data
'C' later document published after the international filing data or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
'D' 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' document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is taken alone
"F" document published prior to the international filing data but later than the priority data claimed

Date of the actual completion of the international search

8 August 2000

Date of mailing of the international search report

08.08.2000

Name and mailing address of the IVA

European Patent Office, P.B. 5816 Patentlaan 2 NL-2280 HJRijswijk Tel. (31-70) 340-2046, Tx. 31 681 spp, Fax (31-70) 340-3016

Authorized officer

Klinger, T
<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
</table>
| X        | DE 33 00 973 A (GEISSLER)  
26 July 1984 (1984-07-26)                                                        | 1-10, 12, 15, 17-24, 26, 31-36, 38-43 |
| A        | the whole document                                                               | 25                   |
abstract; figures 2-4                                                          | 25                   |
| X        | DE 765 087 C (JUNKERS FLUGZEUG UND  
MOTORENWERKE AG)  
27 September 1954 (1954-09-27)                                                   | 1, 27-30             |
<p>|          | the whole document                                                               |                      |</p>
<table>
<thead>
<tr>
<th>Patent document cited in search report</th>
<th>Publication date</th>
<th>Patent family member(s)</th>
<th>Publication date</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB 738085 A</td>
<td>NONE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WO 8808920 A</td>
<td>17-11-1988</td>
<td>DE 3715847 A</td>
<td>08-12-1988</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AT 26475 T</td>
<td>15-04-1987</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 3463071 D</td>
<td>14-05-1987</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AU 5412294 A</td>
<td>08-06-1994</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 69318581 D</td>
<td>18-06-1998</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DE 69318581 T</td>
<td>17-09-1998</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EP 0746673 A</td>
<td>11-12-1996</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JP 85035048 T</td>
<td>02-04-1996</td>
</tr>
<tr>
<td></td>
<td></td>
<td>US 5509386 A</td>
<td>23-04-1996</td>
</tr>
<tr>
<td>DE 765087 C</td>
<td>NONE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>