Title: HYDRAULIC VALVE SYSTEM

Abstract: A valve manifold (54) controls hydraulic flow in a hydraulic system for an air compressor unit. The manifold (54) includes a pressure relief valve (1), a cold oil bypass valve (2), a proportional valve (3), and an anti-cavitation valve (4). The pressure relief valve (1) diverts flow away from a fan motor (30) when the pressure of hydraulic fluid within the hydraulic system is above a predetermined level. The cold oil bypass valve (2) diverts flow away from a hydraulic cooler (42) when the temperature of hydraulic fluid within the hydraulic system is below a predetermined level. The proportional flow valve (3) diverts flow away from the fan motor (30) when the temperature of hydraulic fluid within the hydraulic system is below a predetermined level. The anti-cavitation valve (4) prevents pressure build up within the hydraulic system when the air compressor unit is shut off.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
   IPC(7) : F16D 31/02.
   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)

   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 practicable, search terms used)
   USPTO EAST database: manifold block, manifold valve

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<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>
<tbody>
<tr>
<td>Y</td>
<td>US 5,709,247 A (HUTTON) 20 January 1998, Figs. 1,2,12,13.</td>
<td>1,4,10</td>
</tr>
<tr>
<td>Y</td>
<td>US 4,986,075 A (SHIMOIE) 22 January 1991, Fig. 1.</td>
<td>1,4,10</td>
</tr>
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<td>Y</td>
<td>US 4,694,649 A (HOWETH) 22 September 1987, Figs. 1,5.</td>
<td>1-5,7-10,12-17</td>
</tr>
<tr>
<td>Y,E</td>
<td>US 6,345,501 B1 (MCKAY et al) 12 February 2002, Fig. 1.</td>
<td>1,4,8-10,14-16</td>
</tr>
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<td>Y</td>
<td>US 4,941,437 A (SUZUKI et al) 17 July 1990, Figs. 1,2.</td>
<td>1,4,8-10,14-16</td>
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<td>Y</td>
<td>US 5,946,911 A (BUSCHUR et al) 07 September 1999, Figs. 1,2.</td>
<td>1,2,4,7,10,13,16</td>
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<td>Y,E</td>
<td>US 6,339,929 B1 (UDAGAWA et al) 22 January 2002, Figs. 1,2.</td>
<td>1,2,4,7,10,13,16,18</td>
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<tr>
<td>Y</td>
<td>US 4,179,888 A (GOSCENSKI, Jr.) 25 December 1979, Fig. 3.</td>
<td>1,4,6,10,11,16,19</td>
</tr>
<tr>
<td>Y</td>
<td>US 5,666,807 A (BIANCHETTA) 16 September 1997, Fig. 1, Abstract.</td>
<td>1,4,6,10,11,16,20</td>
</tr>
</tbody>
</table>

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

* Special categories of cited documents:
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Date of the actual completion of the international search: 18 June 2002
Date of mailing of the international search report: 12 jul 2002

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