General Description

Series HP50 pilot pressure valves are designed to provide a separately mounted, pilot pressure system for solenoid and hydraulic remote-controlled, directional control valves.

The pilot pressure valve is installed in the hydraulic system between the pump and the directional control valve.

This valve can be used for other applications where a pilot pressure is required. Possible applications are remote-controlled, variable displacement pumps or motors and differential locks.

The valve consists of a mechanical sequence valve and a pressure reducing cartridge. The pilot operated sequence valve creates a stand-by pressure greater than the pressure reducing cartridge. The pressure reducing cartridge limits the maximum pressure in the pilot circuit.

Features

- Eliminates separate pilot pump and relief valve for a pilot system
- Simplifies plumbing for a pilot system
- Easily installed into an existing hydraulic system
- Optional main system relief valve available
- Solenoid kits available

Operation

The mechanical pressure build up valve can be used in open center systems where the pump is not in stand-by operation for long periods of time. Pilot pressure is maintained at all times.

Specifications

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Flow</td>
<td>187.5 LPM (50 GPM)</td>
</tr>
<tr>
<td>Pilot Flow</td>
<td>18.75 LPM (5 GPM)</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td></td>
</tr>
<tr>
<td>Inlet</td>
<td>240 Bar (3500 PSI)</td>
</tr>
<tr>
<td>Tank</td>
<td>24 Bar (350 PSI)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>Nitrile Seals:</td>
</tr>
<tr>
<td>Range (Ambient)</td>
<td>-40°C to +93°C (-40°F to +200°F)</td>
</tr>
<tr>
<td>Material</td>
<td>Body – High strength cast iron</td>
</tr>
<tr>
<td>Filtration</td>
<td>ISO Code 16/13, SAE Class 4 or better</td>
</tr>
<tr>
<td>Mounting Position</td>
<td>In-line; no restrictions</td>
</tr>
</tbody>
</table>

Understanding the HP pilot pressure valve

Many open center systems have very little pressure drop through the directional valve when in the neutral position. These systems do not provide enough pressure for pilot operation. To create pilot pressure, use the HP valve.

The HP valve has four basic component parts:
1. Sequence valve slave
2. Sequence valve pilot
3. Reducing valve
4. Relief valve

The sequence slave (part #1) and the sequence pilot (part #2) create the back pressure that is used for pilot operation. The reducing valve (part #3) protects the pilot system from high pressure. The relief valve (part #4) protects the pump. Note that the relief valve is located on the pump side of the sequence valve.
**Ordering Information**

**Series HP**

<table>
<thead>
<tr>
<th>HP</th>
<th>Port Size</th>
<th>MA</th>
<th>Pressure Build Up</th>
<th>MA</th>
<th>Relief Option</th>
</tr>
</thead>
</table>

- **Code**
- **Description**
- **Pump** SAE-20 (1 5/8"-12 UNF)
- **Valve** SAE-20 (1 5/8"-12 UNF)
- **Tank** SAE-20 (1 5/8"-12 UNF)
- **Pilot** SAE-6 (9/16"-18 UNF)
- **Gage** SAE-4 (7/16"-20 UNF)

**Pressure Build Up**

- **Code**
- **Description**
- **3** 20.7 Bar (300 PSI)
- **5** 34.5 Bar (500 PSI)

**Service Parts**

- 20.7 Bar (300 PSI) Pilot Pressure Reducing Valve 11416001
- 34.5 Bar (500 PSI) Pilot Pressure Reducing Valve 11416002
- NR - no relief plug 04142003
- Relief Valve RP51-A
- Pressure Build Up Valve 20275001
- Upper Seal - Pressure Build Up Valve 3914V-9
- Lower Seal - Pressure Build Up Valve 2019N-7
- Lower Back Up Ring - Pressure Build Up Valve 407480
- 12 VDC Solenoid Unloader Kit 10722001
- 24 VDC Solenoid Unloader Kit 00711871
- Relief Valve Seal Kit 00712223

**Note:** The body and the internal parts are non-service items.
Dimensions
Inch equivalents for millimeter dimensions are shown in ("")

Performance Curve

Pilot Performance (Nominal)