02 Series Stacking Type Low-pressure Reducing Valves

Nomenclature

1. Applicable fluid code
   - No designation: Petroleum-based hydraulic fluid, water-glycol hydraulic fluid
   - F: Phosphate ester hydraulic fluid

2. Model No.
   - MGB: Modular stacking type low-pressure reducing valve

3. Nominal diameter
   - 02: \( \frac{1}{4} \) \( \frac{1}{4} \)

4. Control port
   - P: Port P  A: Port A  B: Port B

5. Pressure adjustment range
   - 03: 0.15 to 3.5 MPa \( \{1.5 \text{ to } 35 \text{ kgf/cm}^2\} \)
   - 0.5 to 7 MPa \( \{5 \text{ to } 70 \text{ kgf/cm}^2\} \)
   - (applicable only to control No. 82)

6. Design No.
   - (The design No. is subject to change)

7. Drainage code
   - No designation: Internal drain type
   - E: External drain type

8. Pressure adjusting screw position
   - No designation: Adjusted at port B side
   - G: Adjusted at port A side

9. Option code
   - No designation: Pressure adjusting screw type
   - T: Pressure adjusting handle type

10. Control No.
    - 82: With port for remote control (not equipped with pressure adjusting screw)

Specifications

<table>
<thead>
<tr>
<th>Model code</th>
<th>Maximum operating pressure MPa (kgf/cm²)</th>
<th>Maximum flow rate L/min</th>
<th>Pressure adjustment range MPa (kgf/cm²)</th>
<th>Mass kg</th>
<th>Pressure change MPa (kgf/cm²) per screw revolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGB-02P-03-55</td>
<td>7 ( {70} )</td>
<td>20</td>
<td>0.15 to 3.5 ( {1.5 \text{ to } 35} )</td>
<td>1.4</td>
<td>0.89 ( {8.9} )/revolution</td>
</tr>
<tr>
<td>MGB-02P-03-55-82</td>
<td>0.5 to 7 ( {5 \text{ to } 70} )</td>
<td>1.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Handling

- To ensure good pressure reducing performance, set a difference of 0.4 MPa \( \{4 \text{ kgf/cm}^2\} \) minimum between the primary side main circuit pressure and the secondary pressure reducing circuit pressure.
- Directly connect the tank piping of the valve to the tank without merging it with other tank piping.
- When pressure control from the low pressure range is required, use the external drain type to reduce the influence of back pressure on the tank port.
- The external drain connection block MGB-02E-55 is provided with the external drain type (drainage code: E).
- When changing the drain setting of the valve from the internal drain type to the external drain type, order the external drain connection block MGB-02E-55 separately.

Performance curves (viscosity: 32 mm²/s \{cSt\})

Pressure drop characteristics

Pressure - Flow rate characteristics (tank port: vent to atmosphere)
MGB-02P-03-55
Primary pressure: 7 MPa \( \{70 \text{ kgf/cm}^2\} \)
Drain type setting guide

Either the internal or external drain type can be set by fitting/removing plugs.
When the drain setting of the valve is changed from the internal drain type to the external drain type, stack the external drain connection block MGB-02E-55 on top of MGB-02P(A)(B).
When the valve is set as external drain type, connect the piping directly from the external drain port (Rc ¼) of the MGB-02E-55 to the tank.

<table>
<thead>
<tr>
<th>Internal drain type</th>
<th>External drain type</th>
<th>Hexagon socket taper thread plug</th>
<th>Tightening torque N·m (kgf·cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug B</td>
<td>Not provided</td>
<td>NPTF ¼</td>
<td>0.9 to 1.2 (9 to 12)</td>
</tr>
<tr>
<td>Plug C</td>
<td>Provided</td>
<td>NPTF ¼ &lt;MGB-02P(B)&gt;</td>
<td></td>
</tr>
<tr>
<td>Plug A</td>
<td>Provided</td>
<td>NPTF ¼ &lt;MGB-02A&gt;</td>
<td>6 to 7.5 (60 to 75)</td>
</tr>
</tbody>
</table>

External dimension diagram

For products with option code G, the pressure adjusting screw is located at the port A side.
Sectional structural diagram

MGB-02P

Sealing part table

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Name</th>
<th>Quantity</th>
<th>Part specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>O-ring</td>
<td>4</td>
<td>AS568-012 (NBR, Hs90)</td>
</tr>
<tr>
<td>14</td>
<td>O-ring</td>
<td>1</td>
<td>JIS B 2401 1A P8</td>
</tr>
<tr>
<td>15</td>
<td>O-ring</td>
<td>1</td>
<td>JIS B 2401 1A P14</td>
</tr>
<tr>
<td>16</td>
<td>O-ring</td>
<td>1</td>
<td>JIS B 2401 1A P20</td>
</tr>
<tr>
<td>18</td>
<td>O-ring</td>
<td>1</td>
<td>AS568-017 (NBR, Hs90)</td>
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</tbody>
</table>