Reducing Valve/Reducing Valve with Check Valve

Features

- Used to set the pressure of a certain range of a hydraulic circuit lower than the main circuit.
- Maintains the secondary side pressure regardless of changes in the primary side main circuit pressure.
- The branch circuit pressure can be controlled remotely by connecting a relief valve for remote control to the vent port.

Nomenclature

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

2. Model No.
   - JGB: J series reducing valve

3. Check valve code
   - No designation: Without check valve
   - C: With check valve

4. Connections
   - G: Gasket mount type
   - T: Screw connection type
   - F: Flange connection type

5. Nominal diameter
   - 03: ⅜
   - 06: ¾
   - 10: 1¼
   - 16: 2

6. Pressure adjustment range
   - 1: 0.8 to 7 MPa {8 to 70 kgf/cm²}
   - 3: 3.5 to 21 MPa {35 to 210 kgf/cm²}

7. Design No.
   - (The design No. is subject to change)
   - 10: Gasket mount type (G), screw connection type (T)
   - 11: Gasket mount type (G), screw connection type (T)
   - 20: Flange mount type (F)
   - 21: Flange mount type (F)

Specifications

<table>
<thead>
<tr>
<th>Model code</th>
<th>Nominal diameter</th>
<th>Maximum operating pressure MPa (kgf/cm²)</th>
<th>Pressure adjustment range MPa (kgf/cm²)</th>
<th>Maximum flow rate L/min</th>
<th>Drainage rate L/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>JGB(C)-G03-1-10</td>
<td>⅜</td>
<td>0.8 to 7 {8 to 70}</td>
<td>3.5 to 21 (35 to 210)</td>
<td>50</td>
<td>0.8 to 1</td>
</tr>
<tr>
<td>JGB(C)-G03-3-10</td>
<td>⅜</td>
<td>0.8 to 7 {8 to 70}</td>
<td>3.5 to 21 (35 to 210)</td>
<td>120</td>
<td>0.9 to 1.1</td>
</tr>
<tr>
<td>JGB(C)-G06-1-11</td>
<td>¾</td>
<td>0.8 to 7 {8 to 70}</td>
<td>3.5 to 21 (35 to 210)</td>
<td>280</td>
<td>1.2 to 1.5</td>
</tr>
<tr>
<td>JGB(C)-G06-3-11</td>
<td>¾</td>
<td>0.8 to 7 {8 to 70}</td>
<td>3.5 to 21 (35 to 210)</td>
<td>500</td>
<td>2 to 2.4</td>
</tr>
<tr>
<td>JGB(C)-G10-1-11</td>
<td>1¼</td>
<td>0.8 to 7 {8 to 70}</td>
<td>3.5 to 21 (35 to 210)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JGB(C)-G10-3-11</td>
<td>2</td>
<td>0.8 to 7 {8 to 70}</td>
<td>3.5 to 21 (35 to 210)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JGB(C)-×××-1</td>
<td></td>
<td>2.3 (23)/revolution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JGB(C)-×××-3</td>
<td></td>
<td>5.9 (59)/revolution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mass (kg)

<table>
<thead>
<tr>
<th>Model No.</th>
<th>JGB</th>
<th>JGBC</th>
<th>Model No.</th>
<th>JGB</th>
<th>JGBC</th>
<th>Model No.</th>
<th>JGBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>JGB(C)-G03</td>
<td>3.9</td>
<td>4.2</td>
<td>JGB(C)-T03</td>
<td>3.3</td>
<td>3.6</td>
<td>JGB(C)-F06</td>
<td>6.8</td>
</tr>
<tr>
<td>JGB(C)-G06</td>
<td>6.2</td>
<td>6.6</td>
<td>JGB(C)-T06</td>
<td>5.7</td>
<td>6.1</td>
<td>JGB(C)-F10</td>
<td>13.8</td>
</tr>
<tr>
<td>JGB(C)-G10</td>
<td>11.8</td>
<td>13.1</td>
<td>JGB(C)-T10</td>
<td>10</td>
<td>11.3</td>
<td>JGB(C)-F16</td>
<td>37.7</td>
</tr>
</tbody>
</table>
**Contact Details**

Before using the product, please check the guide pages at the front of this catalog.


For latest information, PDF catalogs and operation manuals

---

**Sub-plate model code**

- The sub-plate is not provided with the valve. Order it separately as required by specifying the model code given in the table below.

<table>
<thead>
<tr>
<th>Model code</th>
<th>Nominal diameter</th>
<th>Connection port diameter</th>
<th>Mass kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>JGB-03M</td>
<td>⅜</td>
<td>Rc⅜</td>
<td>1.6</td>
</tr>
<tr>
<td>JGB-03M04</td>
<td>⅜</td>
<td>Rc⅜</td>
<td></td>
</tr>
<tr>
<td>JGB-06M</td>
<td>¾</td>
<td>Rc¾</td>
<td>3.9</td>
</tr>
<tr>
<td>JGB-06M08</td>
<td></td>
<td>Rc1</td>
<td></td>
</tr>
<tr>
<td>JGB-10M</td>
<td>1¼</td>
<td>Rc1¼</td>
<td>6.7</td>
</tr>
<tr>
<td>JGB-10M12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Refer to Page S-6 for the dimensions of the sub-plate.

---

**Accessories**

<table>
<thead>
<tr>
<th>Connections</th>
<th>Model No.</th>
<th>Hexagon socket head cap bolt</th>
<th>Number</th>
<th>Tightening torque N·m (kgf·cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasket mount type</td>
<td>JGB(C)-G03</td>
<td>M10 × 75</td>
<td>4</td>
<td>48 to 63 (480 to 630)</td>
</tr>
<tr>
<td></td>
<td>JGB(C)-G06</td>
<td>M10 × 85</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>JGB(C)-G10</td>
<td>M10 × 105</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

Flange connection type | Flange (JIS B 2291 SSA), O-ring, mounting bolts

---

**Handling**

- Directly connect the drain piping to the tank without merging it with other tank piping.
- To ensure good pressure reducing performance, set the primary side main circuit pressure and the secondary pressure reducing circuit pressure such that there is a minimum difference of 1 MPa [10 kgf/cm²].
- When using the valve in combination with a direct operated relief valve for remote control, connect the remote control valve to the vent port.
  Since excessive internal volume of the vent piping may lead to vibration, use steel pipes with an inner diameter of 4 mm maximum and thick walls for piping.
- The orientation of the pressure adjusting handle can be changed by rearranging the covers. (See external dimension diagrams [I], [II] and [III].)

---

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

- **Flow rate - Pressure characteristics**
  Solid line:  With a primary pressure of 7 MPa {70 kgf/cm²}
  Dashed line: With a primary pressure of 21 MPa {210 kgf/cm²}

---

*Graphs showing performance curves for different models and pressures.*
Performance curves (viscosity: 32 mm²/s \{cSt\})

- Pressure drop characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Pressure drop characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>JGB(C)-G03</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGB(C)-T03</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGB(C)-G06</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGB(C)-T06</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGBC-F06</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGB(C)-G10</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGB(C)-T10</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGBC-F10</td>
<td><img src="image" alt="Graph" /></td>
</tr>
<tr>
<td>JGBC-F16</td>
<td><img src="image" alt="Graph" /></td>
</tr>
</tbody>
</table>

Note:
- OUT → IN (I): Passing resistance of the check valve only
- OUT → IN (II): Passing resistance of both the check valve and reducing valve spool (fully open)
- IN → OUT: Passing resistance of the reducing valve spool (fully open) only
Before using the product, please check the guide pages at the front of this catalog.

http://www.daikinpmc.com/en/
For latest information, PDF catalogs and operation manuals

External dimension diagram

**JGB-T03 (T06, T10)**

- Pressure gauge connection port (secondary pressure) Rc¼
- Pressure gauge connection port (primary pressure) Rc¼

**JGBC-T03 (T06, T10)**

- Pressure gauge connection port (secondary pressure) Rc¼
- Pressure gauge connection port (primary pressure) Rc¼

**JGB-G03 (G06, G10)**

- Pressure adjusting handle (clockwise: pressure increase)

**JGBC-G03 (G06, G10)**

- Pressure adjusting handle (clockwise: pressure increase)

---

**Dimensions in parentheses are for JGB(C)-T**

**Mounting face (conforming standard)**

JGB(C)-G03: ISO 5781-06-07-0-00
JGB(C)-G06: ISO 5781-08-10-0-00
JGB(C)-G10: ISO 5781-10-13-0-00

**Note:** Plug the vent port when no vent piping is connected. Block the port marked with an asterisk (*) with the mounting face.
External dimension diagram

**JGBC-F06 (F10)**

Pressure gauge connection port Rc¼
(Secondary pressure)

12-M"G"
depth "H"

Pressure gauge connection port Rc¼
(Secondary pressure)

12-M"G"
depth "H"

-pressure adjusting handle
(clockwise: pressure increase)

Drain port: Rc¼
(Primary pressure)

Outlet port (Secondary pressure)

Outlet port (Secondary pressure)

Outlet port (Secondary pressure)

Model No. A B C D E F G H J K L M N P
JGBC-F06 69 50 70 100 31 18 10 20 40 21 95 54 80 175
JGBC-F10 91 63 94 126 39.5 30 12 20 56 28 110.5 68 93.5 204

**JGBC-F16**

Pressure gauge connection port Rc¼
(Secondary pressure)

Vent port Rc¼
(plugged at factory)
Remove the plug when connecting the vent piping.

Pressure gauge connection port Rc¼
(Secondary pressure)

Vent port Rc¼
(plugged at factory)
Remove the plug when connecting the vent piping.

Drain port: Rc¼
(Primary pressure)

Outlet port (Secondary pressure)

Outlet port (Secondary pressure)

Outlet port (Secondary pressure)

Hexagonal flat lock nut: 13

Pressure adjusting handle
(clockwise: pressure increase)
Contact Details
Before using the product, please check the guide pages at the front of this catalog.

http://www.daikinpmc.com/en/
For latest information, PDF catalogs and operation manuals

Sectional structural diagram

Sealing part table