Modular reducing valves type HG, KG, JPG-2 and JPG-3
spool type, ISO 4401 sizes 06, 10, 16 and 25

HG, KG, JPG are pressure reducing valves, spool type ③, designed to operate in oil hydraulic systems. HG are direct, three way valves; KG are double stage ① ②, three way valves; JPG are double stage ① ②, two way valves. Clockwise rotation increases the pressure.

Valve size and max flow:
HG = ③ size 06 flow up to 50 l/min;
KG = ① size 10 flow up to 100 l/min;
JPG-2 =① size 16 flow up to 250 l/min;
JPG-3 =① size 25 flow up to 300 l/min;

Mounting surface:
ISO 4401 size 06, 10, 16 and 25
Max pressure: 350 bar for HG
315 bar for KG and JPG

1 MODEL CODE

Modular pressure reducing valve, size:
HG-0 = 06  JPG-2 = 16
KG-0 = 10  JPG-3 = 25

Configuration, see section 2
two way (only for JPG):
11 = reduced pressure on P port
three way (only for HG-0 and KG-0):
31 = reduced pressure on P port
33 = reduced pressure on A port
34 = reduced pressure on B port

2 HYDRAULIC CHARACTERISTICS

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<thead>
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</thead>
<tbody>
<tr>
<td>Max flow</td>
<td>[l/min]</td>
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<tr>
<td>Pressure range</td>
<td>[bar]</td>
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<tr>
<td></td>
<td>3 ÷ 32</td>
<td>2 ÷ 50</td>
<td>10 ÷ 75</td>
<td>20 ÷ 100</td>
<td>50 ÷ 210</td>
<td>7 ÷ 100</td>
<td>8 ÷ 210</td>
<td>6 ÷ 100</td>
<td>70 ÷ 210</td>
<td>6 ÷ 100</td>
<td>70 ÷ 210</td>
<td>6 ÷ 100</td>
<td>70 ÷ 210</td>
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<tr>
<td>Max inlet pressure</td>
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<tr>
<td>Max pressure on port T</td>
<td>[bar]</td>
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</tbody>
</table>

Seals material, see section 3:
- NBR = NBR
- FKM = FKM
- HNBR = HNBR

Options:
V = setting adjustment by handwheel instead of a grub screw protected by cap
Only for HG:
VF = regulating knob/VS = regulating knob with safety locking
### MAIN CHARACTERISTICS, SEALS and HYDRAULIC FLUID

- **Assembly position / location**: Any position
- **Subplate surface finishing**: Roughness index Ra 0.4 - flatness ratio 0.01/100 (ISO 1101)
- **MTTFd values according to EN ISO 13849**: 150 years, for further details see technical table P007
- **Ambient temperature**: Standard execution = -30°C ÷ +70°C
  - PE option = -20°C ÷ +70°C
  - BT option = -40°C ÷ +70°C
- **Seals, recommended fluid temperature**: NBR seals (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C
  - FKM seals (PE option) = -20°C ÷ +80°C
  - HNBR seals (BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C
- **Recommended viscosity**: 1.5÷100 mm²/s - max allowed range 2.8 ÷ 500 mm²/s
- **Fluid contamination class**: ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 μm (β25 > 75 recommended)

<table>
<thead>
<tr>
<th>Hydraulic fluid</th>
<th>Suitable seals type</th>
<th>Classification</th>
<th>Ref. Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral oils</td>
<td>NBR, FKM, HNBR</td>
<td>HL, HLP, HLPD, HVLP, HVLPD</td>
<td>DIN 51524</td>
</tr>
<tr>
<td>Flame resistant without water</td>
<td>FKM</td>
<td>HFDU, HFDR</td>
<td></td>
</tr>
<tr>
<td>Flame resistant with water</td>
<td>NBR, HNBR</td>
<td>HFC</td>
<td>ISO 12922</td>
</tr>
</tbody>
</table>

### DIAGRAMS OF HG-03
based on mineral oil ISO VG 46 at 50°C

1. **regulated pressure variation versus flow**: between use port and discharge port
2. **differential pressure variation versus flow**: between use port and discharge port
3. **differential pressure variation versus flow**: between use port and inlet port

### DIAGRAMS OF KG-03
based on mineral oil ISO VG 46 at 50°C

1. **regulated pressure variation versus flow**: between use port and discharge port
2. **differential pressure variation versus flow**: between use port and discharge port
3. **differential pressure variation versus flow**: between inlet port and use port

### DIAGRAMS OF JPG-211
based on mineral oil ISO VG 46 at 50°C

1. **regulated pressure variation versus flow**: between inlet port and use port
2. **differential pressure variation versus flow**: between use port and discharge port

### DIAGRAMS OF JPG-311
based on mineral oil ISO VG 46 at 50°C

1. **regulated pressure variation versus flow**: between inlet port and use port
2. **differential pressure variation versus flow**: between use port and discharge port

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**Suitable seals type**: Classification

- **NBR seals** (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C
- **HNBR seals** (BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C

**Recommended viscosity**: 1.5÷100 mm²/s - max allowed range 2.8 ÷ 500 mm²/s

**Fluid contamination class**: ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 μm (β25 > 75 recommended)

**Assembly position / location**: Any position

**Subplate surface finishing**: Roughness index Ra 0.4 - flatness ratio 0.01/100 (ISO 1101)

**MTTFd values according to EN ISO 13849**: 150 years, for further details see technical table P007

**Ambient temperature**: Standard execution = -30°C ÷ +70°C
  - PE option = -20°C ÷ +70°C
  - BT option = -40°C ÷ +70°C

**Seals, recommended fluid temperature**: NBR seals (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C
  - FKM seals (PE option) = -20°C ÷ +80°C
  - HNBR seals (BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C

**Recommended viscosity**: 1.5÷100 mm²/s - max allowed range 2.8 ÷ 500 mm²/s

**Fluid contamination class**: ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 μm (β25 > 75 recommended)
8 INSTALLATION DIMENSIONS OF HG-0 VALVES [mm]

HG-03*

Adjustment device for option /V

Adjustment device for option /VF and /VS

Fastening bolts: n° 4 socket head screws M5. The length depends on number and type of modular elements associated.

Mass: 2.3 Kg

ISO 4401: 2005
Mounting surface: 4401-03-02-0-05
Diameter of ports A, B, P, T: Ø = 7.5 mm
Seals: 4 OR 108

9 INSTALLATION DIMENSIONS OF KG-0 VALVES [mm]

KG-03*

Adjustment device for option /V

Fastening bolts: n° 4 socket head screws M6. The length depends on number and type of modular elements associated.

Mass: 3.8 Kg

ISO 4401: 2005
Mounting surface: 4401-05-04-0-05
Diameter of ports A, B, P, T: Ø = 11.2 mm
Seals: 5 OR 2050
10 INSTALLATION DIMENSIONS OF JPG-2 VALVES [mm]

JPG-211

Mass: 9 Kg

Fastening bolts: n° 4 socket head screws M10 and n° 2 M6. The length depends on number and type of modular elements associated.

Adjustment device for option /V

ISO 4401: 2005
Mounting surface: 4401-07-07-0-05
Diameter of ports A, B, P, T: Ø = 20 mm
Diameter of ports X, Y: Ø 7 mm
Seals: 4 OR 130: 2 OR 109

View from X

M = Pressure gauge port = G 1/4"

11 INSTALLATION DIMENSIONS OF JPG-3 VALVES [mm]

JPG-311

Mass: 9 Kg

Fastening bolts: n° 6 socket head screws M12. The length depends on number and type of modular elements associated.

Adjustment device for option /V

ISO 4401: 2005
Mounting surface: 4401-08-08-0-05 (without port L)
Diameter of ports A, B, P, T: Ø = 24 mm
Diameter of ports X, Y: Ø 7 mm
Seals: 4 OR 130: 2 OR 109

View from X

M = Pressure gauge port = G 1/4"