**General Description**

Series VMY*K valves consist of the main stage with valve spools and the pilot stage with the proportional solenoids. The desired pressure can be variably set corresponding to the command signal specified on the amplifier. The proportional solenoid converts the current of the amplifier into force on the valve poppet of the pilot stage.

In the pilot stage, there is a flow limiter which supplies the pilot valve with pressure-independent pilot oil flow from the pressure port P.

The proportional pressure reducing valves of the series VMY*06 allow the variable adjustment of the reduced pressure from 0 bar up to \( p_{\text{max}} \). Typical applications are pressure systems, test equipment, or counterweight systems. The electrical control of the valve takes place using the digital amplifier module PCD00A-400. Used in closed loop pressure control circuits with the PWDXXA-400.

**Function**

With the proportional solenoids de-energized the main spring forces the main spool into the neutral position. Port A is connected to port T. Thus the reduced pressure only depends on the back pressure in the external drain pipe and/or the tank pressure and can accordingly be reduced down to 0 bar. The pressure present in the P line delivers the pilot oil to the pilot stage via a flow control valve.

When the proportional solenoid is energized, the pilot pressure is increased in the pilot pressure area, and the main spool moves against the spring until the connection P - A opens. The regulation of the reduced pressure on connection A takes place by the constant comparison of the actual pressure and the reference pressure of the pilot stage.

**Features**

- Consistent performance.
- Variable adjustment.
- Pilot operated with proportional solenoid.
- Subplate according to ISO 5781

**Technical Information**

<table>
<thead>
<tr>
<th>Port B has to be blocked</th>
<th>Neutral Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neat by the slotted</td>
<td></td>
</tr>
</tbody>
</table>

**VMY*K06N**

**VMY*K10**

**Port X has to be blocked**
**Ordering Information**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>064</td>
<td>64 Bar (928 PSI)</td>
</tr>
<tr>
<td>100</td>
<td>100 Bar (1450 PSI)</td>
</tr>
<tr>
<td>160</td>
<td>160 Bar (2320 PSI)</td>
</tr>
<tr>
<td>210</td>
<td>210 Bar (3000 PSI)</td>
</tr>
<tr>
<td>315</td>
<td>315 Bar (4568 PSI)</td>
</tr>
</tbody>
</table>

**Specifications**

**General**

- **Design**: Proportional Reducing Valve
- **Size**: NFPA D03 / CETOP 3 / DIN NG6
- **Mounting Pattern**: ISO 5781
- **Actuation**: Proportional Solenoid
- **Mounting Position**: Any
- **Ambient Temperature**: -20°C to +80°C (-4°F to +176°F)

**Hydraulics**

- **Operating Pressure, Ports**
  - Ports P, A 315 Bar (4500 PSI) Port T, Y depressurized; Port B has to be blocked
  - Ports A, B 350 Bar (5075 PSI) Port Y depressurized; Port X has to be blocked
- **Flow**: 40 LPM (10.6 GPM) 160 LPM (42.2 GPM)
- **Pilot Flow**: 0.3 - 0.4 LPM (.08 - .011 GPM), not dependent on pressure
- **Pressure Ranges**: 64, 100, 160, 210, 315 Bar (928, 1450, 2320, 3045, 4568 PSI)
- **Fluid**: Hydraulic oil as per DIN 51524...51535, other on request

**Fluid Temperature**

- **Recommended**: +30°C to +50°C (+86°F to +122°F)
- **Permitted**: -20°C to +70°C (-4°F to +158°F)

**Viscosity**

- **Recommended**: 30 to 50 cSt / mm²/s (139 to 232 SSU)
- **Permitted**: 20 to 380 cSt / mm²/s (93 to 1761 SSU)

**Filtration**: ISO 4406 (1999) 18/16/13 (acc. NAS 1638: 7)

**Linearity**: See Performance Curves ±3.5 at >15% \( p \text{nom} \)

**Repeatability**: <±2%

**Hysteresis**: <3%

**Response Time**: <150 ms

**Electrical**

- **Duty Cycle**: 100% ED; CAUTION: Coil temperature up to 150°C (302°F) possible
- **Protection Class**: IP65 in accordance with EN 60529 (plugged and mounted)
- **Nominal Voltage**: 9 VDC
- **Maximum Current**: 2.5 A
- **Ambient Temperature**: -20°C to +70°C (-4°F to +158°F)
- **Coil Resistance**: 2.1 ohm at 20°C (68°F)
- **Plug Connectors**: 2 pole + PE / connector EN 175301-803 / cable Ø 8 to 10mm
- **Power Amplifier**: PCD00A-400
Proportional Pressure Reducing Valves

Series VMY*K06

Pressure Curves where \( p = f(U\text{ sat}) \)

**Setting Range max. 64 Bar (928 PSI)**

![Pressure Curves 64 Bar Graph](image)

**Setting Range max. 210 Bar (3045 PSI)**

![Pressure Curves 210 Bar Graph](image)

**Step Response**

Typical Curve

![Step Response Graph](image)

**Accumulator Plate H06VMY-1350**

Inch equivalents for millimeter dimensions are shown in (\(^\ast\))

![Accumulator Plate Diagram](image)
Proportional Pressure Reducing Valves
Series VMY*K06

p/Q Performance Curves measured at $t = 50\,^\circ \text{C}$ (122\,\textdegree \text{F}) and $v = 35\text{mm}^3/\text{s}$.

Setting Range max. 64 Bar (928 PSI)

Setting Range max. 100 Bar (1450 PSI)

Setting Range max. 160 Bar (2320 PSI)

Setting Range max. 210 Bar (3045 PSI)

Setting Range max. 315 Bar (4568 PSI)
Proportional Pressure Reducing Valves
Series VMY*K10

p/Q Performance Curves for pilot oil supply from high pressure channel P, measured with HLP46 at 50°C (122°F).

**Setting Range max. 64 Bar (928 PSI)**

![Graph showing performance curves for 64 Bar setting range.](image)

**Setting Range max. 100 Bar (1450 PSI)**

![Graph showing performance curves for 100 Bar setting range.](image)

**Setting Range max. 160 Bar (2320 PSI)**

![Graph showing performance curves for 160 Bar setting range.](image)

**Setting Range max. 210 Bar (3045 PSI)**

![Graph showing performance curves for 210 Bar setting range.](image)
**Proportional Pressure Reducing Valves**

**Series VMY*K06**

**Size NG6**

Inch equivalents for millimeter dimensions are shown in (**)

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**Mounting Pattern ISO 5781-03-04-0-00**

Inch equivalents for millimeter dimensions are shown in (**)

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**Dimensions**

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The connection B must be blocked on the subplate for standard applications.
Size NG10
Inch equivalents for millimeter dimensions are shown in (**)

### Dimensions

**Proportional Pressure Reducing Valves**

**Series VMY*K10**

**Mounting Pattern ISO 5781-06-07-0-00**
Inch equivalents for millimeter dimensions are shown in (**)

**Surface Finish**

<table>
<thead>
<tr>
<th>Bolt kit</th>
<th>DIN912 12.9</th>
<th>Seal Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>BK153 (4) 3/8-16x2</td>
<td>63 Nm (5.5 lb.-ft.)</td>
<td>Nitrile: SK-VB/VM-A10</td>
</tr>
<tr>
<td>BK242 (4) M10x50</td>
<td>Fluorocarbon: SK-VB/VM-A10V</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions**

- **Bolt kit:** DIN912 12.9
- **Seal Kit:** Nitrile: SK-VB/VM-A10
  Fluorocarbon: SK-VB/VM-A10V

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**Parker Hannifin Corporation**

Hydraulic Valve Division

Elyria, Ohio, USA