Modular Valves

Product Overview

Northman
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MODULAR RELIEF VALVE
MRF-02 SERIES

FEATURES
• The modular adjustable relief valve is designed to limit the operating pressure in a hydraulic system or in a branch of the system to a maximum set pressure. The internal piston moves to smoothly relieve the pressure when the system pressure reaches the desired setting, maintaining stable pressure control and repeatability.

Pressure relief is available on the P, A, B, and A & B ports. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D03 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MRF - 02 P - K - 1 - **

1 Series
MRF: Modular Relief Valve

2 Mounting Style
02: NFPA Size D03

3 Function Port
P: P Port
A: A Port
B: B Port
C: A & B Ports Relieve to Tank
D: A & B Ports Crossover

4 Adjustment Style
K: Adjusting Knob

5 Pressure Adj. Range
1: 8-70 BAR (120-1000 PSI)
2: 35-40 BAR (500-2000 PSI)
3: 70-210 BAR (1000-3000 PSI)

6 Design Number
MODULAR RELIEF VALVE
MRF-02 SERIES

SPECIFICATIONS

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<th>MAX. OPERATING PRESSURE</th>
<th>250 BAR (3675 PSI)</th>
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<td>MAX. FLOW CAPACITY</td>
<td>35 LPM (9.3 GPM)</td>
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PERFORMANCE CURVES

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR RELIEF VALVE
MRF-02 SERIES

DIMENSIONS
UNIT: mm(inch) WEIGHT: 1.5 kgs(3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MRF-02C-K-**

DIMENSIONS
UNIT: mm(inch) WEIGHT: 1.5 kgs(3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MRF-02D-K-**
MODULAR RELIEF VALVE
MRF-02 SERIES

UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A

MRF-A/B/P-K-**
MODULAR RELIEF VALVE
MPR-02 SERIES

FEATURES
• The modular adjustable pressure reducing valve will ensure that the operating pressure in a branch of a hydraulic system will be maintained at a lower setting than that of the main system pressure. The valve functions on the selected P, A, or B port and is internally drained. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D03 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MPR – 02 P – K – 1 – **-N

1 Series
MPR: Modular Pressure Reducing Valve

2 Mounting Style
02: NFPA Size D03

3 Function Port
P: P Port
A: A Port
B: B Port

4 Adjustment Style
K: Adjusting Knob

5 Pressure Adj. Range
0: 1.5-35 BAR (20-500 PSI)
1: 8-70 BAR (120-1000 PSI)
2: 35-40 BAR (500-2000 PSI)
3: 70-210 BAR (1000-3000 PSI)

6 Design Number
MODULAR RELIEF VALVE
MPR-02 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY  35 LPM (9.3 GPM)

PERFORMANCE CURVES
TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR RELIEF VALVE
MPR-02 SERIES

DIMENSIONS
UNIT: mm(inch) WEIGHT: 1.5 kgs(3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MPR - 02 A/B/P - K - **
MODULAR THROTTLE AND CHECK VALVE
MT-02 SERIES

FEATURES

• The modular adjustable flow control valve functions as a needle valve flow restrictor in one direction in a branch of a circuit, with free flow in the opposite direction. It may be specified to operate on the A, B, or A & B ports in either a “meter-in” or “meter-out” configuration. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D03 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MT - 02 W - K - I - **
1 2 3 4 5 6

1 Series
MT: Modular Throttle and Check Valve (Flow Control)

2 Mounting Style
02: NFPA Size D03

3 Function Port
A: A Port
B: B Port
P: P Port
T: T Port
W: A & B Ports

4 Adjustment Style
K: Adjusting Knob

5 Control Function
No Code: Meter Out
I: Meter In

6 Design Number

MODULAR THROTTLE AND CHECK VALVE
MT-02 SERIES

SPECIFICATIONS

MAX. OPERATING PRESSURE 250 BAR (3675 PSI)
MAX. FLOW CAPACITY 35 LPM (9.3 GPM)

PERFORMANCE CURVES

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR THROTTLE AND CHECK VALVE
MT-02 SERIES

DIMENSIONS
UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A

MT-02A-K

MT-02B-*.-40

DIMENSIONS
UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A

MT-02B-K
MODULAR THROTTLE AND CHECK VALVE
MT-02 SERIES

DIMENSIONS
UNIT: mm(inch) WEIGHT: 1.5 kgs(3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MODULAR CHECK VALVE
MC-02 SERIES

FEATURES
• The modular check valve will allow free flow in one direction and block flow in the opposite direction. It may be specified to operate on the P, T, A, or B port with a 7 PSI or 50 PSI cracking pressure.

As a modular valve, this valve mounts between an NFPA D03 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

**MC - 02 P - 05 - **

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<td><strong>Cracking Pressure</strong></td>
<td><strong>Design Number</strong></td>
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<td><strong>MT</strong>: Modular Check Valve</td>
<td><strong>02</strong>: NFPA Size D03</td>
<td><strong>P</strong>: P Port</td>
<td><strong>05</strong>: 0.5 BAR (7 PSI)</td>
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<td><strong>2</strong>: Mounting Style</td>
<td><strong>05</strong>: 0.5 BAR (7 PSI)</td>
<td><strong>T</strong>: T Port</td>
<td><strong>05</strong>: 0.5 BAR (50 PSI)</td>
<td><strong>5</strong>: Design Number</td>
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<td><strong>4</strong>: Cracking Pressure</td>
<td><strong>A</strong>: A Port</td>
<td><strong>5</strong>: Design Number</td>
<td><strong>5</strong>: Design Number</td>
</tr>
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<td><strong>4</strong>: Cracking Pressure</td>
<td><strong>5</strong>: Design Number</td>
<td><strong>B</strong>: B Port</td>
<td><strong>5</strong>: Design Number</td>
<td><strong>5</strong>: Design Number</td>
</tr>
</tbody>
</table>
MODULAR CHECK VALVE
MC-02 SERIES

SPECIFICATIONS

MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY       35 LPM (9.3 GPM)

PERFORMANCE CURVES

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR CHECK VALVE
MC-02 SERIES

DIMENSIONS
UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MC-02P- ** -40

DIMENSIONS
UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MC-02T- ** -40
MODULAR CHECK VALVE
MC-02 SERIES

DIMENSIONS
UNIT: mm(inch) WEIGHT: 1.5 kgs(3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MC-02A- ** -40

DIMENSIONS
UNIT: mm(inch) WEIGHT: 1.5 kgs(3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MC-02B- ** -40
MODULAR PILOT CHECK VALVE
MPC-02 SERIES

FEATURES
• The modular pilot-operated check valve will allow free flow in one direction and block flow in the opposite direction. It functions to positively hold the actuator in a neutral position. Movement is restored by an automatic pilot pressure signal when the directional control valve shifts to move the actuator. It may be specified to operate on the A, B, or A & B port.

As a modular valve, this valve mounts between an NFPA D03 size directional control valve and the subplate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MPC - 02 W - 50 - **

1 Series
MPC: Modular Pilot Check Valve

2 Mounting Style
02: NFPA Size D03

3 Function Port
A: A Port
B: B Port
W: A & B Ports

4 Cracking PSI
50: 50 PSI (3.5 BAR)

5 Design Number
MODULAR PILOT CHECK VALVE
MPC-02 SERIES

SPECIFICATIONS

MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY  35 LPM (9.3 GPM)

Internal Leakage: 0.1 cc/minute (2 drops/minute) MAX. at 207 BAR(3000 PSI).
MODULAR PILOT CHECK VALVE
MPC-02 SERIES

DIMENSIONS
UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A

MPC-02-* -40
MODULAR RELIEF VALVE
MRF-03 SERIES

FEATURES
• The modular adjustable relief valve is designed to limit the operating pressure in a hydraulic system or in a branch of the system to a maximum set pressure. The internal piston moves to smoothly relieve the pressure when the system pressure reaches the desired setting, maintaining stable pressure control and repeatability.

Pressure relief is available on the P, A, B, and A & B ports. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D05 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MRF - 03 P - K - 1 - **

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<td>Mounting Style</td>
<td>Function Port</td>
<td>Adjustment Style</td>
<td>Pressure Adj. Range</td>
<td>Design Number</td>
</tr>
<tr>
<td>MRF: Modular Relief Valve</td>
<td>03: NFPA Size D05</td>
<td>P: P Port</td>
<td>K: Adjusting Knob</td>
<td>1: 8-70 BAR (120-1000 PSI)</td>
<td>1</td>
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<tr>
<td>Mounting Style</td>
<td>Function Port</td>
<td>A: A Port</td>
<td>2: 35-40 BAR (500-2000 PSI)</td>
<td>B: B Port</td>
<td>2</td>
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<tr>
<td></td>
<td>Function Port</td>
<td>C: A &amp; B Ports Relieve to Tank</td>
<td>3: 70-210 BAR (1000-3000 PSI)</td>
<td>D: A &amp; B Ports Crossover</td>
<td>3</td>
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</tbody>
</table>

Northman     www.northmanfp.com
MODULAR RELIEF VALVE
MRF-03 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY  35 LPM (9.3 GPM)

PERFORMANCE CURVES

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)

[Graphs showing performance curves for nominal override characteristics, minimum adjustment pressure, and pressure drop]
MODULAR RELIEF VALVE
MRF-03 SERIES

DIMENSIONS
UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A

DIMENSIONS
UNIT: mm (inch) WEIGHT: 1.5 kgs (3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MODULAR RELIEF VALVE
MRF-03 SERIES

DIMENSIONS
UNIT: mm (inch)  WEIGHT: 1.5 kgs (3.3 lbs)  Mounting Surface: ISO 4401-AB-03-4-A
MODULAR PRESSURE REDUCING VALVE
MPR-03 SERIES

FEATURES
• The modular adjustable pressure reducing valve will ensure that the operating pressure in a branch of a hydraulic system will be maintained at a lower setting than that of the main system pressure. The valve functions on the selected P, A, or B port and is internally drained. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D05 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MPR - 03 P - K - 1 - **-N

<table>
<thead>
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<td>03: NFPA Size D05</td>
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<th>Function Port</th>
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<td>P: P Port</td>
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<tr>
<td>A: A Port</td>
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<tr>
<td>B: B Port</td>
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<table>
<thead>
<tr>
<th>4</th>
<th>Adjustment Style</th>
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<tr>
<td>K: Adjusting Knob</td>
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<table>
<thead>
<tr>
<th>5</th>
<th>Pressure Adj. Range</th>
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</thead>
<tbody>
<tr>
<td>0: 1.5-35 BAR (20-500 PSI)</td>
<td></td>
</tr>
<tr>
<td>1: 8-70 BAR (120-1000 PSI)</td>
<td></td>
</tr>
<tr>
<td>2: 35-40 BAR (500-2000 PSI)</td>
<td></td>
</tr>
<tr>
<td>3: 70-210 BAR (1000-3000 PSI)</td>
<td></td>
</tr>
</tbody>
</table>

| 6 | Design Number |
MODULAR PRESSURE REDUCING VALVE
MPR-03 SERIES

SPECIFICATIONS

MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY  35 LPM (9.3 GPM)

PERFORMANCE CURVES

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR RELIEF VALVE
MPR-03 SERIES

DIMENSIONS
UNIT: mm(inch) WEIGHT: 1.5 kgs(3.3 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MPR-03A/B/P-**-**-40
MODULAR THROTTLE AND CHECK VALVE
MT-03 SERIES

FEATURES

The modular adjustable flow control valve functions as a needle valve flow restrictor in one direction in a branch of a circuit, with free flow in the opposite direction. It may be specified to operate on the A, B, or A & B ports in either a “meter-in” or “meter-out” configuration. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D05 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

**MT - 03 W - K - I - **

1 Series
MT: Modular Throttle and Check Valve (Flow Control)

2 Mounting Style
03: NFPA Size D05

3 Function Port
A: A Port
B: B Port
P: P Port
T: T Port
W: A & B Ports

4 Adjustment Style
K: Adjusting Knob

5 Control Function
No Code: Meter Out
I: Meter In

6 Design Number
MODULAR THROTTLE AND CHECK VALVE
MT-03 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY       35 LPM (9.3 GPM)

PERFORMANCE CURVES
Models with MT-03W/A/B

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR THROTTLE AND CHECK VALVE
MT-03 SERIES

PERFORMANCE CURVES
Models with MT-P/T

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR THROTTLE AND CHECK VALVE
MT-03 SERIES

DIMENSIONS
UNIT: mm (inch) WEIGHT: 2.8 kgs (6.171 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MT-03W-.-*-.40

DIMENSIONS
UNIT: mm (inch) WEIGHT: 2.8 kgs (6.171 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MT-03A-.*-40
MODULAR THROTTLE AND CHECK VALVE
MT-03 SERIES

DIMENSIONS

UNIT: mm (inch) WEIGHT: 2.8 kgs (6.171 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MT-03B-*-40
MODULAR CHECK VALVE
MC-03 SERIES

FEATURES
• The modular check valve will allow free flow in one direction and block flow in the opposite direction. It may be specified to operate on the P, T, A, or B port with a 7 PSI or 50 PSI cracking pressure.

As a modular valve, this valve mounts between an NFPA D05 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MC - 03 P - 05 - **

1 2 3 4 5

1 Series
MT: Modular Check Valve

2 Mounting Style
03: NFPA Size D05

3 Function Port
P: P Port
T: T Port
A: A Port
B: B Port

4 Cracking Pressure
05: 0.5 BAR (7 PSI)
50: 3.5 BAR (50 PSI)

5 Design Number

Northman www.northmanfp.com
MODULAR CHECK VALVE
MC-03 SERIES

SPECIFICATIONS

MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY  35 LPM (9.3 GPM)

PERFORMANCE CURVES

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR CHECK VALVE
MC-03 SERIES

DIMENSIONS
UNIT: mm (inch)  WEIGHT: 1.5 kgs (3.3 lbs)  Mounting Surface: ISO 4401-AB-03-4-A
MC-03* ** -40
MODULAR PILOT CHECK VALVE
MPC-03 SERIES

FEATURES
• The modular pilot-operated check valve will allow free flow in one direction and block flow in the opposite direction. It functions to positively hold the actuator in a neutral position. Movement is restored by an automatic pilot pressure signal when the directional control valve shifts to move the actuator. It may be specified to operate on the A, B, or A & B port.

As a modular valve, this valve mounts between an NFPA D05 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

```
MPC - 03 W - 50 - **

1 2 3 4 5

1 Series
MPC: Modular Pilot Check Valve

2 Mounting Style
03: NFPA Size D05

3 Function Port
A: A Port
B: B Port
W: A & B Ports

4 Cracking PSI
50: 50 PSI (3.5 BAR)

5 Design Number
```
MODULAR PILOT CHECK VALVE
MPC-03 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY       35 LPM (9.3 GPM)

PERFORMANCE CURVES

TEST CONDITIONS
Viscosity: 35 cSt (175 SSU) Temperature: 50° C (122° F)
MODULAR PILOT CHECK VALVE
MPC-03 SERIES

DIMENSIONS
UNIT: mm(inch) WEIGHT: 3.4 kgs(7.5 lbs) Mounting Surface: ISO 4401-AB-03-4-A
MPC-03- * -40
MODULAR RELIEF VALVE
MRF-04 SERIES

FEATURES
• The modular adjustable relief valve is designed to limit the operating pressure in a hydraulic system to a maximum set pressure. The internal piston moves to smoothly relieve the pressure when the system pressure reaches the desired setting, maintaining stable pressure control and repeatability.

Pressure relief is available on the P port. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D07 size directional control valve and the subplate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MRF - 04 P - K - 3 - **

1 Series
MRF: Modular Relief Valve

2 Mounting Style
04: NFPA Size D07

3 Function Port
P: P Port

4 Adjustment Style
K: Adjusting Knob

5 Pressure Adj. Range
3: 70-210 BAR (1000-3000 PSI)

6 Design Number
MODULAR RELIEF VALVE
MRF-04 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE 250 BAR (3675 PSI)
MAX. FLOW CAPACITY 190 LPM (50 GPM)

DIMENSIONS

[Diagram showing dimensions in inches and millimeters]
MODULAR PRESSURE REDUCING VALVE
MPR-04 SERIES

FEATURES
• The modular adjustable pressure reducing valve will ensure that the operating pressure in a branch of a hydraulic system will be maintained at a lower setting than that of the main system pressure. The valve functions on the P port and is internally drained. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D07 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

<table>
<thead>
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<th>MPR - 04 P - K - 2 - **</th>
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</tr>
</tbody>
</table>
MODULAR PRESSURE REDUCING VALVE
MPR-04 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE 250 BAR (3675 PSI)
MAX. FLOW CAPACITY 190 LPM (50 GPM)

DIMENSIONS
MODULAR THROTTLE AND CHECK VALVE
MT-04 SERIES

FEATURES
• The modular adjustable flow control valve functions as a needle valve flow restrictor in one direction in a branch of a circuit, with free flow in the opposite direction. It operates on the A & B ports in the “meter-out” configuration. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D07 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

MT-04W

Model Code

MT - 04 W - K - **

1 Series
MT: Modular Throttle and Check Valve (Flow Control)

2 Mounting Style
04: NFPA Size D07

3 Function Port
W: A & B Ports

4 Adjustment Style
K: Adjusting Knob

5 Design Number
MODULAR THROTTLE AND CHECK VALVE
MT-04 SERIES

SPECIFICATIONS

MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY   190 LPM (50 GPM)

DIMENSIONS
MODULAR PILOT CHECK VALVE
MPC-04 SERIES

FEATURES
• The modular pilot-operated check valve will allow free flow in one direction and block flow in the opposite direction. It functions to positively hold the actuator in a neutral position. Movement is restored by an automatic pilot pressure signal when the directional control valve shifts to move the actuator. It operates on the A & B ports.

As a modular valve, this valve mounts between an NFPA D07 size directional control valve and the subplate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MPC – 04 W – 50 – **

1 Series
MPC: Modular Pilot Check Valve

2 Mounting Style
04: NFPA Size D07

3 Function Port
W: A & B, Meter-Out

4 Spring
50: Spring PSI

5 Design Number
MODULAR THROTTLE AND CHECK VALVE
MT-04 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE 250 BAR (3675 PSI)
MAX. FLOW CAPACITY 190 LPM (50 GPM)

DIMENSIONS
MODULAR RELIEF VALVE
MRF-06 SERIES

FEATURES

- The modular adjustable relief valve is designed to limit the operating pressure in a hydraulic system to a maximum set pressure. The internal piston moves to smoothly relieve the pressure when the system pressure reaches the desired setting, maintaining stable pressure control and repeatability.

Pressure relief is available on the P port. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D08 size directional control valve and the subplate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

![Symbol](image)

Model Code

**MRF - 06 P - K - 3 - **

1 Series 4 Adjustment Style
MRF: Modular Relief Valve K: Adjusting Knob

2 Mounting Style
06: NFPA Size D08

3 Function Port
P: P Port

4 5 6

3 Pressure Adj. Range
3: 70-210 BAR (1000-3000 PSI)

Design Number

Note: Inquire for availability of other port and pressure options.
MODULAR RELIEF VALVE
MRF-06 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE 250 BAR (3675 PSI)
MAX. FLOW CAPACITY 200 LPM (53 GPM)

DIMENSIONS

[Diagram of MRF-06P-K valve dimensions]
MODULAR PRESSURE REDUCING VALVE
MPR-06 SERIES

FEATURES
- The modular adjustable pressure reducing valve will ensure that the operating pressure in a branch of a hydraulic system will be maintained at a lower setting than that of the main system pressure. The valve functions on the P port and is internally drained. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D08 size directional control valve and the sub-plate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

MPR - 06 P - K - 2 - **-N

1 Series
MPR: Modular Pressure Reducing Valve

2 Mounting Style
06: NFPA Size D08

3 Function Port
P: P Port

4 Adjustment Style
K: Adjusting Knob

5 Pressure Adj. Range
1: 8-70 BAR (120-1000 PSI)
2: 35-40 BAR (500-2000 PSI)
3: 70-210 BAR (1000-3000 PSI)

6 Design Number
MODULAR PRESSURE REDUCING VALVE
MPR-06 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE    250 BAR (3675 PSI)
MAX. FLOW CAPACITY          200 LPM (53 GPM)

DIMENSIONS
MODULAR THROTTLE AND CHECK VALVE
MT-06 SERIES

FEATURES
• The modular adjustable flow control valve functions as a needle valve flow restrictor in one direction in a branch of a circuit, with free flow in the opposite direction. It operates on the A & B ports in the “meter-out” configuration. Adjustment is made with a calibrated knob, standard with the valve.

As a modular valve, this valve mounts between an NFPA D08 size directional control valve and the subplate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

Model Code

**MT - 06 W - K - **

1 Series
MT: Modular Throttle and Check Valve (Flow Control)

2 Mounting Style
06: NFPA Size D08

3 Function Port
W: A & B Ports

4 Adjustment Style
K: Adjusting Knob

5 Design Number

Note: Inquire for availability of other port and function options.
MODULAR THROTTLE AND CHECK VALVE
MT-06 SERIES

SPECIFICATIONS

MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY        300 LPM (79 GPM)

DIMENSIONS
MODULAR PILOT CHECK VALVE
MPC-06 SERIES

FEATURES

• The modular pilot-operated check valve will allow free flow in one direction and block flow in the opposite direction. It functions to positively hold the actuator in a neutral position. Movement is restored by an automatic pilot pressure signal when the directional control valve shifts to move the actuator. It operates on the A & B ports.

As a modular valve, this valve mounts between an NFPA D08 size directional control valve and the subplate. A longer than standard bolt kit is required when mounting modular valves in a stack. Refer to bolt kits.

Symbol

```
MPC-06W
```

Model Code

```
MPC – 06 W – **
```

1 Series
MPC: Modular Pilot Check Valve

2 Mounting Style
06: NFPA Size D08

3 Function Port
W: A & B Ports

4 Design Number

Note: Inquire for availability of other port options.
MODULAR THROTTLE AND CHECK VALVE
MPC-06 SERIES

SPECIFICATIONS
MAX. OPERATING PRESSURE  250 BAR (3675 PSI)
MAX. FLOW CAPACITY        300 LPM (79 GPM)

DIMENSIONS
MODELLAR BOLT KITS
MBK-02 & 03 SERIES

FEATURES
The mounting bolt kits for the modular valve series MBK-02 and MBK-03 sizes consist of four (4) each of threaded rods and nuts. The lengths are sized to mount from one (1) to four (4) Northman Fluid Power modular valves between a Northman directional control valve and a subplate or manifold.

Model Code

<table>
<thead>
<tr>
<th>MBK - 02</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Series</td>
<td>No. of Modular Valves in Stack</td>
<td>Thread</td>
<td></td>
</tr>
<tr>
<td>MBK: Mounting Bolt Kit</td>
<td>1: One Modular Valve</td>
<td>1: Metric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02: NFPA Size D03</td>
<td>2: Two Modular Valves</td>
<td>2: Inch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03: NFPA Size D05</td>
<td>3: Three Modular Valves</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## MODULAR BOLT KITS
### MBK-02 & 03 SERIES

### DIMENSIONS

**Diagram:**
- **A:** Total Length
- **B:** Thread Length
- **C:** Number of Modular Valves in Stack
- **D:** Number of Bolts and Nuts
- **E:** Bolt Length
- **F:** Thread Length
- **G:** Bolt Length

**Table:**

<table>
<thead>
<tr>
<th>Series</th>
<th>* = Number of Modular Valves in Stack</th>
<th>Number of Bolts and Nuts</th>
<th>A Total Length</th>
<th>B Thread Length</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>A - C Bolt Length</th>
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</thead>
<tbody>
<tr>
<td>MBK-02-*-1</td>
<td>1</td>
<td>4</td>
<td>3.7 (94)</td>
<td>0.35 (9)</td>
<td>0.35</td>
<td>0.59</td>
<td>0.16</td>
<td>0.33</td>
<td>M5 x 0.88P</td>
<td>3.35 (85)</td>
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<tr>
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<td>2</td>
<td>4</td>
<td>5.27 (134)</td>
<td>0.35 (9)</td>
<td>0.59</td>
<td>0.16</td>
<td>0.33</td>
<td>#10 – 24 UNC</td>
<td>4.92 (125)</td>
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</tr>
<tr>
<td></td>
<td>3</td>
<td>4</td>
<td>6.85 (174)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>M6 x 1P</td>
<td>6.50 (165)</td>
</tr>
<tr>
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<td>4</td>
<td>4</td>
<td>8.42 (214)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>8.07 (205)</td>
</tr>
<tr>
<td>MBK-02-*-2</td>
<td>1</td>
<td>4</td>
<td>4.17 (106)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>3.70 (94)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td>6.34 (161)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>5.90 (149)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4</td>
<td>8.51 (216)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>8.03 (204)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>10.68 (271)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>10.20 (259)</td>
</tr>
<tr>
<td>MBK-03-*-1</td>
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<td>4</td>
<td>4.17 (106)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>M6 x 1P</td>
<td>3.70 (94)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td>6.34 (161)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>5.90 (149)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4</td>
<td>8.51 (216)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>8.03 (204)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>10.68 (271)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>10.20 (259)</td>
</tr>
<tr>
<td>MBK-03-*-2</td>
<td>1</td>
<td>4</td>
<td>4.17 (106)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>M6 x 1P</td>
<td>3.70 (94)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td>6.34 (161)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>5.90 (149)</td>
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<tr>
<td></td>
<td>3</td>
<td>4</td>
<td>8.51 (216)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>8.03 (204)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>10.68 (271)</td>
<td>0.47 (12)</td>
<td>0.47</td>
<td>0.87</td>
<td>0.20</td>
<td>0.39</td>
<td>1/4 – 20 UNC</td>
<td>10.20 (259)</td>
</tr>
</tbody>
</table>
MODULAR BOLT KITS
MBK-06 SERIES

FEATURES
The mounting bolt kits for the modular valve series MBK-06 size consist of six (6) 1/2-13 socket head cap screws. The lengths are sized to mount from one (1) to three (3) Northman Fluid Power modular valves between a Northman directional control valve and a subplate or manifold.

Model Code

MBK – 06 – 1 – 2

1  2  3  4

1 Series
MBK: Mounting Bolt Kit

2 Mounting Size
06: NFPA Size D08

3 No. of Modular Valves in Stack
1: One Modular Valve
2: Two Modular Valves
3: Three Modular Valves

4 Thread
2: Inch (UNC Thread)
### MODULAR BOLT KITS
#### MBK-06 SERIES

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Series</th>
<th>* = Number of Modular Valves in Stack</th>
<th>Number of Bolts</th>
<th>A Total Length</th>
<th>B Thread Length</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBK-06-*-2</td>
<td>1</td>
<td>6</td>
<td>5.38 (137)</td>
<td>1.88 (48)</td>
<td>0.5</td>
<td>0.75</td>
<td>0.38</td>
<td>1/2-13 UNC-2B</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>6</td>
<td>8.88 (256)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6</td>
<td>12.13 (308)</td>
<td>0.5 (13)</td>
<td>0.75</td>
<td>0.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Solenoid Directional Valve  Modular Valve
Pressure Control Valve  Flow Control Valve
Variable Vane Pump  High Pressure Vane Pump

Our Commitment

We are committed to excellent customer care, quality products and a very timely delivery.

Northman’s reputation for reliability is built on high quality products, engineering and manufacturing systems.

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