

# Modular Valves

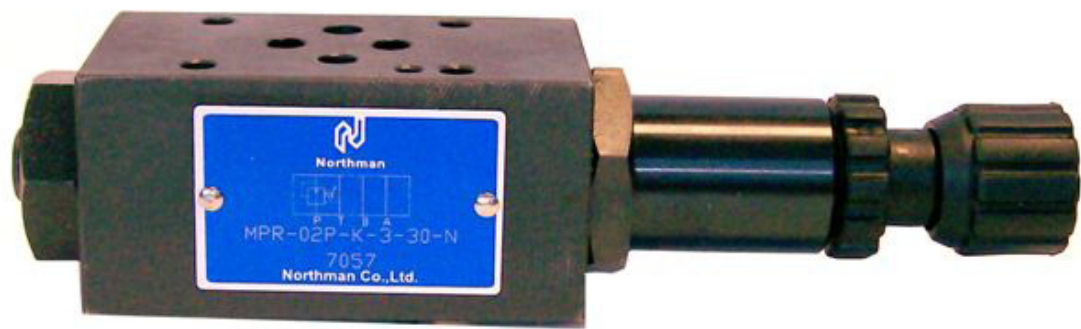
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## Product Overview



***Northman***



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# MODULAR RELIEF VALVE

## MRF-02 SERIES



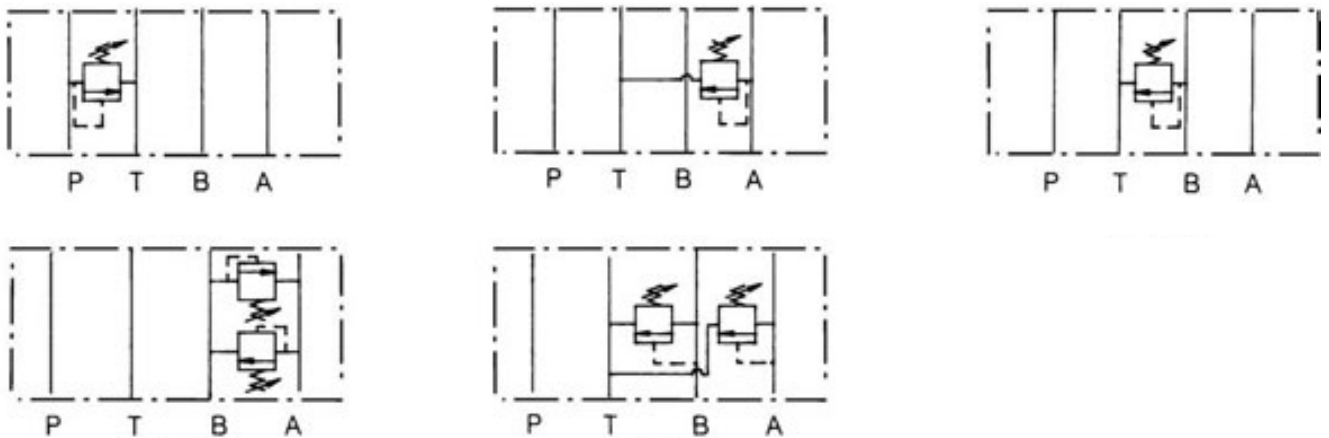
### FEATURES

•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      2   3      4      5      6

**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

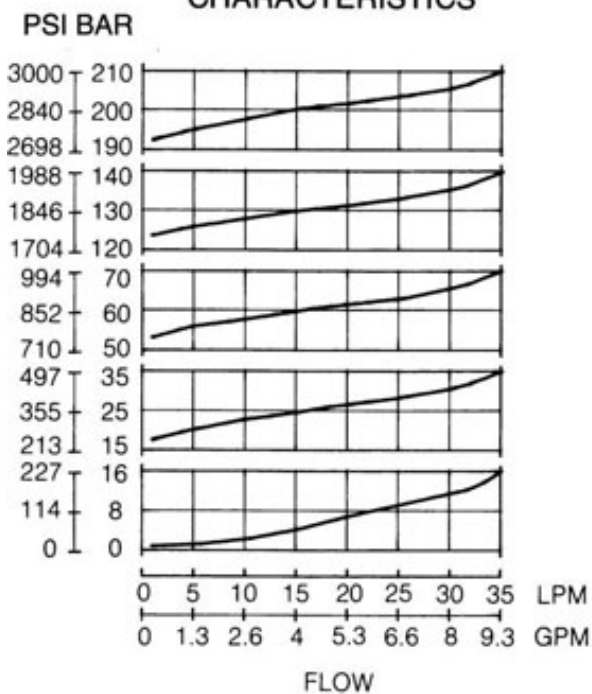
MAX. OPERATING PRESSURE	250 BAR (3675 PSI)
MAX. FLOW CAPACITY	35 LPM (9.3 GPM)

### PERFORMANCE CURVES

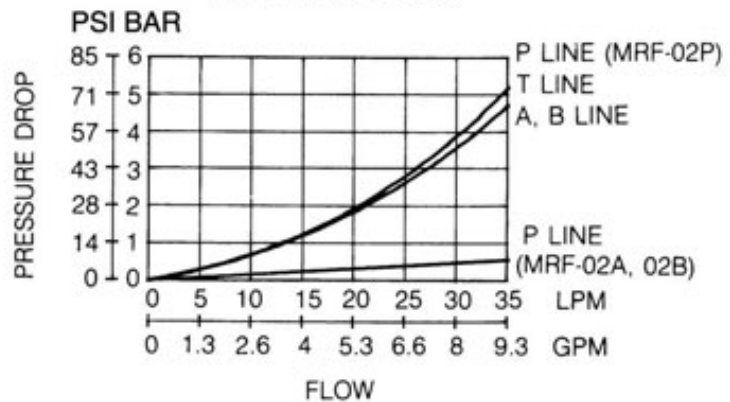
#### TEST CONDITIONS

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

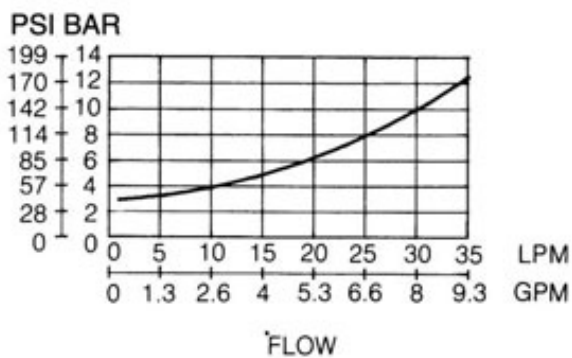
#### NOMINAL OVERRIDE CHARACTERISTICS



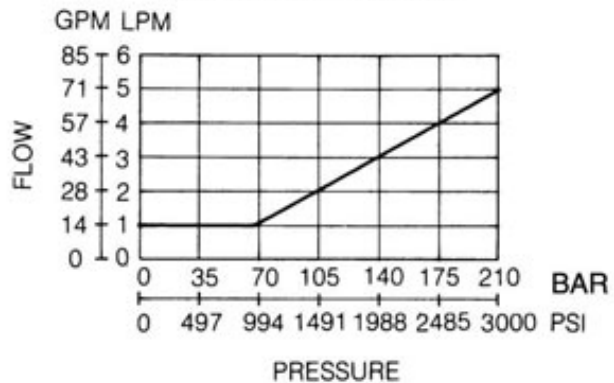
#### PRESSURE DROP



#### MIN. ADJUSTMENT PRESSURE



#### MIN. FLOW CHARACTERISTICS



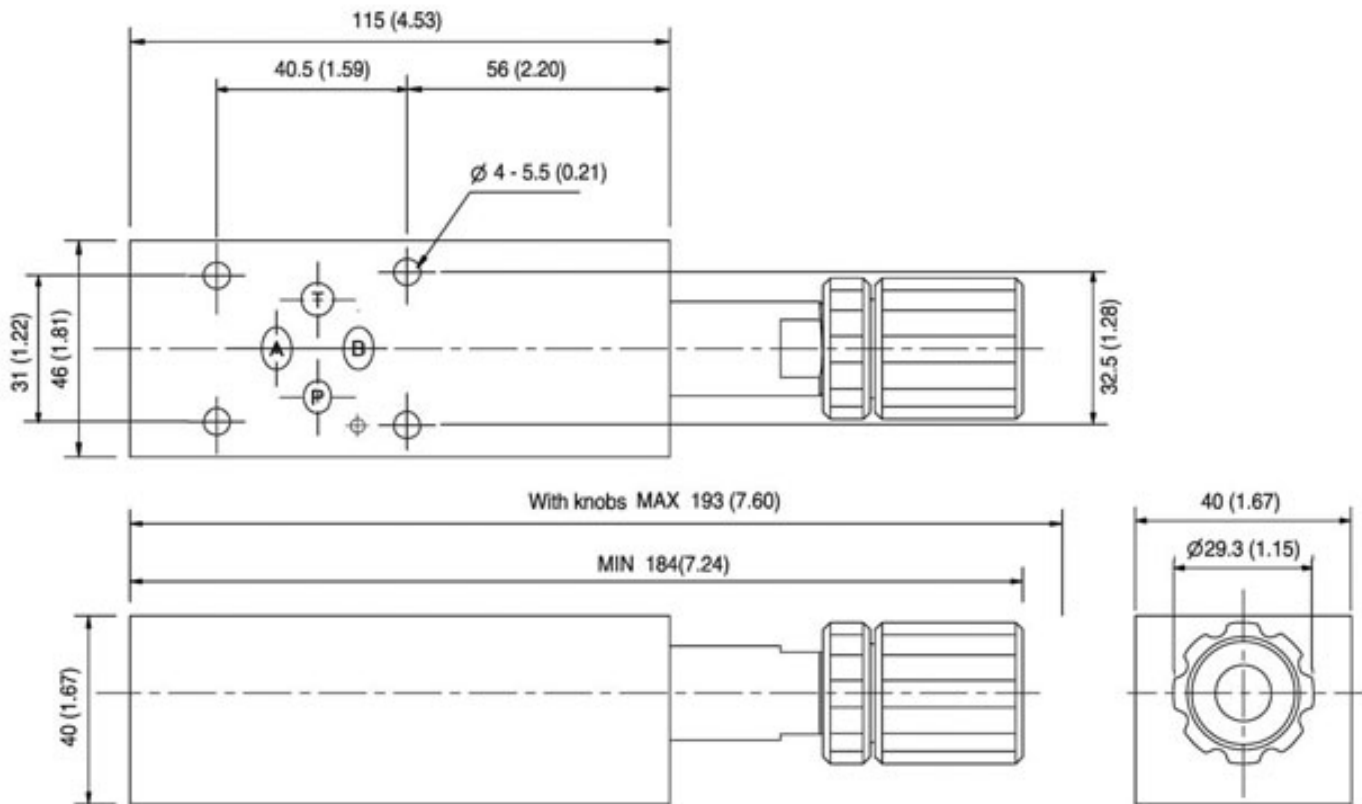
# MODULAR RELIEF VALVE

## MRF-02 SERIES

### DIMENSIONS

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

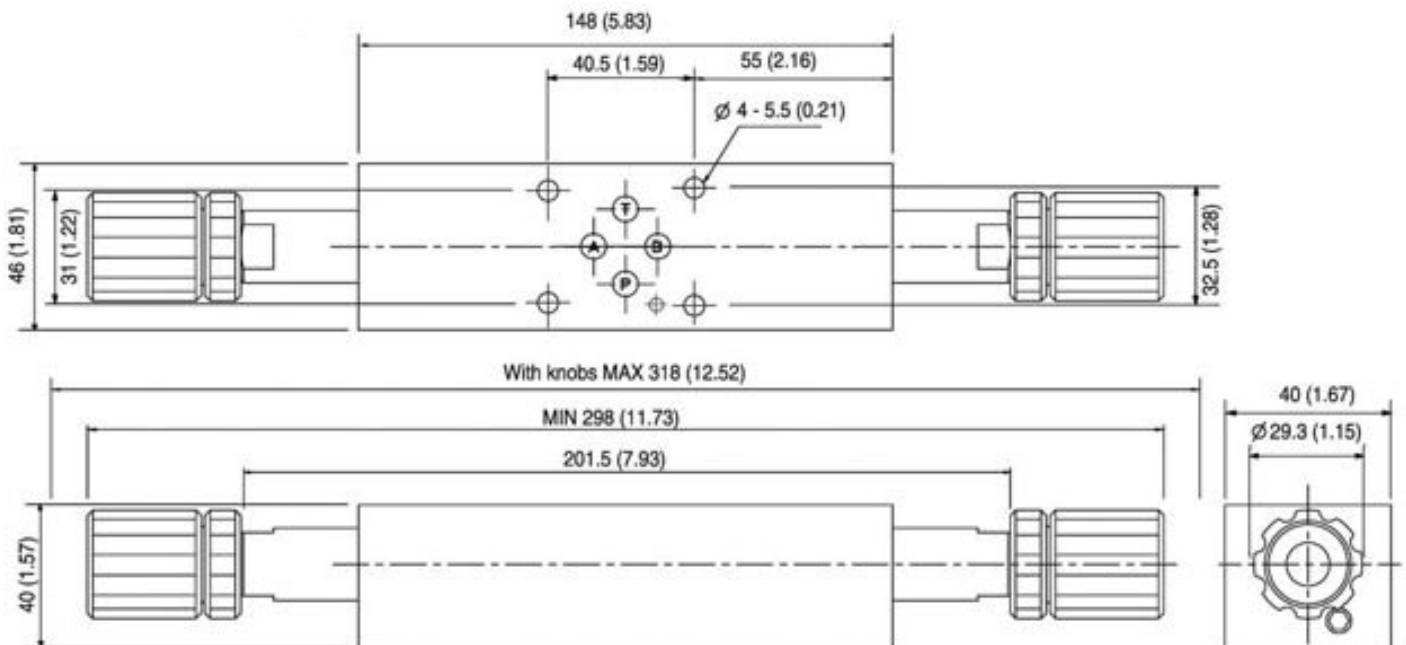
MRF-02C-K-\*\*



### DIMENSIONS

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

MRF-02D-K-\*\*



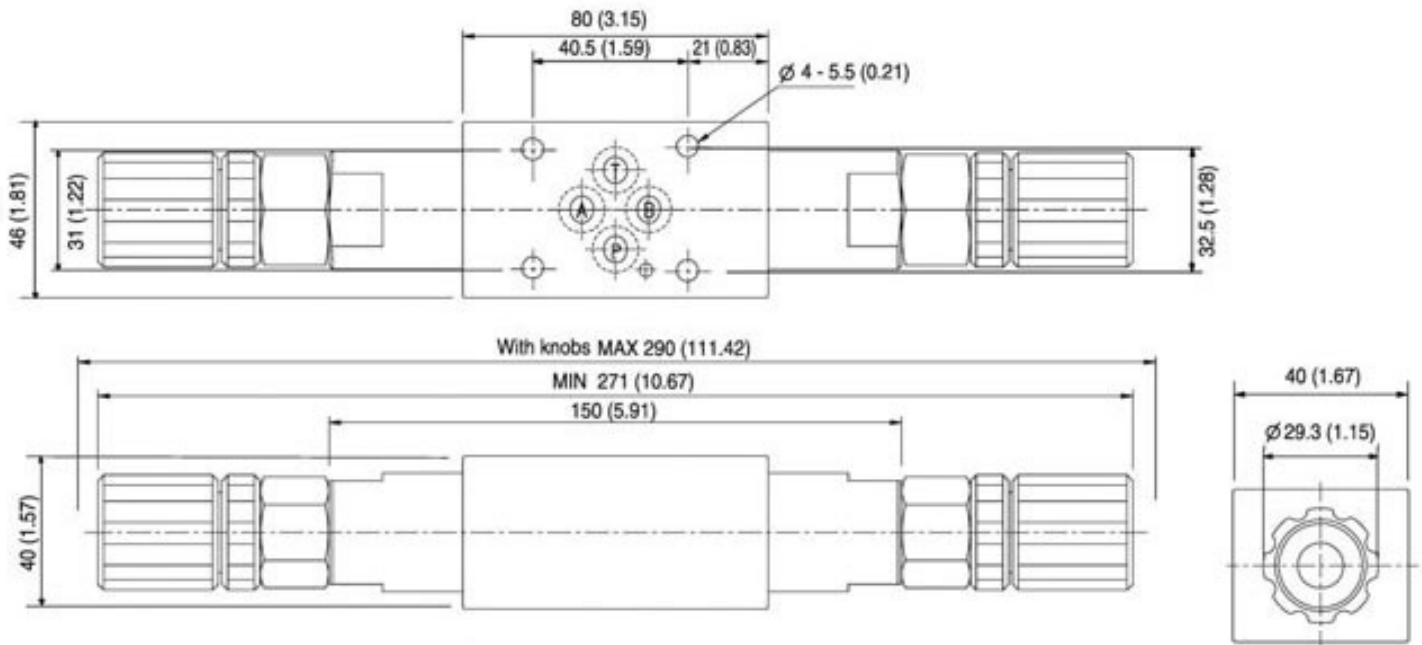
# MODULAR RELIEF VALVE

## MRF-02 SERIES

### DIMENSIONS

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

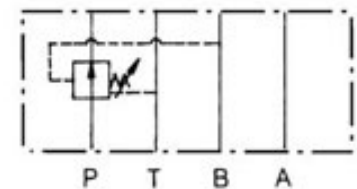
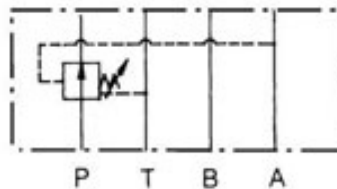
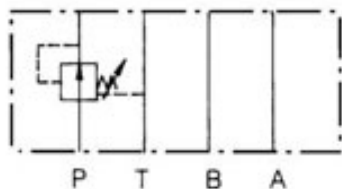


### FEATURES

•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

2

3

4

5

6

#### 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

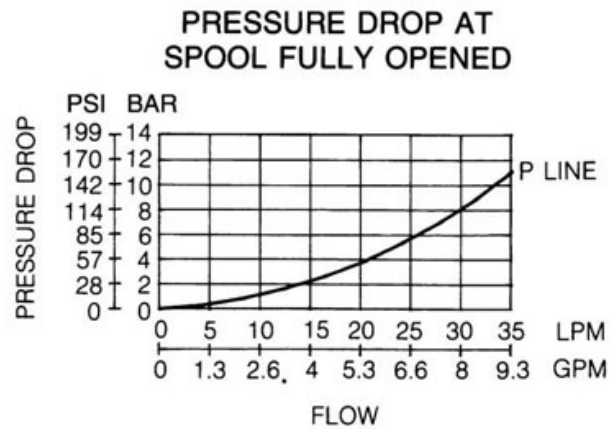
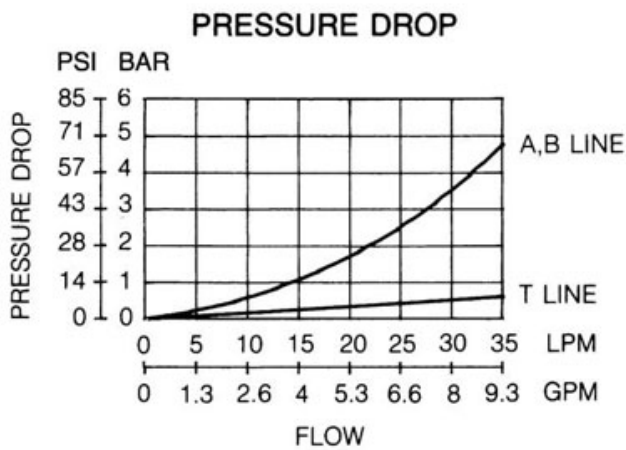
### SPECIFICATIONS

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

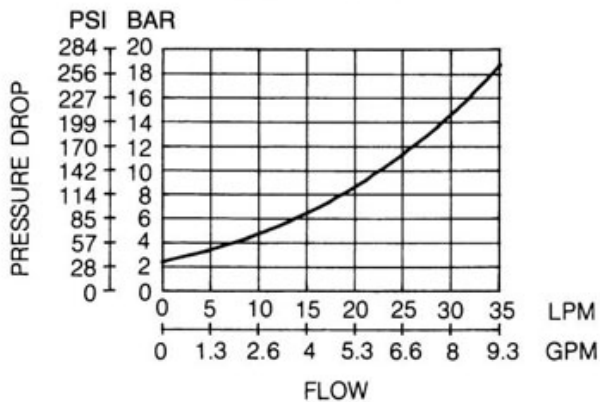
### PERFORMANCE CURVES

#### TEST CONDITIONS

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



#### MIN. ADJUSTMENT PRESSURE VS. MAX. FLOW



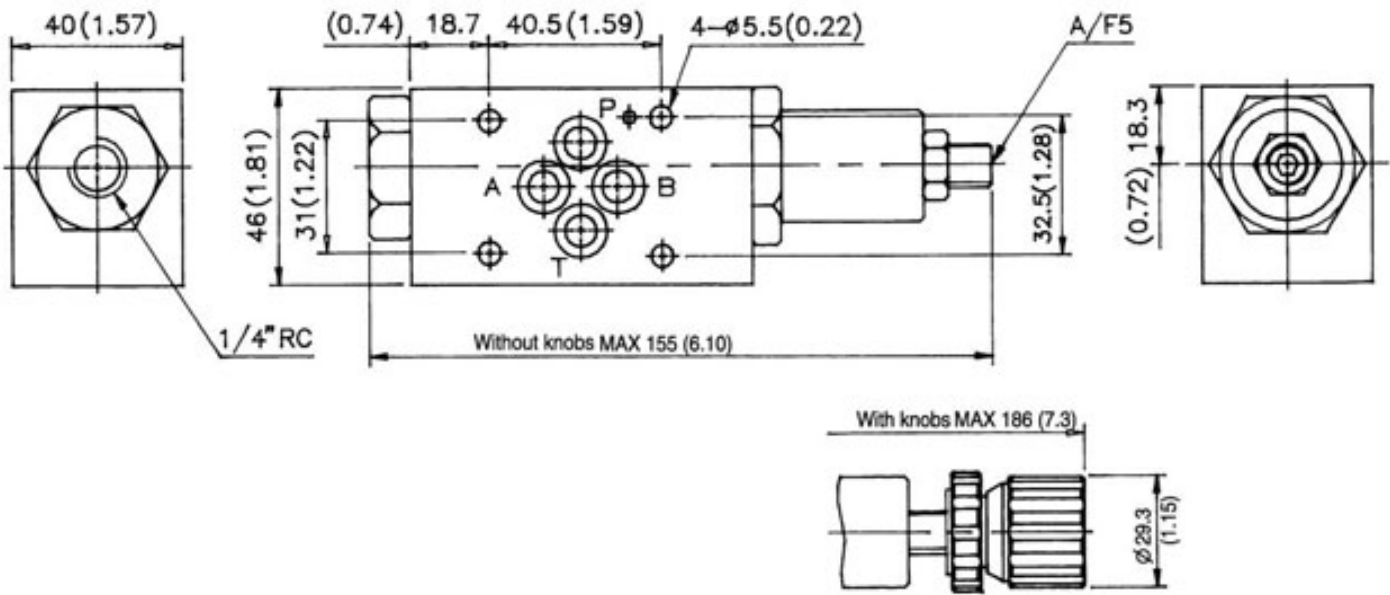
# MODULAR RELIEF VALVE

## 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

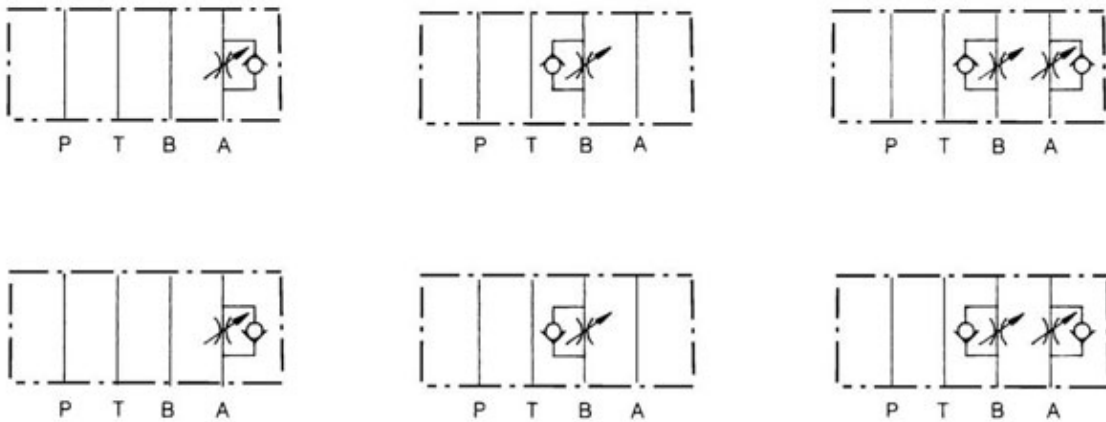


### FEATURES

•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

**5 Design Number**

# MODULAR THROTTLE AND CHECK VALVE MT-02 SERIES

## SPECIFICATIONS

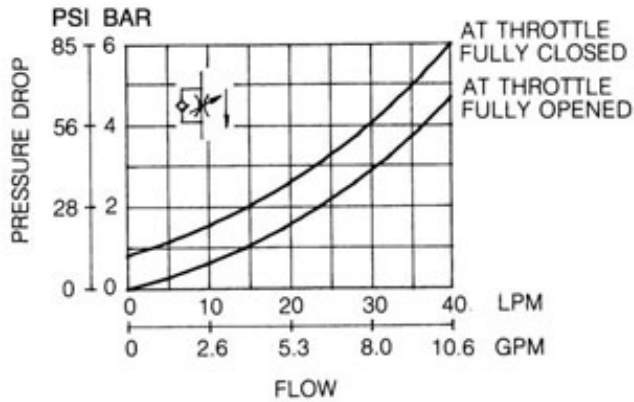
MAX. OPERATING PRESSURE	250 BAR (3675 PSI)
MAX. FLOW CAPACITY	35 LPM (9.3 GPM)

## PERFORMANCE CURVES

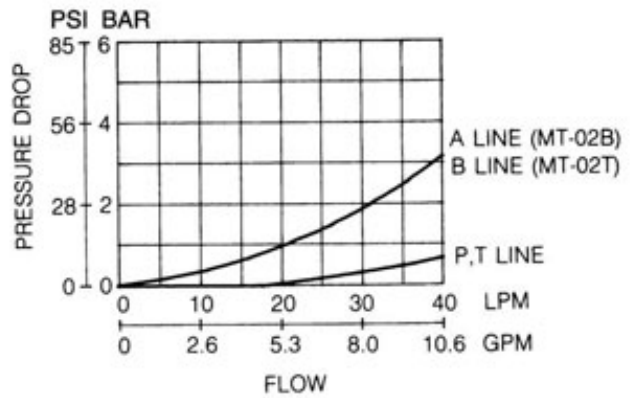
### TEST CONDITIONS

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

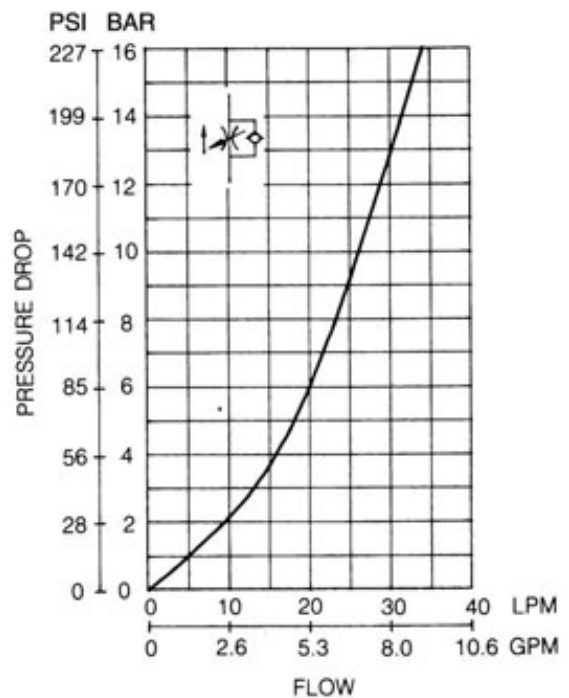
**PRESSURE DROP FOR FREE FLOW**



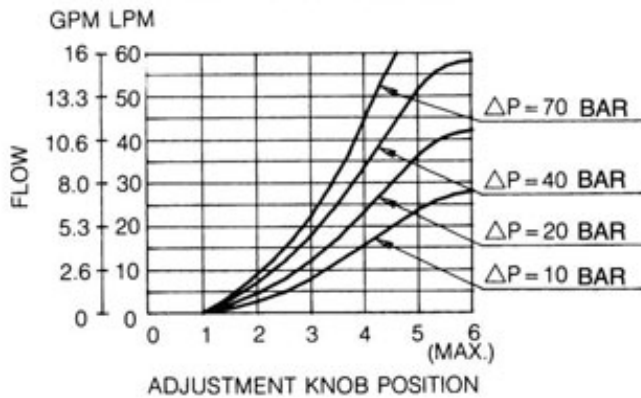
**PRESSURE DROP**



**PRESSURE DROP AT THROTTLE FULLY OPENED**



**METERED FLOW VS. DIAL POSITION**





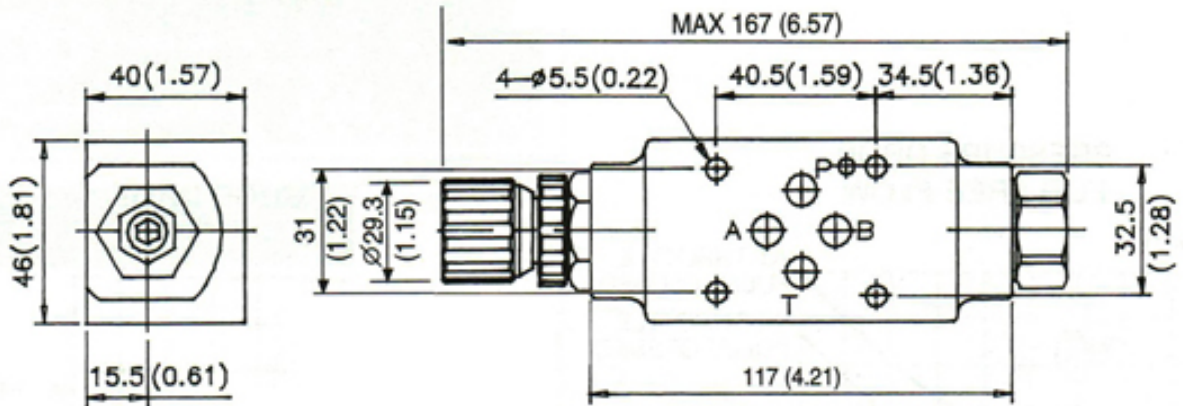
# MODULAR THROTTLE AND CHECK VALVE

## 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

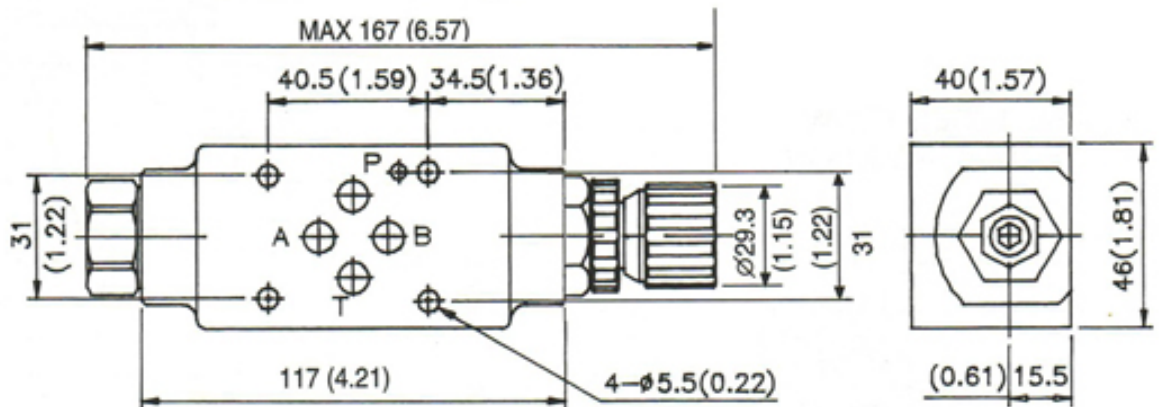


### DIMENSIONS

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

### MT-02B\*-40

### MT - 02B-K

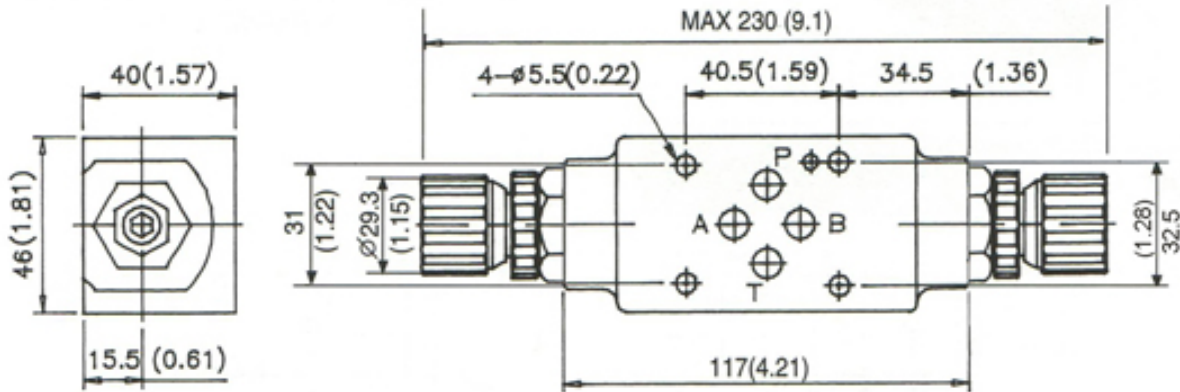


# MODULAR THROTTLE AND CHECK VALVE MT-02 SERIES

## DIMENSIONS

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

MT - 02W-K



# MODULAR CHECK VALVE

## MC-02 SERIES

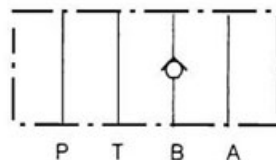
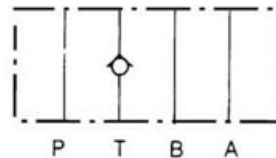


### FEATURES

•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 - \*\***

1      2   3      4      5

**1 Series**  
**MT:** Modular Check Valve

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

**2 Mounting Style**  
**02:** NFPA Size D03

**5 Design Number**

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

# MODULAR CHECK VALVE

## MC-02 SERIES

### SPECIFICATIONS

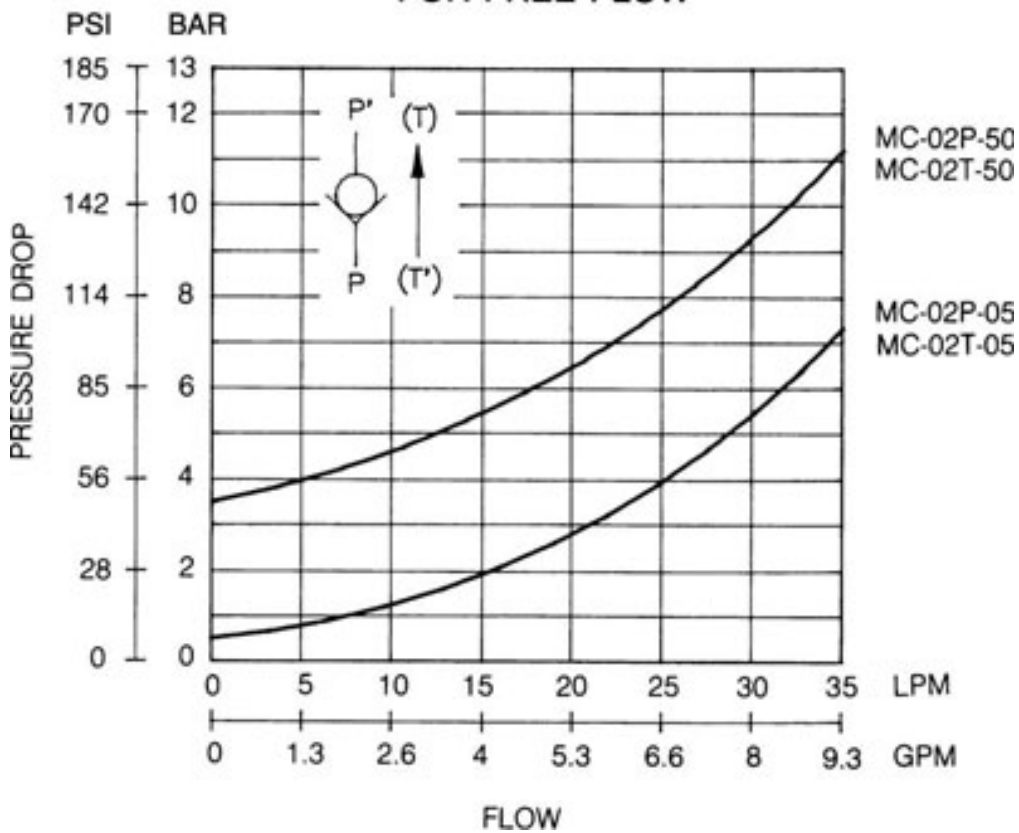
MAX. OPERATING PRESSURE	250 BAR (3675 PSI)
MAX. FLOW CAPACITY	35 LPM (9.3 GPM)

### PERFORMANCE CURVES

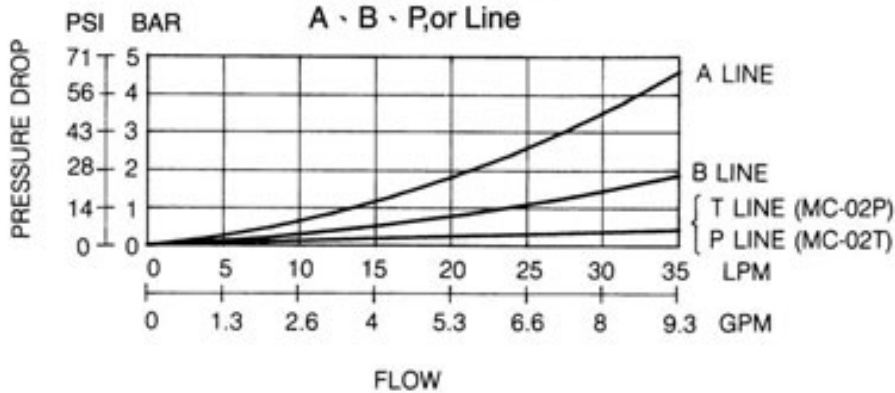
#### TEST CONDITIONS

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

#### PRESSURE DROP FOR FREE FLOW



#### PRESSURE DROP A, B, P, or Line

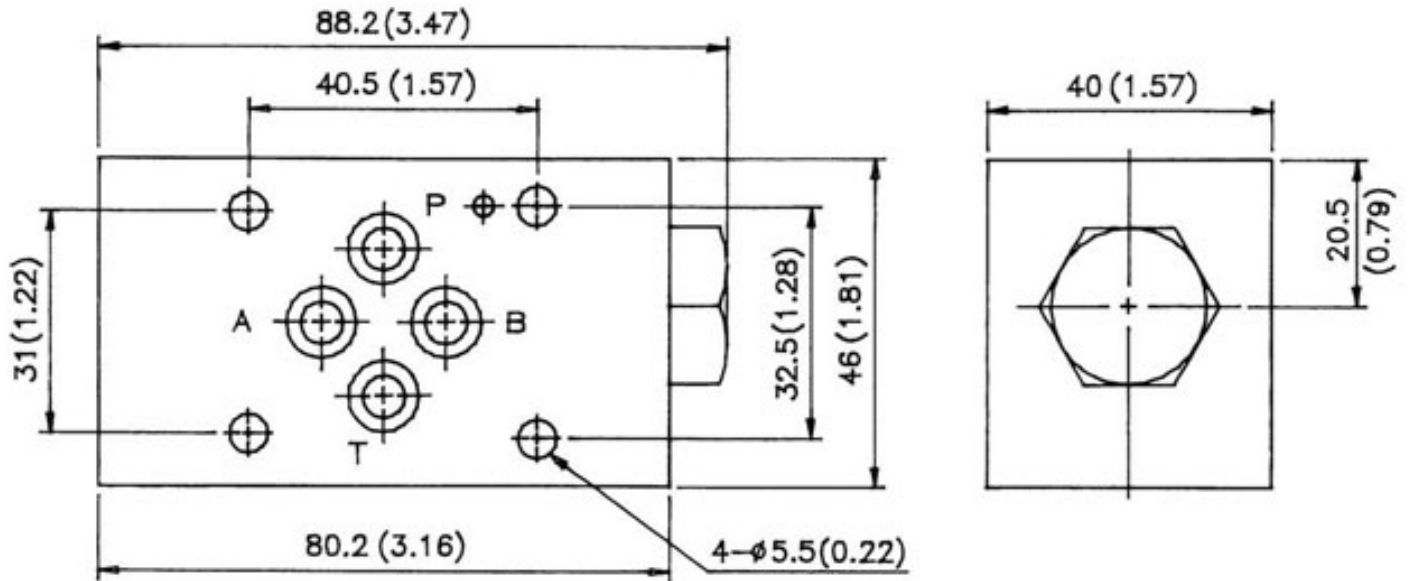


## MODULAR CHECK VALVE MC-02 SERIES

### DIMENSIONS

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

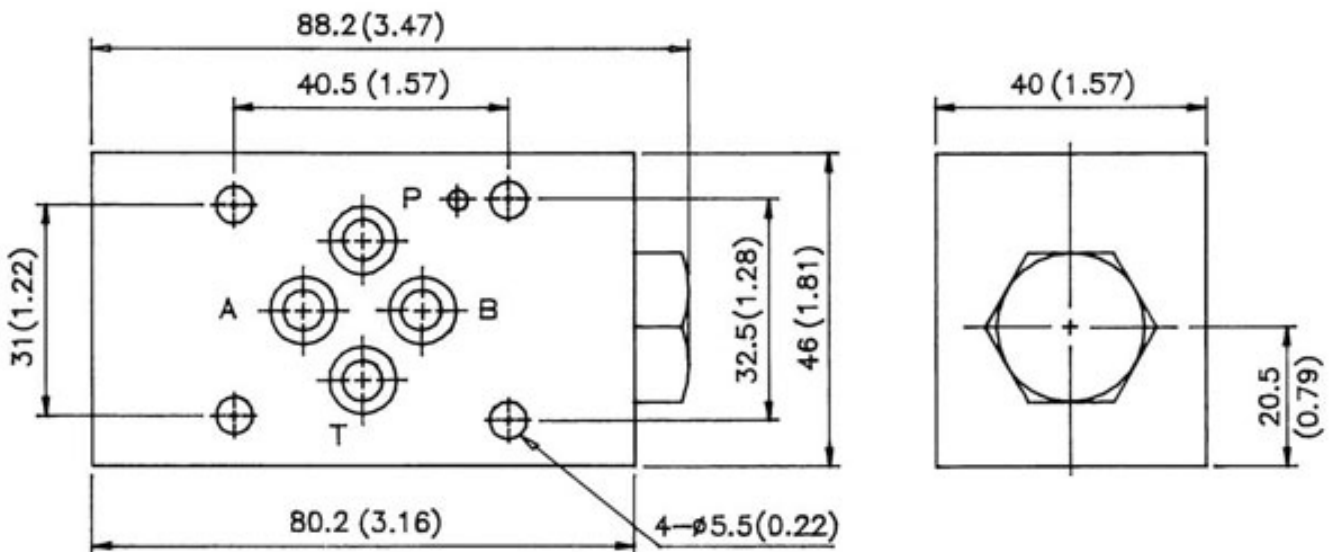
MC-02P- \*\* -40



### DIMENSIONS

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

MC-02T- \*\* -40

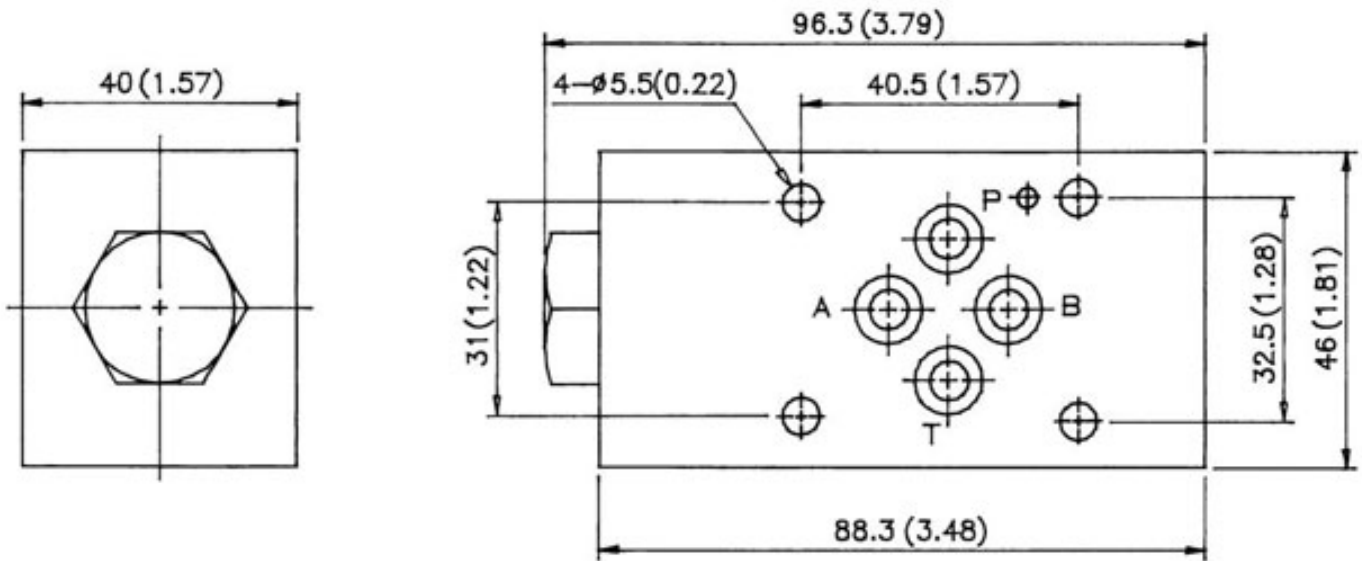


**MODULAR CHECK VALVE**  
**MC-02 SERIES**

**DIMENSIONS**

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

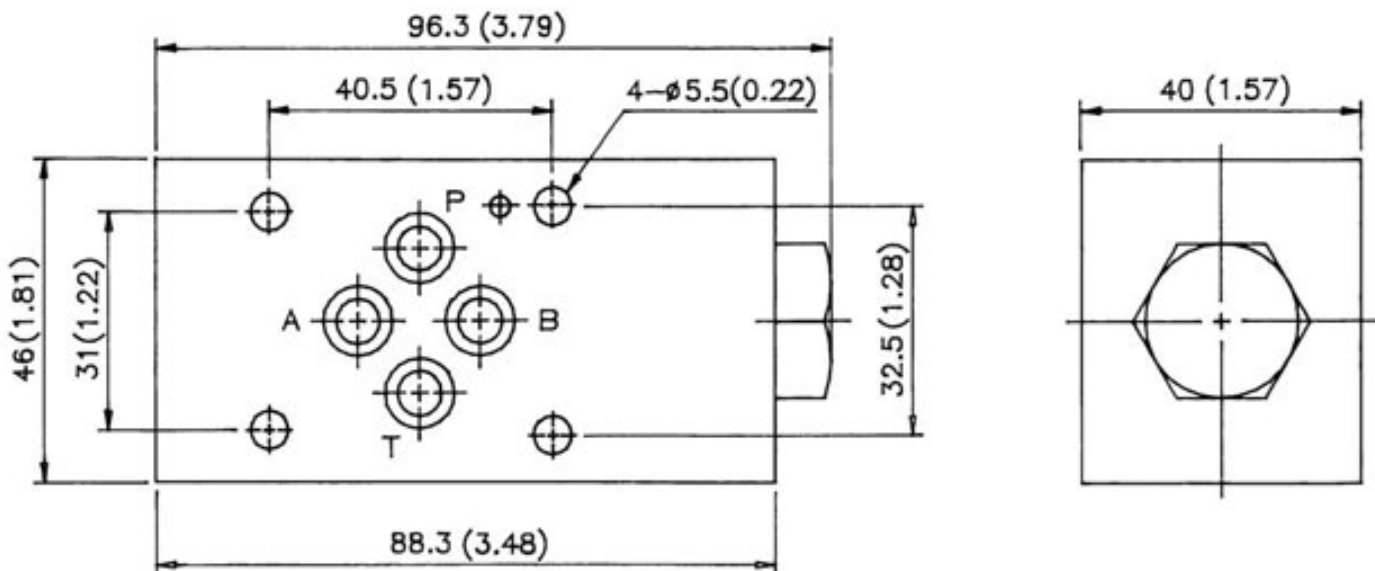
MC-02A- \*\* -40



**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

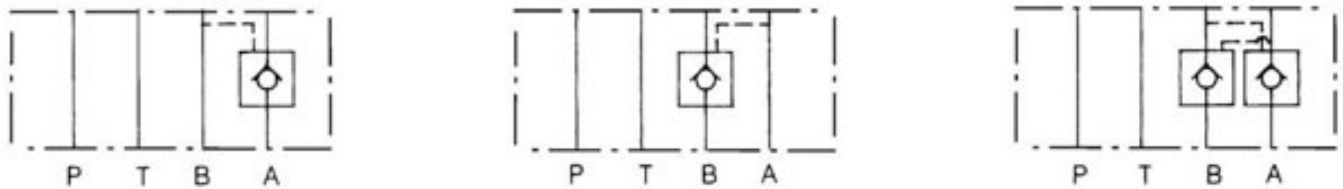


#### FEATURES

•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            2   3            4            5

**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**

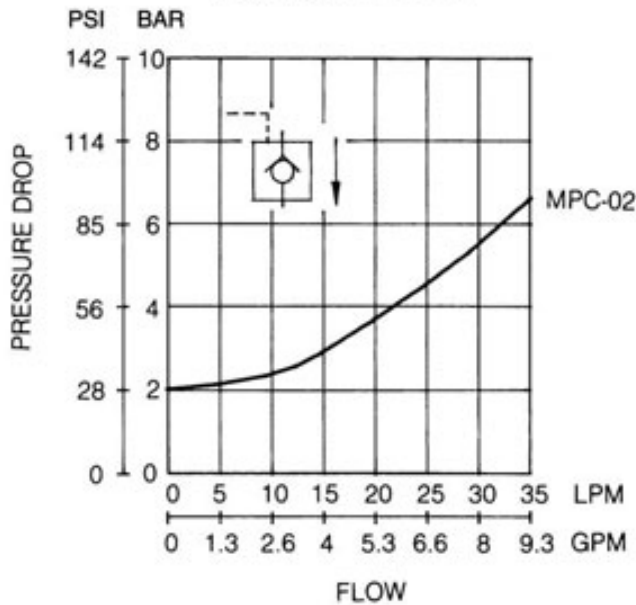
# MODULAR PILOT CHECK VALVE MPC-02 SERIES

## SPECIFICATIONS

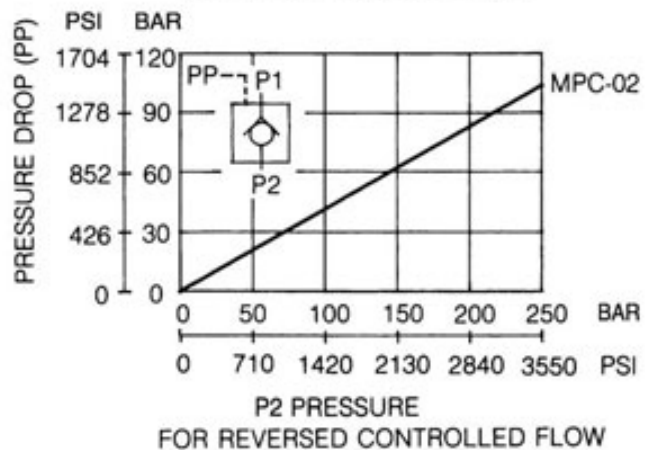
MAX. OPERATING PRESSURE 250 BAR (3675 PSI)  
 MAX. FLOW CAPACITY 35 LPM (9.3 GPM)

Internal Leakage: 0.1 cc/minute (2 drops/minute) MAX. at 207 BAR(3000 PSI).

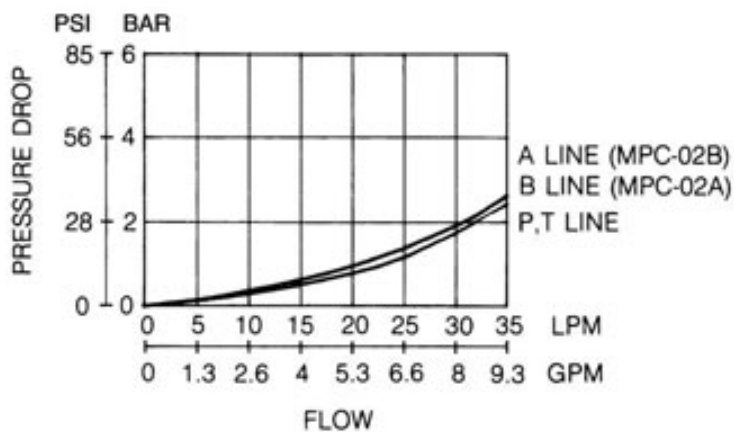
**PRESSURE DROP  
FOR FREE FLOW**



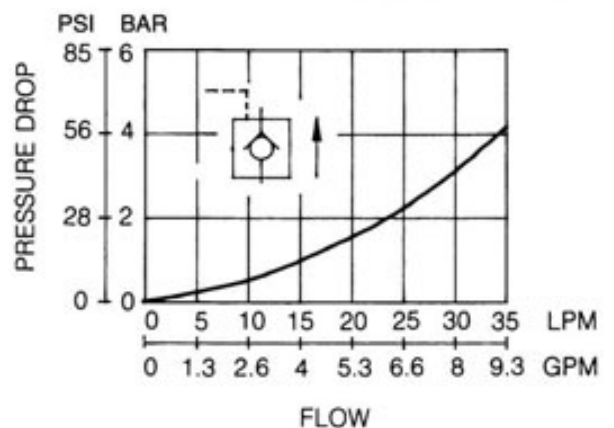
**MIN. PILOT PRESSURE**



**PRESSURE DROP**



**PRESSURE DROP FOR  
REVERSE CONTROLLED FLOW**



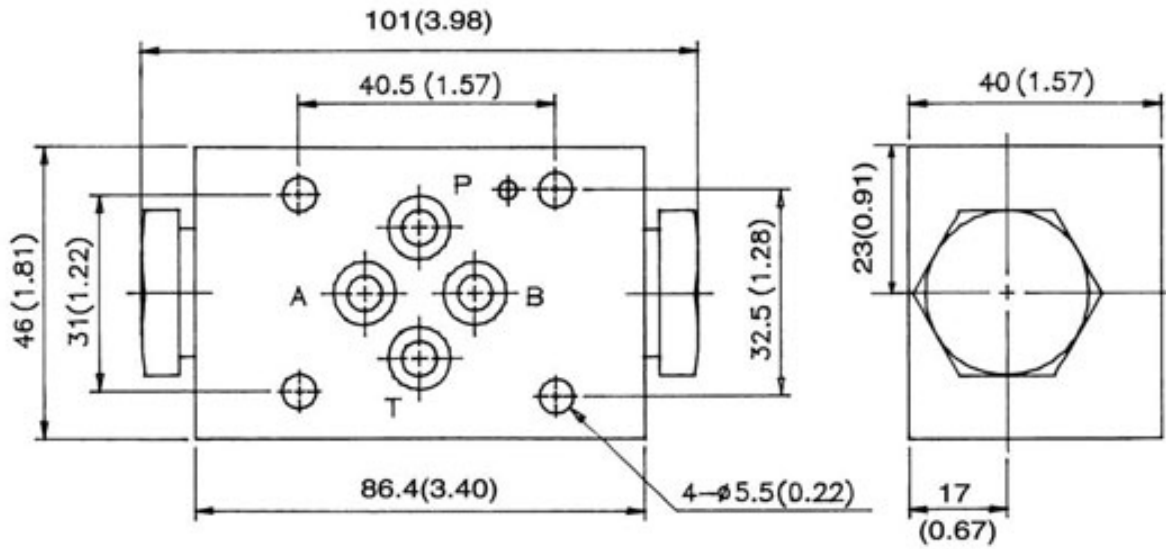


# MODULAR PILOT CHECK VALVE MPC-02 SERIES

## 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 - \*\***

1      2   3      4      5      6

**1 Series**  
**MRF:** Modular Relief Valve

**2 Mounting Style**  
**03:** NFPA Size D05

**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-03 SERIES

### SPECIFICATIONS

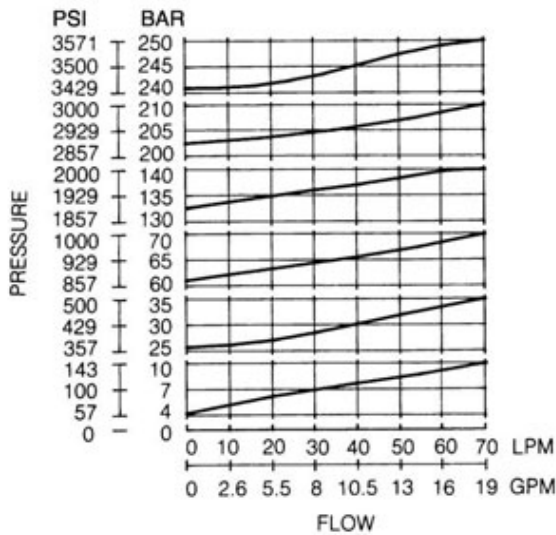
MAX. OPERATING PRESSURE	250 BAR (3675 PSI)
MAX. FLOW CAPACITY	35 LPM (9.3 GPM)

### PERFORMANCE CURVES

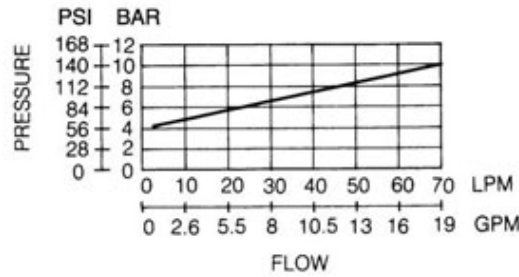
#### TEST CONDITIONS

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

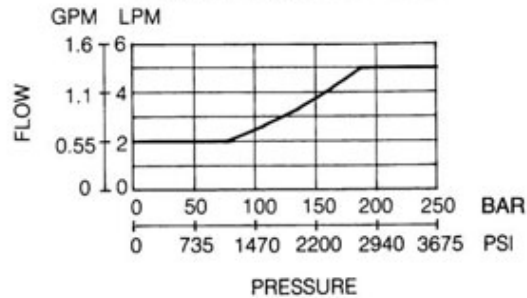
**NOMINAL OVERRIDE CHARACTERISTICS**



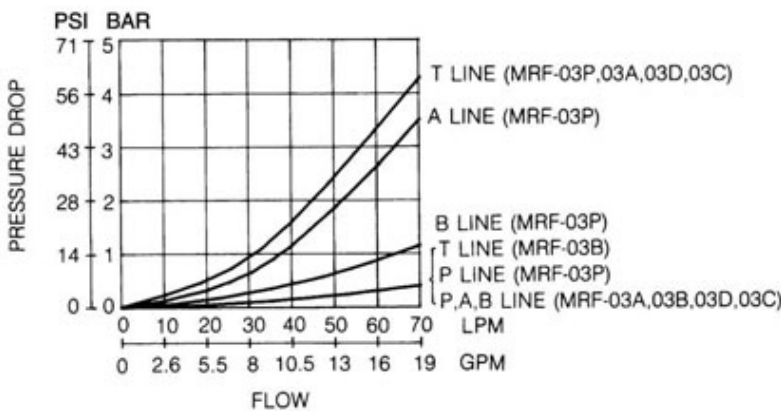
**MIN ADJUSTMENT PRESSURE**



**MIN. FLOW VS. ADJUSTMENT PRESSURE**



**PRESSURE DROP**



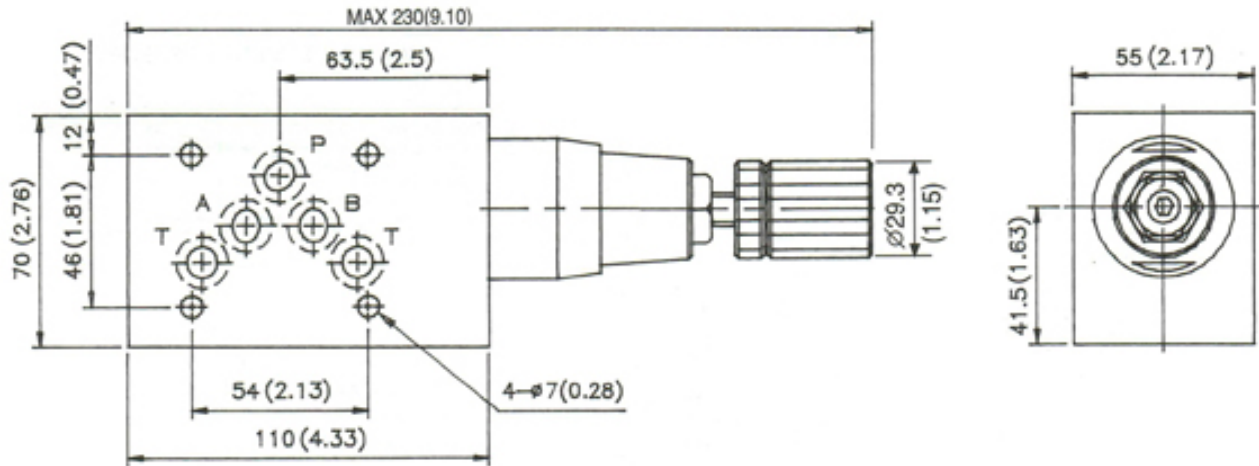
# MODULAR RELIEF VALVE

## MRF-03 SERIES

### DIMENSIONS

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

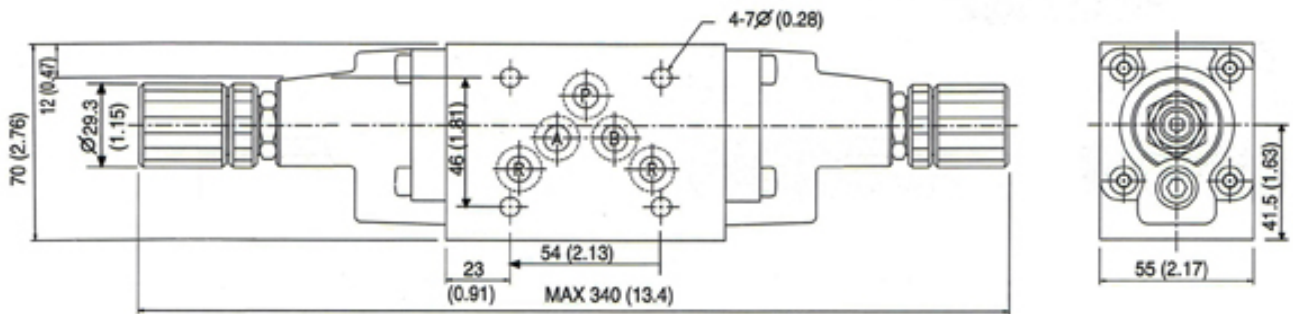
MRF - 03A/B/P-K



### DIMENSIONS

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

MRF - 03C -K



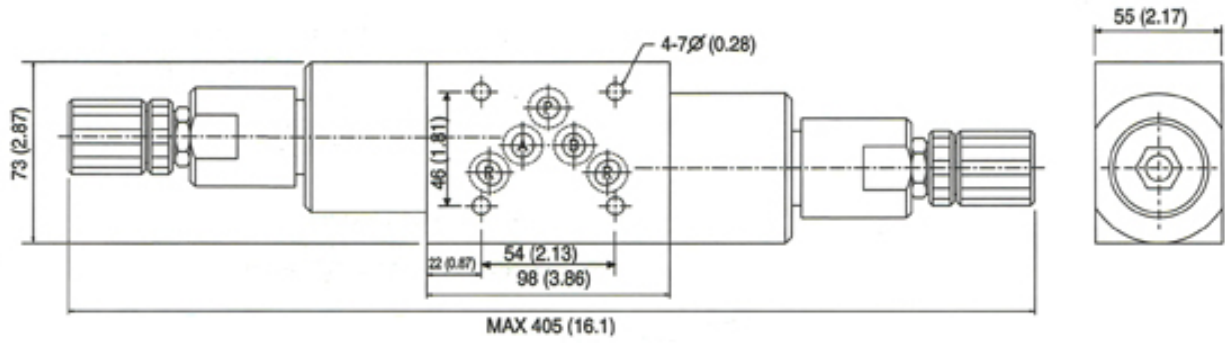
# MODULAR RELIEF VALVE

## MRF-03 SERIES

### DIMENSIONS

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

MRF - 03D - K



## MODULAR PRESSURE REDUCING VALVE

### MPR-03 SERIES

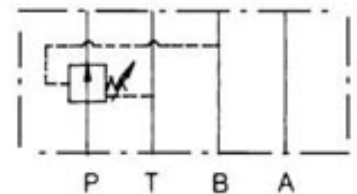
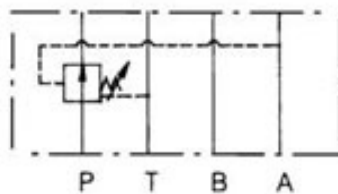
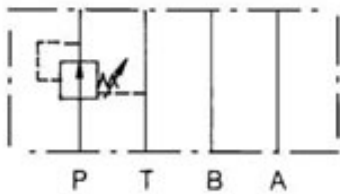


#### FEATURES

•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**

1

2

3

4

5

6

#### 1 Series

**MPR:** Modular Pressure Reducing Valve

#### 2 Mounting Style

**03:** NFPA Size D05

#### 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 PRESSURE REDUCING VALVE

## MPR-03 SERIES

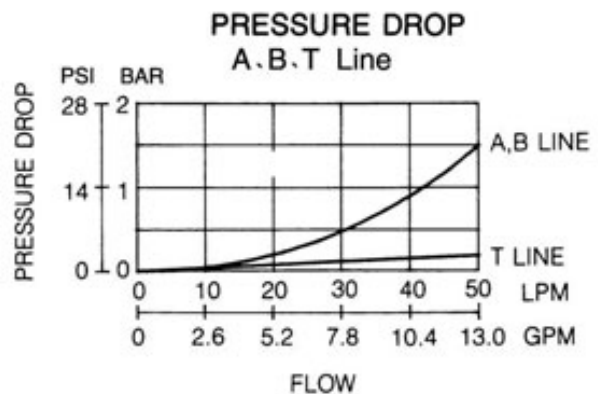
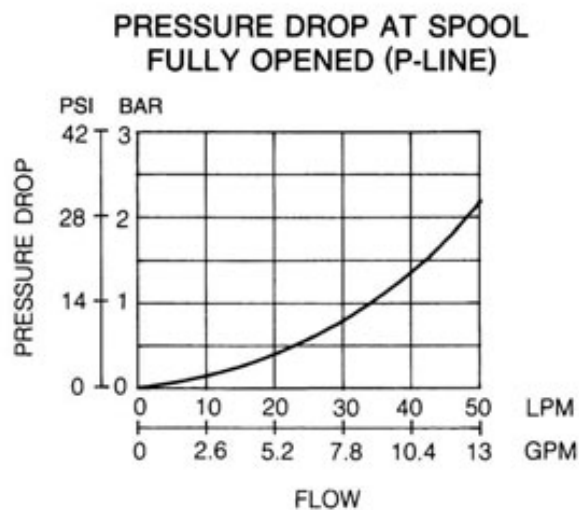
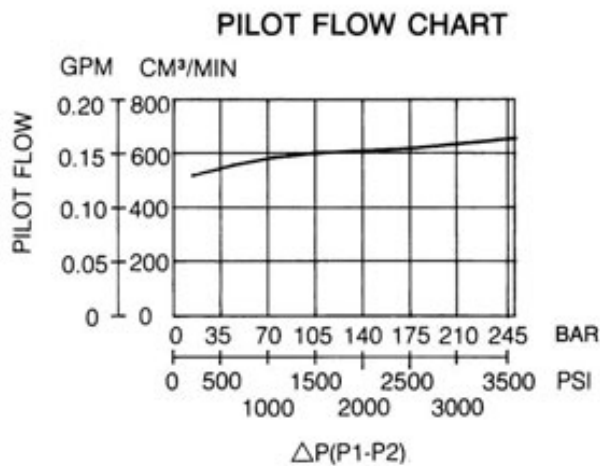
### SPECIFICATIONS

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 THROTTLE AND CHECK VALVE

## MT-03 SERIES

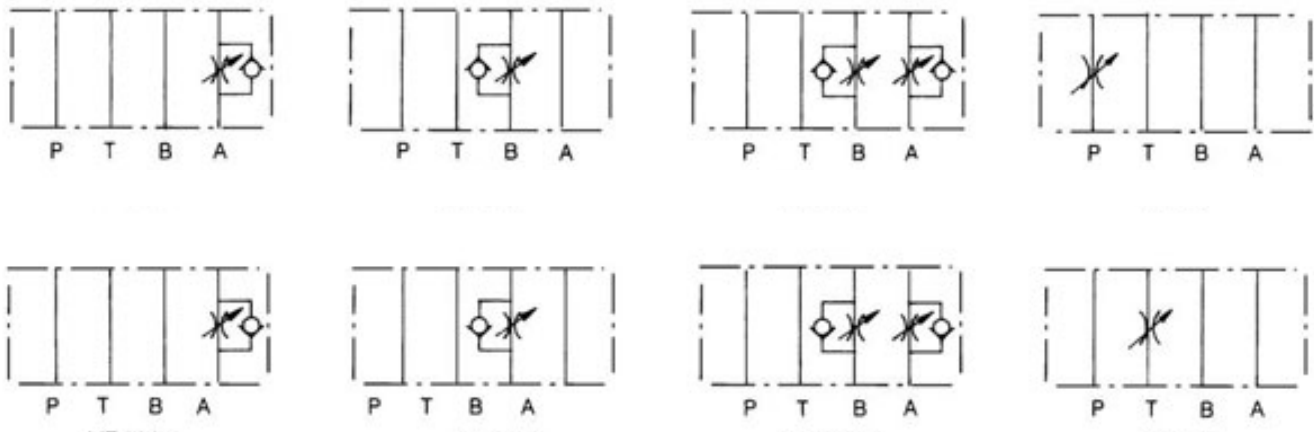


### FEATURES

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 2 3 4 5 6

**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

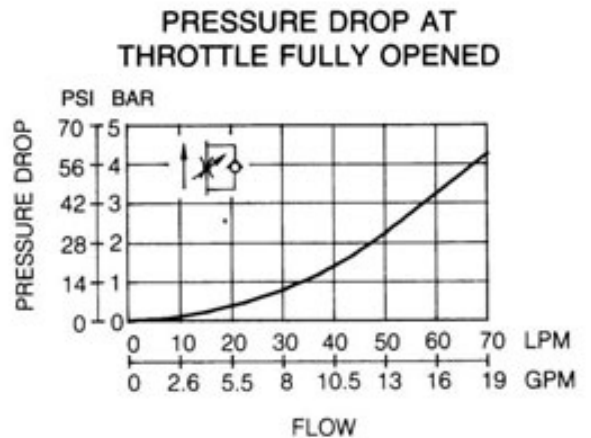
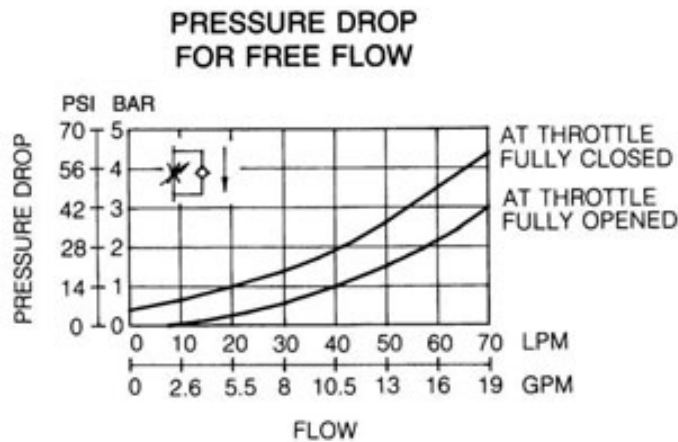
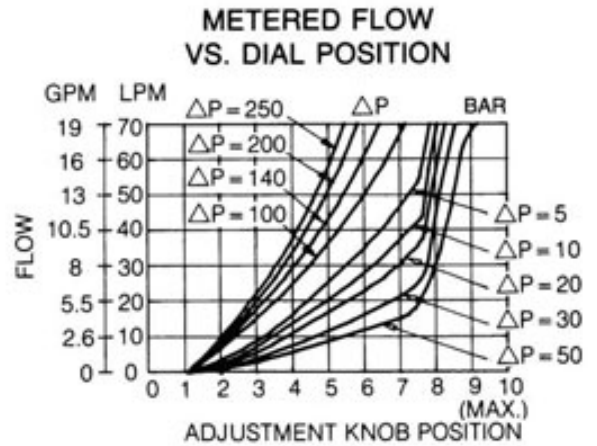
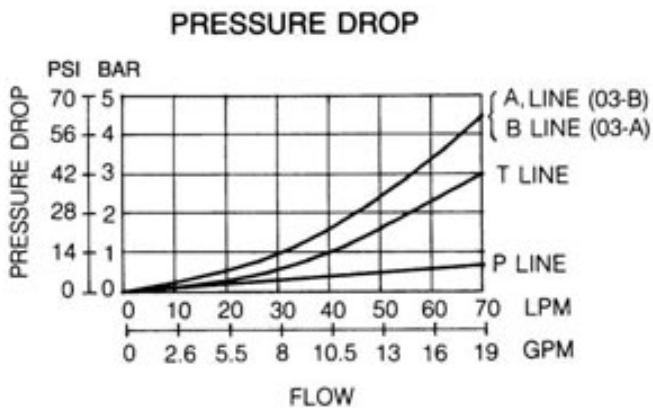
MAX. OPERATING PRESSURE 250 BAR (3675 PSI)  
MAX. FLOW CAPACITY 35 LPM (9.3 GPM)

## PERFORMANCE CURVES

Models with MT-03W/A/B

### TEST CONDITIONS

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



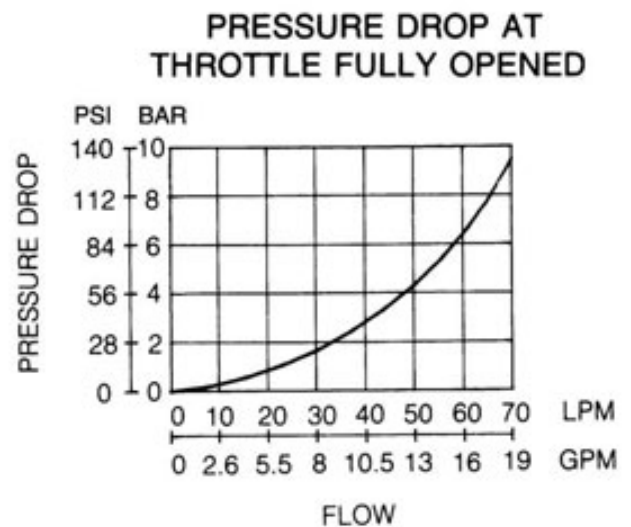
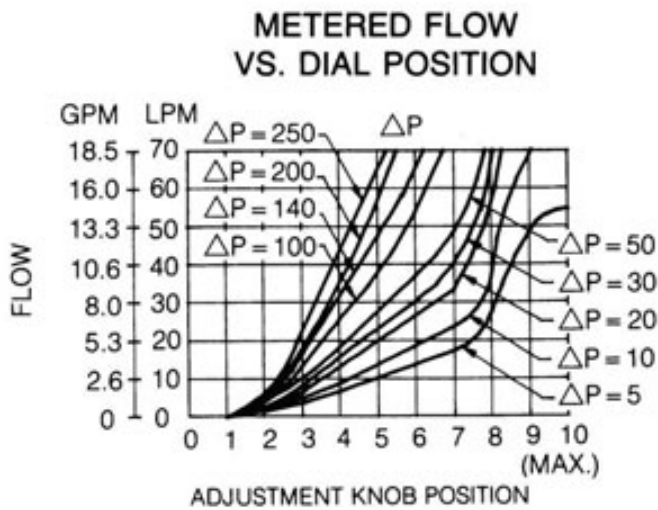
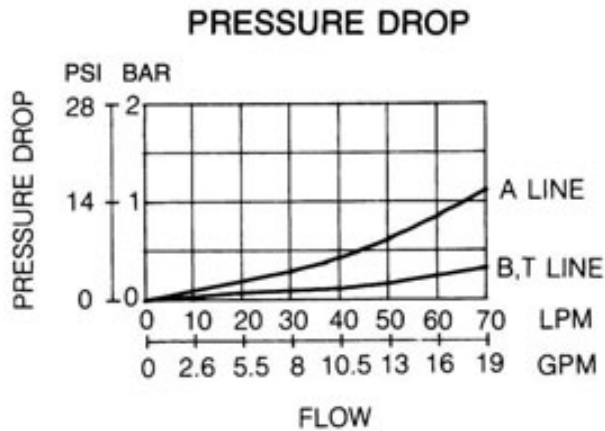
# MODULAR THROTTLE AND CHECK VALVE MT-03 SERIES

## PERFORMANCE CURVES

Models with MT-P/T

### TEST CONDITIONS

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

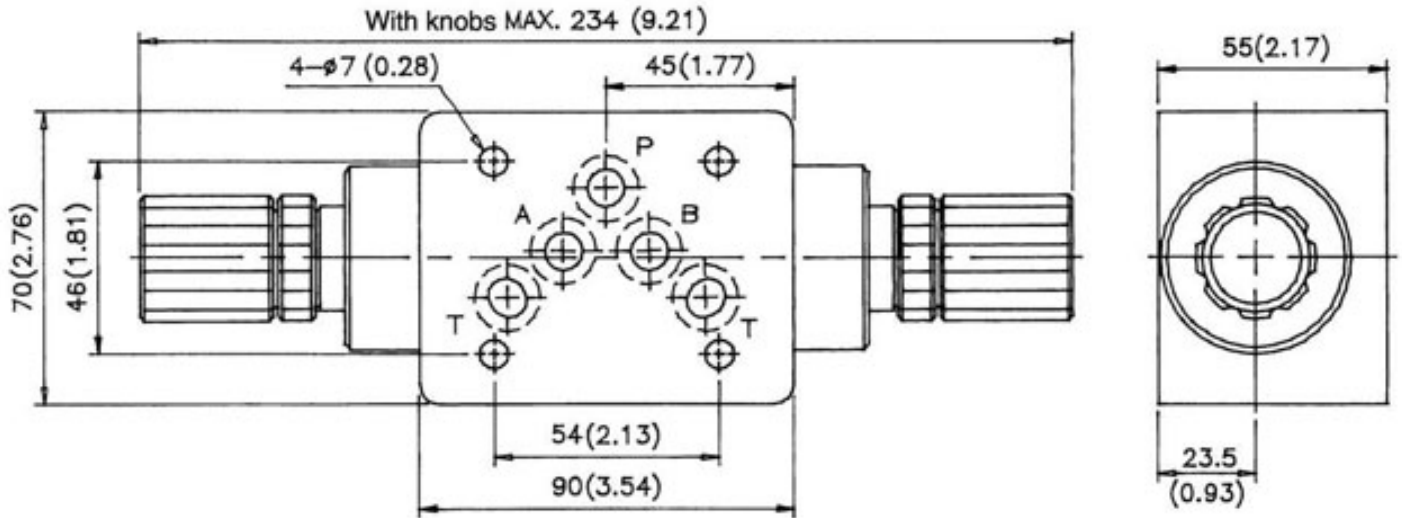


# MODULAR THROTTLE AND CHECK VALVE MT-03 SERIES

## DIMENSIONS

UNIT: mm(inch) WEIGHT: 2.8 kgs(6.171 lbs) Mounting Surface: ISO 4401-AB-03-4-A

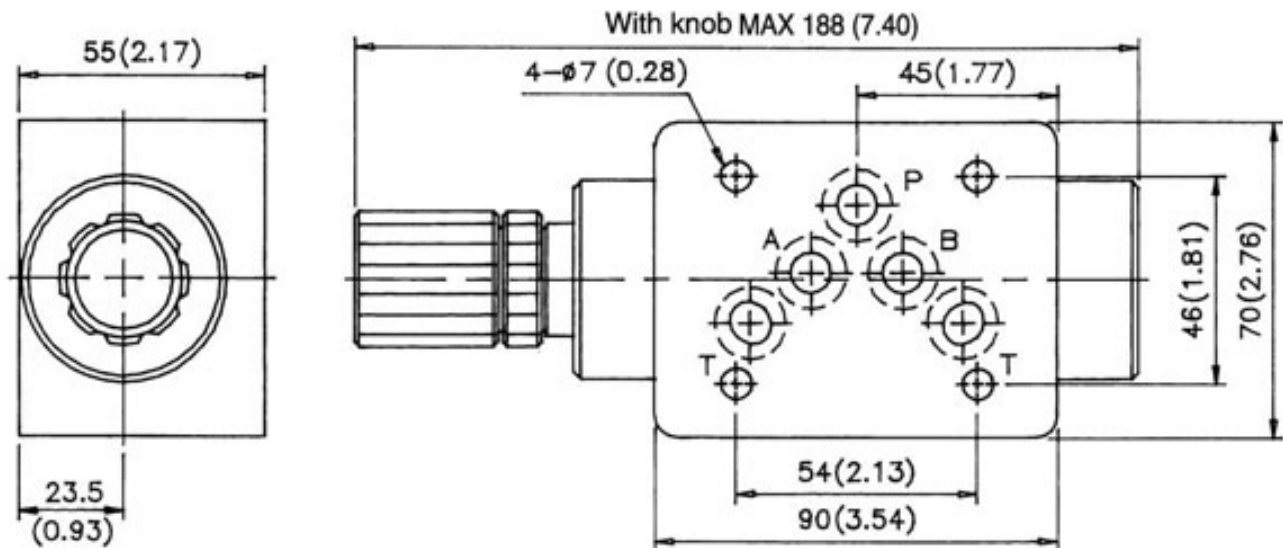
MT-03W-\*-\*-\*40



## DIMENSIONS

UNIT: mm(inch) WEIGHT: 2.8 kgs(6.171 lbs) Mounting Surface: ISO 4401-AB-03-4-A

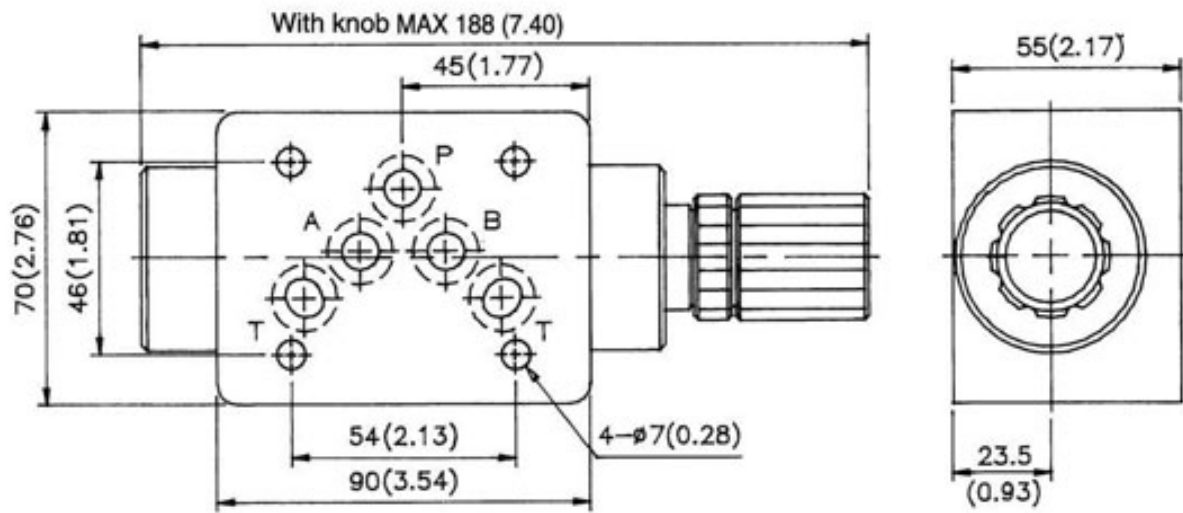
MT-03A-\*-\*-\*40



# MODULAR THROTTLE AND CHECK VALVE MT-03 SERIES

**DIMENSIONS**  
MT-03B-\*-40

UNIT: mm(inch) WEIGHT: 2.8 kgs(6.171 lbs) Mounting Surface: ISO 4401-AB-03-4-A



# MODULAR CHECK VALVE

## MC-03 SERIES

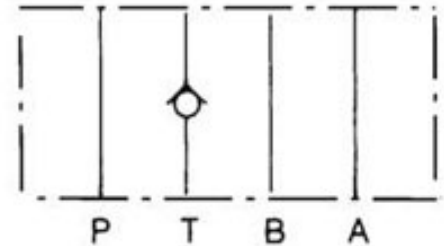
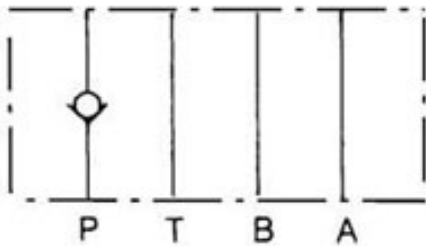


### FEATURES

- 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

**4 Cracking Pressure**

**05:** 0.5 BAR (7 PSI)

**50:** 3.5 BAR (50 PSI)

**2 Mounting Style**

**03:** NFPA Size D05

**5 Design Number**

**3 Function Port**

**P:** P Port

**T:** T Port

**A:** A Port

**B:** B Port



# MODULAR CHECK VALVE

## MC-03 SERIES

### SPECIFICATIONS

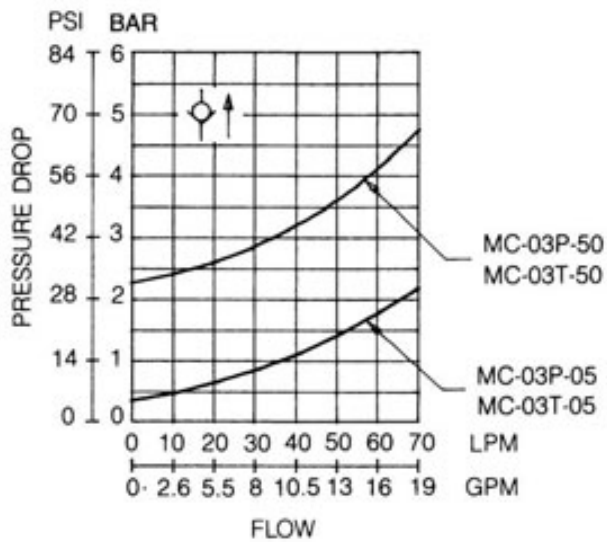
MAX. OPERATING PRESSURE	250 BAR (3675 PSI)
MAX. FLOW CAPACITY	35 LPM (9.3 GPM)

### PERFORMANCE CURVES

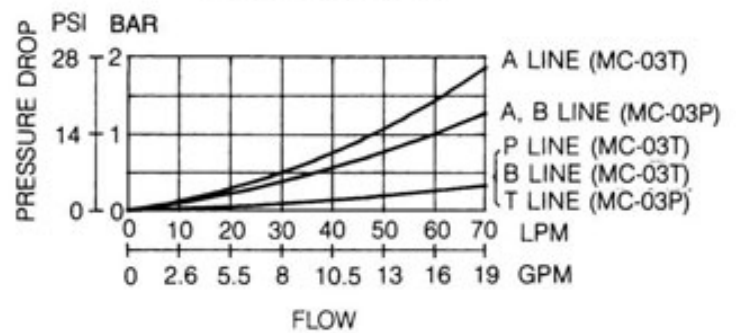
#### TEST CONDITIONS

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

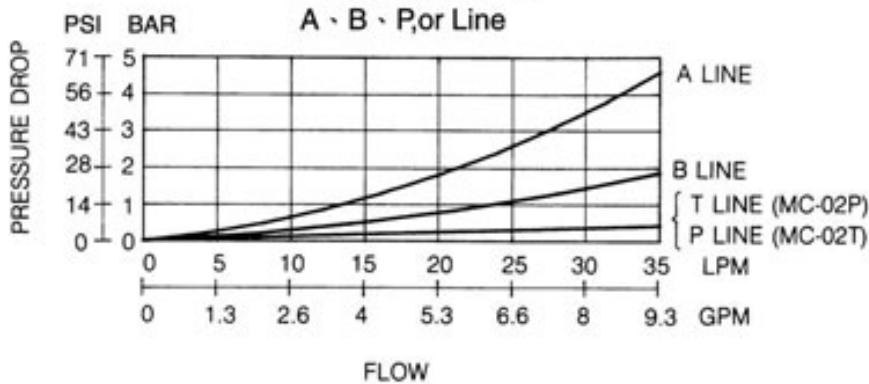
**PRESSURE DROP FOR FREE FLOW**



**PRESSURE DROP**



**PRESSURE DROP A, B, P, or Line**



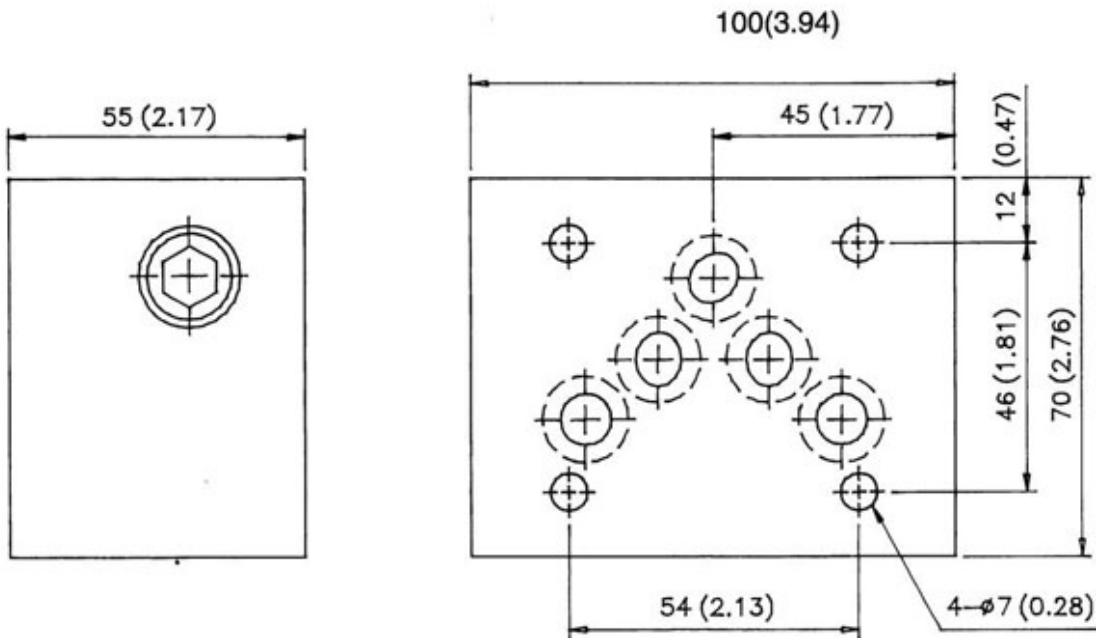
# MODULAR CHECK VALVE

## 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

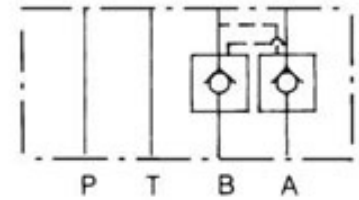
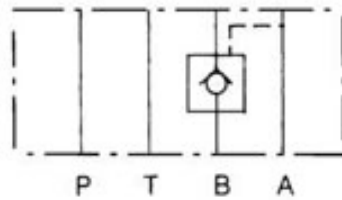


### FEATURES

•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

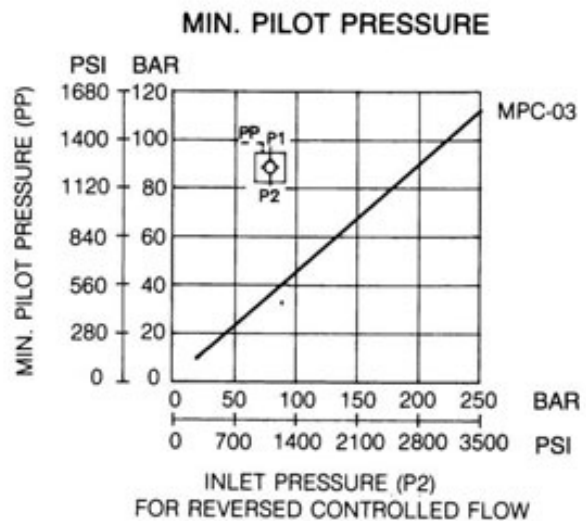
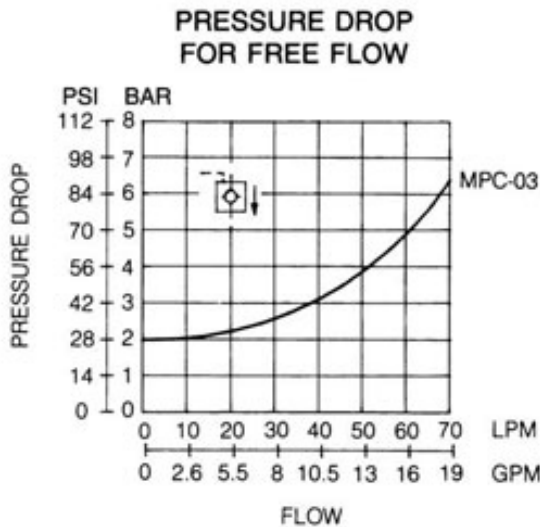
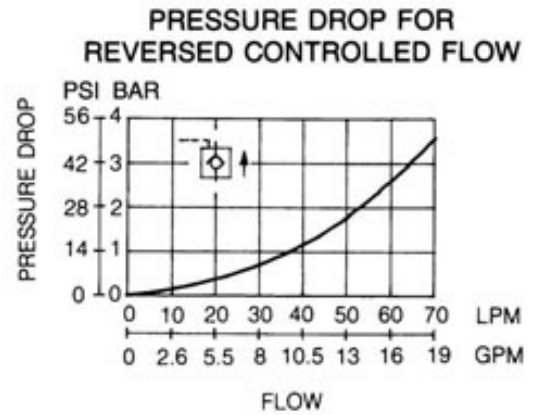
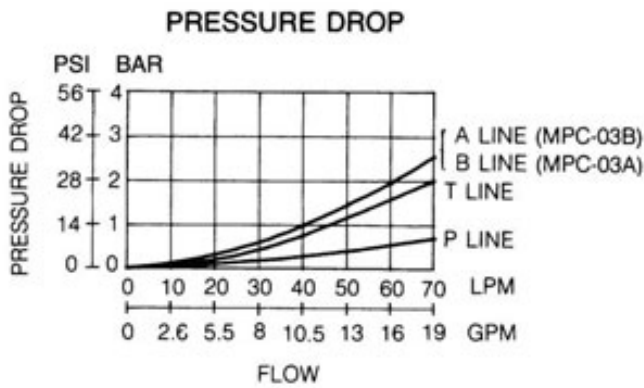
## SPECIFICATIONS

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)



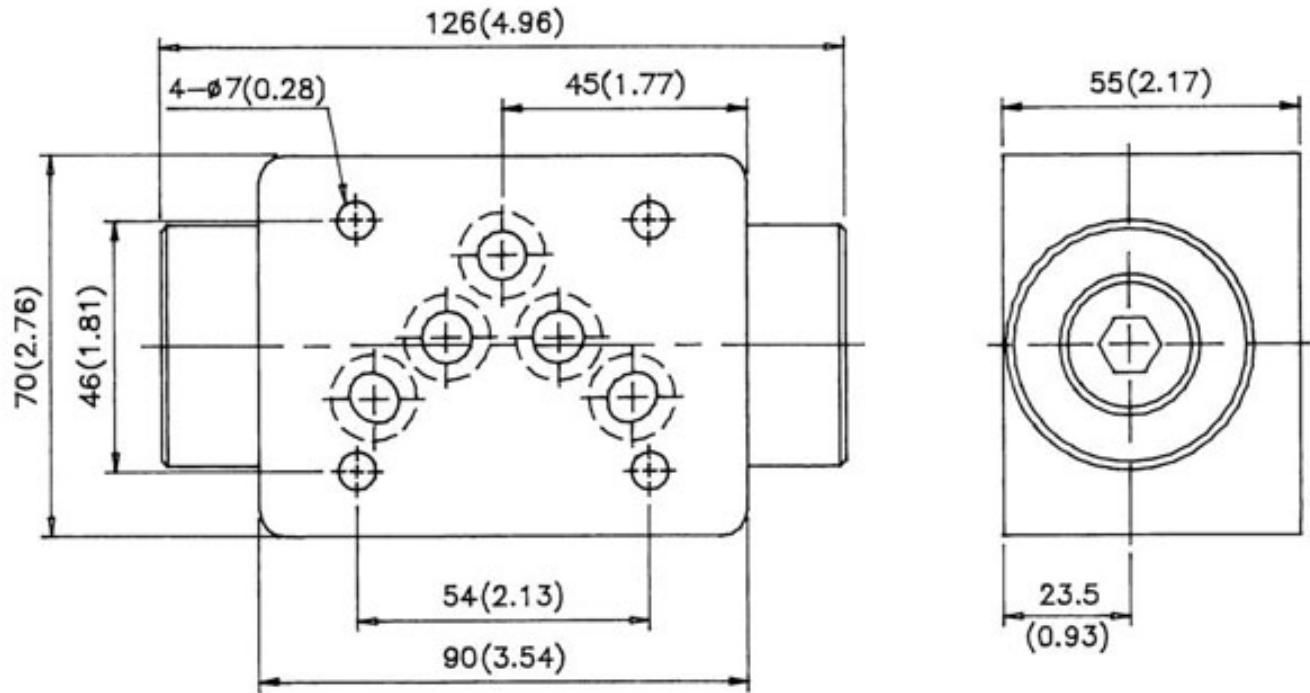
# MODULAR PILOT CHECK VALVE

## 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

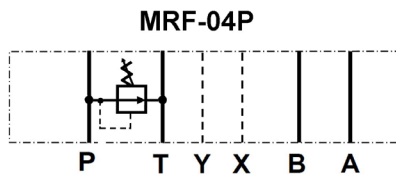
•The modular adjustable relief valve is designed to limit the operating pressure in a hydraulic system to a maximum set pressure. The internal piston moves to smoothly relieve the pressure when the system pressure reaches the desired setting, maintaining stable pressure control and repeatability.



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    
 2 3    
 4    
 5    
 6

**1 Series**  
**MRF:** Modular Relief Valve

**4 Adjustment Style**  
**K:** Adjusting Knob

**2 Mounting Style**  
**04:** NFPA Size D07

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

**3 Function Port**  
**P:** P Port

**6 Design Number**

# MODULAR RELIEF VALVE

## MRF-04 SERIES

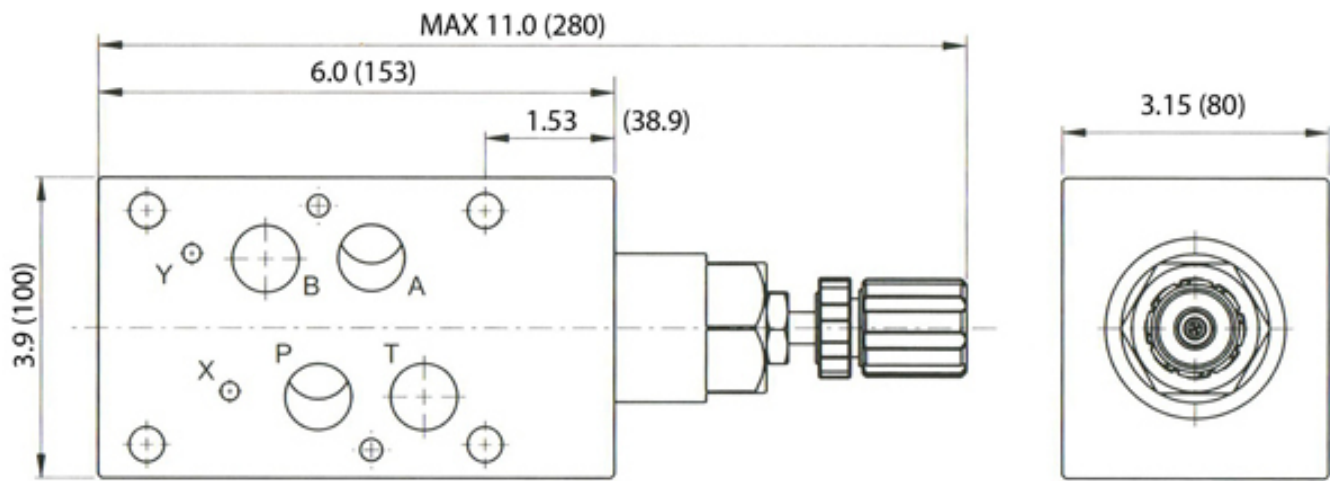
### SPECIFICATIONS

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

### DIMENSIONS

MRF-04P

Inch (mm)



# MODULAR PRESSURE REDUCING VALVE

## MPR-04 SERIES

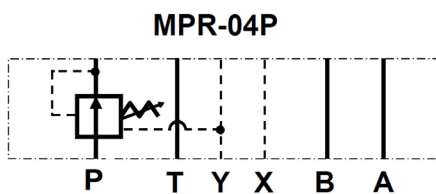


### FEATURES

•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

**MPR - 04 P - K - 2 - \*\***

1
2
3
4
5
6

**1 Series**  
**MPR:** Modular Pressure Reducing Valve

**2 Mounting Style**  
**04:** NFPA Size D07

**3 Function Port**  
**P:** P Port

**4 Adjustment Style**  
**K:** Adjusting Knob

**5 Pressure Adj. Range**  
**2:** 35-40 BAR (500-2000 PSI)

**6 Design Number**



# MODULAR PRESSURE REDUCING VALVE

## MPR-04 SERIES

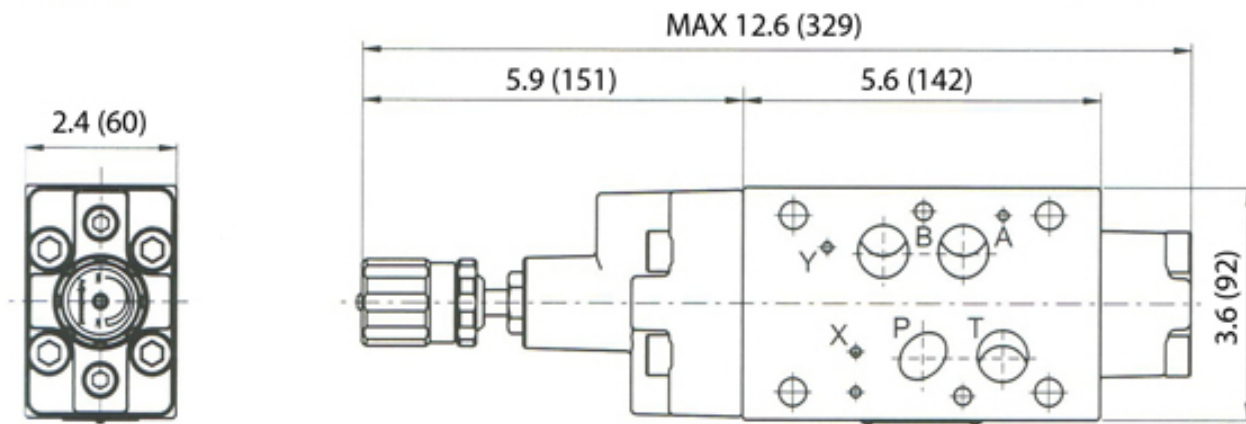
### SPECIFICATIONS

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

### DIMENSIONS

MPR-04P

Inch (mm)



## MODULAR THROTTLE AND CHECK VALVE MT-04 SERIES

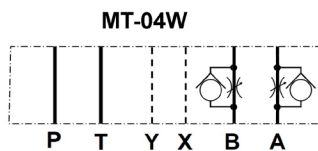


### FEATURES

- 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



### Model Code

**MT - 04 W - K - \*\***

1 2 3 4 5

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**

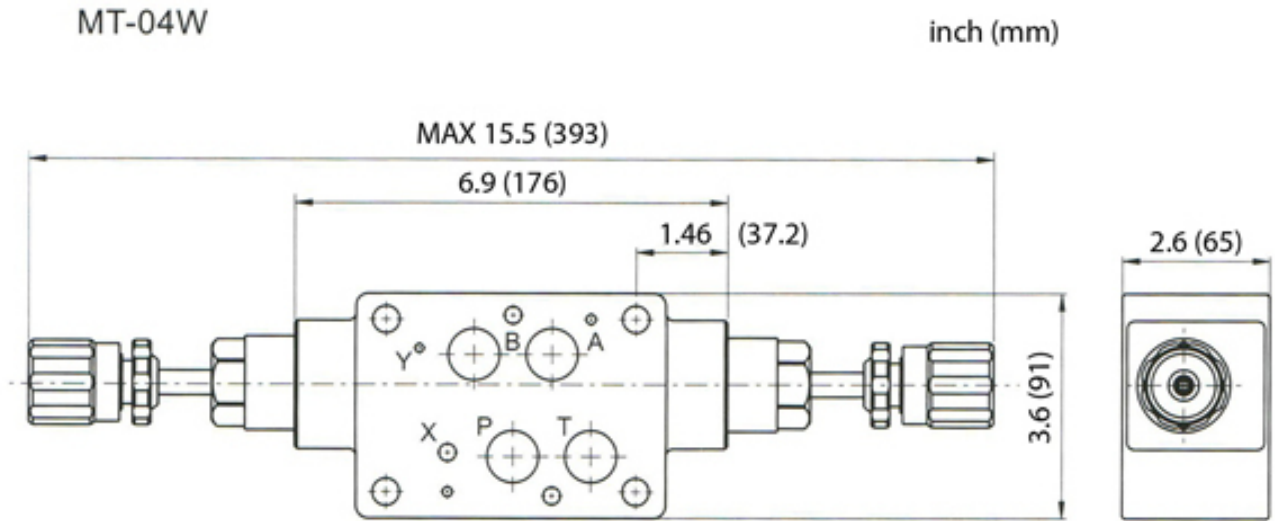
# MODULAR THROTTLE AND CHECK VALVE

## 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

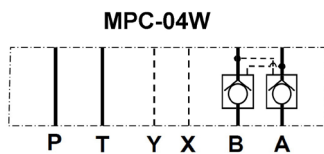


### FEATURES

•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

2

3

4

5

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

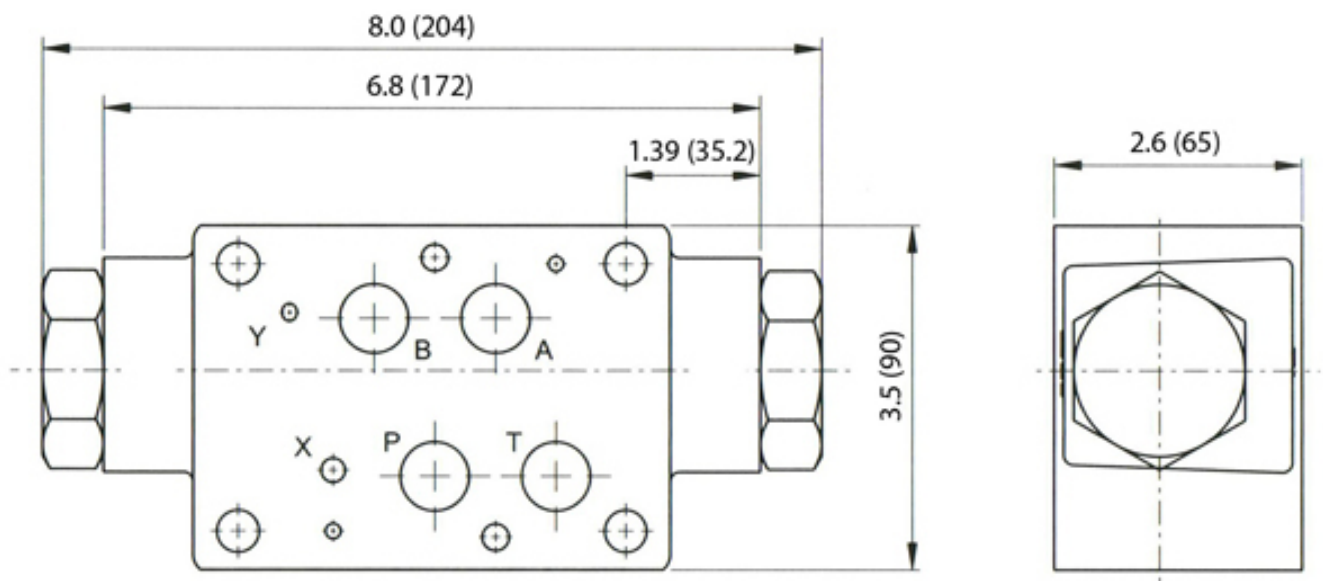
### SPECIFICATIONS

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

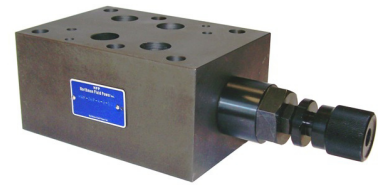
### DIMENSIONS

MPC-04W

Inch (mm)



## MODULAR RELIEF VALVE MRF-06 SERIES



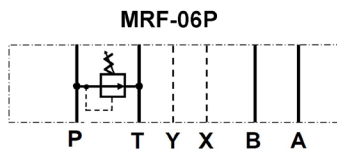
### FEATURES

- 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



### Model Code

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

1      2   3      4      5      6

1 **Series**  
MRF: Modular Relief Valve

4 **Adjustment Style**  
K: Adjusting Knob

2 **Mounting Style**  
06: NFPA Size D08

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

3 **Function Port**  
P: P Port

6 **Design Number**

Note: Inquire for availability of other port and pressure options.



# MODULAR RELIEF VALVE

## MRF-06 SERIES

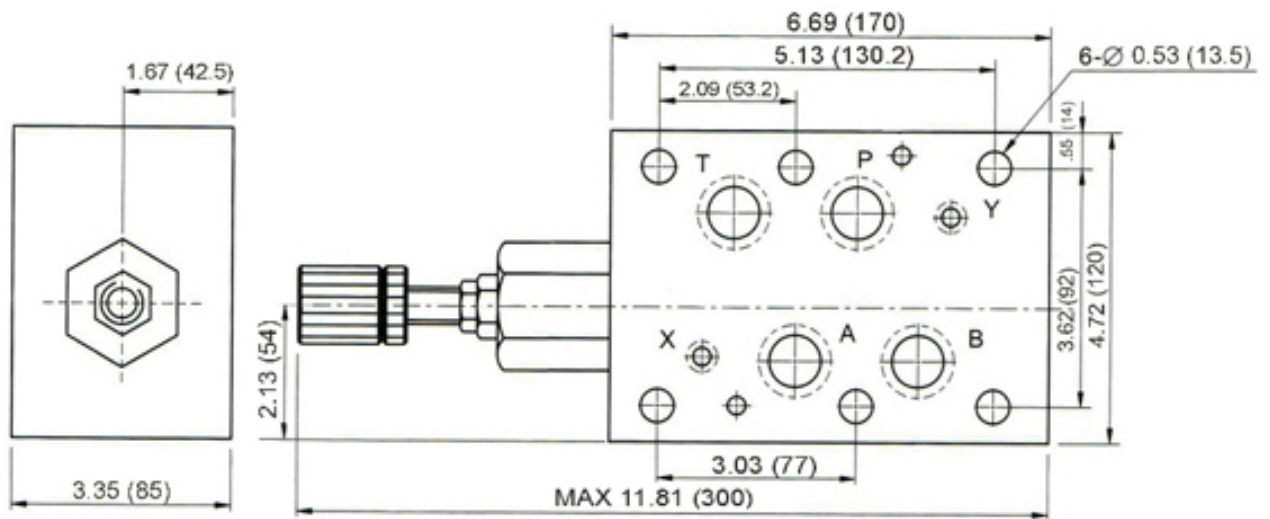
### SPECIFICATIONS

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

### DIMENSIONS

#### ● MRF-06P-K

in (mm)



# MODULAR PRESSURE REDUCING VALVE

## MPR-06 SERIES

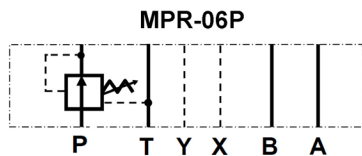


### FEATURES

•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

2

3

4

5

6

**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

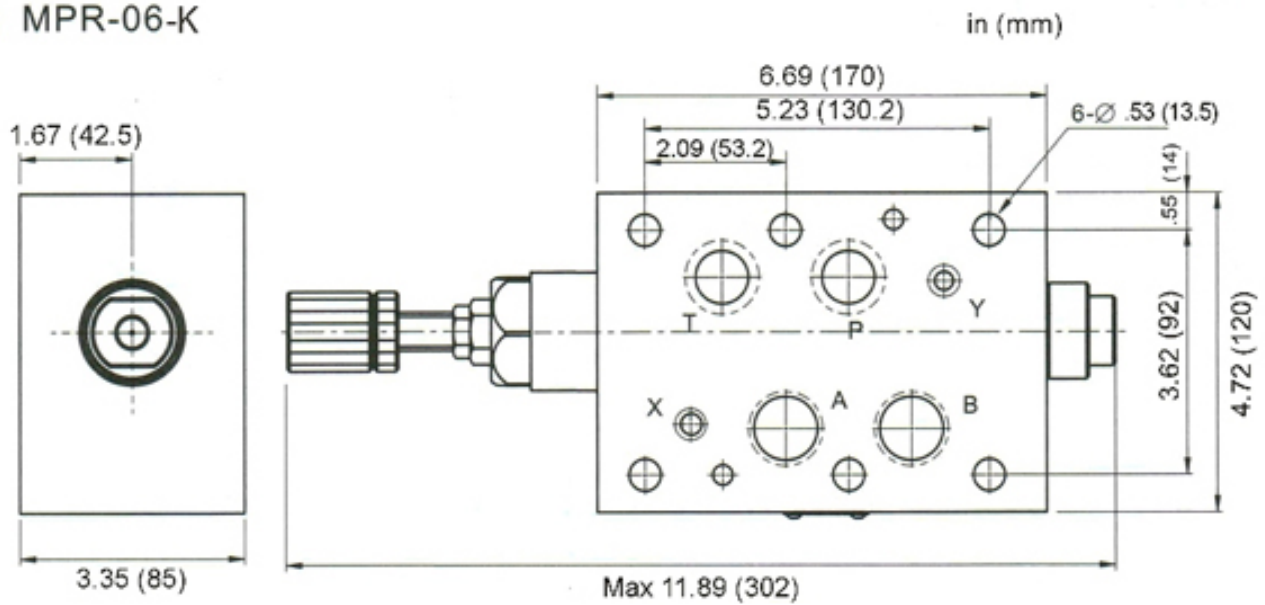
## MPR-06 SERIES

### SPECIFICATIONS

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

### DIMENSIONS

#### ● MPR-06-K



## MODULAR THROTTLE AND CHECK VALVE MT-06 SERIES

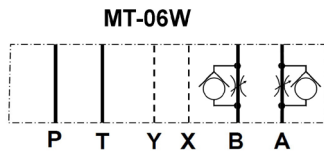


### FEATURES

- 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

2

3

4

5

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

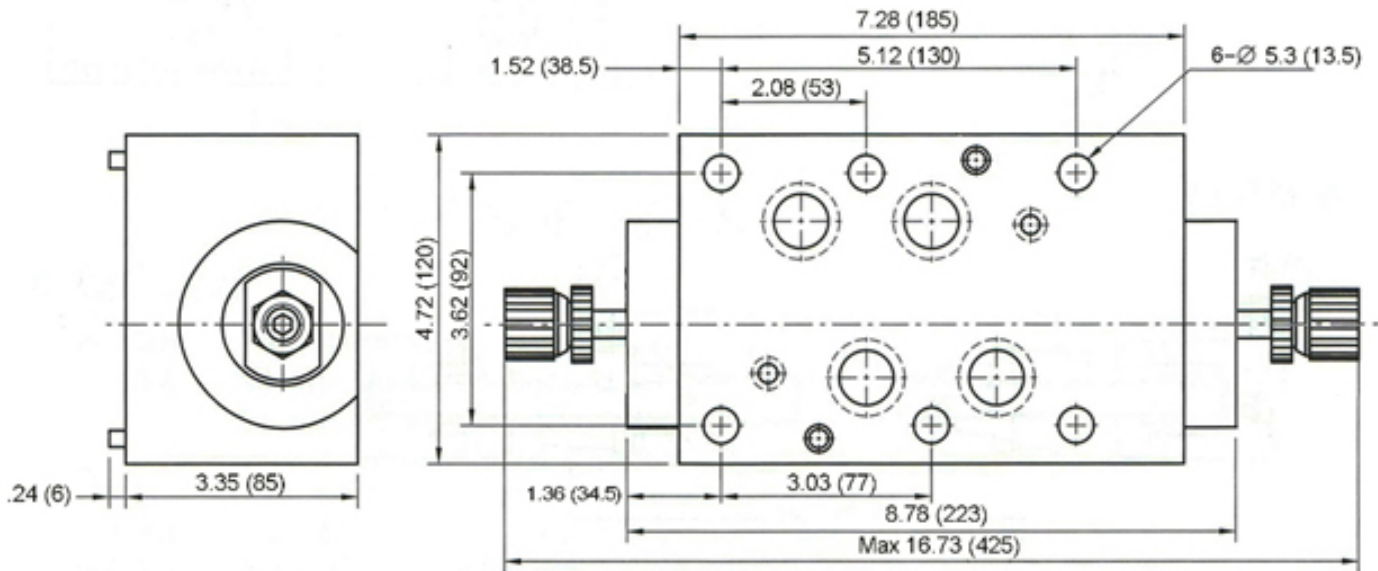
### SPECIFICATIONS

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

### DIMENSIONS

#### ● MT-06W-K

in (mm)



# MODULAR PILOT CHECK VALVE

## MPC-06 SERIES

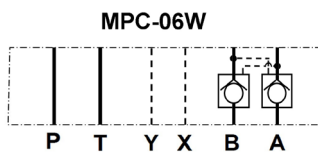


### FEATURES

•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 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 – 06 W – \*\***

1 2 3 4

1 **Series**  
MPC: Modular Pilot  
Check Valve

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

2 **Mounting Style**  
06: NFPA Size D08

4 **Design Number**

Note: Inquire for availability of other port options.



# MODULAR THROTTLE AND CHECK VALVE

## MPC-06 SERIES

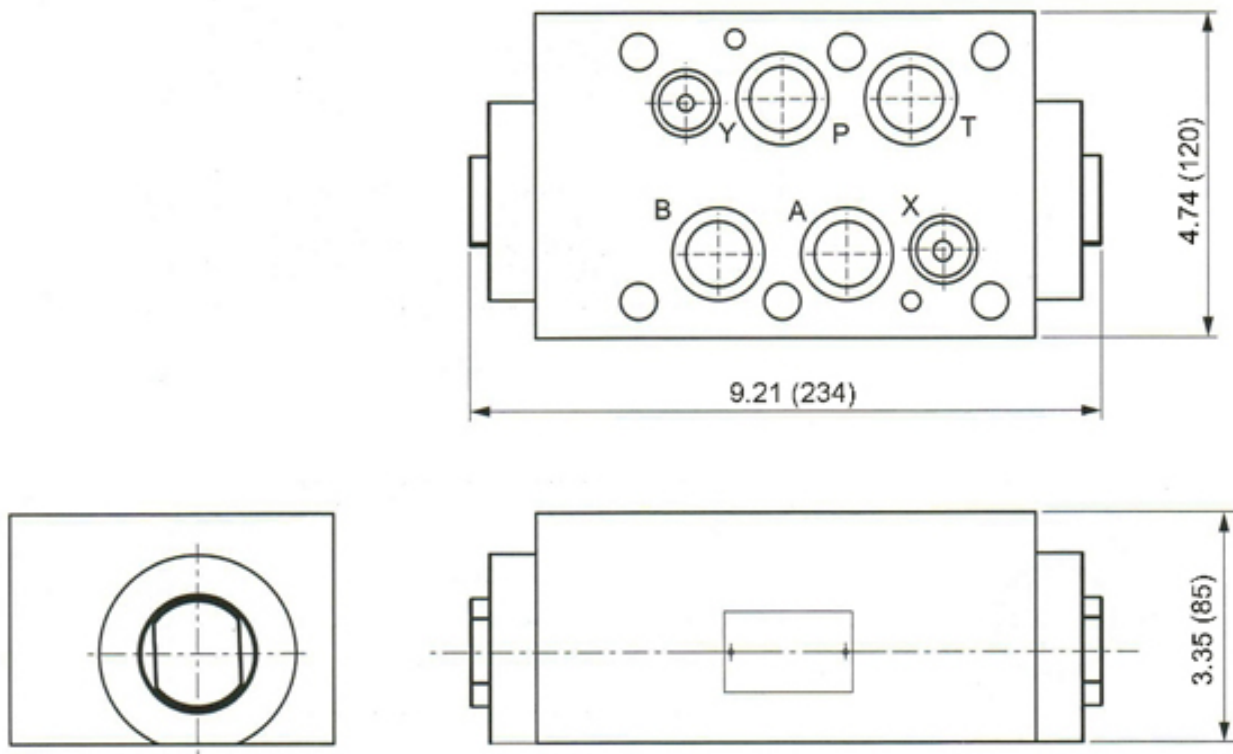
### SPECIFICATIONS

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

### DIMENSIONS

#### ● MPC-06W

in (mm)



## MODULAR BOLT KITS MBK-02 &03 SERIES

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### 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

**MBK – 02 – 1 – 2**

1

2

3

4

**1 Series**  
**MBK:** Mounting Bolt Kit

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

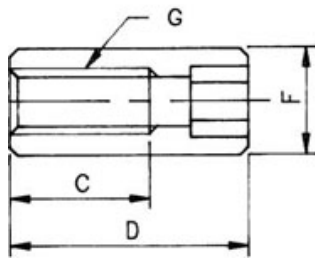
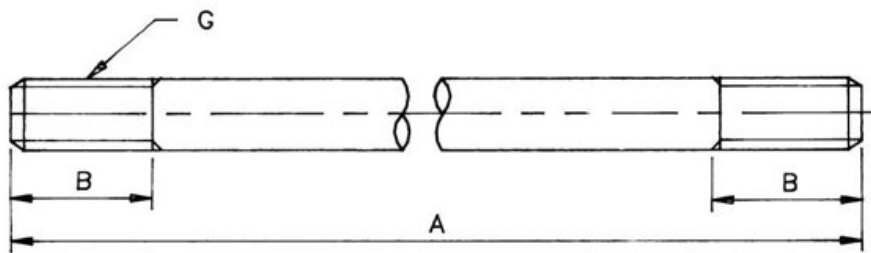
**4 Thread**  
**1:** Metric  
**2:** Inch

**2 Mounting Size**  
**02:** NFPA Size D03  
**03:** NFPA Size D05

# MODULAR BOLT KITS

## MBK-02 &03 SERIES

### DIMENSIONS



Series	* = Number of Modular Valves in Stack	Number of Bolts and Nuts	A Total Length	B Thread Length	C	D	E	F	G	A - C Bolt Length
MBK-02-*-1	1	4	3.7 (94)	0.35 (9)	0.35 (9)	0.59 (15)	0.16 (4)	0.33 (8.5)	M5 x 0.88P	3.35 (85)
	2		5.27 (134)							4.92 (125)
	3		6.85 (174)							6.50 (165)
	4		8.42 (214)							8.07 (205)
MBK-02-*-2	1	4	3.7 (94)	0.35 (9)	0.35 (9)	0.59 (15)	0.16 (4)	0.33 (8.5)	#10 - 24 UNC	3.35 (85)
	2		5.27 (134)							4.92 (125)
	3		6.85 (174)							6.50 (165)
	4		8.42 (214)							8.07 (205)
MBK-03-*-1	1	4	4.17 (106)	0.47 (12)	0.47 (12)	0.87 (22)	0.20 (5)	0.39 (10)	M6 x 1P	3.70 (94)
	2		6.34 (161)							5.90 (149)
	3		8.51 (216)							8.03 (204)
	4		10.68 (271)							10.20 (259)
MBK-03-*-2	1	4	4.17 (106)	0.47 (12)	0.47 (12)	0.87 (22)	0.20 (5)	0.39 (10)	1/4 - 20 UNC	3.70 (94)
	2		6.34 (161)							5.90 (149)
	3		8.51 (216)							8.03 (204)
	4		10.68 (271)							10.20 (259)

## MODULAR BOLT KITS

### MBK-06 SERIES

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### 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.

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### Model Code

**MBK - 06 - 1 - 2**

1      2      3      4

**1 Series**  
MBK: Mounting Bolt Kit

**2 Mounting Size**  
06: NFPA Size D08

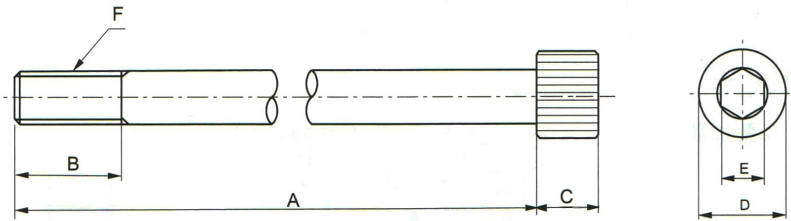
**3 No. of Modular Valves in Stack**  
1: One Modular Valve  
2: Two Modular Valves  
3: Three Modular Valves

**4 Thread**  
2: Inch (UNC Thread)

# MODULAR BOLT KITS

## MBK-06 SERIES

### DIMENSIONS



Series	* = Number of Modular Valves in Stack	Number of Bolts	A Total Length	B Thread Length	C	D	E	F
MBK-06-*-2	1	6	5.38 (137)	1.88 (48)	0.5 (13)	0.75 (19)	0.38 (10)	1/2-13 UNC-2B
	2	6	8.88 (256)					
	3	6	12.13 (308)					

# Northman

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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