

# Modular Hydraulic Valve

Modular Relief Valve

Modular Reducing Valve

Modular Counter Balance Valve

Modular Flow Control Valve

Modular Flow Control Valve w/ Pressure & Temperature Compensated

Solenoid Modular Flow Control Valve

Modular Check Valve

Modular Pilot Operated Check Valve





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Modular Hydraulic Valve

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# Technical Info.

## FEATURES

### 1. Rugged Steel Body Designs :

Designed for high cycle and quick response applications.

### 2. Uniform Height :

Valve body thickness is the same for each series and provides a clean, neat uniform appearance. This also reduces the number of bolt kits.

### 3. Better Performance :

Modular valving eliminates leaky connections, reduces plumbing costs and places controls together.

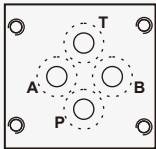
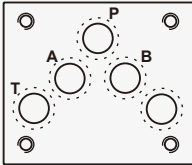
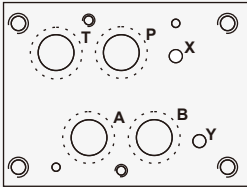
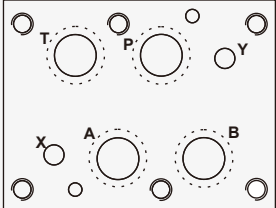
### 4. Space Savings :

Manifold mounted control circuits greatly reduce space requirements from conventional line mounted valves.

### 5. Adjustment :

Hand knobs with locknuts provided standard-tools are not required for adjustments.

## SPEC.

| Size                                   | 02                                                                                  | 03                                                                                  | 04                                                                                   | 06                                                                                    |
|----------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Mounting Surfaces:<br>General Patterns |  |  |  |  |
| Mounting Surface                       | ISO 4401-03<br>cetop-03                                                             | ISO 4401-05<br>cetop-05                                                             | ISO 4401-07<br>cetop-07                                                              | ISO 4401-08<br>cetop-08                                                               |
| Normal Flow Rate                       | 19 l/min<br>( 5 gpm )                                                               | 45 l/min<br>( 12 gpm )                                                              | 76 l/min<br>( 20 gpm )                                                               | 130 l/min<br>( 35 gpm )                                                               |
| Max. Pressure                          | 210 kgf/cm <sup>2</sup>                                                             |                                                                                     |                                                                                      |                                                                                       |
| Operating Temperature                  | 5~70 °C                                                                             |                                                                                     |                                                                                      |                                                                                       |
| Viscosity of fluid                     | 17 ~ 65 Cst                                                                         |                                                                                     |                                                                                      |                                                                                       |
| Operating Filtering Fineness           | 25 micron or less ( ISO 18/15 )                                                     |                                                                                     |                                                                                      |                                                                                       |
| Recommended Fluids                     | Petroleum Based Fluids - ISO VG32-68                                                |                                                                                     |                                                                                      |                                                                                       |

# Index

## MODULAR VALVE TYPE

| Page No. | Model No.          | Valve Sizes |    |    |    | Function                                             | Symbols |
|----------|--------------------|-------------|----|----|----|------------------------------------------------------|---------|
|          |                    | 02          | 03 | 04 | 06 |                                                      |         |
|          |                    |             |    |    |    |                                                      |         |
| 06       | MRV                | ○           | ○  | ○  | ○  | Modular relief valve                                 |         |
| 09       | MBRV               | ○           | ○  | ○  | ○  | Modular reducing valve                               |         |
| 12       | MSCV               | ○           | ○  | -  | -  | Modular Counter Balance Valve                        |         |
| 14       | MTV                | ○           | ○  | -  | -  | Modular Flow Control Valve                           |         |
| 14       | MTCV-P             | ○           | ○  | -  | -  | Modular Flow Control Valve                           |         |
| 16       | MTCV-W (Metre-out) | ○           | ○  | ○  | ○  | Modular Flow Control and Check Valve                 |         |
| 16       | MTCV-W (Metre-in)  | ○           | ○  | ○  | ○  | Modular Flow Control and Check Valve                 |         |
| 20       | MOCF-W (Metre-out) | ○           | ○  | -  | -  | Modular Flow Control Valve w/ Pressure & Temperature |         |
| 20       | MOCF-W (Metre-in)  | ○           | ○  | -  | -  | Modular Flow Control Valve w/ Pressure & Temperature |         |
| 22       | MST                | ○           | ○  | -  | -  | Solenoid Modular Flow Control Valve                  |         |
| 24       | MCV                | ○           | ○  | -  | -  | Modular Check Valve                                  |         |
| 26       | MPCV               | ○           | ○  | ○  | ○  | Modular Pilot Operated Check Valve                   |         |
| 29       | MRV-D              | ○           | -  | -  | -  | Modular Motor Brake Valve                            |         |

# MRV



MRV-02



MRV-03

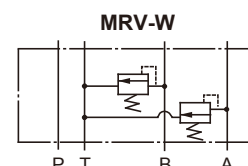
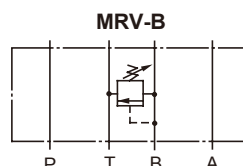
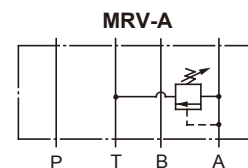
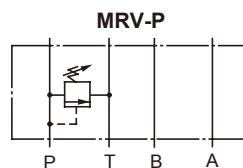


MRV-04



MRV-06

## SYMBOLS



## ORDER CODES

**MRV** - **02** - **P** - **1**

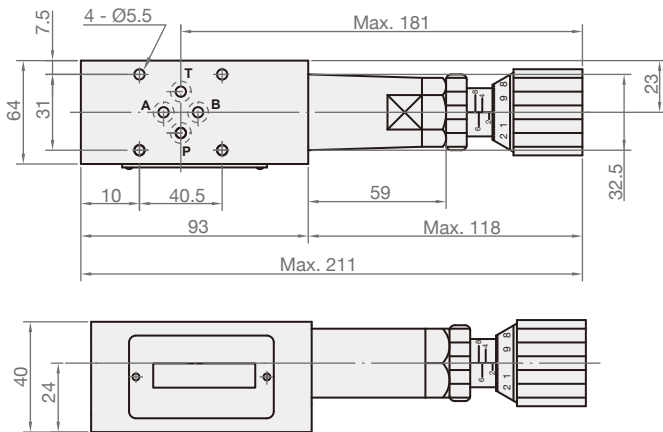
1 2 3 4

|   |                     |     |                            |
|---|---------------------|-----|----------------------------|
| 1 | Model Name          | MRV |                            |
| 2 | Thread Connection   | 02  | 1/4"                       |
|   |                     | 03  | 3/8"                       |
|   |                     | 04  | 1/2"                       |
|   |                     | 06  | 3/4"                       |
| 3 | Action Form         | P   |                            |
|   |                     | A   |                            |
|   |                     | B   |                            |
|   |                     | W   |                            |
| 4 | Pressure Adj. Range | 1   | 7~70 kgf/cm <sup>2</sup>   |
|   |                     | 2   | 35~140 kgf/cm <sup>2</sup> |
|   |                     | 3   | 70~210 kgf/cm <sup>2</sup> |

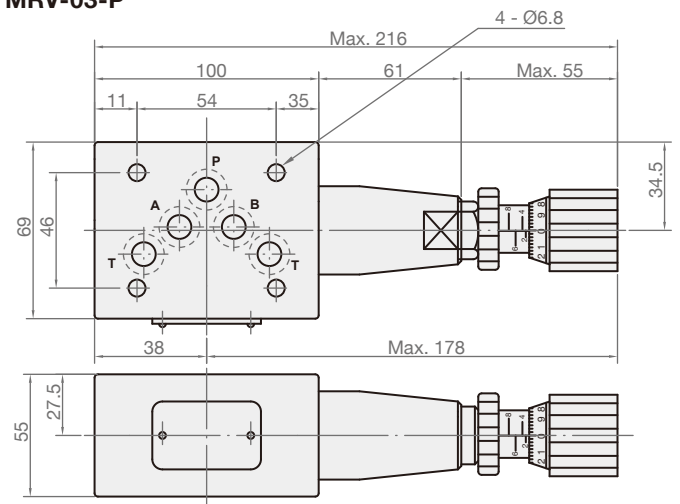
## MODEL SPEC.

| Model          | Max. Pressure<br>(kgf/cm <sup>2</sup> ) | Pressure Adj. Range<br>(kgf/cm <sup>2</sup> ) | Max. Flow<br>(l/min) | Weight<br>(kg) |
|----------------|-----------------------------------------|-----------------------------------------------|----------------------|----------------|
| MRV-02-P, A, B | 210                                     | 1: 7~70<br>2: 35~140<br>3: 70~210             | 35                   | 1.7            |
| MRV-02-W       |                                         |                                               | 35                   | 2.5            |
| MRV-03-P, A, B |                                         |                                               | 70                   | 3.2            |
| MRV-03-W       |                                         |                                               | 70                   | 4.5            |
| MRV-04-P, A, B |                                         |                                               | 160                  | 6.7            |
| MRV-06-P, A, B |                                         |                                               | 200                  | 11.0           |

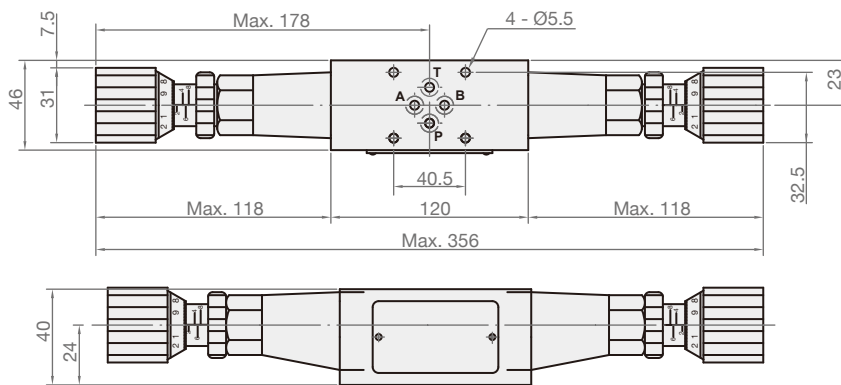
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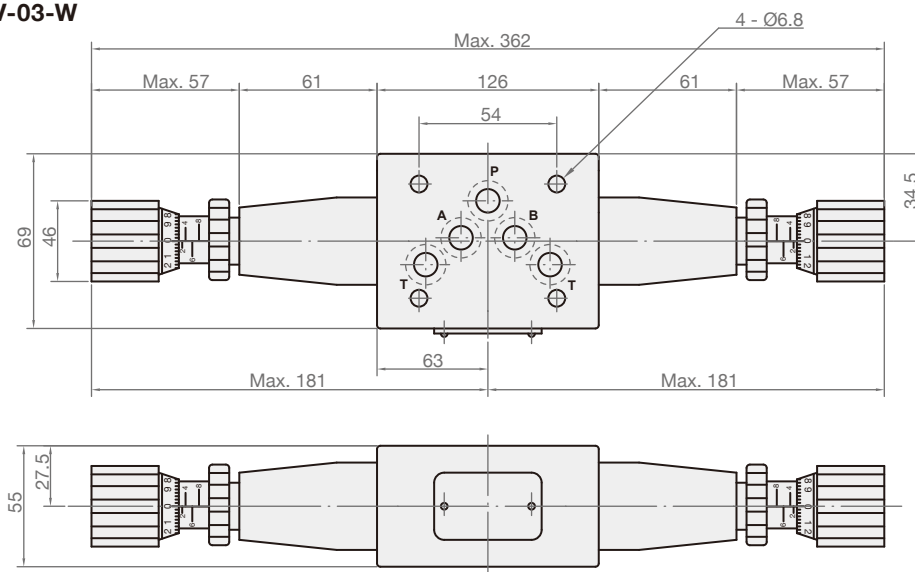
► MRV-03-P



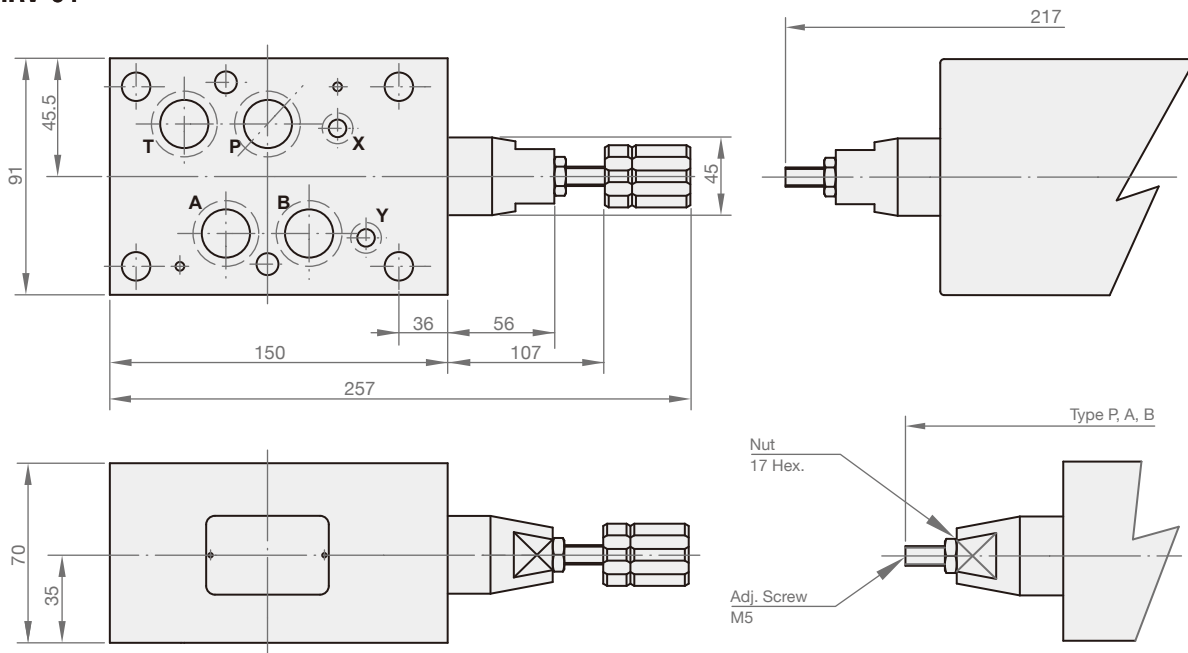
► MRV-02-W



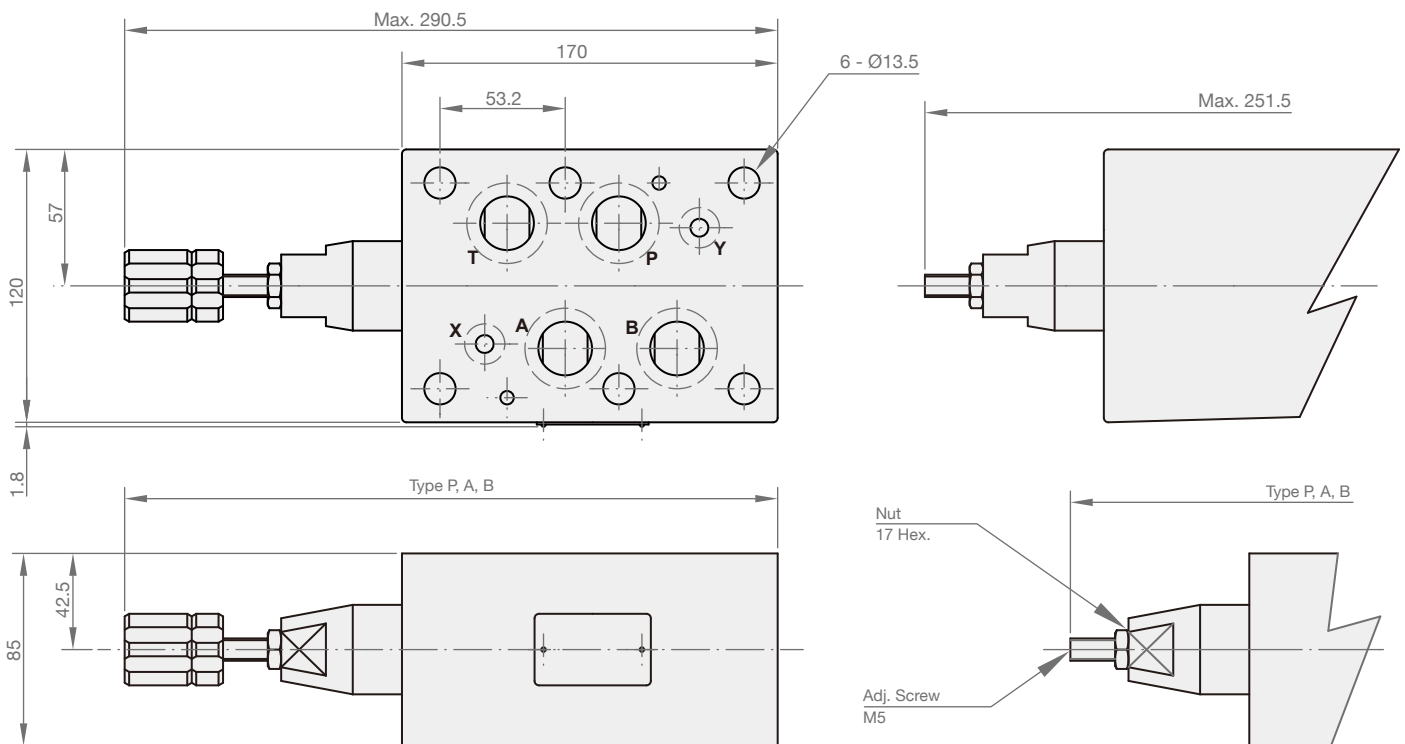
► MRV-03-W



► MRV-04



► MRV-06



# MBRV

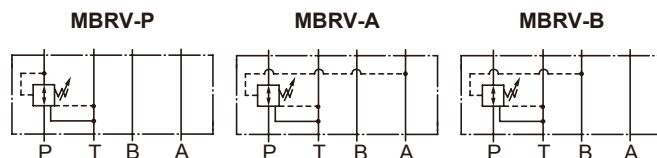

**MBRV-02**

**MBRV-03**

**MBRV-04**

**MBRV-06**

## SYMBOLS



## ORDER CODES

**MBRV** - **02** - **A** - **1**

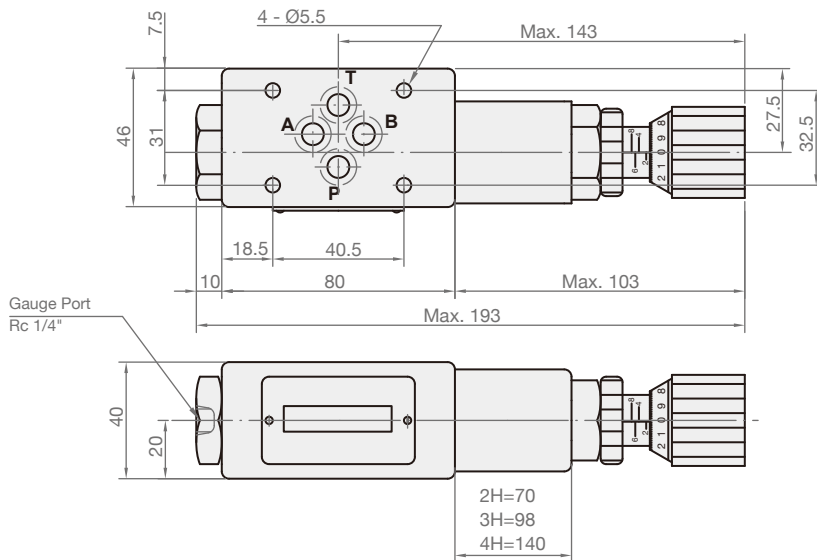
1                      2                      3                      4

|   |                     |             |                            |
|---|---------------------|-------------|----------------------------|
| 1 | Model Name          | <b>MBRV</b> |                            |
| 2 | Thread Connection   | 02          | 1/4"                       |
|   |                     | 03          | 3/8"                       |
|   |                     | 04          | 1/2"                       |
|   |                     | 06          | 3/4"                       |
| 3 | Action Form         | P           |                            |
|   |                     | A           |                            |
|   |                     | B           |                            |
| 4 | Pressure Adj. Range | 0           | 3~30 kgf/cm <sup>2</sup>   |
|   |                     | 1           | 8~70 kgf/cm <sup>2</sup>   |
|   |                     | 2           | 35~140 kgf/cm <sup>2</sup> |
|   |                     | 3           | 70~210 kgf/cm <sup>2</sup> |

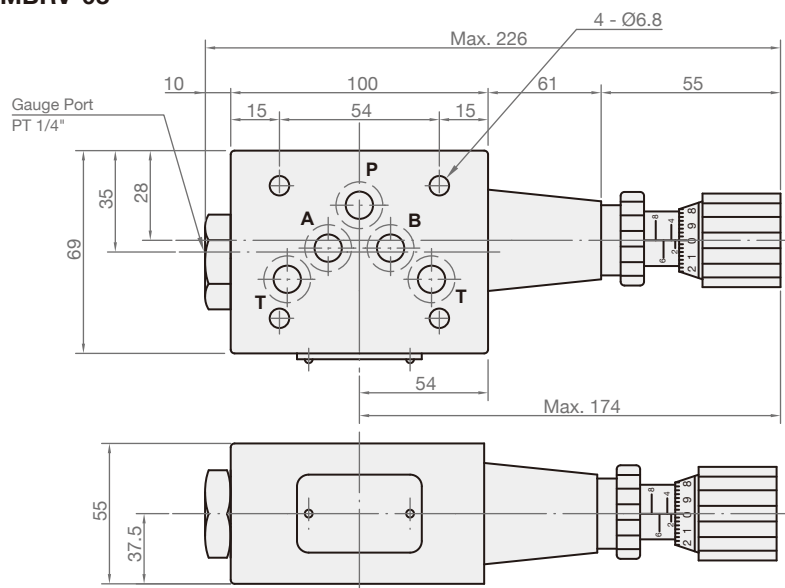
## MODEL SPEC.

| Model   | Max. Pressure<br>(kgf/cm <sup>2</sup> ) | Pressure Adj. Range<br>(kgf/cm <sup>2</sup> ) | Max. Flow<br>(l/min) | Weight<br>(kg) |
|---------|-----------------------------------------|-----------------------------------------------|----------------------|----------------|
| MBRV-02 | 210                                     | 0: 3~30<br>1: 8~70<br>2: 35~140<br>3: 70~210  | 35                   | 1.3            |
| MBRV-03 |                                         |                                               | 70                   | 3.3            |
| MBRV-04 |                                         | 1: 8~70<br>2: 35~140<br>3: 70~210             | 120                  | 7.7            |
| MBRV-06 |                                         |                                               | 180                  | 11.0           |

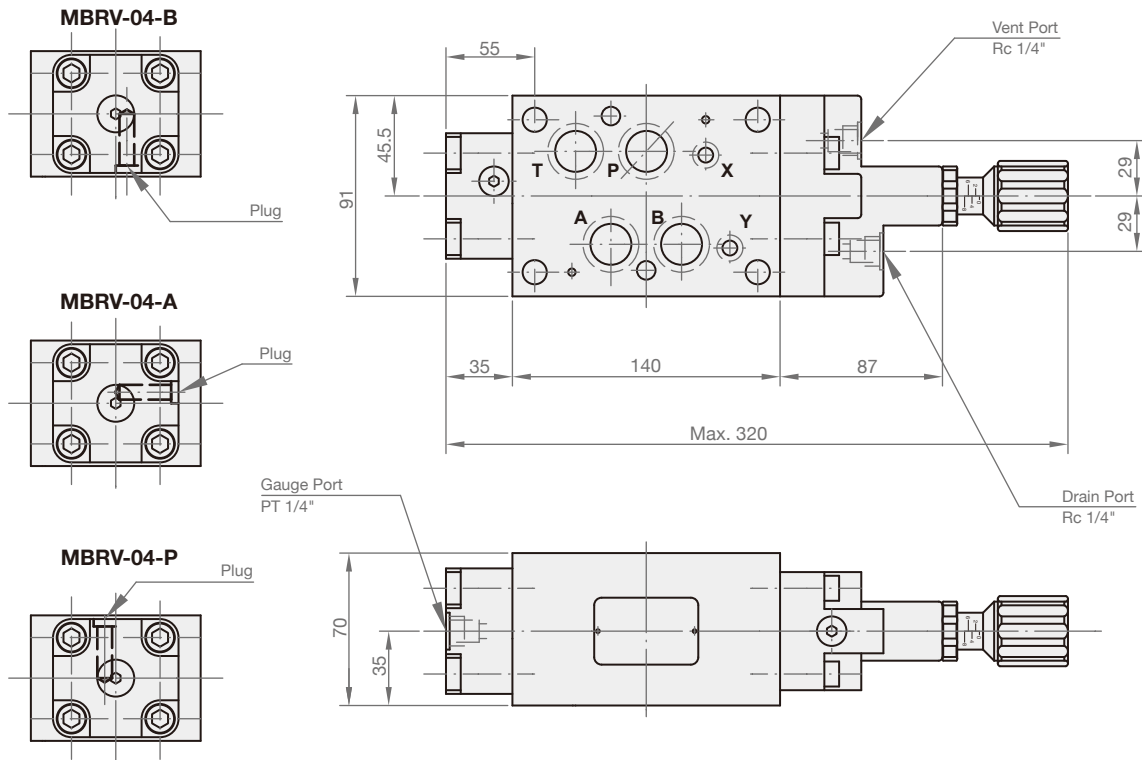
► **MBRV-02**



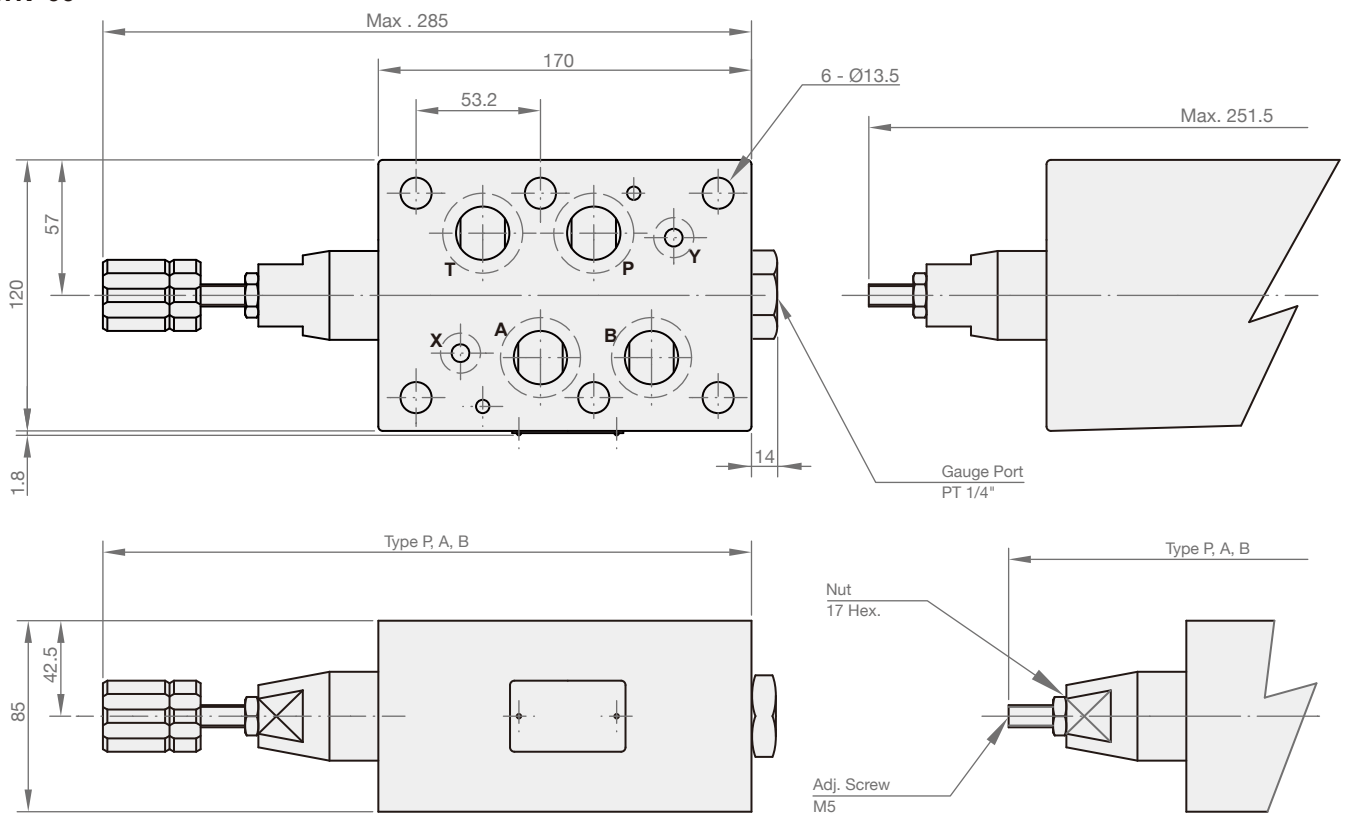
► **MBRV-03**



► MBRV-04



► MBRV-06



# MSCV

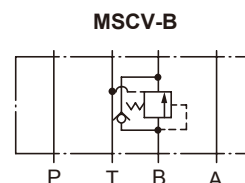
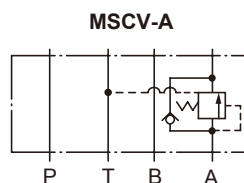


MSCV-02



MSCV-03

## SYMBOLS



## ORDER CODES

MSCV - 02 - B - 2

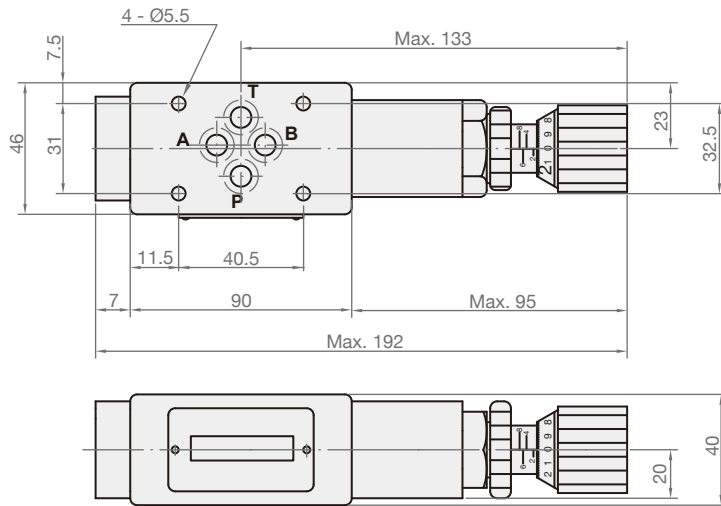
1 2 3 4

|   |                     |      |                            |
|---|---------------------|------|----------------------------|
| 1 | Model Name          | MSCV |                            |
| 2 | Thread Connection   | 02   | 1/4"                       |
|   |                     | 03   | 3/8"                       |
| 3 | Action Form         | A    |                            |
|   |                     | B    |                            |
| 4 | Pressure Adj. Range | 1    | 8~70 kgf/cm <sup>2</sup>   |
|   |                     | 2    | 35~140 kgf/cm <sup>2</sup> |
|   |                     | 3    | 70~210 kgf/cm <sup>2</sup> |

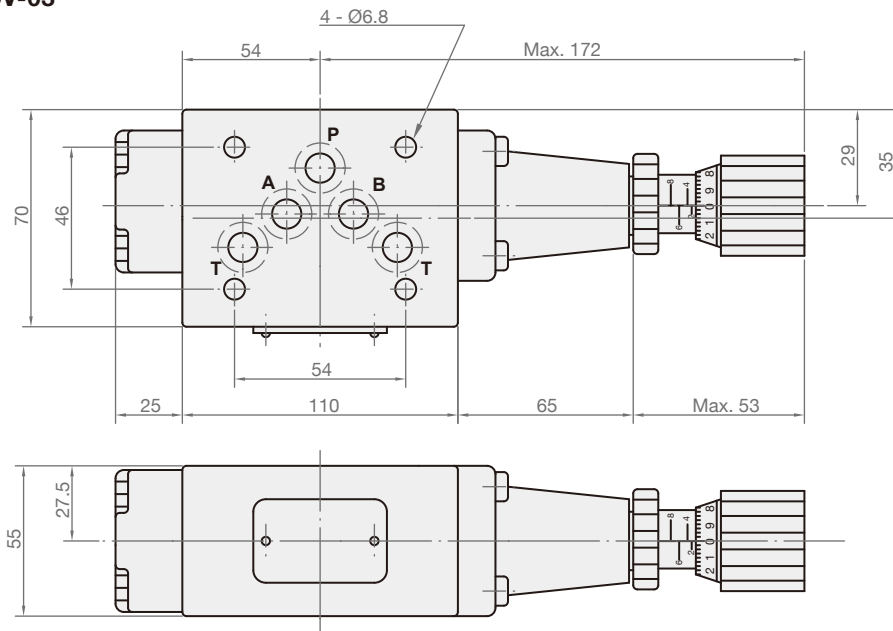
## MODEL SPEC.

| Model   | Max. Pressure<br>(kgf/cm <sup>2</sup> ) | Pressure Adj. Range<br>(kgf/cm <sup>2</sup> ) | Max. Flow<br>(l/min) | Weight<br>(kg) |
|---------|-----------------------------------------|-----------------------------------------------|----------------------|----------------|
| MSCV-02 | 210                                     | 1: 8~70                                       | 35                   | 1.5            |
| MSCV-03 |                                         | 2: 35~140<br>3: 70~210                        |                      |                |
|         |                                         |                                               | 70                   | 4.1            |

► MSCV-02



► MSCV-03



# MTV, MTCV-P

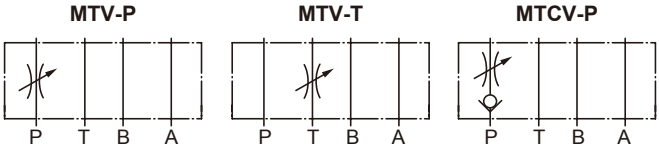


MTV-02-P, T  
MTCV-02-P



MTV-03-P, T  
MTCV-03-P

## SYMBOLS



## ORDER CODES

**MTV** - **02** - **P**

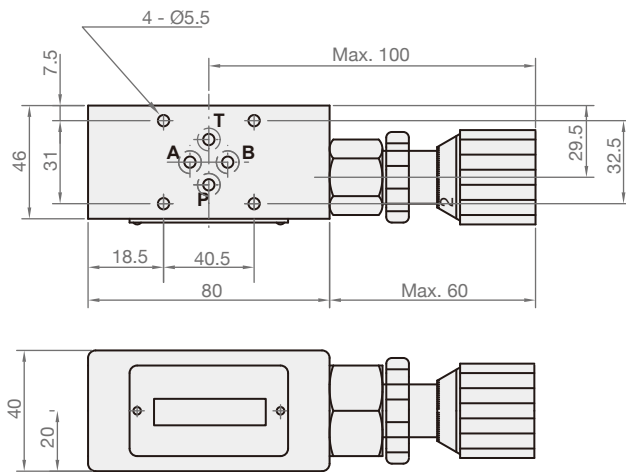
1 2 3

|   |                   |      |      |
|---|-------------------|------|------|
| 1 | Model Name        | MTV  |      |
|   |                   | MTCV |      |
| 2 | Thread Connection | 02   | 1/4" |
|   |                   | 03   | 3/8" |
| 3 | Action Form       | P    |      |
|   |                   | T    |      |

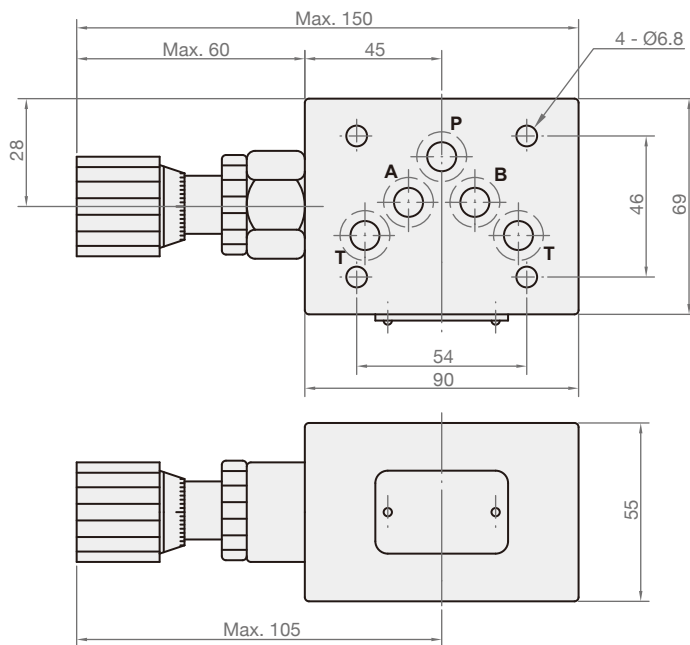
## MODEL SPEC.

| Model                    | Max. Pressure<br>( kgf/cm <sup>2</sup> ) | Max. Flow<br>( l/min ) | Weight<br>( kg ) |
|--------------------------|------------------------------------------|------------------------|------------------|
| MTV-02-P, T<br>MTCV-02-P | 210                                      | 35                     | 1.1              |
| MTV-03-P, T<br>MTCV-03-P |                                          | 70                     | 2.6              |

► MTV-02, MTCV-02-P



► MTV-03, MTCV-03-P



# MTCV



MTCV-02



MTCV-03

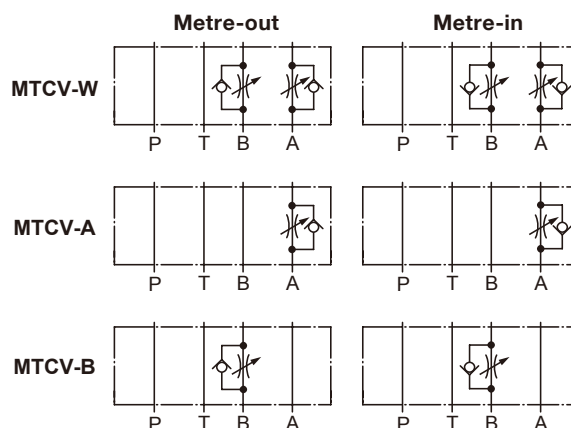


MTCV-04



MTCV-06

## SYMBOLS



## ORDER CODES

**MTCV** - **02** - **W** - **I** - **05**

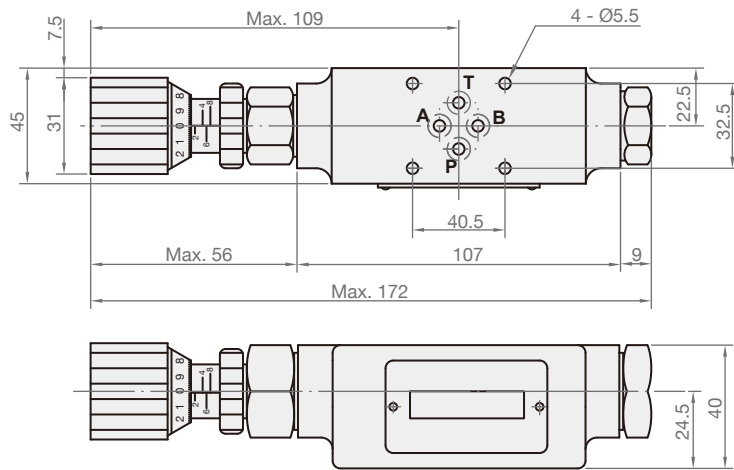
1      2      3      4      5

|   |                   |      |                         |
|---|-------------------|------|-------------------------|
| 1 | Model Name        | MTCV |                         |
| 2 | Thread Connection | 02   | 1/4"                    |
|   |                   | 03   | 3/8"                    |
|   |                   | 04   | 1/2"                    |
|   |                   | 06   | 3/4"                    |
| 3 | Action Form       | A    |                         |
|   |                   | B    |                         |
|   |                   | W    |                         |
| 4 | Moving Direction  | none | Out                     |
|   |                   | I    | In                      |
| 5 | Checking Pressure | 05   | 0.5 kgf/cm <sup>2</sup> |
|   |                   | 50   | 2.5 kgf/cm <sup>2</sup> |

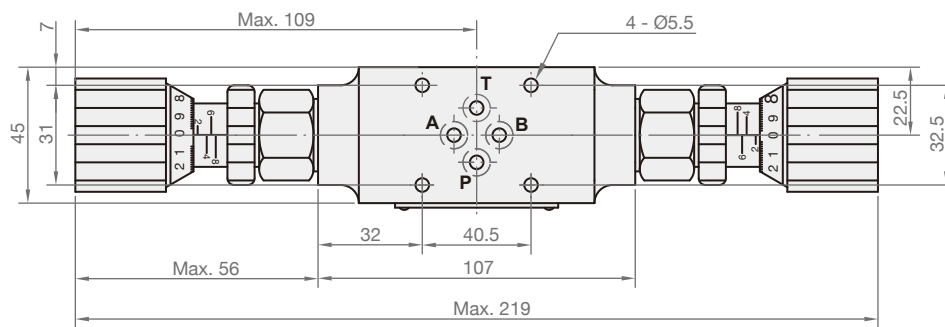
## MODEL SPEC.

| Model   | Max. Pressure<br>( kgf/cm <sup>2</sup> ) | Max. Flow<br>( l/min ) | Weight<br>( kg ) |
|---------|------------------------------------------|------------------------|------------------|
| MTCV-02 | 210                                      | 35                     | 1.4              |
| MTCV-03 |                                          | 70                     | 3.0              |
| MTCV-04 |                                          | 120                    | 6.0              |
| MTCV-06 |                                          | 180                    | 12.5             |

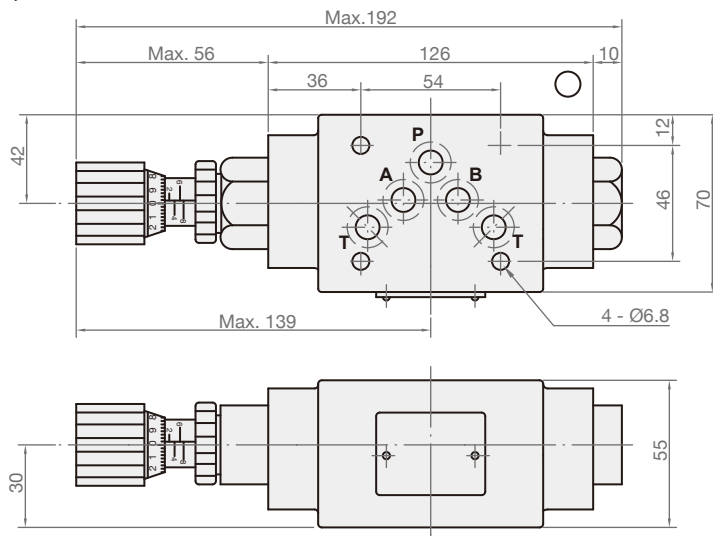
► MTCV-02-A, B



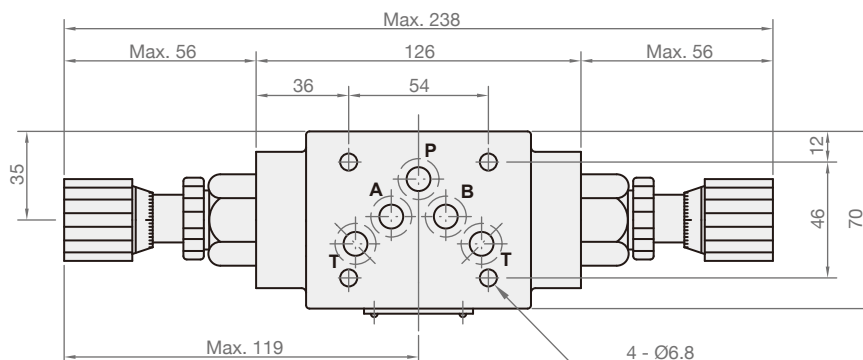
► MTCV-02-W



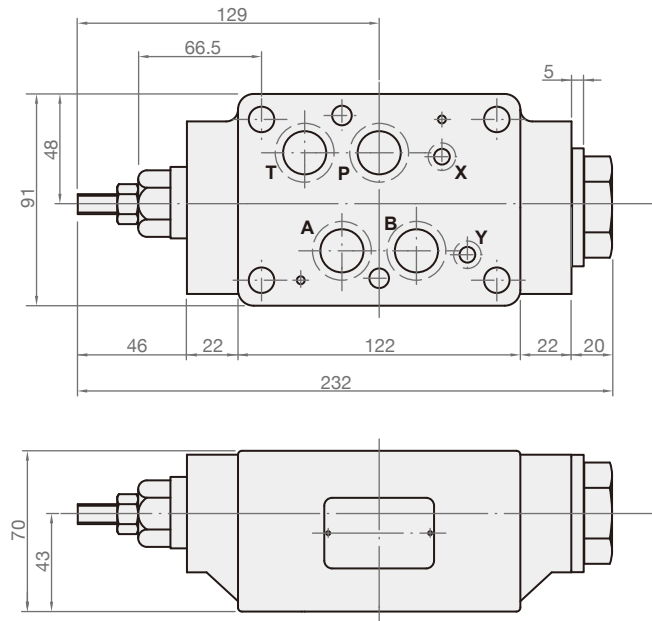
► MTCV-03-A, B



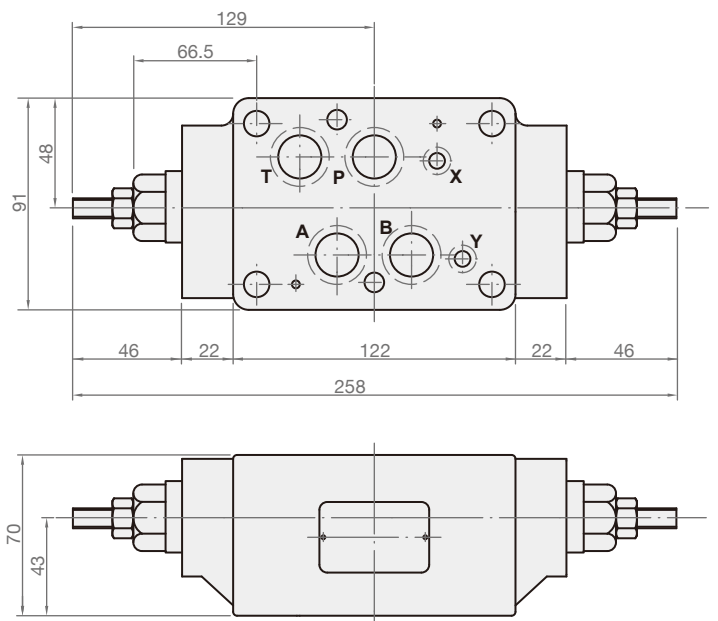
► MTCV-03-W



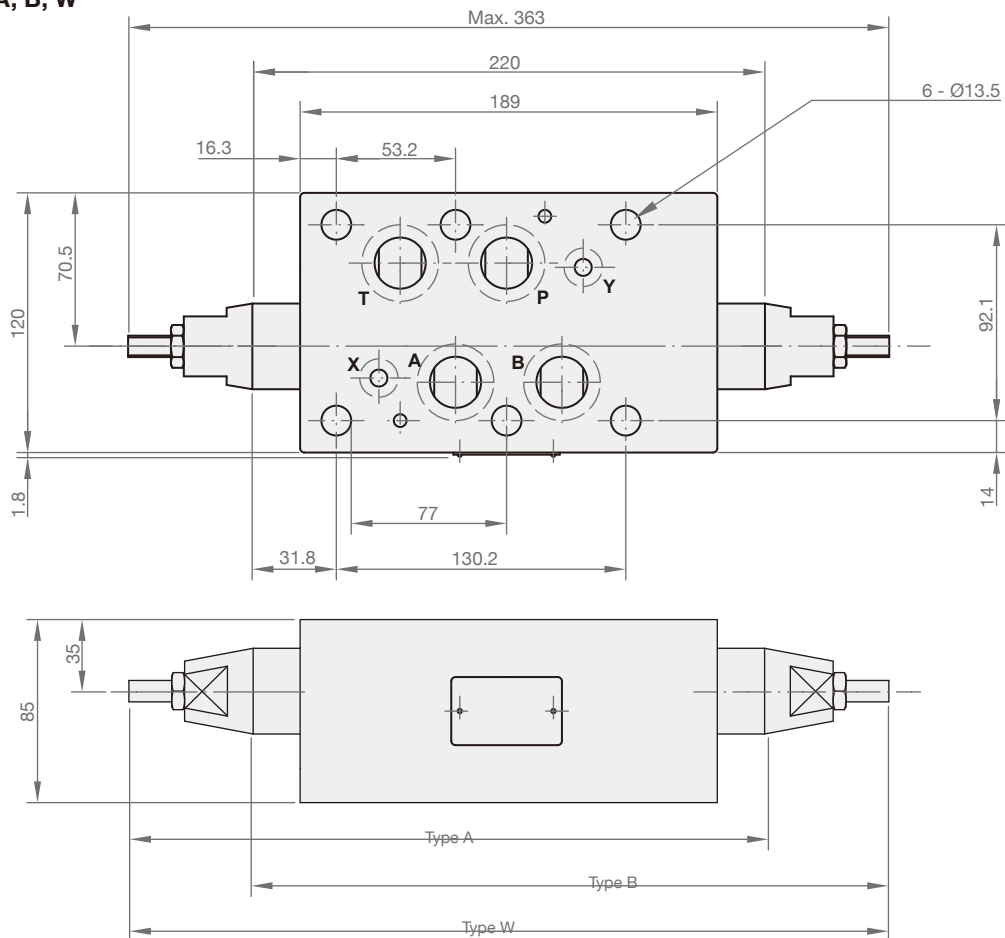
► MTCV-04-A, B

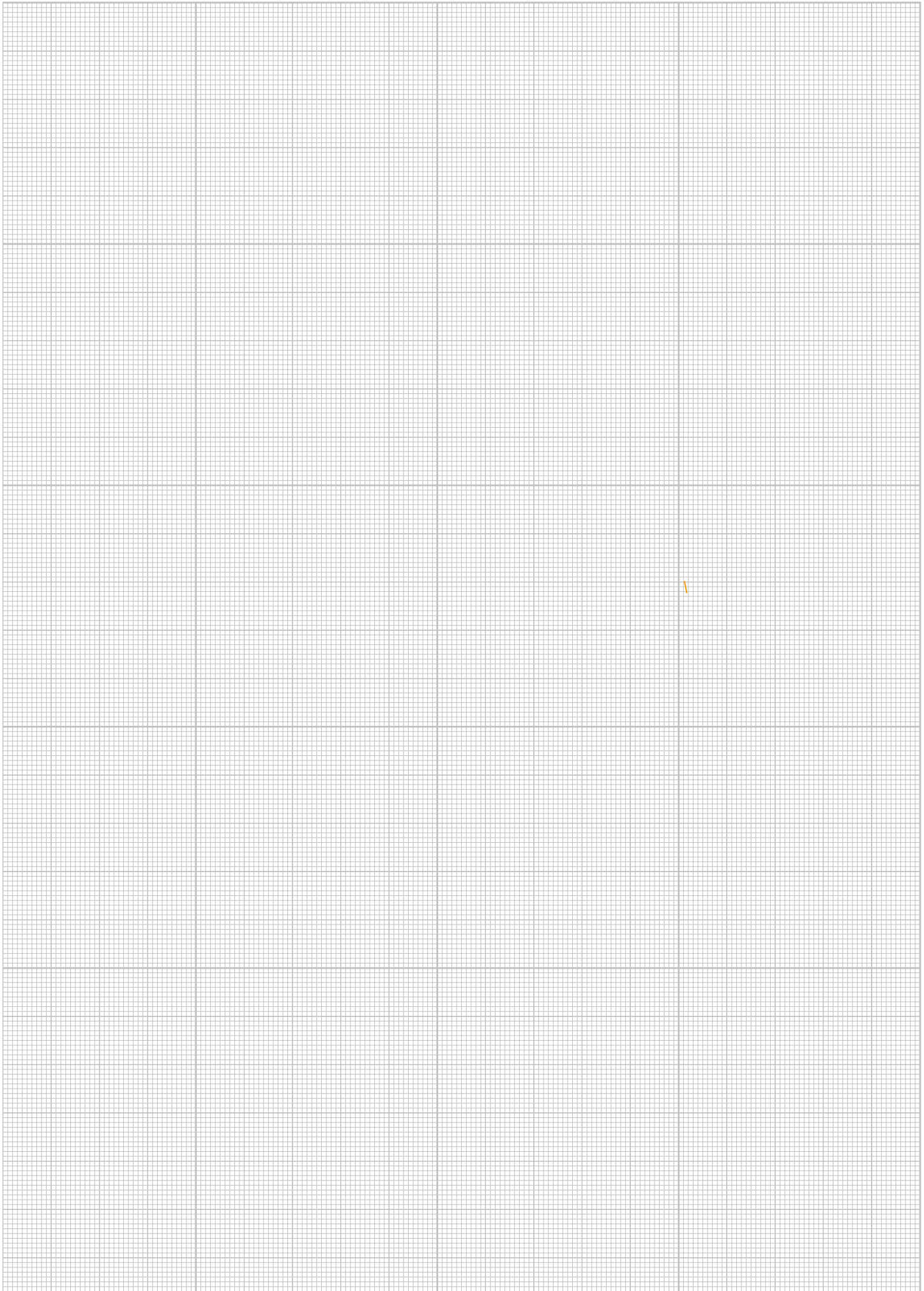


► MTCV-04-W



► MTCV-06-A, B, W

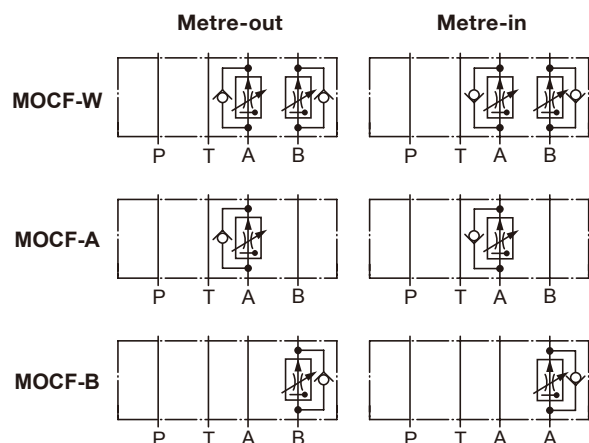




# MOCF



## SYMBOLS



## ORDER CODES

**MOCF** - **02** - **W** **1**

1      2      3      4

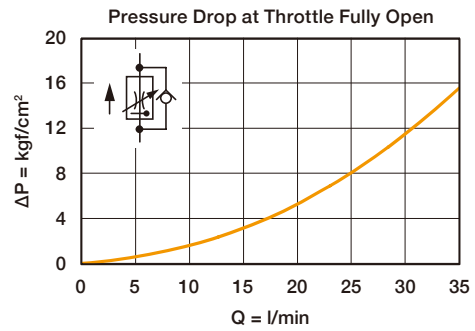
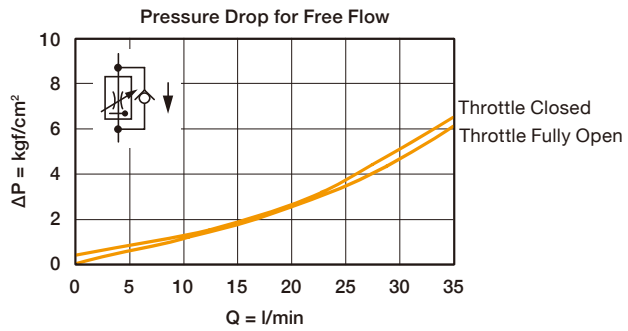
|   |                  |      |      |
|---|------------------|------|------|
| 1 | Model Name       | MOCF |      |
| 2 | Orifice          | 02   | 1/4" |
|   |                  | 03   | 3/8" |
| 3 | Action Form      | A    |      |
|   |                  | B    |      |
|   |                  | W    |      |
| 4 | Moving Direction | none | out  |
|   |                  | I    | in   |

## MODEL SPEC.

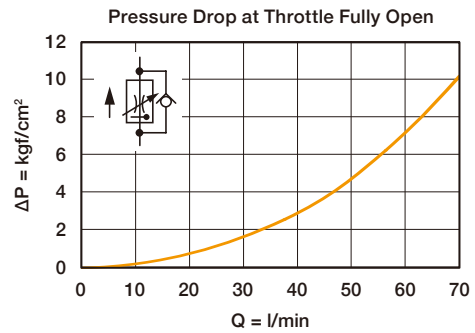
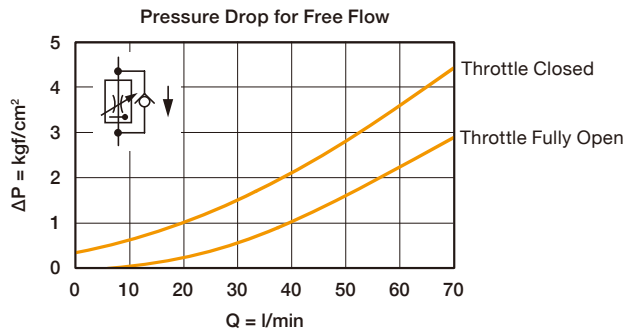
| Model        | Max. Pressure<br>( kgf/cm <sup>2</sup> ) | Control Flow<br>( l/min )                                                 | Operating Temperature<br>( °C ) | Weight<br>( kg ) |
|--------------|------------------------------------------|---------------------------------------------------------------------------|---------------------------------|------------------|
| MOCF-02-W    | 250                                      | 0.3 ~ 20, ΔP=70kgf/cm <sup>2</sup><br>0.5 ~ 20, ΔP=210kgf/cm <sup>2</sup> | -15 ~ 70                        | 3.4              |
| MOCF-02-A, B |                                          |                                                                           |                                 | 1.2              |
| MOCF-03-W    | 250                                      | 0.5 ~ 60, ΔP=70kgf/cm <sup>2</sup><br>1 ~ 60, ΔP=250kgf/cm <sup>2</sup>   | -15 ~ 70                        | 5                |
| MOCF-03-A, B |                                          |                                                                           |                                 | 4.6              |

## CURVE

### ► MOCF-02



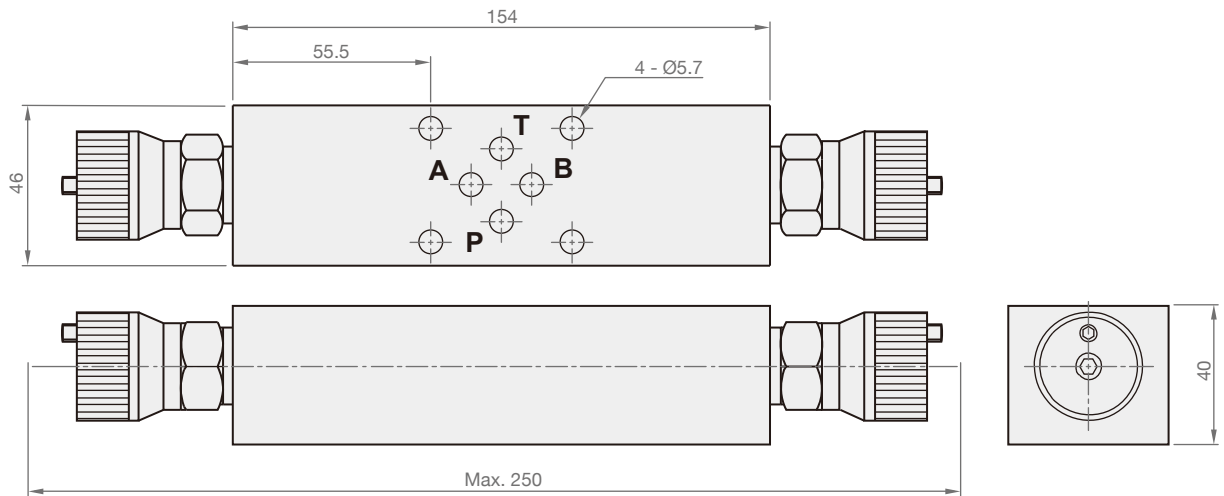
### ► MOCF-03



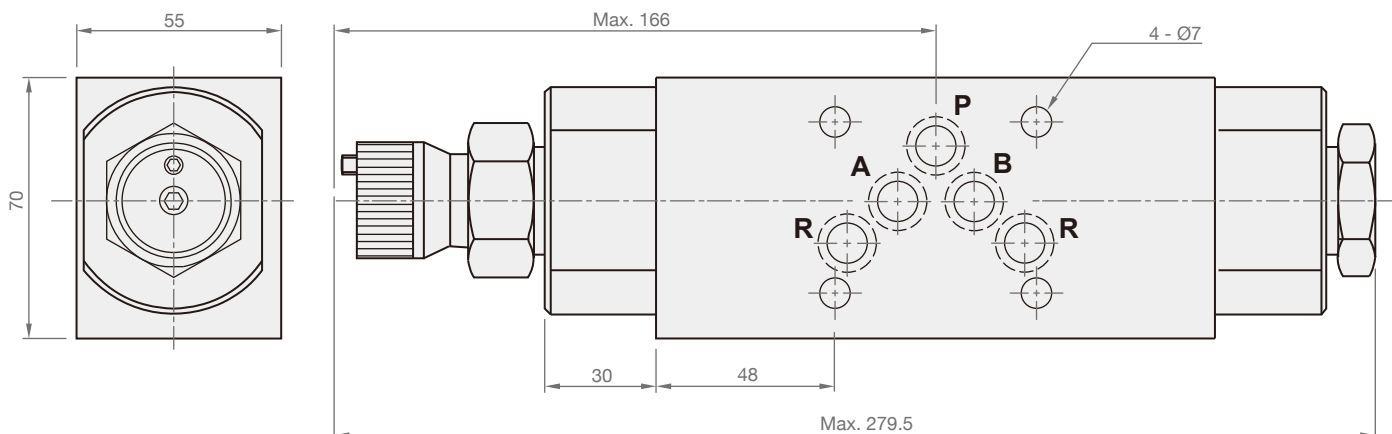
## DIMENSION

( UNIT : mm )

### ► MOCF-02



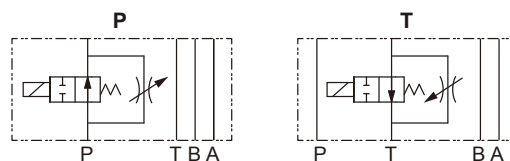
### ► MOCF-03



# MST



## SYMBOLS



## ORDER CODES

**MST - 03 - P - D2**

1 2 3 4

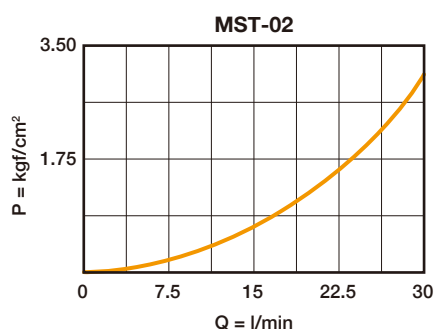
|   |                   |     |                  |
|---|-------------------|-----|------------------|
| 1 | Model Name        | MST |                  |
| 2 | Thread Connection | 02  | 1/4"             |
|   |                   | 03  | 3/8"             |
| 3 | Action Form       | P   |                  |
|   |                   | T   |                  |
| 4 | Power Source      | A1  | AC 110V, 50/60Hz |
|   |                   | A2  | AC 220V, 50/60Hz |
|   |                   | D1  | DC 12V           |
|   |                   | D2  | DC 24V           |

## MODEL SPEC.

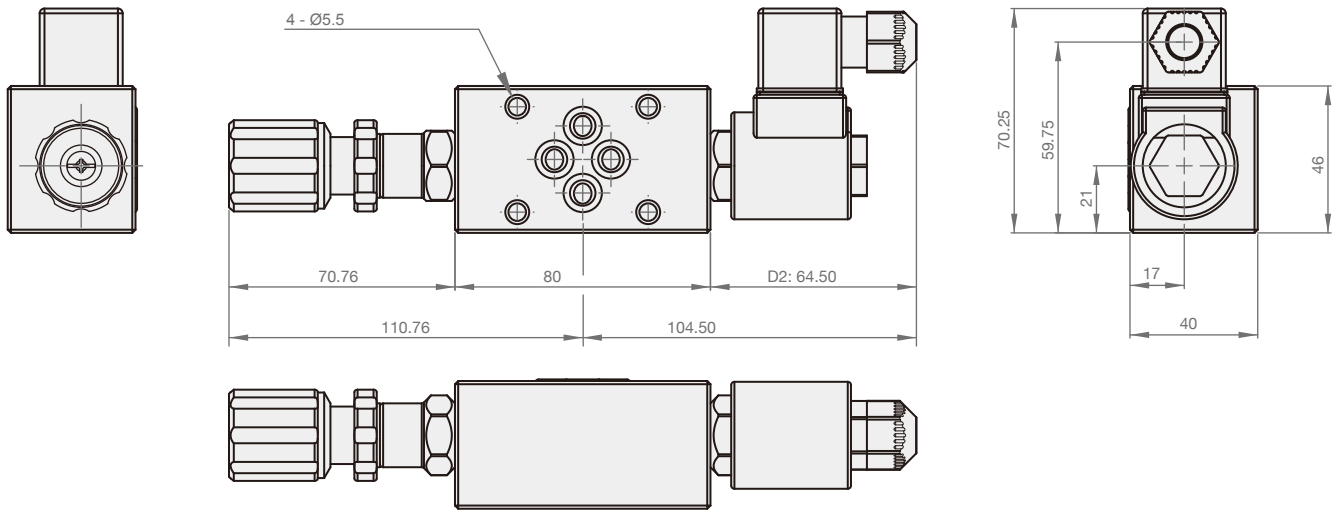
| Model  | Max. Pressure<br>(kgf/cm <sup>2</sup> ) | Max. Flow<br>(l/min) | Weight<br>(kg) |
|--------|-----------------------------------------|----------------------|----------------|
| MST-02 | 210                                     | 35                   | 1.28           |
| MST-03 | 210                                     | 70                   | 3.8            |

## CURVE

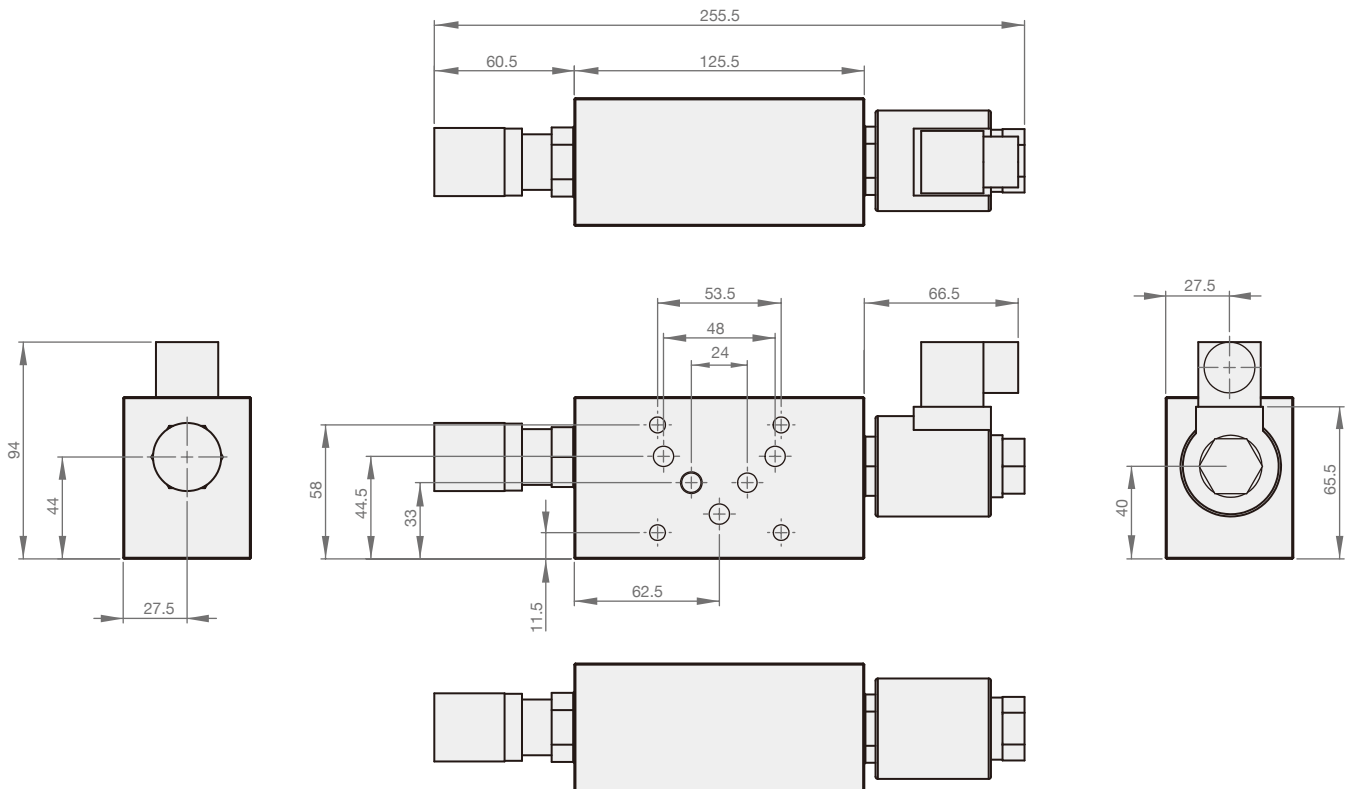
### ► Pressure Drop (Fully Open)



► MST-02



► MST-03



# MCV

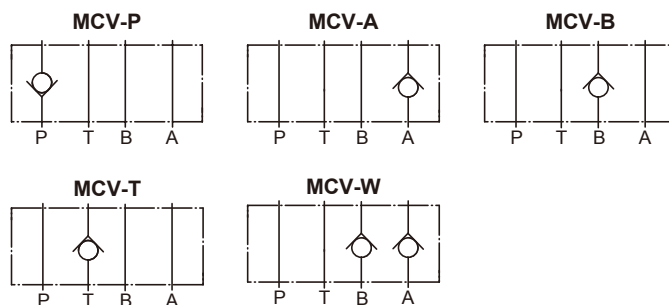


MCV-02



MCV-03

## SYMBOLS



## ORDER CODES

MCV - 02 - P - 05

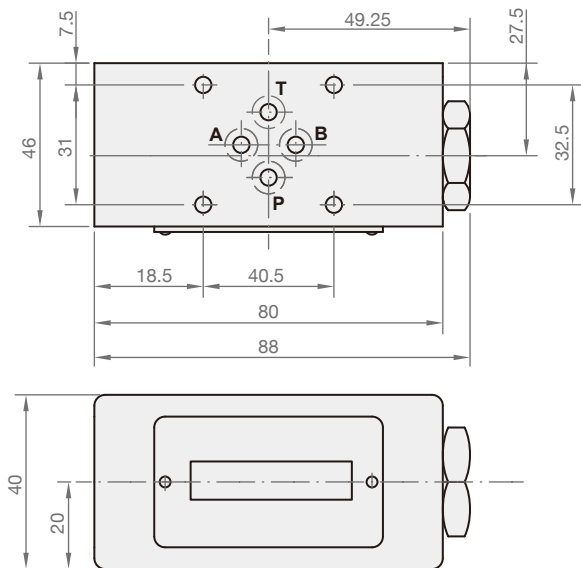
1 2 3 4

|   |                   |     |                          |
|---|-------------------|-----|--------------------------|
| 1 | Model Name        | MCV |                          |
| 2 | Thread Connection | 02  | 1/4"                     |
|   |                   | 03  | 3/8"                     |
| 3 | Action Form       | P   |                          |
|   |                   | T   |                          |
|   |                   | A   |                          |
|   |                   | B   |                          |
|   |                   | W   |                          |
| 4 | Checking Pressure | 05  | 0.35 kgf/cm <sup>2</sup> |
|   |                   | 50  | 3.5 kgf/cm <sup>2</sup>  |

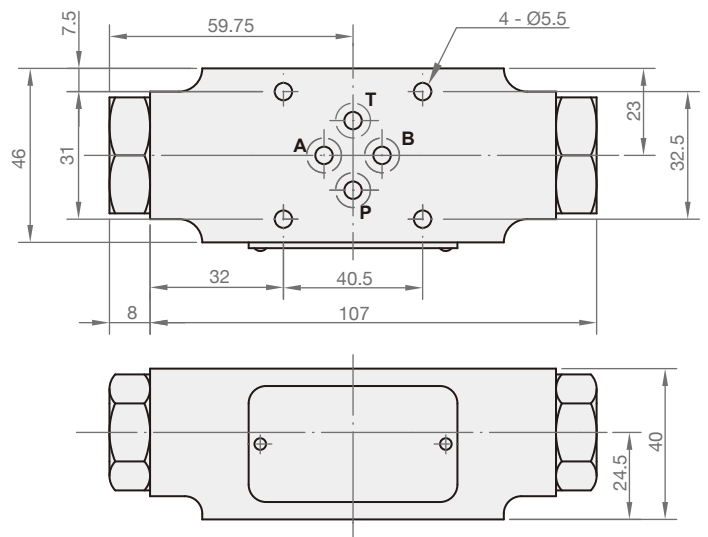
## MODEL SPEC.

| Model  | Max. Pressure<br>(kgf/cm <sup>2</sup> ) | Checking Pressure<br>(kgf/cm <sup>2</sup> ) | Max. Flow<br>(l/min) | Weight<br>(kg) |
|--------|-----------------------------------------|---------------------------------------------|----------------------|----------------|
| MCV-02 | 210                                     | 05: 0.35                                    | 35                   | 1.1            |
| MCV-03 |                                         | 50: 3.5                                     | 70                   | 2.5            |

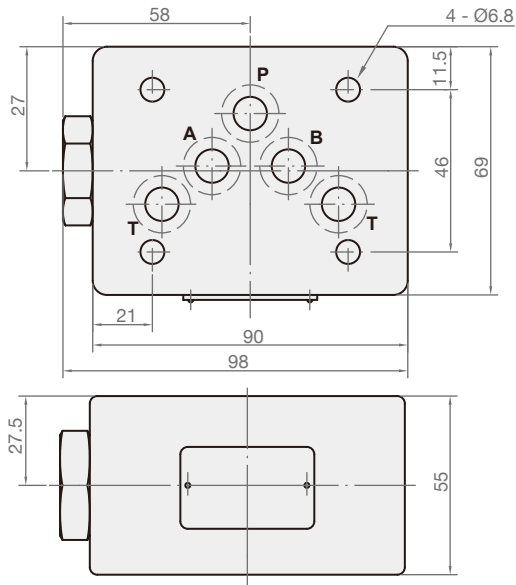
► MCV-02-P, T, A, B



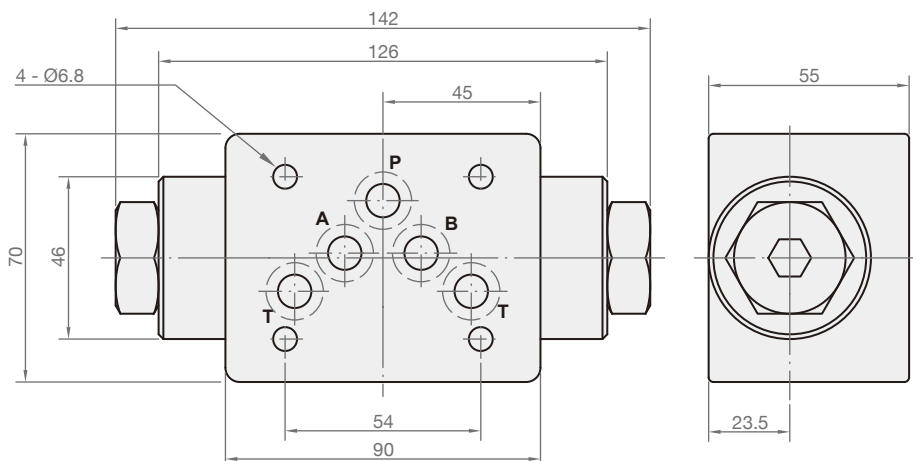
► MCV-02-W



► MCV-03-P, T, A, B



► MCV-03-W



# MPCV



MPCV-02



MPCV-03

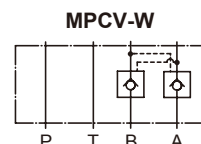
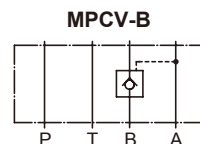
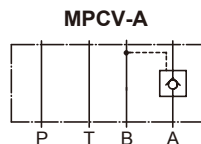


MPCV-04



MPCV-06

## SYMBOLS



## ORDER CODES

**MPCV** - **02** - **A**

1

2

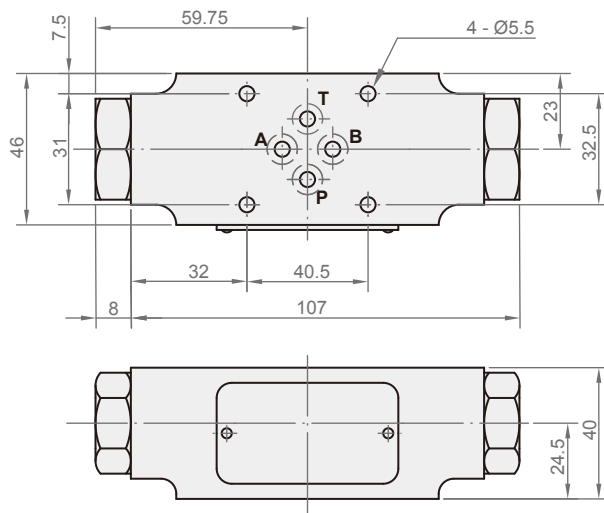
3

|   |                   |      |      |
|---|-------------------|------|------|
| 1 | Model Name        | MPCV |      |
| 2 | Thread Connection | 02   | 1/4" |
|   |                   | 03   | 3/8" |
|   |                   | 04   | 1/2" |
|   |                   | 06   | 3/4" |
| 3 | Action Form       | A    |      |
|   |                   | B    |      |
|   |                   | W    |      |

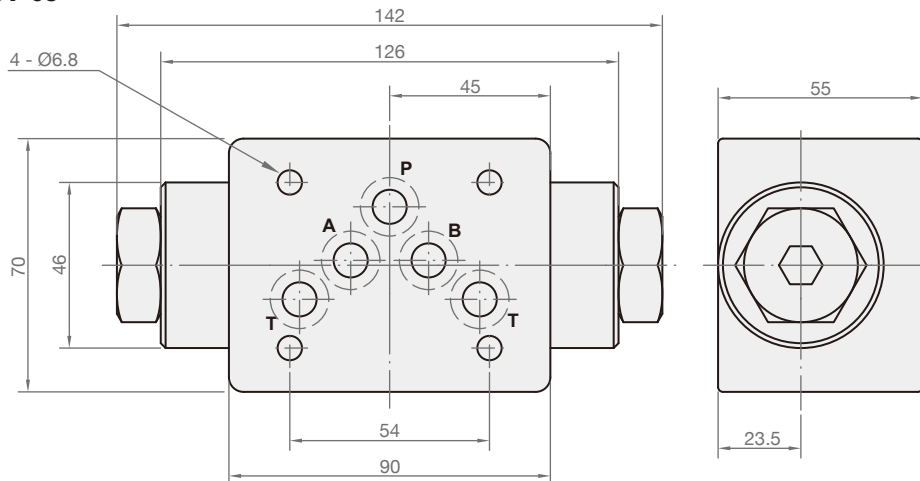
## MODEL SPEC.

| Model   | Max. Pressure<br>(kgf/cm <sup>2</sup> ) | Max. Flow<br>(l/min) | Weight<br>(kg) |
|---------|-----------------------------------------|----------------------|----------------|
| MPCV-02 | 210                                     | 35                   | 1.3            |
| MPCV-03 |                                         | 70                   | 3.0            |
| MPCV-04 |                                         | 120                  | 7.0            |
| MPCV-06 |                                         | 180                  | 12.5           |

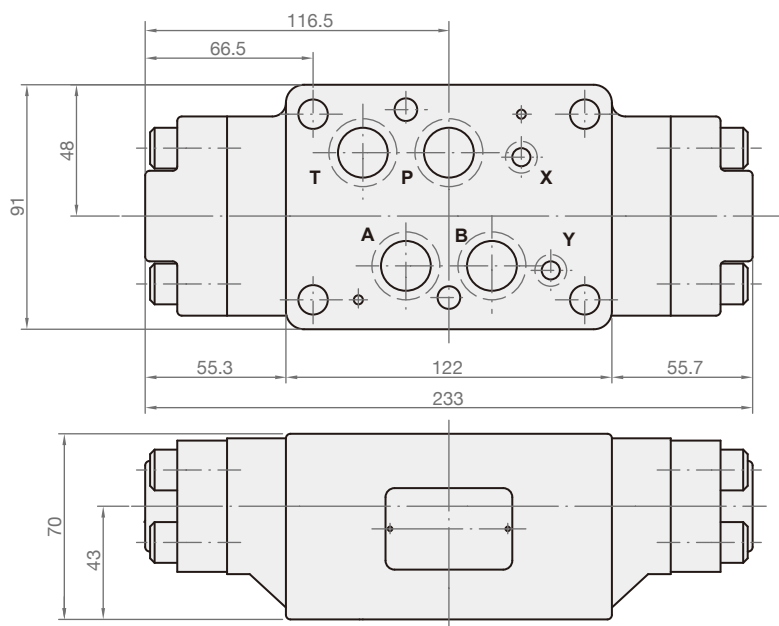
► MPCV-02



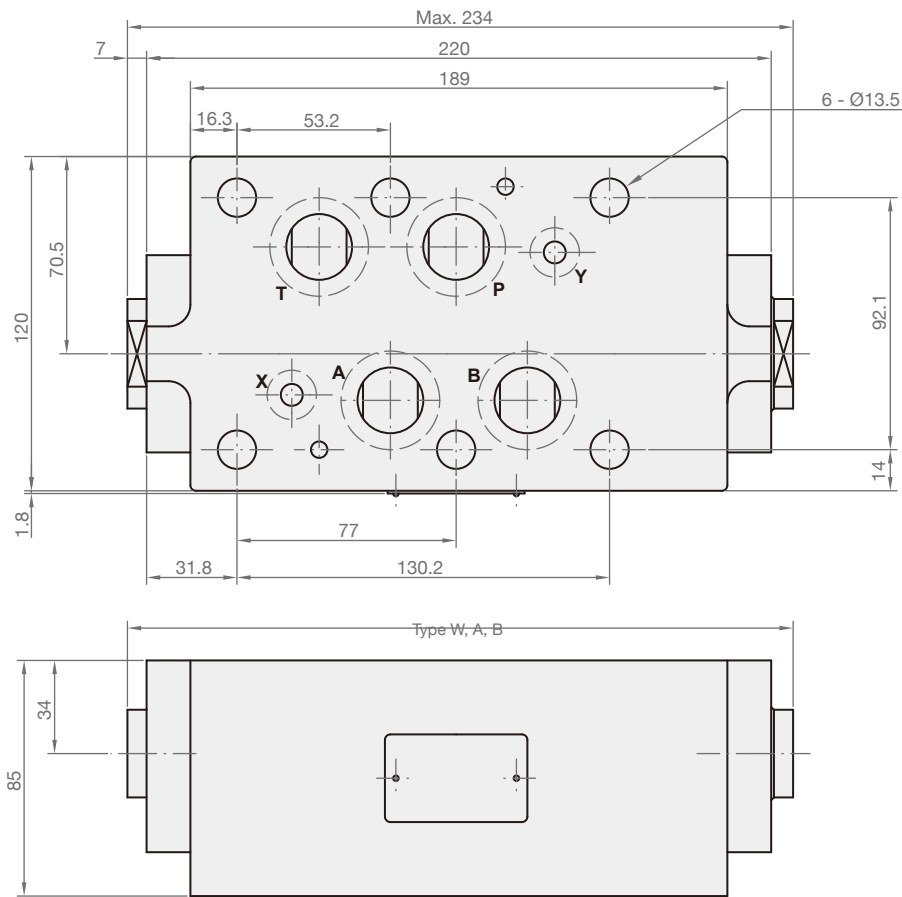
► MPCV-03



► MPCV-04

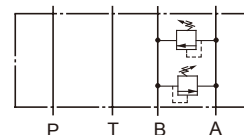


► **MPCV-06**



# MRV-D

## SYMBOLS



## ORDER CODES

**MRV** - **02** **D** - **1**

1 2 1 3

|   |                     |       |                            |
|---|---------------------|-------|----------------------------|
| 1 | Model Name          | MRV-D |                            |
| 2 | Thread Connection   | 02    | 1/4"                       |
| 3 | Pressure Adj. Range | 1     | 7~70 kgf/cm <sup>2</sup>   |
|   |                     | 2     | 35~140 kgf/cm <sup>2</sup> |
|   |                     | 3     | 70~210 kgf/cm <sup>2</sup> |

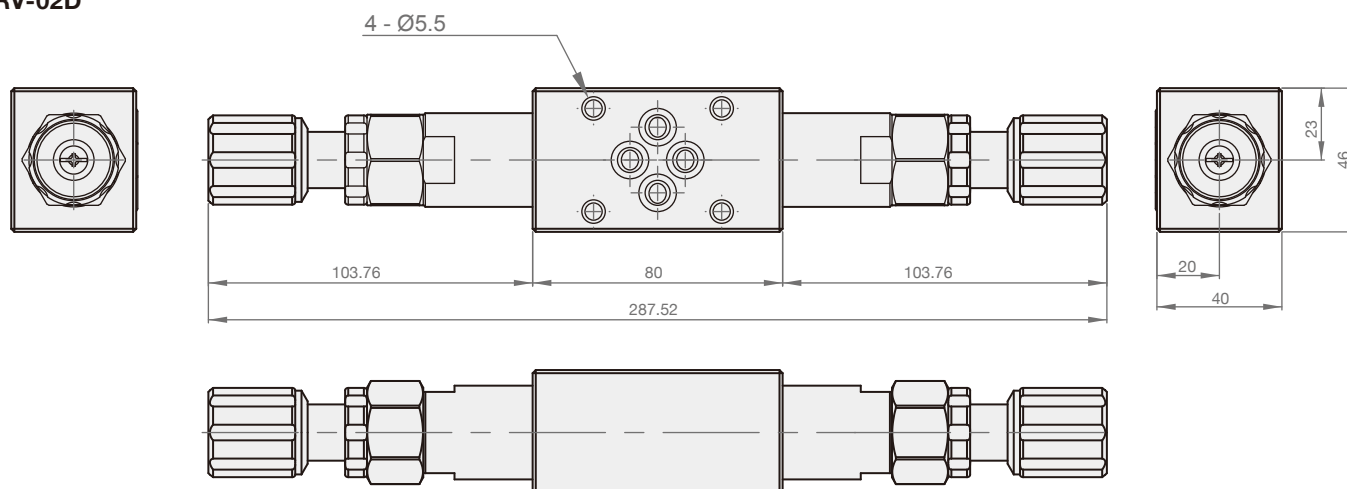
## MODEL SPEC.

| Model   | Max. Pressure<br>(kgf/cm <sup>2</sup> ) | Pressure Adj. Range<br>(kgf/cm <sup>2</sup> ) | Max. Flow<br>(l/min) | Weight<br>(kg) |
|---------|-----------------------------------------|-----------------------------------------------|----------------------|----------------|
| MRV-02D | 210                                     | 1: 7~70<br>2: 35~140<br>3: 70~210             | 35                   | 1.53           |

## DIMENSION

( UNIT : mm )

### ► MRV-02D



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