

# Control valve(3/2way)



## M3 Series



### Symbol

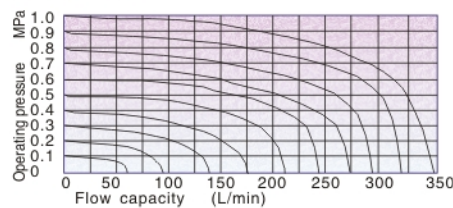


### Product feature

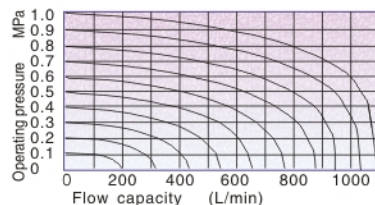
1. Exhaust outlet locates over the (body), which is convenient to install muffler to decrease noise and pollution;
2. The external force required by direction-change of series of M3B, M3R and M3L is provided by external mechanism, which can be used for position test or [stroke switch] limit switch;
3. M3C, M3D, M3Y, M3PF, M3PM, M3PP, M3PL and M3HS are operated manually, owning control joints with several structure forms and suitable for application under different conditions;
4. It is in sliding column structure that the control force is not influenced by working pressure (that is, there is no back pressure effect); internal circle is sealed with good tightness and the direction-change is sensitive;
5. No need to add oil for lubrication;
6. Multi-mounting makes it convenient to install and apply;
7. The control joints of series of M3C, M3D, M3Y, M3R, and M3L are made of metal which has long service life and more reliable and steady performance.

### Flow chart

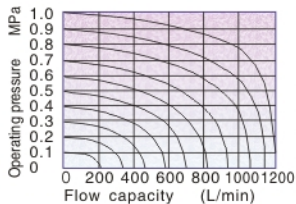
Model: M3B-05



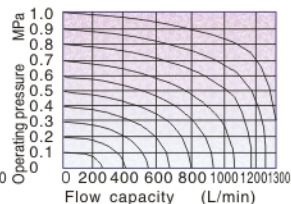
Model: M3B110-06



Model: M3B210-06



Model: M3B210-08



### Specification

| Model                    | M3B   | M3C  | M3D | M3R | M3L | M3Y | M3PM | M3PP | M3PF | M3PL | M3HS |
|--------------------------|---|--|-----|-----|-----|-----|------|------|------|------|------|
| Fluid                    | Air (to be filtered by 40 $\mu$ m filter element) |  |     |     |     |     |      |      |      |      |      |
| Operating                | External control direct acting type               |  |     |     |     |     |      |      |      |      |      |
| Port size <sup>①</sup>   | 05: M5; 06:1/8" ; 08:1/4"                         |  |     |     |     |     |      |      |      |      |      |
| Orifice size             | Mini type   | 05: 2.5mm <sup>2</sup> (Cv=0.14)                                 |     |     |     |     |      |      |      |      |      |
|                          | 110   | 06: 8.0mm <sup>2</sup> (Cv=0.45)                                 |     |     |     |     |      |      |      |      |      |
|                          | 210   | 06:9.0mm <sup>2</sup> (Cv=0.50);08:12.0mm <sup>2</sup> (CV=0.67) |     |     |     |     |      |      |      |      |      |
| Valve type               | 3 port 2 position                                 |  |     |     |     |     |      |      |      |      |      |
| Lubrication <sup>②</sup> | Not required                                      |  |     |     |     |     |      |      |      |      |      |
| Pressure range           | 0 ~ 1.0MPa(0~145Psi)                              |  |     |     |     |     |      |      |      |      |      |
| Proof pressure           | 1.5 MPa(215Psi)                                   |  |     |     |     |     |      |      |      |      |      |
| Temperature <sup>③</sup> | -20~70  |  |     |     |     |     |      |      |      |      |      |
| Material of body         | Aluminum alloy                                    |  |     |     |     |     |      |      |      |      |      |

① PT thread, NPT thread and G thread are available;

② If add oil for lubrication, it is not allowed to stop midway. It is suggested to use ISO VG32 lubricant or the oil with the same grade.

### Ordering code

Common type: **M3** **PM** **210** — **06** — **R** — **P**

Valve's type  
M3: M type  
3/2 way

| Model                            | Code                          |
|----------------------------------|-------------------------------|
| B: Basic type <sup>①</sup>       | 110:100 Series single control |
| C: Long handle type              |                               |
| D: Short handle type             | 210:200 Series single control |
| Y: Lever type                    |                               |
| R: Roller type                   |                               |
| L: Roller with free return type  |                               |
| PL: Latching type(only red)      |                               |
| PP: Protruding type <sup>②</sup> |                               |
| PF: Flat type                    |                               |
| PM: Mushroom type                |                               |
| HS: Selector type                |                               |

Port size  
06: 1/8"  
08: 1/4"

| Button color | Thread type |
|--------------|-------------|
| R: Red       | P: PT       |
| G: Green     | T: NPT      |
| B: Black     | G: G        |

① Note: The types of B, C, D, Y, R, L have no color code of the button for option

② Note: The types of PP, PF, PM and HS have three button colors for option.

Mini type: **M3** **R** — **05**

Valve's type  
M3: M type  
3/2 way

| Model                           |
|---------------------------------|
| B: Basic type                   |
| R: Roller type                  |
| L: Roller with free return type |

Port size  
05: M5

### Inner structure

**M3R210**

| No. | Item              |
|-----|-------------------|
| 1   | Button cover      |
| 2   | Screw             |
| 3   | Spring            |
| 4   | Spacer            |
| 5   | Body              |
| 6   | Screw             |
| 7   | Roller holder     |
| 8   | Roller            |
| 9   | Axle              |
| 10  | Rotating block    |
| 11  | Screw             |
| 12  | Fore cover        |
| 13  | Piston O-ring     |
| 14  | Spool             |
| 15  | Positioning block |

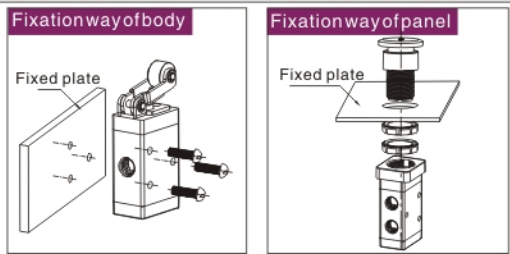
### Reversal stroke

Unit: mm

| Common type |              |               |      |              | Mini type             |       |              |               |
|-------------|--------------|---------------|------|--------------|-----------------------|-------|--------------|---------------|
| Type        | Spool stroke | Button stroke | Type | Spool stroke | Roller (handle)stroke | Type  | Spool stroke | Roller stroke |
| M3B         | 2.0-3.3      | -             | M3R  | 2.0-3.0      | 4.6-6.8               | M3B05 | 2.0-3.3      | -             |
| M3PF        | 2.0-3.3      | 3.8-5.1       | M3L  | 2.0-3.0      | 5.0-7.8               | M3R05 | 2.0-3.0      | 6.0-8.5       |
| M3PP        | 2.0-3.3      | 3.8-5.1       | M3C  | 2.0-3.0      | 11.0-16.0             | M3L05 | 2.0-3.0      | 7.0-10.0      |
| M3PM        | 2.0-3.3      | 3.8-5.1       | M3D  | 2.0-3.0      | 5.5-8.0               |       |              |               |
| M3PL        | 2.0-3.3      | 5.9-7.2       |      |              |                       |       |              |               |
| M3HS        | 2.0-3.3      | 5.1-6.4       |      |              |                       |       |              |               |

## M3 Series

### Assemble chart

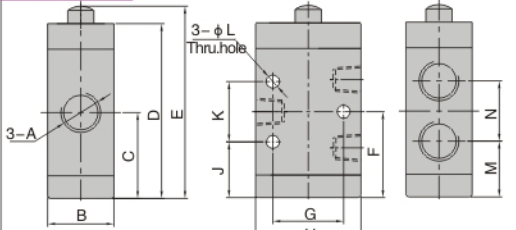


#### Attentions

- 1) The control set is made of engineering plastic which only allows manual operation and switching valves through metal impact is forbidden.
- 2) The series of M3B, M3C, M3D, M3PM, M3PF and M3PP get the function of automatic restoration. The hand valves of M3Y, M3HS and M3PL are in the type of manual restoration. M3PL will be restored by turning the revolve button after being pressed into orientation.
- 3) Pay attention to the reversing stroke. The reversing stroke can not surpass its stroke stipulated in stroke control table when the direction-change of the valve is forced by any external forces, otherwise it will cause the damage of the valve.
- 4) The M3L can only switch the valve in single direction (impact from right to left). The impact from the other direction is invalid (from left to right).
- 5) Control joint combination can be ordered individually. Please refer to the table on the right for order details.

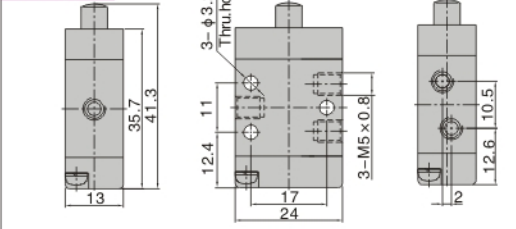
### Dimensions

#### Common type



| Type/Item | M3B110   | M3B210               | Type/Item | M3B110 | M3B210 |
|-----------|----------|----------------------|-----------|--------|--------|
| A         | 06: 1/8" | 06: 1/8"<br>08: 1/4" | G         | 18     | 23.5   |
| B         | 18       | 22                   | J         | 15.5   | 18.5   |
| C         | 23.5     | 28.5                 | K         | 16     | 20     |
| D         | 46.5     | 58                   | L         | 3.2    | 4.3    |
| E         | 52       | 63.8                 | M         | 15.5   | 18.5   |
| F         | 23.5     | 28.5                 | N         | 16     | 20     |

#### Mini type



### Mini control set dimensions

| Model               | M3R05 Model  | M3L05 Model   |
|---------------------|--|---|
| How to order        | Ordering code: M3R05-P14A<br>Type: M3R05 Roller type control set | Ordering code: M3L05-P14A<br>Type: M3L05 Roller with free return type control set |
| Applicable products | M3R05  | M3L05   |
| Dimensions          |  |   |

### Control set dimensions

| Model               | C Long handle type |                                     | D Short handle type |                                      | Y Lever type   |                               |
|---------------------|--------------------|-------------------------------------|---------------------|--------------------------------------|----------------|-------------------------------|
|                     | Ordering code      | Type                                | Ordering code       | Type                                 | Ordering code  | Type                          |
| How to order        | M3C210-P13A        | M3C210 Long handle type control set | M3D210-P13A         | M3D210 Short handle type control set | M3Y210-P13A    | M3Y210 Lever type control set |
| Applicable products | M3C110, M3C210     |                                     | M3D110, M3D210      |                                      | M3Y110, M3Y210 |                               |
| Dimensions          |                    |                                     |                     |                                      |                |                               |

| Model               | R Roller type  |                                | L Roller with free return type |   |
|---------------------|----------------|--------------------------------|--------------------------------|---|
|                     | Ordering code  | Type                           | Ordering code                  | Type  |
| How to order        | M3R210-P14A    | M3R210 Roller type control set | M3L210-P14A                    | M3L210 Roller with free return type control set |
| Applicable products | M3R110, M3R210 |                                | M3L110, M3L210                 |   |
| Dimensions          |                |                                |                                |   |

| Model               | PP Protruding type |  | PM Mushroom type |  | PL Latching type (only red) |                                      |
|---------------------|--------------------|--|------------------|--|-----------------------------|--------------------------------------|
|                     | Ordering code      | Type                                     | Ordering code    | Type                                   | Ordering code               | Type                                 |
| How to order        | S3PP05-P11A        | S3PP protruding type control set (Green) | S3PM05-P11A      | S3PM mushroom type control set (Green) | S3PL05-P12A                 | S3PL Latching type control set (Red) |
|                     | S3PP05-P12A        | S3PP protruding type control set (Red)   | S3PM05-P12A      | S3PM mushroom type control set (Red)   |                             |                                      |
|                     | S3PP05-P13A        | S3PP protruding type control set (Black) | S3PM05-P13A      | S3PM mushroom type control set (Black) |                             |                                      |
| Applicable products | M3PP110, M3PP210   |  | M3PM110, M3PM210 |  | M3PL110, M3PL210            |                                      |
| Dimensions          |                    |  |                  |  |                             |                                      |

| Model               | PF Flat type     |                                    | HS Selector type |  |
|---------------------|------------------|------------------------------------|------------------|--|
|                     | Ordering code    | Type                               | Ordering code    | Type                                   |
| How to order        | S3PF05-P11A      | S3PF flat type control set (Green) | S3HS05-P11A      | S3HS selector type control set (Green) |
|                     | S3PF05-P12A      | S3PF flat type control set (Red)   | S3HS05-P12A      | S3HS selector type control set (Red)   |
|                     | S3PF05-P13A      | S3PF flat type control set (Black) | S3HS05-P13A      | S3HS selector type control set (Black) |
| Applicable products | M3PF110, M3PF210 |                                    | M3HS110, M3HS210 |  |
| Dimensions          |                  |                                    |                  |  |