# Mechanically Jointed Rodless Cylinder/Basic Type

# Series MY3A/3B

## ø16, ø20, ø25, ø32, ø40, ø50, ø63

## How to Order

**Basic** **MY3 B 16 – 300 HL – M9BW –**

**Type**

| | |
|---|---|
| **A** | Short type (Rubber bumper) |
| **B** | Standard type (Air cushion) |

**Cylinder bore size**

| | |
|---|---|
| **16** | 16 mm |
| **20** | 20 mm |
| **25** | 25 mm |
| **32** | 32 mm |
| **40** | 40 mm |
| **50** | 50 mm |
| **63** | 63 mm |

**Port thread type**

| Symbol | Type | Bore size |
|---|---|---|
| **Nil** | M5 | ø16, ø20 |
| | Rc | ø25, ø32, ø40 ø50, ø63 |
| **TN** | NPT | |
| **TF** | G | |

**Stroke**

∗ Refer to "Standard Stroke" table on page 14 for further information.

**Number of auto switches**

| | |
|---|---|
| **Nil** | 2 pcs. |
| **S** | 1 pc. |
| **n** | "n" pcs. |

**Made to Order**

For details, refer to page 14.

**Auto switch**

| | |
|---|---|
| **Nil** | Without auto switch (Built-in magnet) |

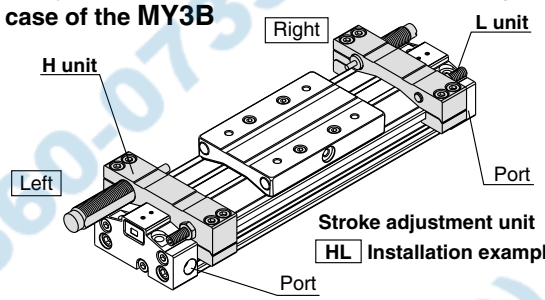
∗ Refer to the table below for auto switch model numbers.

**Stroke adjustment unit**

| Symbol | Stroke adjustment unit | Applicable model |
|---|---|---|
| **Nil** | Without adjustment unit | MY3A, MY3B |
| **L** | With shock absorbers for low load on both sides | MY3B |
| **H** | With shock absorbers for high load on both sides | |
| **LS** | With a shock absorber for low load on left side | |
| **SL** | With a shock absorber for low load on right side | |
| **HS** | With a shock absorber for high load on left side | |
| **SH** | With a shock absorber for high load on right side | |
| **LH** | With L unit on left side and H unit on right side | |
| **HL** | With H unit on left side and L unit on right side | |

**Stroke adjustment unit appearance and mounting direction**

**In case of the MY3B**




**Applicable Auto Switches**/ Refer to Best Pneumatics No. 2, pages 1263 to 1371 for further information on auto switches.

| Type | Special function | Electrical entry | Indicator light | Wiring (Output) | Load voltage DC | | Load voltage AC | Auto switch model Perpendicular | Auto switch model In-line | Lead wire length (m) 0.5 (Nil) | 1 (M) | 3 (L) | 5 (Z) | Pre-wired connector | Applicable load | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Solid state switch | — | Grommet | Yes | 3-wire (NPN) | 24 V | 5 V, 12 V | — | **M9NV** | **M9N** | ● | ● | ● | ○ | ○ | IC circuit | Relay, PLC |
| | | | | 3-wire (PNP) | | | | **M9PV** | **M9P** | ● | ● | ● | ○ | ○ | | |
| | | | | 2-wire | | 12 V | | **M9BV** | **M9B** | ● | ● | ● | ○ | ○ | — | |
| | Diagnostic indication (2-color indication) | | | 3-wire (NPN) | | 5 V, 12 V | | **M9NWV** | **M9NW** | ● | ● | ● | ○ | ○ | IC circuit | |
| | | | | 3-wire (PNP) | | | | **M9PWV** | **M9PW** | ● | ● | ● | ○ | ○ | | |
| | | | | 2-wire | | 12 V | | **M9BWV** | **M9BW** | ● | ● | ● | ○ | ○ | — | |
| Reed switch | — | Grommet | Yes | 3-wire (NPN equiv.) | — | 5 V | — | **A96V** | **A96** | ● | — | ● | — | — | IC circuit | — |
| | | | No | 2-wire | 24 V | 12 V | 100 V | **A93V** | **A93** | ● | — | ● | — | — | — | Relay, PLC |
| | | | | | | | 100 V or less | **A90V** | **A90** | ● | — | ● | — | — | IC circuit | |

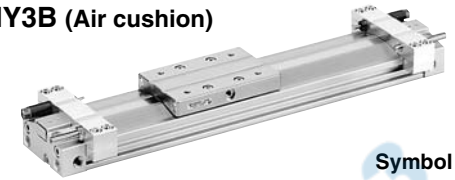
∗ Lead wire length symbols: 0.5 m ..... Nil (Example) M9NW
1 m ..... M (Example) M9NWM
3 m ..... L (Example) M9NWL
5 m ..... Z (Example) M9NWZ

∗ Solid state auto switches marked with a "○" symbol are produced upon receipt of order.

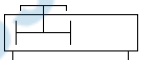
∗ In addition to the models in the above table, there are some other auto switches that are applicable. For more information, please refer to page 38.
∗ Refer to Best Pneumatics No. 2, pages 1328 to 1329 for the details of auto switches with a pre-wired connector.
∗ Auto switches are shipped together, but not assembled.

**MY3A (Rubber bumper)**

**MY3B (Air cushion)**



**Symbol**



## Specifications

| Bore size (mm) | 16, 20 | 25, 32 | 40 | 50, 63 |
|---|---|---|---|---|
| **Fluid** | Air | | | |
| **Action** | Double acting | | | |
| **Operating pressure range** | 0.15 to 0.8 MPa | | | |
| **Proof pressure** | 1.2 MPa | | | |
| **Ambient and fluid temperature** | 5 to 60°C | | | |
| **Cushion** | Rubber bumper (MY3A) / Air cushion (MY3B) | | | |
| **Lubrication** | Not required (Non-lube) | | | |
| **Stroke length tolerance** | 1000 mm or less $^{+1.8}_{0}$, From 1001 mm $^{+2.8}_{0}$ Note) | | | |
| **Port size (Rc, NPT, G)** | M5 x 0.8 | 1/8 | 1/4 | 3/8 |

Note) The tolerance of the MY3A is a value with no pressurization. When a rubber bumper is used, the stroke of the MY3A varies according to the operating pressure. To find the stroke length tolerance at each operating pressure, double the additional stroke due to pressure on each side (pages 6 and 7) and add it.

## Piston Speed

| Bore size (mm) | 16 | 20 | 25 | 32 | 40 | 50 | 63 |
|---|---|---|---|---|---|---|---|
| Without stroke adjustment unit (MY3A) | 80 to 500 mm/s | | | | | | |
| Without stroke adjustment unit (MY3B) | 80 to 1000 mm/s | | | | | | |
| Stroke adjustment unit (L and H unit/MY3B) | 80 to 1000 mm/s (ø16, ø20 L unit: 80 to 800 mm/s) | | | | | | |
| ✻ External shock absorber (low reaction type) | 80 to 1500 mm/s | | | | | | |

✻ Refer to "External Shock Absorber Selection" on pages 10 and 11. When the RB series is used, operate at a piston speed that will not exceed the absorption capacity of the air cushion and stroke adjustment unit.

✻ Because of its structure, the fluctuation of this cylinder's operating speed is greater than rod type cylinders. For applications that require constant speed, select an applicable equipment for the level of demand.

## Standard Stroke

| Bore size (mm) | Standard stroke (mm)✻ | Max. manufacturable stroke (mm) |
|---|---|---|
| **16, 20, 25 32, 40, 50 63** | 100, 200, 300, 400, 500, 600 700, 800, 900, 1000, 1200 1400, 1600, 1800, 2000 | 3000 |

✻ Strokes are manufacturable in 1 mm increments, up to the maximum stroke. However, when exceeding 2000 mm stoke, add "-XB11" to the end of the model number. Refer to "Made to Order" on page 40.

## Stroke Adjustment Unit Specifications

| Bore size (mm) | 16, 20 | | 25, 32 | | 40, 50 | | 63 | |
|---|---|---|---|---|---|---|---|---|
| **Unit symbol** | L | H | L | H | L | H | L | H |
| **Shock absorber model** | RB0806 | RB1007 | RB1007 | RB1412 | RB1412 | RB2015 | RB2015 | RB2725 |
| **Shock absorber soft type Series RJ (-XB22) model** | RJ0806H | RJ1007H | RJ1007H | RJ1412H | RJ1412H | — | — | — |
| **Fine stroke adjustment range (mm)** | 0 to –10 | | 0 to –12 | | 0 to –16 | | 0 to –24 | |

Made to Order

### Made to Order

**(For details, refer to pages 40 to 44.)**

| Symbol | Specifications |
|---|---|
| **-XB11** | Long stroke type |
| **-XB22** | Shock absorber soft type Series RJ type |
| **-X168** | Helical insert thread |
| **-X416** | Holder mounting bracket Ⅰ |
| **-X417** | Holder mounting bracket Ⅱ |

## Shock Absorber Specifications

| Model | | RB 0806 | RB 1007 | RB 1412 | RB 2015 | RB 2725 |
|---|---|---|---|---|---|---|
| **Max. energy absorption (J)** | | 0.84 | 2.4 | 10.1 | 29.8 | 46.6 |
| **Stroke absorption (mm)** | | 6 | 7 | 12 | 15 | 25 |
| **Max. collision speed (mm/s)** | | 1000 | | | | |
| **Max. operating frequency (cycle/min)** | | 80 | 70 | 45 | 25 | 10 |
| **Spring force (N)** | **Extended** | 1.96 | 4.22 | 6.86 | 8.34 | 8.83 |
| | **Compressed** | 4.22 | 6.86 | 15.98 | 20.50 | 20.01 |
| **Operating temperature range (°C)** | | 5 to 60 | | | | |

Note) The shock absorber service life is different from that of the MY3A/3B cylinders depending on operating conditions. Allowable operating cycle under the specifications set in this catalog is shown below.

**1.2 million times RB08□□**
**2 million times RB10□□ to RB2725**

Note) Specified service life (suitable replacement period) is the value at room temperature (20 to 25°C). The period may vary depending on the temperature and other conditions. In some cases the absorber may need to be replaced before the allowable operating cycle above.