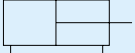


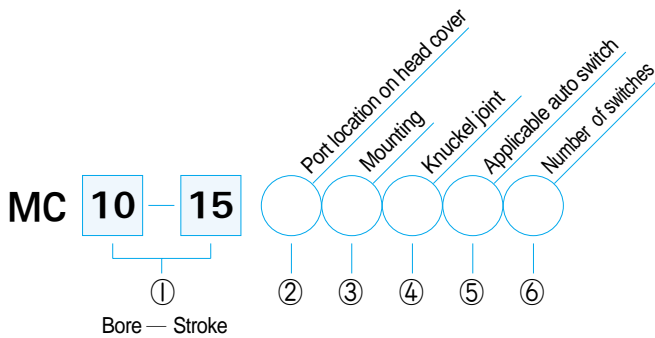
# Mini Cylinder

(Series MC)

Bore size  $\phi$  10,  $\phi$  16

KS Symbol 

## How to order



### ① Bore size — Standard stroke (mm)

|           |   |
|-----------|---|
| $\phi$ 10 | 15, 30, 45, 60, 75, 100, 125, 150           |
| $\phi$ 16 | 15, 30, 45, 60, 75, 100, 125, 150, 175, 200 |

### ② Port location on head cover

|       |                         |
|-------|-------------------------|
| Blank | Perpendicular(standard) |
| H     | In-line                 |
| S     | Use bush on rod cover   |

### ③ Mounting

|       |                      |
|-------|----------------------|
| Blank | Basic type           |
| L     | Axial foot type      |
| F     | Rod side flange type |
| D     | Double clevis type   |

### ④ Knuckle joint

|   |                      |
|---|----------------------|
| Y | Double knuckle joint |
| I | Single knuckle joint |

### ⑤ Applicable auto switch

|       |                         |
|-------|-------------------------|
| Blank | None                    |
| A30B  | A - 30 Switch with band |
| A35B  | A - 35 Switch with band |

### ⑥ Number of switches

|   |       |
|---|-------|
| 1 | 1 pc  |
| 2 | 2 pcs |
| n | n pcs |

- Built-in magnet (standard)
- Stainless steel tube provides long cycle life
- No lubrication required
- Compact and lightweight

## Specifications

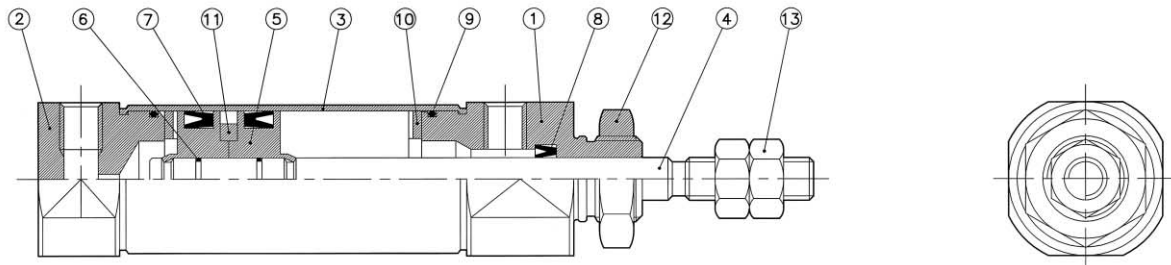
|                               |                                    |               |
|-------------------------------|------------------------------------|---------------|
| Acting                        | Double acting single rod           |               |
| Fluid                         | Air                                |               |
| Proof pressure                | 10.5 kgf/cm <sup>2</sup> (1050kPa) |               |
| Max. operating pressure       | 7.0 kgf/cm <sup>2</sup> (700kPa)   |               |
| Min. operating pressure       | 0.6 kgf/cm <sup>2</sup> (60kPa)    |               |
| Ambient and fluid temperature | -10℃ ~+70℃                         |               |
| Cushion                       | Rubber cushion(Standard)           |               |
| Lube                          | None(Non-lube)                     |               |
| Piston speed                  | 50~750 mm/s                        |               |
| Thread tolerance              | KS 2 class                         |               |
| Stroke tolerance              | +1.0<br>0                          |               |
| Allowable kinetic energy      | $\phi$ 10                          | 0.35 kgf · cm |
|                               | $\phi$ 16                          | 0.9 kgf · cm  |

## Weight table

(gf)

| Bore size(mm)                           | $\phi$ 10            | $\phi$ 16 |
|---|----------------------|-----------|
| Basic weight                            | 24                   | 55        |
| Additional weight for each 15 of stroke | 4                    | 6.5       |
| Mounting bracket weight                 | Axial foot type      | 7         |
|   | Rod side flange type | 5         |
|   | Double clevis type   | 2         |
|   |                      | 19        |
|   |                      | 13        |
|   |                      | 8         |

## Construction



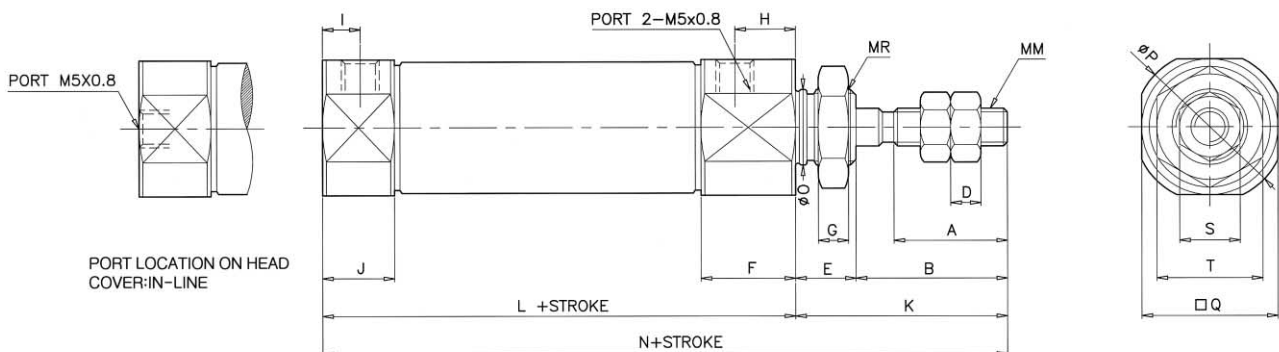
## Parts List

| NO. | Description    | Material    |
|-----|----------------|-------------|
| ①   | Rod Cover      | A $\ell$    |
| ②   | Head Cover     | A $\ell$    |
| ③   | Cylinder Tube  | SUS         |
| ④   | Piston Rod     | SUS         |
| ⑤   | Piston         | MBsBE       |
| ⑥   | O - ring       | NBR         |
| ⑦   | Piston Packing | NBR         |
| ⑧   | Rod Packing    | NBR         |
| ⑨   | Guide Packing  | NBR         |
| ⑩   | Damper         | Urethan     |
| ⑪   | Magnet         | Nd - Fe - B |
| ⑫   | Mounting Nut   | MBsBE       |
| ⑬   | Hexagon Nut    | -           |

## Accessories List

| Mounting |                      | Basic type | Foot type | Flange type | Double clevis type |
|----------|----------------------|------------|-----------|-------------|--------------------|
| Standard | Mounting nut         | ○          | ○         | ○           | -                  |
|          | Rod end nut          | ○          | ○         | ○           | ○                  |
|          | Pin for clevis       | -          | -         | -           | ○                  |
| Option   | Foot                 | -          | ○         | -           | -                  |
|          | Flange               | -          | -         | ○           | -                  |
|          | Single knuckle joint | ○          | ○         | ○           | ○                  |
|          | Double knuckle joint | ○          | ○         | ○           | ○                  |
|          | Auto Switch          | ○          | ○         | ○           | ○                  |

Basic Type

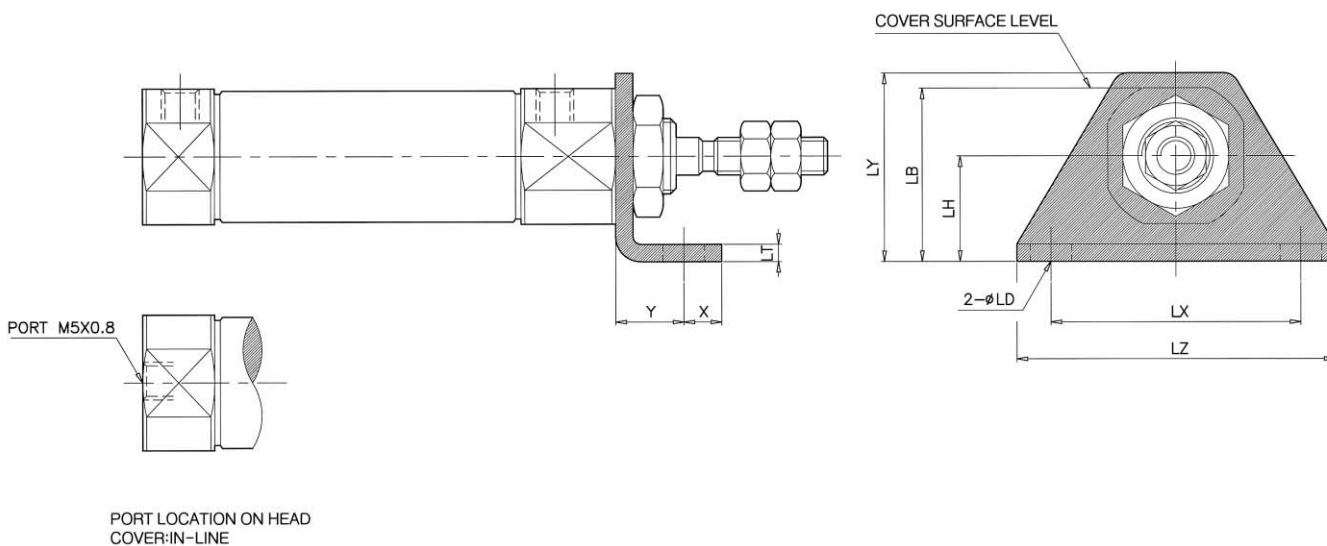


| Bore size | A  | B  | D   | E | F    | G | H | I | J   | K  | L  | N  | $\phi O_{(h8)}$      | $\phi P$  | $\square Q$ | MM     | MR    | S | T  |
|-----------|----|----|-----|---|------|---|---|---|-----|----|----|----|----------------------|-----------|-------------|--------|-------|---|----|
| $\phi 10$ | 15 | 20 | 3.2 | 8 | 12.5 | 4 | 8 | 5 | 9.5 | 28 | 46 | 74 | $\phi 8_{-0.022}^0$  | $\phi 14$ | 12          | M4×0.7 | M8×1  | 7 | 11 |
| $\phi 16$ | 15 | 20 | 4   | 8 | 12.5 | 4 | 8 | 5 | 9.5 | 28 | 47 | 75 | $\phi 10_{-0.022}^0$ | $\phi 20$ | 18          | M5×0.8 | M10×1 | 8 | 14 |

※ Use bush on rod cover

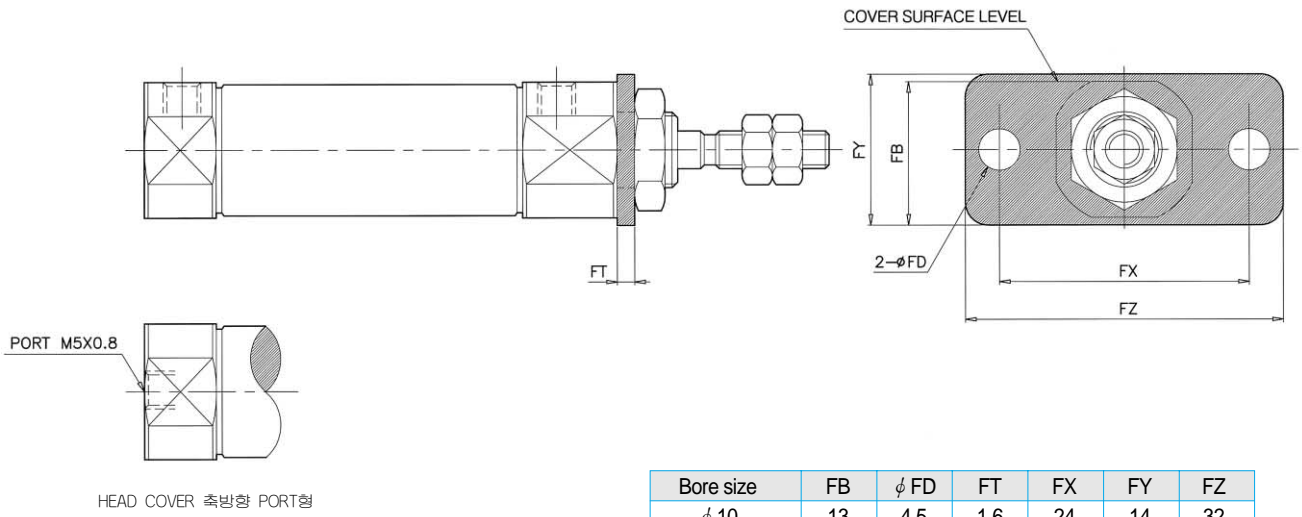
| Bore size | G | MR    | T  |
|-----------|---|-------|----|
| $\phi 10$ | 4 | M10×1 | 14 |
| $\phi 16$ | 4 | M12×1 | 14 |

Axial Foot Type(L)



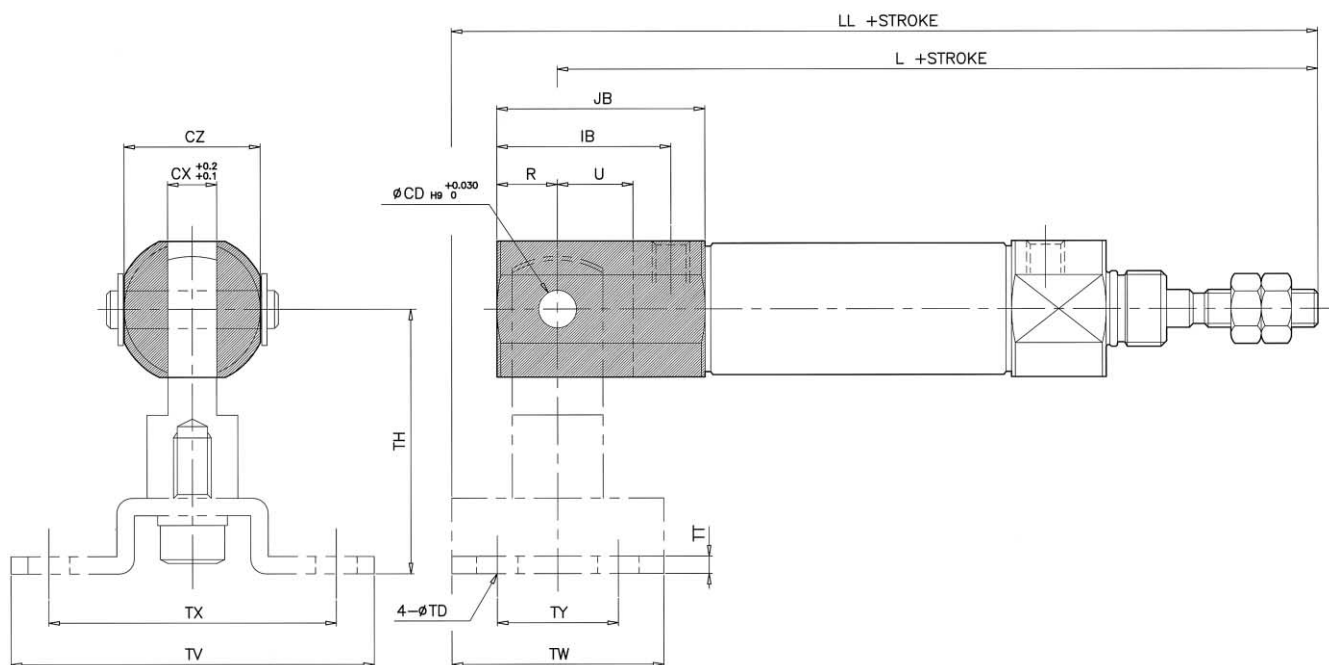
| Bore size | LB | $\phi LD$ | LH | LT  | LX | LY   | LZ | X | Y |
|-----------|----|-----------|----|-----|----|------|----|---|---|
| $\phi 10$ | 15 | 4.5       | 9  | 1.6 | 24 | 16.5 | 32 | 5 | 7 |
| $\phi 16$ | 23 | 5.5       | 14 | 2.3 | 33 | 25   | 42 | 6 | 9 |

Rod Side Flange Type(F)



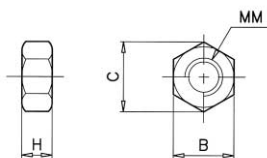
| Bore size | FB | $\phi$ FD | FT  | FX | FY | FZ |
|-----------|----|-----------|-----|----|----|----|
| $\phi 10$ | 13 | 4.5       | 1.6 | 24 | 14 | 32 |
| $\phi 16$ | 19 | 5.5       | 2.3 | 33 | 20 | 42 |

Double Clevis Type(D)



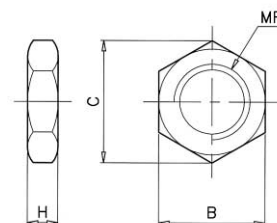
| Bore size | $\phi$ CD | CX  | CZ | L  | LL | R | U  | IB | JB   | $\phi$ TD | TH | TT  | TV | TW | TX | TY |
|-----------|-----------|-----|----|----|----|---|----|----|------|-----------|----|-----|----|----|----|----|
| $\phi 10$ | 3.3       | 3.2 | 12 | 82 | 93 | 5 | 8  | 18 | 22.5 | 4.5       | 29 | 2   | 40 | 22 | 32 | 12 |
| $\phi 16$ | 5         | 6.5 | 18 | 85 | 99 | 8 | 10 | 23 | 27.5 | 5.5       | 35 | 2.3 | 48 | 28 | 38 | 16 |

### Rod End Nut



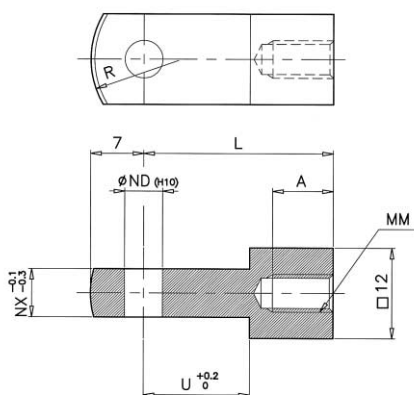
| Bore size | B | C   | MM              | H   |
|-----------|---|-----|-----------------|-----|
| $\phi 10$ | 7 | 8.1 | M4 $\times$ 0.7 | 3.2 |
| $\phi 16$ | 8 | 9.2 | M5 $\times$ 0.8 | 4   |

### Mounting Nut



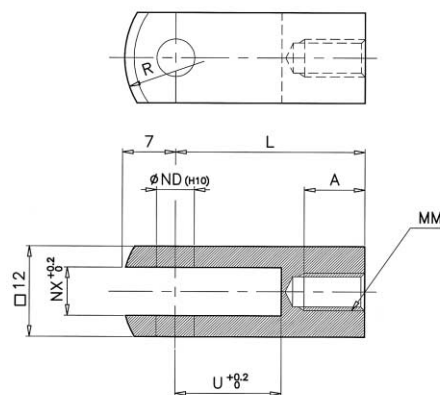
| Bore size | B  | C    | MR             | H |
|-----------|----|------|----------------|---|
| $\phi 10$ | 11 | 12.7 | M8 $\times$ 1  | 4 |
| $\phi 16$ | 14 | 16.2 | M10 $\times$ 1 | 4 |

### Single Knuckel Joint



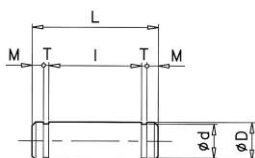
| Bore size | A | L  | MM              | $\phi ND_{(H10)}$ | NX  | R  | U  |
|-----------|---|----|-----------------|-------------------|-----|----|----|
| $\phi 10$ | 8 | 21 | M4 $\times$ 0.7 | 3.2 $^{+0.048}_0$ | 3.1 | 8  | 9  |
| $\phi 16$ | 8 | 25 | M5 $\times$ 0.8 | 5 $^{+0.048}_0$   | 6.4 | 12 | 14 |

### Double Knuckel Joint



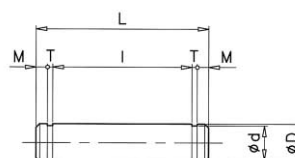
| Bore size | A  | L  | MM              | $\phi ND_{(H10)}$ | NX  | R  | U  |
|-----------|----|----|-----------------|-------------------|-----|----|----|
| $\phi 10$ | 8  | 21 | M4 $\times$ 0.7 | 3.3 $^{+0.048}_0$ | 3.2 | 8  | 9  |
| $\phi 16$ | 11 | 25 | M5 $\times$ 0.8 | 5 $^{+0.048}_0$   | 6.5 | 12 | 14 |

### Clevis Pin



| Bore size | $\phi D_{(d9)}$          | $\phi d$ | L    | I    | M   | T   | Clip     |
|-----------|--------------------------|----------|------|------|-----|-----|----------|
| $\phi 10$ | 3.3 $^{+0.030}_{-0.060}$ | 2        | 15.2 | 12.2 | 1   | 0.5 | E type 2 |
| $\phi 16$ | 5 $^{+0.030}_{-0.060}$   | 4        | 22.7 | 18.3 | 1.5 | 0.7 | E type 4 |

### Knuckel Pin

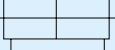


| Bore size | $\phi D_{(d9)}$          | $\phi d$ | L    | I    | M   | T   | Clip     |
|-----------|--------------------------|----------|------|------|-----|-----|----------|
| $\phi 10$ | 3.3 $^{+0.030}_{-0.060}$ | 2        | 15.2 | 12.2 | 1   | 0.5 | E type 2 |
| $\phi 16$ | 5 $^{+0.030}_{-0.060}$   | 4        | 16.6 | 12.2 | 1.5 | 0.7 | E type 4 |

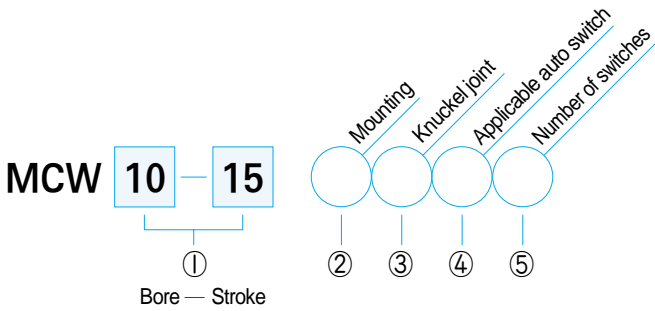
# Mini Cylinder

(Series MCW)

Bore size  $\phi 10, \phi 16$

KS Symbol 

## How to order



### ① Bore size — Standard stroke (mm)

|           |                |
|-----------|----------------|
| $\phi 10$ | 15, 30, 45, 60 |
| $\phi 16$ | 15, 30, 45, 60 |

### ② Mounting

|       |                      |
|-------|----------------------|
| Blank | Basic type           |
| L     | Axial foot type      |
| F     | Rod side flange type |

### ④ Applicable auto switch

|       |                         |
|-------|-------------------------|
| Blank | None                    |
| A30B  | A - 30 Switch with band |
| A35B  | A - 35 Switch with band |

### ③ Knuckle joint

|   |                      |
|---|----------------------|
| Y | Double knuckle joint |
|---|----------------------|

### ⑤ Number of switches

|   |       |
|---|-------|
| 1 | 1 pc  |
| 2 | 2 pcs |
| n | n pcs |

- Built-in magnet (standard)
- Stainless steel tube provides long cycle life
- No lubrication required
- Compact and lightweight

