

### Single acting – Table for standard stroke

| Tube I.D.               | Standard stroke (mm) |
|-------------------------|----------------------|
| ø12, 16, 20, 25, 32, 40 | 5, 10                |
| ø50                     | 5, 10, 15, 20        |

### Double acting – Table for standard stroke

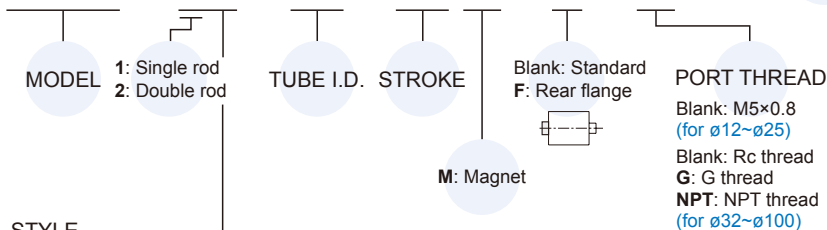
| Tube I.D. | Standard stroke                                | Long stroke (mm)                      |
|-----------|--|---------------------------------------|
| ø12, 16   | 5, 10, 15, 20, 25, 30                          | 35, 40, 45, 50, 75, 100               |
| ø20       | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50          | 75, 100, 125, 150, 175, 200           |
| ø25       | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 | 75, 100, 125, 150, 175, 200, 250, 300 |
| ø32~80    | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 | 125, 150, 175, 200, 250, 300          |
| Tube I.D. | Standard stroke (mm)                           |                                       |
| ø100      | 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100 |                                       |

\* Please contact us if the stroke is out of specification.

### Order example

\* Order example for special specification, refer to page 0-7.

**MCJQ – 12 – 20 – 25 M – F – G**



STYLE

| Code | Symbol | Description                                     | Code | Symbol | Description                                |
|------|--------|---|------|--------|--|
| 1 1  |        | Double acting / Male thread                     | 2 1  |        | Double rod / Male thread                   |
| 1 2  |        | Double acting / Female thread                   | 2 2  |        | Double rod / Female thread                 |
| 1 3  |        | Single acting / Normally extended male thread   | 2 3  |        | Single acting / Double rod / Male thread   |
| 1 4  |        | Single acting / Normally extended female thread | 2 4  |        | Single acting / Double rod / Female thread |
| 1 5  |        | Single acting / Normally returned male thread   | 2 7  |        | Double rod / Adjustable male thread        |
| 1 6  |        | Single acting / Normally returned female thread | 2 8  |        | Double rod / Adjustable female thread      |

### Features

- All products use counterbore and thread installation design without any fixed frame to meet the space saving requirements.
- Anodised aluminum tubes provide better corrosion and abrasion resistance.
- The assembly grooves are designed around the body to make the sensor easier to install and fix.
- Compact assembly groove design makes the sensors enable to flush mount and can save space.
- Sensors can be mounted on any one of three faces for 12 and 16 bore and on four faces for 20~100 bore.

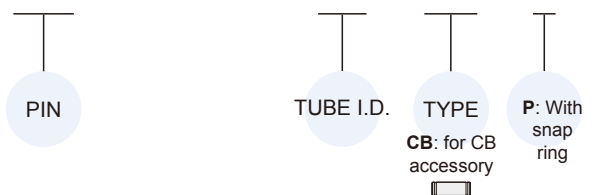
### Specification

| Model                          | MCJQ                          |    |        |       |        |        |       |         |     |     |  |
|--------------------------------|-------------------------------|----|--------|-------|--------|--------|-------|---------|-----|-----|--|
| Acting type                    | Double acting / Single acting |    |        |       |        | Double |       |         |     |     |  |
| Tube I.D. (mm)                 | 12                            | 16 | 20     | 25    | 32     | 40     | 50    | 63      | 80  | 100 |  |
| Port size                      | M5×0.8                        |    |        | Rc1/8 |        | Rc1/4  |       | Rc3/8   |     |     |  |
| Medium                         | Air                           |    |        |       |        |        |       |         |     |     |  |
| Operating pressure range (MPa) | Double acting                 |    | 0.07~1 |       | 0.05~1 |        |       |         |     |     |  |
|                                | Single acting                 |    | 0.2~1  |       | 0.15~1 |        | 0.1~1 |         | —   |     |  |
| Proof pressure                 | 1.5 MPa                       |    |        |       |        |        |       |         |     |     |  |
| Ambient temperature            | -5°C~+60°C (No freezing)      |    |        |       |        |        |       |         |     |     |  |
| Available speed range          | 50~500 mm/sec                 |    |        |       |        |        |       |         |     |     |  |
| Sensor switch (*)              | RCB                           |    | —      |       |        |        |       | ● ● ● ● |     |     |  |
|                                | RCE, RCE1                     |    | ● ●    |       | ● ●    |        | ● ●   |         | ● ● |     |  |
|                                | RDEP                          |    | ● ●    |       | —      |        | ● ●   |         | ● ● |     |  |

\* RCB, RCE, RCE1, RDEP specification, please refer to page 8-10, 12, 13, 18.

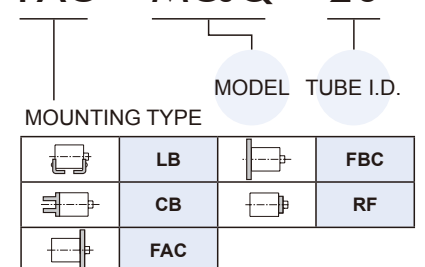
### Pin

**PIN – MCJQ – 20 – CB – P**



### Mounting accessories

**FAC – MCJQ – 20**

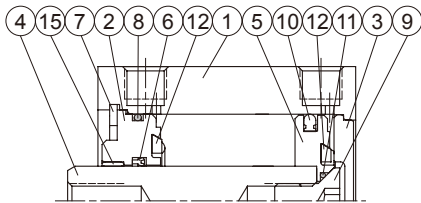


# MCJQ Inside structure & Parts list – Single rod

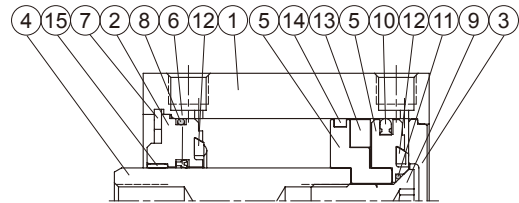
## COMPACT CYLINDER



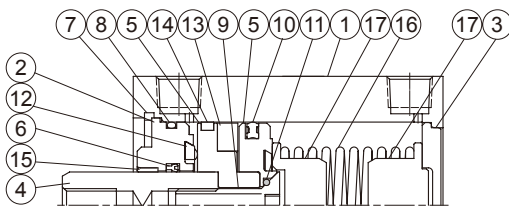
### Double acting



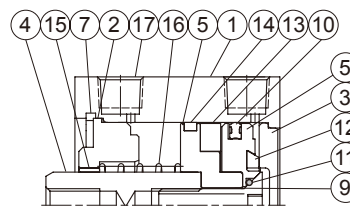
### Double acting (with magnet)



### Single acting Normally extended



### Single acting Normally returned



## Material

| No. | Tube I.D.<br>Part name                   | 12              | 16           | 20 | 25 | 32 | 40            | 50 | 63 | 80 | 100 | Q'y | Component parts (inclusion) | Repair kits (inclusion) |
|-----|--|-----------------|--------------|----|----|----|---------------|----|----|----|-----|-----|-----------------------------|-------------------------|
| 1   | Body                                     | Aluminum alloy  |              |    |    |    |               |    |    |    |     | 1   |                             |                         |
| 2   | Rod cover                                | Aluminum alloy  |              |    |    |    |               |    |    |    |     | 1   | ●                           |                         |
| 3   | End cover                                | Aluminum alloy  |              |    |    |    |               |    |    |    |     | 1   | ●                           |                         |
| 4   | Piston With magnet rod<br>Without magnet | Stainless steel |              |    |    |    | Carbor steel  |    |    |    |     | 1   |                             |                         |
|     |  | *1              | Carbor steel |    |    |    |               |    |    |    |     |     | 1                           |                         |
| 5   | Piston                                   | Aluminum alloy  |              |    |    |    |               |    |    |    |     | 1   | ●                           |                         |
| 6   | Rod packing                              | NBR             |              |    |    |    |               |    |    |    |     | 1   | ●                           | ●                       |
| 7   | Snap ring                                | Stainless steel |              |    |    |    | Spring steel  |    |    |    |     | 1   | ●                           |                         |
| 8   | Cover ring                               | NBR             |              |    |    |    |               |    |    |    |     | 1   | ●                           | ●                       |
| 9   | Piston bolt                              | Stainless steel |              |    |    |    | SCM           |    |    |    |     | 1   | ●                           |                         |
| 10  | Piston packing                           | NBR             |              |    |    |    |               |    |    |    |     | 1   | ●                           | ●                       |
| 11  | Piston gasket                            | NBR             |              |    |    |    |               |    |    |    |     | 1   | ●                           | ●                       |
| 12  | Cushion packing                          | NBR             |              |    |    |    |               |    |    |    |     | 2   | ●                           | ●                       |
| 13  | Magnet                                   | Magnet          |              |    |    |    |               |    |    |    |     | 1   | ●                           |                         |
| 14  | Wear ring                                | —               |              |    |    |    | Resin         |    |    |    |     | 1   | ●                           |                         |
| 15  | Bush                                     | —               |              |    |    |    | Bearing alloy |    |    |    |     | 1   | ●                           |                         |
| 16  | Spring                                   | SWP             |              |    |    |    |               |    |    |    |     | 1   | ●                           |                         |
| 17  | Spring holder                            | Aluminum alloy  |              |    |    |    | —             |    |    |    |     | 2   | ●                           |                         |

\*1. Stainless steel

## Seal kit

| Acting type | Rod packing                       |                   | Piston packing |               | Cover ring                        |                   | Piston gasket |
|-------------|-----------------------------------|-------------------|----------------|---------------|-----------------------------------|-------------------|---------------|
|             | Double acting / Normally extended | Normally retruned | Double acting  | Single acting | Double acting / Normally extended | Normally retruned |               |
| Q'y         | 1                                 | 0                 | 1              | 1             | 1                                 | 0                 | 1             |
| ø12         | KSYR-6                            | —                 | OPA-12         | OPA-12        | S-11                              | —                 | d4×w1         |
| ø16         | KSYR-8                            | —                 | OPA-16         | OPA-16        | S-14                              | —                 | d5×w1         |
| ø20         | KSYR-10A                          | —                 | OPA-20         | OPA-20        | S-18                              | —                 | d6×w1         |
| ø25         | KSYR-12                           | —                 | OPA-25         | OPA-25        | S-22,4                            | —                 | d8×w1         |
| ø32         | KSYR-16                           | —                 | OPA-32         | OPA-32        | S-28                              | —                 | S-9           |
| ø40         | KSYR-16                           | —                 | OPA-40         | OPA-40        | S-36                              | —                 | S-10          |
| ø50         | KSYR-20                           | —                 | OPA-50         | OPA-50        | S-46                              | —                 | S-16          |
| ø63         | KSYR-20                           | —                 | OPA-63         | —             | S-60                              | —                 | S-16          |
| ø80         | ORA-25                            | —                 | OPA-80         | —             | G-75                              | —                 | d20×w1        |
| ø100        | ORA-30                            | —                 | OPA-100        | —             | G-95                              | —                 | S-26          |

## Order example Component parts

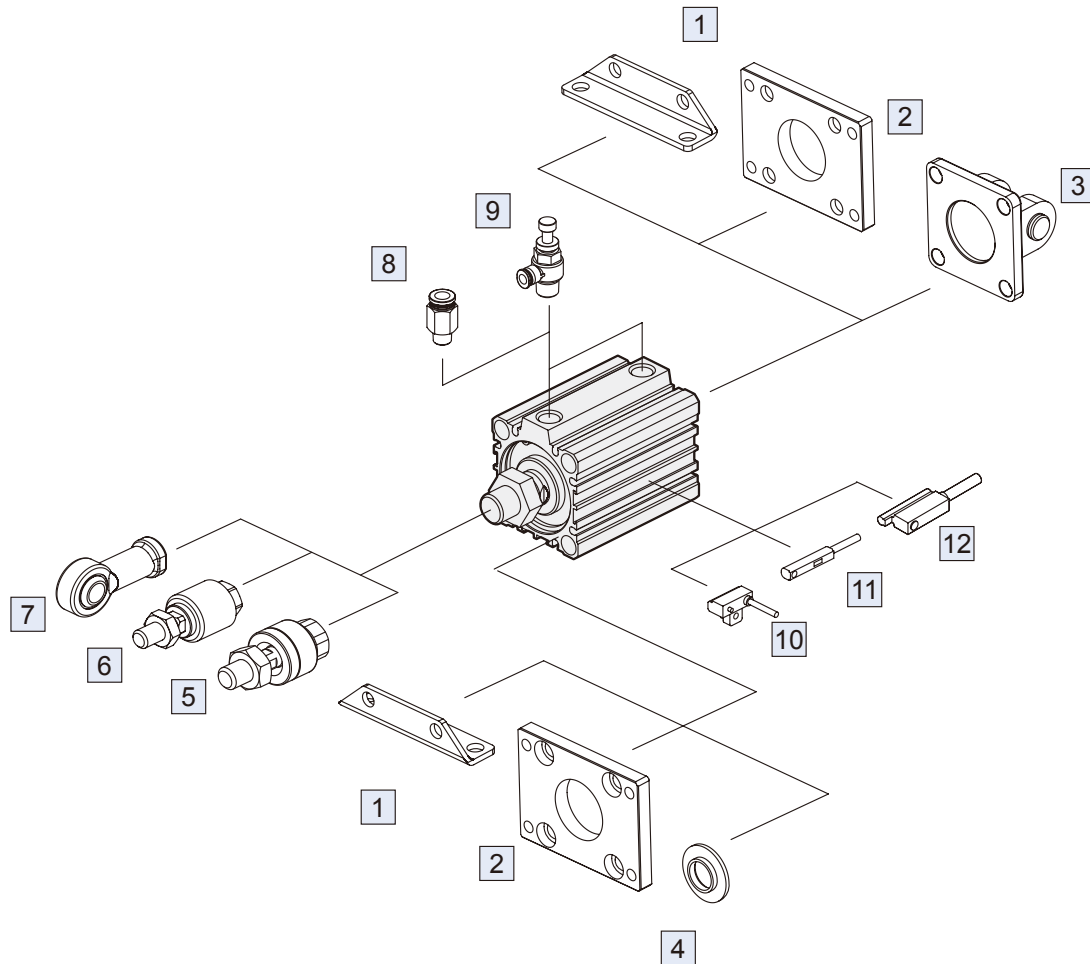
| Tube I.D. | Component parts |
|-----------|-----------------|
| ø12       | CP-MCJQ-12(M)   |
| ø16       | CP-MCJQ-16(M)   |
| ø20       | CP-MCJQ-20(M)   |
| ø25       | CP-MCJQ-25(M)   |
| ø32       | CP-MCJQ-32(M)   |
| ø40       | CP-MCJQ-40(M)   |
| ø50       | CP-MCJQ-50(M)   |
| ø63       | CP-MCJQ-63(M)   |
| ø80       | CP-MCJQ-80(M)   |
| ø100      | CP-MCJQ-100(M)  |

M: With magnet

## Repair kits

| Tube I.D. | Repair kits |
|-----------|-------------|
| ø12       | PS-MCJQ-12  |
| ø16       | PS-MCJQ-16  |
| ø20       | PS-MCJQ-20  |
| ø25       | PS-MCJQ-25  |
| ø32       | PS-MCJQ-32  |
| ø40       | PS-MCJQ-40  |
| ø50       | PS-MCJQ-50  |
| ø63       | PS-MCJQ-63  |
| ø80       | PS-MCJQ-80  |
| ø100      | PS-MCJQ-100 |



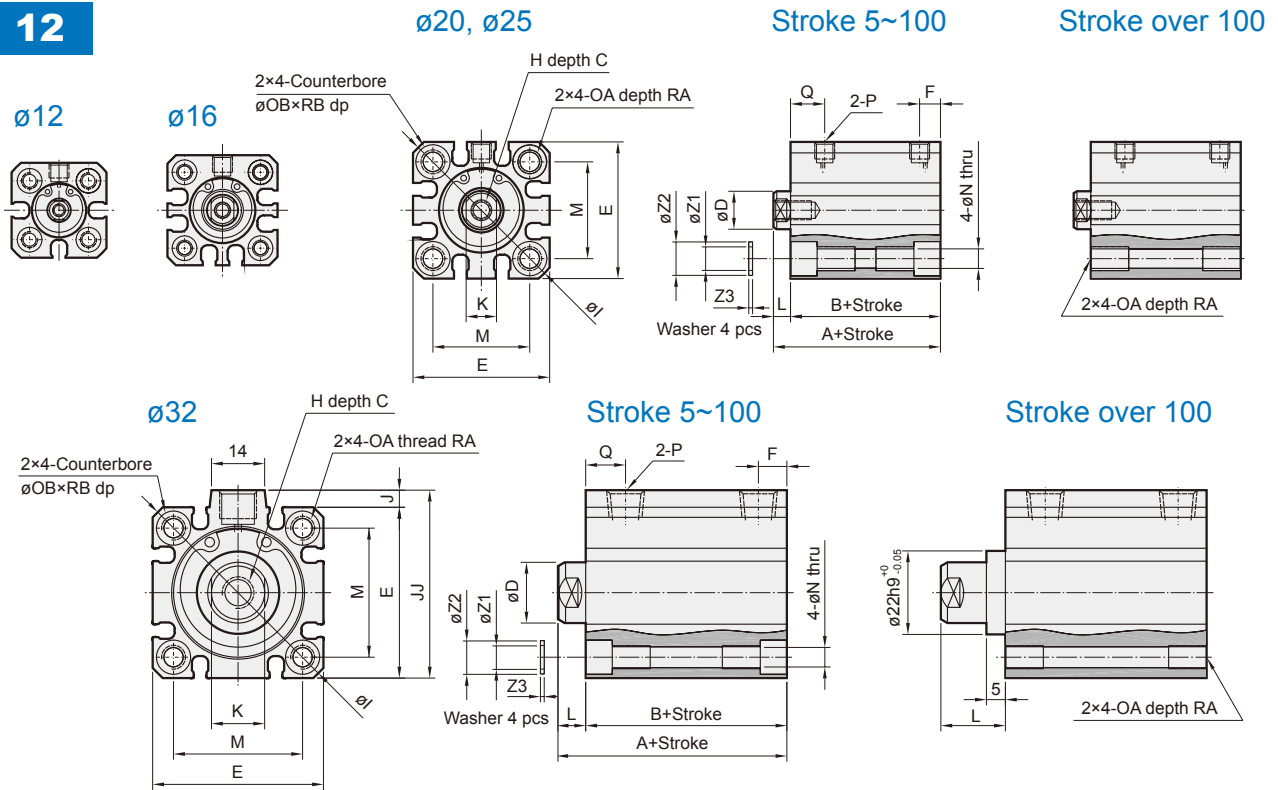


| No. | Accessories                  | Material      | Page             |
|-----|------------------------------|---------------|------------------|
| 1   | Mounting accessories LB      | Carbon steel  | 2-37, 39         |
| 2   | Mounting accessories FAC/FBC | Carbon steel  | 2-37, 38, 40, 41 |
| 3   | Mounting accessories CB+PIN  | Cast iron / * | 2-38, 42, 43     |
| 4   | Mounting accessories RF      | Aluminum      | 2-43             |
| 5   | Floating joint MFC           | Carbon steel  | 8-2              |
| 6   | Floating joint MFCS          | Carbon steel  | 8-5              |

| No. | Accessories                  | Material     | Page         |
|-----|------------------------------|--------------|--------------|
| 7   | Female rod ends PHS          | Carbon steel | 8-6          |
| 8   | Fitting PC (PISCO)           | -            | 8-3 (Vol.1)  |
| 9   | Speed controller JSC (PISCO) | -            | 8-15 (Vol.1) |
| 10  | Sensor switch RCB            | -            | 8-10         |
| 11  | Sensor switch RCE/RCE1       | -            | 8-12, 13     |
| 12  | Sensor switch RDEP           | -            | 8-18         |

\* Material of PIN and  $\phi 12$ ,  $\phi 16$  CB accessories are carbon steel.

**12**



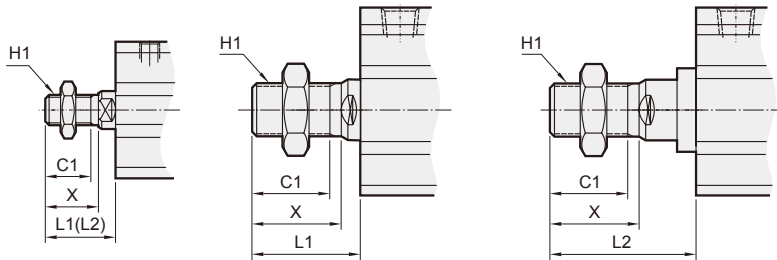
$\phi 12\sim 25$

$\phi 32$  for stroke 5~100

$\phi 32$  for stroke over 100

**11**

**Male thread**



| Code<br>Tube I.D. | C1   | H1       | L1   | L2   | X    |
|-------------------|------|----------|------|------|------|
| 12                | 9    | M5×0.8   | 14   | 24   | 10.5 |
| 16                | 10   | M6×1.0   | 15.5 | 25.5 | 12   |
| 20                | 12   | M8×1.25  | 18.5 | 28.5 | 14   |
| 25                | 15   | M10×1.25 | 22.5 | 32.5 | 17.5 |
| 32                | 20.5 | M14×1.5  | 28.5 | 38.5 | 23.5 |

\* L1: Standard stroke, L2: Long stroke

$\phi 12\sim 25$

| Code<br>Tube I.D. | Standard stroke |                |      |     |     |        |      |     |     |              |      |    | Long stroke |      |    |    |    |        |    |    |      |     |        |     | C      | D   | E  | H | I   | K   | M   | N | OA | OB | P | Q | RA | RB | Z1 | Z2 | Z3 |
|-------------------|-----------------|----------------|------|-----|-----|--------|------|-----|-----|--------------|------|----|-------------|------|----|----|----|--------|----|----|------|-----|--------|-----|--------|-----|----|---|-----|-----|-----|---|----|----|---|---|----|----|----|----|----|
|                   | Stroke range    | Without magnet |      |     |     | Magnet |      |     |     | Stroke range | A    | B  | F           | L    |    |    |    |        |    |    |      |     |        |     |        |     |    |   |     |     |     |   |    |    |   |   |    |    |    |    |    |
|                   |                 | A              | B    | F   | L   | A      | B    | F   | L   |              |      |    |             |      |    |    |    |        |    |    |      |     |        |     |        |     |    |   |     |     |     |   |    |    |   |   |    |    |    |    |    |
| 12                | 5~30            | 20.5           | 17   | 5   | 3.5 | 25.5   | 22   | 5   | 3.5 | 31~100       | 45.5 | 32 | 7.5         | 13.5 | 6  | 6  | 25 | M3×0.5 | 32 | 5  | 15.5 | 3.5 | M4×0.7 | 6.5 | M5×0.8 | 7.5 | 7  | 4 | 4.2 | 6.3 | 0.5 |   |    |    |   |   |    |    |    |    |    |
| 16                | 5~30            | 20.5           | 17   | 5   | 3.5 | 25.5   | 22   | 5   | 3.5 | 31~100       | 45.5 | 32 | 7.5         | 13.5 | 8  | 8  | 29 | M4×0.7 | 38 | 6  | 20   | 3.5 | M4×0.7 | 6.5 | M5×0.8 | 7.5 | 7  | 4 | 4.2 | 6.3 | 0.5 |   |    |    |   |   |    |    |    |    |    |
| 20                | 5~50            | 24             | 19.5 | 5.5 | 4.5 | 34     | 29.5 | 5.5 | 4.5 | 51~200       | 55.5 | 41 | 9           | 14.5 | 7  | 10 | 36 | M5×0.8 | 47 | 8  | 25.5 | 5.5 | M6×1.0 | 9   | M5×0.8 | 9   | 10 | 7 | 6.2 | 8.8 | 1   |   |    |    |   |   |    |    |    |    |    |
| 25                | 5~50            | 27.5           | 22.5 | 5.5 | 5   | 37.5   | 32.5 | 5.5 | 5   | 51~300       | 59   | 44 | 11          | 15   | 12 | 12 | 40 | M6×1.0 | 52 | 10 | 28   | 5.5 | M6×1.0 | 9   | M5×0.8 | 11  | 10 | 7 | 6.2 | 8.8 | 1   |   |    |    |   |   |    |    |    |    |    |

$\phi 32$

| Code<br>Tube I.D. | Standard stroke |                |    |        |     |              | Long stroke |        |         |      |      |      | P  | C    | D  | E  | H  | I  | J       | JJ | K   | M    | N  | OA | OB  | RA     | RB | Z1 | Z2 | Z3  |     |   |
|-------------------|-----------------|----------------|----|--------|-----|--------------|-------------|--------|---------|------|------|------|----|------|----|----|----|----|---------|----|-----|------|----|----|-----|--------|----|----|----|-----|-----|---|
|                   | Stroke range    | Without magnet |    | Magnet |     | Stroke range | A           | B      | F       | L    | Q    |      |    |      |    |    |    |    |         |    |     |      |    |    |     |        |    |    |    |     |     |   |
|                   |                 | A              | B  | A      | B   |              |             |        |         |      |      | F    |    |      |    |    |    |    |         |    |     |      |    |    |     |        |    |    |    |     | L   | Q |
| 32                | 5~50            | 30             | 23 | 40     | 33  | 7.5*1        | 7           | 10.5*1 | 101~300 | 62.5 | 45.5 | 12.5 | 17 | 12.5 | *1 | 13 | 16 | 45 | M8×1.25 | 60 | 4.5 | 49.5 | 14 | 34 | 5.5 | M6×1.0 | 9  | 10 | 7  | 6.2 | 8.8 | 1 |
| 51~100            | 40              | 33             | 40 | 33     | 7.5 | 7            | 10.5        |        |         |      |      |      |    |      |    |    |    |    |         |    |     |      |    |    |     |        |    |    |    |     |     |   |

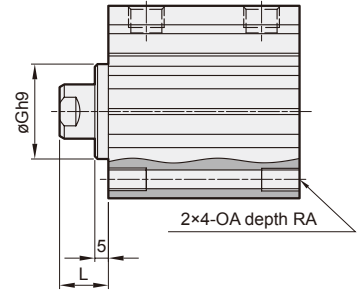
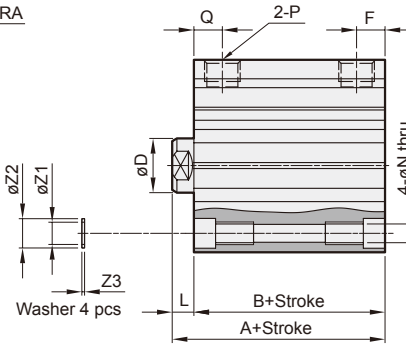
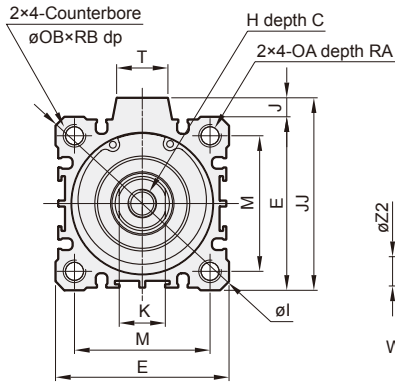
\*1. Without magnet with stroke=5mm, P=M5×0.8, Q=11.5, F=5.5

12

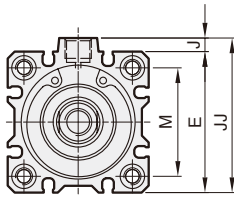
$\phi 50\sim\phi 100$

Stroke 5~100

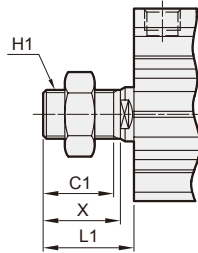
Stroke over 100



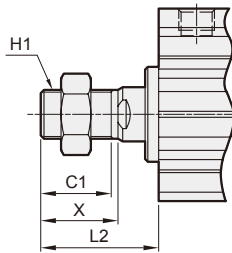
$\phi 40$



$\phi 40\sim\phi 100$   
(Stroke 5~100)



$\phi 40\sim\phi 80$   
(Stroke over 100)



11 Male thread

| Code<br>Tube I.D. | C1   | H1      | L1   | L2   | X    |
|-------------------|------|---------|------|------|------|
| 40                | 20.5 | M14×1.5 | 28.5 | 38.5 | 23.5 |
| 50                | 26   | M18×1.5 | 33.5 | 43.5 | 28.5 |
| 63                | 26   | M18×1.5 | 33.5 | 43.5 | 28.5 |
| 80                | 32.5 | M22×1.5 | 43.5 | 53.5 | 35.5 |
| 100               | 32.5 | M26×1.5 | 43.5 | —    | 35.5 |

| Code<br>Tube I.D. | Standard stroke |                |      |        |      |                    |    |                    |              | Long stroke |      |      |    |      |
|-------------------|-----------------|----------------|------|--------|------|--------------------|----|--------------------|--------------|-------------|------|------|----|------|
|                   | Stroke range    | Without magnet |      | Magnet |      | F                  | L  | Q                  | Stroke range | A           | B    | F    | L  | Q    |
| 40                | 5~50            | 36.5           | 29.5 | 46.5   | 39.5 | 8                  | 7  | 11                 | 125~300      | 72          | 55   | 14   | 17 | 14   |
|                   | 51~100          | 46.5           | 39.5 | 46.5   | 39.5 | 8                  | 7  | 11                 | 125~300      | 72          | 55   | 14   | 17 | 14   |
| 50                | 5~50            | 38.5           | 30.5 | 48.5   | 40.5 | 10.5 <sup>*1</sup> | 8  | 10.5 <sup>*1</sup> | 125~300      | 73.5        | 55.5 | 14   | 18 | 14   |
|                   | 51~100          | 48.5           | 40.5 | 48.5   | 40.5 | 10.5 <sup>*1</sup> | 8  | 10.5 <sup>*1</sup> | 125~300      | 73.5        | 55.5 | 14   | 18 | 14   |
| 63                | 5~50            | 44             | 36   | 54     | 46   | 10.5               | 8  | 15                 | 125~300      | 75          | 57   | 16.5 | 18 | 16.5 |
|                   | 51~100          | 54             | 46   | 54     | 46   | 10.5               | 8  | 15                 | 125~300      | 75          | 57   | 16.5 | 18 | 16.5 |
| 80                | 5~50            | 53.5           | 43.5 | 63.5   | 53.5 | 12.5               | 10 | 16                 | 125~300      | 86          | 66   | 19   | 20 | 19   |
|                   | 51~100          | 63.5           | 53.5 | 63.5   | 53.5 | 12.5               | 10 | 16                 | 125~300      | 86          | 66   | 19   | 20 | 19   |
| 100               | 5~50            | 65             | 53   | 75     | 63   | 13                 | 12 | 23                 | —            | —           | —    | —    | —  | —    |
|                   | 51~100          | 75             | 63   | 75     | 63   | 13                 | 12 | 23                 | —            | —           | —    | —    | —  | —    |

| Code<br>Tube I.D. | C  | D  | E   | G <sup>h9</sup>                    | H       | I   | J   | JJ    | K  | M  | N   | OA       | OB   | P                   | RA | RB   | T  | Z1   | Z2   | Z3 |
|-------------------|----|----|-----|------------------------------------|---------|-----|-----|-------|----|----|-----|----------|------|---------------------|----|------|----|------|------|----|
| 40                | 13 | 16 | 52  | 28 <sup>+0</sup> <sub>-0.052</sub> | M8×1.25 | 70  | 5   | 57    | 14 | 40 | 5.5 | M6×1.0   | 9    | Rc1/8               | 10 | 7    | 14 | 6.2  | 8.8  | 1  |
| 50                | 15 | 20 | 64  | 35 <sup>+0</sup> <sub>-0.062</sub> | M10×1.5 | 86  | 7   | 71    | 17 | 50 | 6.6 | M8×1.25  | 11   | Rc1/4 <sup>*1</sup> | 14 | 8    | 19 | 8.2  | 10.8 | 1  |
| 63                | 15 | 20 | 77  | 35 <sup>+0</sup> <sub>-0.062</sub> | M10×1.5 | 103 | 7   | 84    | 17 | 60 | 9   | M10×1.5  | 14   | Rc1/4 <sup>*2</sup> | 18 | 10.5 | 19 | 10.2 | 13.8 | 1  |
| 80                | 21 | 25 | 98  | 43 <sup>+0</sup> <sub>-0.062</sub> | M16×2.0 | 132 | 6   | 104   | 22 | 77 | 11  | M12×1.75 | 17.5 | Rc3/8 <sup>*3</sup> | 22 | 13.5 | 26 | 12.2 | 17.3 | 2  |
| 100               | 27 | 30 | 117 | —                                  | M20×2.5 | 156 | 6.5 | 123.5 | 27 | 94 | 11  | M12×1.75 | 17.5 | Rc3/8 <sup>*3</sup> | 22 | 13.5 | 26 | 12.2 | 17.3 | 2  |

\*1. Without magnet with stroke=5mm, P=Rc1/8, Q=12, F=8

\*2. Without magnet with stroke=5mm, P=Rc1/8

\*3. Without magnet with stroke=5mm, P=Rc1/4

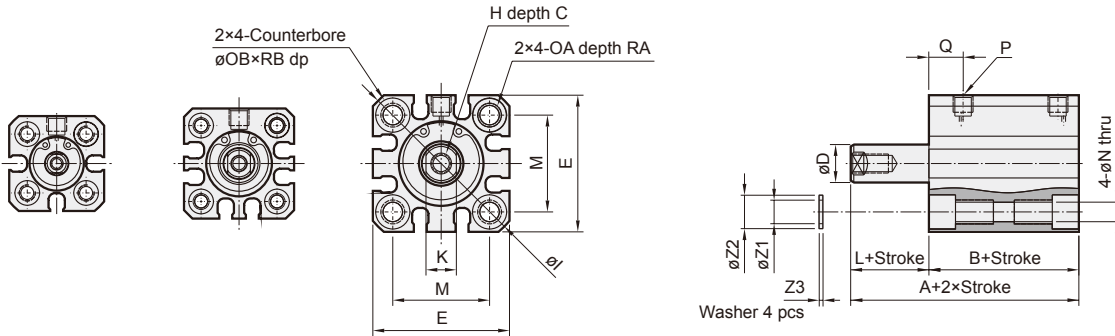
## COMPACT CYLINDER

### 14

$\phi 12$

$\phi 16$

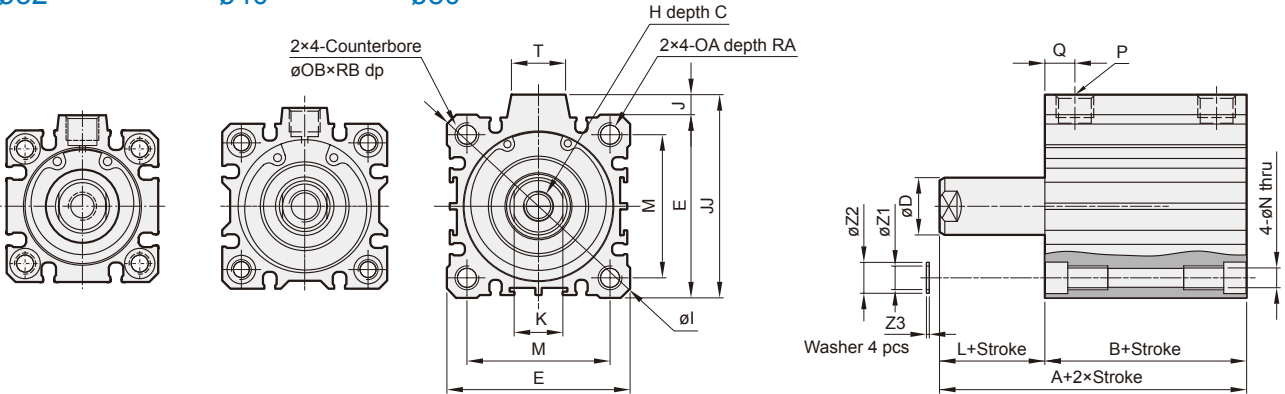
$\phi 20, \phi 25$



$\phi 32$

$\phi 40$

$\phi 50$



\* L1: Standard stroke

### 13 Male thread

| Code<br>Tube I.D. | C1   | H1       | L1   | X    |
|-------------------|------|----------|------|------|
| 12                | 9    | M5×0.8   | 14   | 10.5 |
| 16                | 10   | M6×1.0   | 15.5 | 12   |
| 20                | 12   | M8×1.25  | 18.5 | 14   |
| 25                | 15   | M10×1.25 | 22.5 | 17.5 |
| 32                | 20.5 | M14×1.5  | 28.5 | 23.5 |
| 40                | 20.5 | M14×1.5  | 28.5 | 23.5 |
| 50                | 26   | M18×1.5  | 33.5 | 28.5 |

Note: The value B of  $\phi 12\sim\phi 40$  type is greater than double acting type.

| Code<br>Tube I.D. | Standard stroke |      |        |      | C    | D  | E  | H  | I       | J  | JJ  | K    | L  | M   | N    | OA  | OB      | P   | Q       | RA     | RB | T | Z1 | Z2  | Z3   |     |
|-------------------|-----------------|------|--------|------|------|----|----|----|---------|----|-----|------|----|-----|------|-----|---------|-----|---------|--------|----|---|----|-----|------|-----|
|                   | Without magnet  |      | Magnet |      |      |    |    |    |         |    |     |      |    |     |      |     |         |     |         |        |    |   |    |     |      |     |
|                   | A               | B    | A      | B    |      |    |    |    |         |    |     |      |    |     |      |     |         |     |         |        |    |   |    |     |      |     |
| 12                | 5,10            | 30.5 | 27     | 35.5 | 32   | 6  | 6  | 25 | M3×0.5  | 32 | –   | –    | 5  | 3.5 | 15.5 | 3.5 | M4×0.7  | 6.5 | M5×0.8  | 7.5    | 7  | 4 | –  | 4.2 | 6.3  | 0.5 |
| 16                | 5,10            | 35.5 | 32     | 40.5 | 37   | 8  | 8  | 29 | M4×0.7  | 38 | –   | –    | 6  | 3.5 | 20   | 3.5 | M4×0.7  | 6.5 | M5×0.8  | 7.5    | 7  | 4 | –  | 4.2 | 6.3  | 0.5 |
| 20                | 5,10            | 34   | 29.5   | 44   | 39.5 | 7  | 10 | 36 | M5×0.8  | 47 | –   | –    | 8  | 4.5 | 25.5 | 5.5 | M6×1.0  | 9   | M5×0.8  | 9      | 10 | 7 | –  | 6.2 | 8.8  | 1   |
| 25                | 5,10            | 47.5 | 42.5   | 57.5 | 52.5 | 12 | 12 | 40 | M6×1.0  | 52 | –   | –    | 10 | 5   | 28   | 5.5 | M6×1.0  | 9   | M5×0.8  | 11     | 10 | 7 | –  | 6.2 | 8.8  | 1   |
| 32                | 5,10            | 55   | 48     | 65   | 58   | 13 | 16 | 45 | M8×1.25 | 60 | 4.5 | 49.5 | 14 | 7   | 34   | 5.5 | M6×1.0  | 9   | Rc1/8   | 10.5   | 10 | 7 | 14 | 6.2 | 8.8  | 1   |
| 40                | 5,10            | 61.5 | 54.5   | 71.5 | 64.5 | 13 | 16 | 52 | M8×1.25 | 70 | 5   | 57   | 14 | 7   | 40   | 5.5 | M6×1.0  | 9   | Rc1/8   | 11     | 10 | 7 | 14 | 6.2 | 8.8  | 1   |
| 50                | 5~20            | 38.5 | 30.5   | 48.5 | 40.5 | 15 | 20 | 64 | M10×1.5 | 86 | 7   | 71   | 17 | 8   | 50   | 6.5 | M8×1.25 | 11  | Rc1/4 * | 10.5 * | 14 | 8 | 19 | 8.2 | 10.8 | 1   |

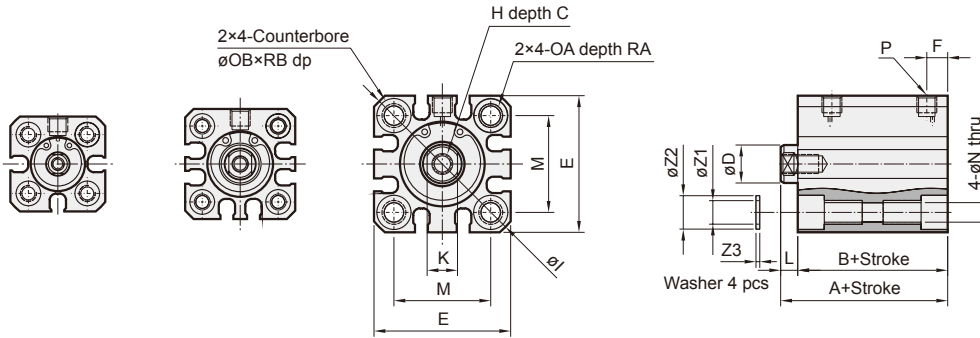
\*1. Without magnet with stroke=5mm, P=Rc1/8, Q=12

### 16

$\phi 12$

$\phi 16$

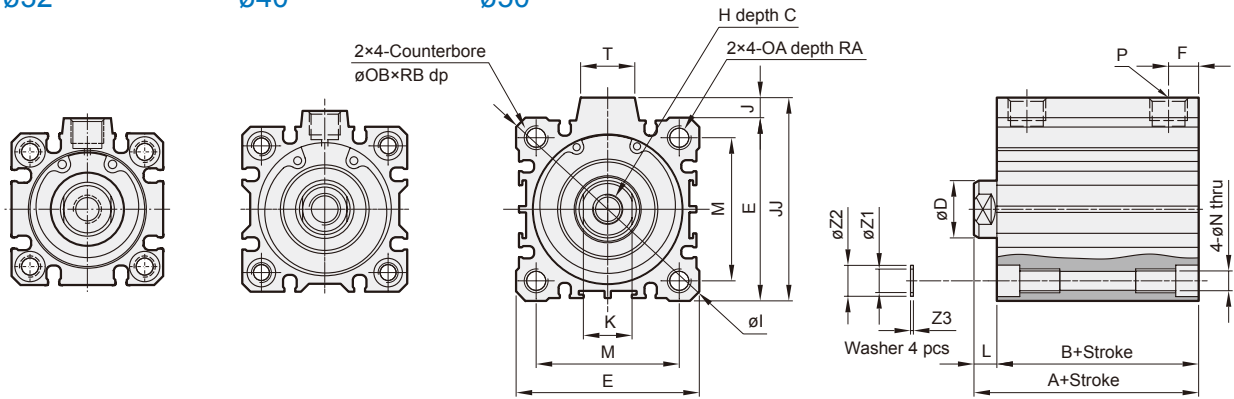
$\phi 20, \phi 25$



$\phi 32$

$\phi 40$

$\phi 50$



\* L1: Standard stroke

### 15 Male thread

| Code<br>Tube I.D. | C1   | H1       | L1   | X    |
|-------------------|------|----------|------|------|
| 12                | 9    | M5×0.8   | 14   | 10.5 |
| 16                | 10   | M6×1.0   | 15.5 | 12   |
| 20                | 12   | M8×1.25  | 18.5 | 14   |
| 25                | 15   | M10×1.25 | 22.5 | 17.5 |
| 32                | 20.5 | M14×1.5  | 28.5 | 23.5 |
| 40                | 20.5 | M14×1.5  | 28.5 | 23.5 |
| 50                | 26   | M18×1.5  | 33.5 | 28.5 |

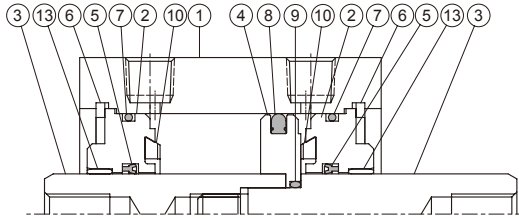
| Code<br>Tube I.D. | Standard stroke |                | C    | D    | E    | F  | H  | I  | J                  | JJ      | K  | L   | M    | N  | OA  | OB   | P   | RA      | RB  | T                   | Z1 | Z2 | Z3 |        |      |     |
|-------------------|-----------------|----------------|------|------|------|----|----|----|--------------------|---------|----|-----|------|----|-----|------|-----|---------|-----|---------------------|----|----|----|--------|------|-----|
|                   | Stroke range    | Without magnet |      |      |      |    |    |    |                    |         |    |     |      |    |     |      |     |         |     |                     |    |    |    | Magnet |      |     |
|                   |                 | A              |      |      |      |    |    |    |                    |         |    |     |      |    |     |      |     |         |     |                     |    |    |    | B      | A    | B   |
| 12                | 5,10            | 20.5           | 17   | 25.5 | 22   | 6  | 6  | 25 | 5                  | M3×0.5  | 32 | —   | —    | 5  | 3.5 | 15.5 | 3.5 | M4×0.7  | 6.5 | M5×0.8              | 7  | 4  | —  | 4.2    | 6.3  | 0.5 |
| 16                | 5,10            | 20.5           | 17   | 25.5 | 22   | 8  | 8  | 29 | 5                  | M4×0.7  | 38 | —   | —    | 6  | 3.5 | 20   | 3.5 | M4×0.7  | 6.5 | M5×0.8              | 7  | 4  | —  | 4.2    | 6.3  | 0.5 |
| 20                | 5,10            | 24             | 19.5 | 34   | 29.5 | 7  | 10 | 36 | 5.5                | M5×0.8  | 47 | —   | —    | 8  | 4.5 | 25.5 | 5.5 | M6×1.0  | 9   | M5×0.8              | 10 | 7  | —  | 6.2    | 8.8  | 1   |
| 25                | 5,10            | 27.5           | 22.5 | 37.5 | 32.5 | 12 | 12 | 40 | 5.5                | M6×1.0  | 52 | —   | —    | 10 | 5   | 28   | 5.5 | M6×1.0  | 9   | M5×0.8              | 10 | 7  | —  | 6.2    | 8.8  | 1   |
| 32                | 5,10            | 30             | 23   | 40   | 33   | 13 | 16 | 45 | 7.5 <sup>*1</sup>  | M8×1.25 | 60 | 4.5 | 49.5 | 14 | 7   | 34   | 5.5 | M6×1.0  | 9   | Rc1/8 <sup>*1</sup> | 10 | 7  | 14 | 6.2    | 8.8  | 1   |
| 40                | 5,10            | 36.5           | 29.5 | 46.5 | 39.5 | 13 | 16 | 52 | 8                  | M8×1.25 | 70 | 5   | 57   | 14 | 7   | 40   | 5.5 | M6×1.0  | 9   | Rc1/8               | 10 | 7  | 14 | 6.2    | 8.8  | 1   |
| 50                | 5~20            | 38.5           | 30.5 | 48.5 | 40.5 | 15 | 20 | 64 | 10.5 <sup>*2</sup> | M10×1.5 | 86 | 7   | 71   | 17 | 8   | 50   | 6.5 | M8×1.25 | 11  | Rc1/4 <sup>*2</sup> | 14 | 8  | 19 | 8.2    | 10.8 | 1   |

\*1. Without magnet with stroke=5mm, P=M5×0.8, F=5.5

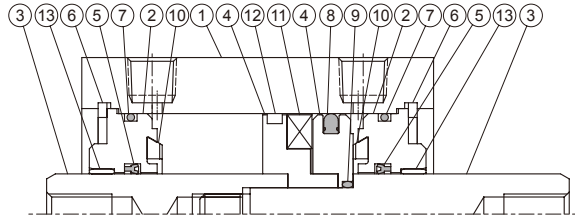
\*2. Without magnet with stroke=5mm, P=Rc1/8, F=8



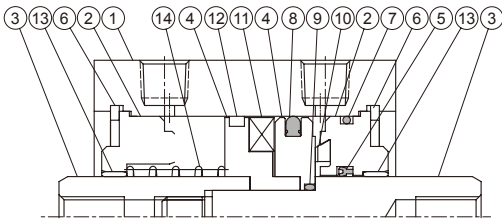
### Double acting



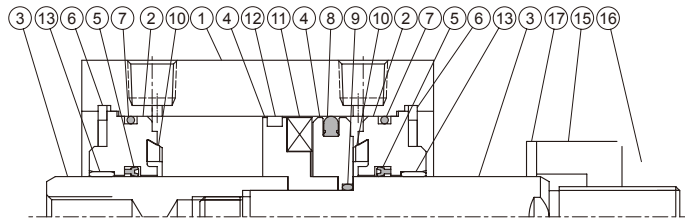
### Double acting (with magnet)



### Single acting



### Adjustable stroke



## Material

| No. | Tube I.D.<br>Part name | 12              | 16 | 20              | 25 | 32            | 40 | 50 | 63 | 80 | 100 | Q'y  | Component parts (inclusion) | Repair kits (inclusion) |
|-----|------------------------|-----------------|----|-----------------|----|---------------|----|----|----|----|-----|------|-----------------------------|-------------------------|
| 1   | Body                   | Aluminum alloy  |    |                 |    |               |    |    |    |    |     | 1    |                             |                         |
| 2   | Rod cover              | Aluminum alloy  |    |                 |    |               |    |    |    |    |     | 2    | ●                           |                         |
| 3   | Piston rod             | With magnet     |    | Stainless steel |    | Carbor steel  |    |    |    |    |     | 2    |                             |                         |
|     |                        | Without magnet  |    | *1              |    | Carbor steel  |    |    |    |    |     | 2    |                             |                         |
| 4   | Piston                 | Aluminum alloy  |    |                 |    |               |    |    |    |    |     | 1    | ●                           |                         |
| 5   | Rod packing            | NBR             |    |                 |    |               |    |    |    |    |     | 2    | ●                           | ●                       |
| 6   | Snap ring              | Stainless steel |    |                 |    | Spring steel  |    |    |    |    |     | 2    | ●                           |                         |
| 7   | Cover ring             | NBR             |    |                 |    |               |    |    |    |    |     | 2 *2 | ●                           | ●                       |
| 8   | Piston packing         | NBR             |    |                 |    |               |    |    |    |    |     | 1    | ●                           | ●                       |
| 9   | Piston gasket          | NBR             |    |                 |    |               |    |    |    |    |     | 1    | ●                           | ●                       |
| 10  | Cushion packing        | NBR             |    |                 |    |               |    |    |    |    |     | 2    | ●                           | ●                       |
| 11  | Magnet                 | Magnet          |    |                 |    |               |    |    |    |    |     | 1    | ●                           |                         |
| 12  | Wear ring              | -               |    |                 |    | Resin         |    |    |    |    |     | 1    | ●                           |                         |
| 13  | Bush                   | -               |    |                 |    | Bearing alloy |    |    |    |    |     | 2    | ●                           |                         |
| 14  | Spring                 | SWP             |    |                 |    |               |    | -  |    |    |     | 1    | ●                           |                         |
| 15  | Adjustable nut         | Carbor steel    |    |                 |    |               |    |    |    |    |     | 1    | ●                           |                         |
| 16  | Hexagon nut            | Carbor steel    |    |                 |    |               |    |    |    |    |     | 1    | ●                           |                         |
| 17  | Cushion packing        | PU              |    |                 |    |               |    |    |    |    |     | 1    | ●                           |                         |

\*1. Stainless steel

\*2. Single acting (Q'y=1 pc)

## Seal kit

| Acting type | Rod packing   |               | Piston packing |               | Cover ring    |               | Piston gasket |
|-------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|
|             | Double acting | Single acting | Double acting  | Single acting | Double acting | Single acting |               |
| Q'y         | 2             | 1             | 1              | 1             | 2             | 1             | 1             |
| ø12         | KSYR-6        | KSYR-6        | OPA-12         | OPA-12        | S-11          | S-11          | d4×w1         |
| ø16         | KSYR-8        | KSYR-8        | OPA-16         | OPA-16        | S-14          | S-14          | d6×w1         |
| ø20         | KSYR-10A      | KSYR-10A      | OPA-20         | OPA-20        | S-18          | S-18          | d6×w1         |
| ø25         | KSYR-12       | KSYR-12       | OPA-25         | OPA-25        | S-22          | S-22          | S-9           |
| ø32         | KSYR-16       | KSYR-16       | OPA-32         | OPA-32        | d28×w2        | d28×w2        | d11×w1        |
| ø40         | KSYR-16       | KSYR-16       | OPA-40         | OPA-40        | S-36          | S-36          | S-10          |
| ø50         | KSYR-20       | KSYR-20       | OPA-50         | OPA-50        | S-46          | S-46          | S-16          |
| ø63         | KSYR-20       | -             | OPA-63         | -             | S-60          | -             | S-14          |
| ø80         | ORA-25        | -             | OPA-80         | -             | G-75          | -             | d20×w1        |
| ø100        | ORA-30        | -             | OPA-100        | -             | G-95          | -             | S-24          |

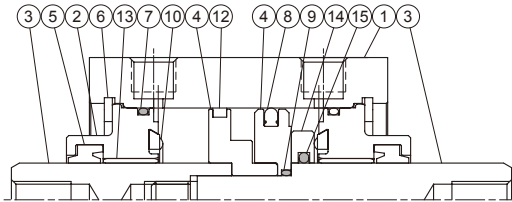
## Order example

### Component parts / Repair kits

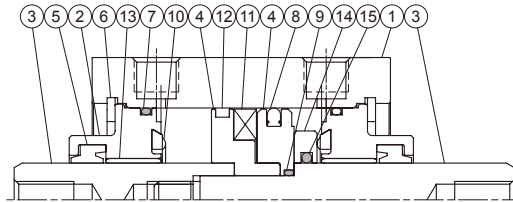
| Tube I.D. | Component parts  | Repair kits   |
|-----------|------------------|---------------|
| ø12       | CP-MCJQ-2-12(M)  | PS-MCJQ-2-12  |
| ø16       | CP-MCJQ-2-16(M)  | PS-MCJQ-2-16  |
| ø20       | CP-MCJQ-2-20(M)  | PS-MCJQ-2-20  |
| ø25       | CP-MCJQ-2-25(M)  | PS-MCJQ-2-25  |
| ø32       | CP-MCJQ-2-32(M)  | PS-MCJQ-2-32  |
| ø40       | CP-MCJQ-2-40(M)  | PS-MCJQ-2-40  |
| ø50       | CP-MCJQ-2-50(M)  | PS-MCJQ-2-50  |
| ø63       | CP-MCJQ-2-63(M)  | PS-MCJQ-2-63  |
| ø80       | CP-MCJQ-2-80(M)  | PS-MCJQ-2-80  |
| ø100      | CP-MCJQ-2-100(M) | PS-MCJQ-2-100 |

M: With magnet

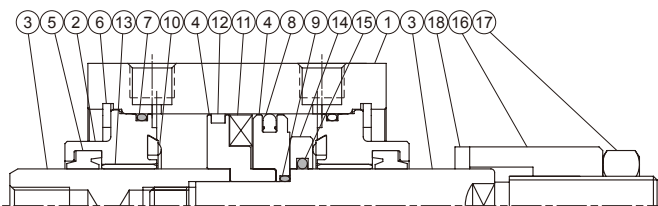
### Double acting



### Double acting (with magnet)



### Adjustable stroke



## Long stroke – Material

| No. | Tube I.D.<br>Part name | 12              | 16           | 20 | 25             | 32 | 40 | 50 | 63 | 80 | Q'y | Component parts (inclusion) | Repair kits (inclusion) |   |
|-----|------------------------|-----------------|--------------|----|----------------|----|----|----|----|----|-----|-----------------------------|-------------------------|---|
| 1   | Body                   | Aluminum alloy  |              |    |                |    |    |    |    |    | 1   |                             |                         |   |
| 2   | Rod cover              | Aluminum alloy  |              |    |                |    |    |    |    |    | 2   | ●                           |                         |   |
| 3   | Piston With magnet     | Stainless steel |              |    | Carbor steel   |    |    |    |    |    | 2   |                             |                         |   |
|     | rod Without magnet     | *1              | Carbor steel |    |                |    |    |    |    |    |     |                             |                         |   |
| 4   | Piston                 | Aluminum alloy  |              |    |                |    |    |    |    |    | 2   | ●                           |                         |   |
| 5   | Rod packing            | NBR             |              |    |                |    |    |    |    |    | 2   | ●                           | ●                       |   |
| 6   | Snap ring              | Stainless steel |              |    | Spring steel   |    |    |    |    |    | 2   | ●                           |                         |   |
| 7   | Cover ring             | NBR             |              |    |                |    |    |    |    |    | 2   | ●                           | ●                       |   |
| 8   | Piston packing         | NBR             |              |    |                |    |    |    |    |    | 1   | ●                           | ●                       |   |
| 9   | Piston gasket          | NBR             |              |    |                |    |    |    |    |    | 1   | ●                           | ●                       |   |
| 10  | Cushion packing        | –               | NBR          |    |                |    |    |    |    |    |     | 2                           | ●                       | ● |
| 11  | Magnet                 | Magnet          |              |    |                |    |    |    |    |    | 1   | ●                           |                         |   |
| 12  | Wear ring              | –               |              |    | Resin          |    |    |    |    |    | 1   | ●                           |                         |   |
| 13  | Bush                   | –               |              |    | Bearing alloy  |    |    |    |    |    | 2   | ●                           |                         |   |
| 14  | Sub-piston             | –               | PU           |    | Aluminum alloy |    |    |    |    |    | 1   | ●                           |                         |   |
| 15  | Sub-piston gasket      | –               |              |    | NBR            |    |    |    |    |    | 1   | ●                           | ●                       |   |
| 16  | Adjust nut             | Carbor steel    |              |    |                |    |    |    |    |    | 1   | ●                           |                         |   |
| 17  | Hexagon nut            | Carbor steel    |              |    |                |    |    |    |    |    | 1   | ●                           |                         |   |
| 18  | Cushion gasket         | PU              |              |    |                |    |    |    |    |    | 1   | ●                           |                         |   |

\*1. Stainless steel

## Long stroke – Seal kit

|             | Rod packing   | Piston packing | Cover ring | Piston gasket | Sub-piston gasket |
|-------------|---------------|----------------|------------|---------------|-------------------|
| Acting type | Double acting |                |            |               |                   |
| Q'y         | 2             | 1              | 2          | 1             | 1                 |
| ø12         | KSYR-6        | OPA-12         | S-11       | d4×w1         | –                 |
| ø16         | KSYR-8        | OPA-16         | S-14       | d5×w1         | –                 |
| ø20         | KSYR-10A      | OPA-20         | S-18       | d6×w1         | –                 |
| ø25         | KSYR-12       | OPA-25         | S-22       | S-9           | –                 |
| ø32         | KSYR-16       | OPA-32         | d28×w2     | d11×w1        | P-16              |
| ø40         | ORA-16        | OPA-40         | S-36       | S-10          | P-16              |
| ø50         | ORA-20        | OPA-50         | S-46       | S-16          | P-20              |
| ø63         | ORA-20        | OPA-63         | S-60       | S-14          | P-20              |
| ø80         | ORA-25        | OPA-80         | G-75       | S-18          | S-25              |

## Order example

### Component parts / Repair kits

| Tube I.D. | Component parts  | Repair kits   |
|-----------|------------------|---------------|
| ø12       | CPL-MCJQ-2-12(M) | PSL-MCJQ-2-12 |
| ø16       | CPL-MCJQ-2-16(M) | PSL-MCJQ-2-16 |
| ø20       | CPL-MCJQ-2-20(M) | PSL-MCJQ-2-20 |
| ø25       | CPL-MCJQ-2-25(M) | PSL-MCJQ-2-25 |
| ø32       | CPL-MCJQ-2-32(M) | PSL-MCJQ-2-32 |
| ø40       | CPL-MCJQ-2-40(M) | PSL-MCJQ-2-40 |
| ø50       | CPL-MCJQ-2-50(M) | PSL-MCJQ-2-50 |
| ø63       | CPL-MCJQ-2-63(M) | PSL-MCJQ-2-63 |
| ø80       | CPL-MCJQ-2-80(M) | PSL-MCJQ-2-80 |

M: With magnet

22

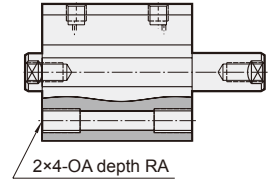
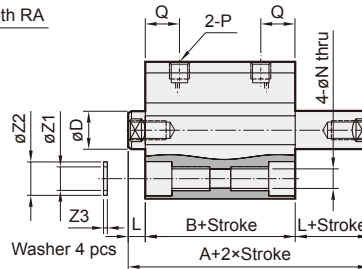
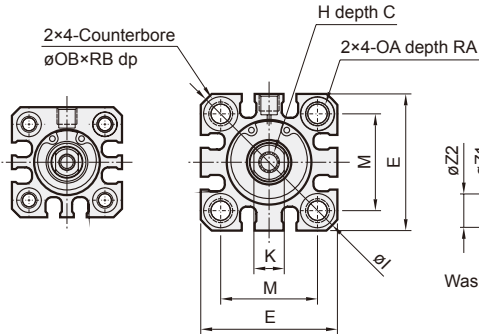
$\phi 16$

$\phi 20, \phi 25$

Stroke 5~100

Stroke over 100

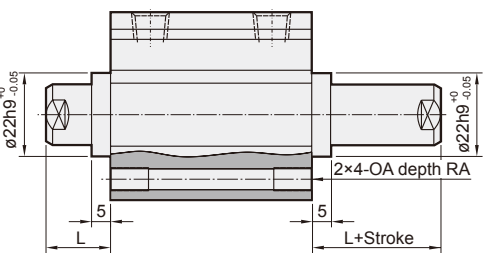
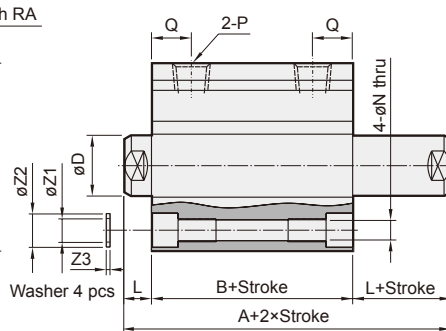
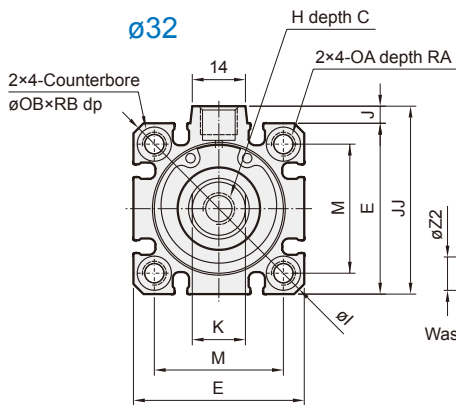
$\phi 12$



$\phi 32$

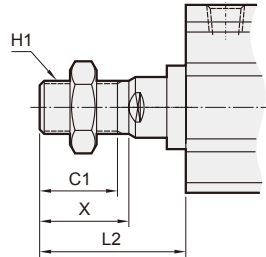
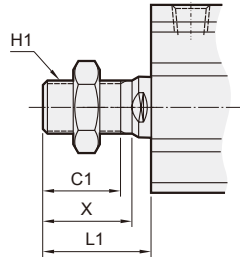
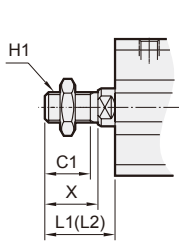
Stroke 5~100

Stroke over 100



$\phi 12\sim 25$

$\phi 32$  for stroke 5~100     $\phi 32$  for stroke over 100



21

Male thread

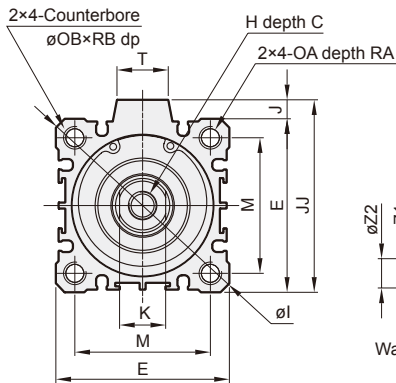
| Code<br>Tube I.D. | C1   | H1       | L1   | L2   | X    |
|-------------------|------|----------|------|------|------|
| 12                | 9    | M5×0.8   | 14   | 24   | 10.5 |
| 16                | 10   | M6×1.0   | 15.5 | 25.5 | 12   |
| 20                | 12   | M8×1.25  | 18.5 | 28.5 | 14   |
| 25                | 15   | M10×1.25 | 22.5 | 32.5 | 17.5 |
| 32                | 20.5 | M14×1.5  | 28.5 | 38.5 | 23.5 |

\* L1: Standard stroke, L2: Long stroke

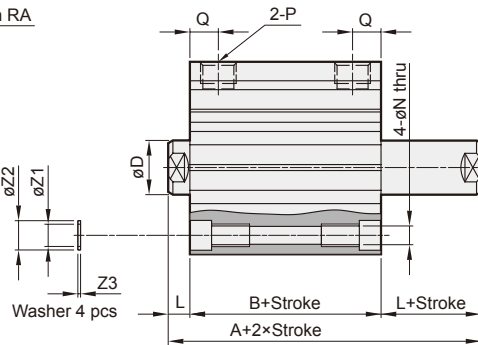
| Code<br>Tube I.D. | Standard stroke |      |      |        |      |      | Long stroke  |         |      |      |      |    |    |    |         |    |     |      |    |      |     |        |     |          |      |    |    |     |     |     |
|-------------------|-----------------|------|------|--------|------|------|--------------|---------|------|------|------|----|----|----|---------|----|-----|------|----|------|-----|--------|-----|----------|------|----|----|-----|-----|-----|
|                   | Without magnet  |      |      | Magnet |      |      | Stroke range | A       | B    | L    | C    | D  | E  | H  | I       | J  | JJ  | K    | M  | N    | OA  | OB     | P   | Q        | RA   | RB | Z1 | Z2  | Z3  |     |
| 12                | 5~30            | 29   | 22   | 3.5    | 34   | 27   |              |         |      |      |      |    |    |    |         |    |     |      |    |      |     |        |     |          |      |    |    |     |     | 3.5 |
| 16                | 5~30            | 29   | 22   | 3.5    | 34   | 27   | 3.5          | 31~100  | 59   | 32   | 13.5 | 8  | 8  | 29 | M4×0.7  | 38 | -   | -    | 6  | 20   | 3.5 | M4×0.7 | 6.5 | M5×0.8   | 7.5  | 7  | 4  | 4.2 | 6.3 | 0.5 |
| 20                | 5~50            | 35   | 26   | 4.5    | 45   | 36   | 4.5          | 51~200  | 70   | 41   | 14.5 | 7  | 10 | 36 | M5×0.8  | 47 | -   | -    | 8  | 25.5 | 5.5 | M6×1.0 | 9   | M5×0.8   | 9    | 10 | 7  | 6.2 | 8.8 | 1   |
| 25                | 5~50            | 39   | 29   | 5      | 49   | 39   | 5            | 51~300  | 74   | 44   | 15   | 12 | 12 | 40 | M6×1.0  | 52 | -   | -    | 10 | 28   | 5.5 | M6×1.0 | 9   | M5×0.8   | 11   | 10 | 7  | 6.2 | 8.8 | 1   |
| 32                | 5~50            | 44.5 | 30.5 | 7      | 54.5 | 40.5 | 7            | 101~300 | 79.5 | 45.5 | 17   | 13 | 16 | 45 | M8×1.25 | 60 | 4.5 | 49.5 | 14 | 34   | 5.5 | M6×1.0 | 9   | Rc1/8 *1 | 12.5 | 10 | 7  | 6.2 | 8.8 | 1   |
|                   | 51~100          | 54.5 | 40.5 | 7      | 54.5 | 40.5 | 7            |         |      |      |      |    |    |    |         |    |     |      |    |      |     |        |     |          |      |    |    |     |     |     |

\*1. Without magnet with stroke=5mm, P=M5×0.8

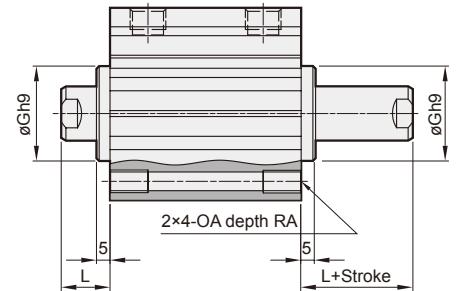
### 22 $\phi 50\sim\phi 100$



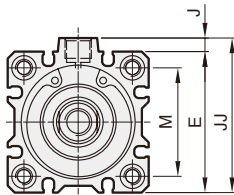
### Stroke 5~100



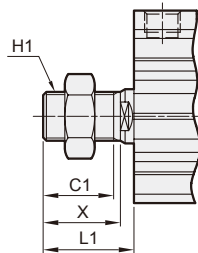
### Stroke over 100



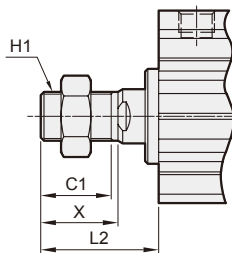
### $\phi 40$



### $\phi 40\sim\phi 100$ (Stroke 5~100)



### $\phi 40\sim\phi 80$ (Stroke over 100)



### 21 Male thread

| Code<br>Tube I.D. | C1   | H1      | L1   | L2   | X    |
|-------------------|------|---------|------|------|------|
| 40                | 20.5 | M14×1.5 | 28.5 | 38.5 | 23.5 |
| 50                | 26   | M18×1.5 | 33.5 | 43.5 | 28.5 |
| 63                | 26   | M18×1.5 | 33.5 | 43.5 | 28.5 |
| 80                | 32.5 | M22×1.5 | 43.5 | 53.5 | 35.5 |
| 100               | 32.5 | M26×1.5 | 43.5 | —    | 35.5 |

| Code<br>Tube I.D. | Standard stroke |                |      |        |      |    | Long stroke |              |      |      |    |      |
|-------------------|-----------------|----------------|------|--------|------|----|-------------|--------------|------|------|----|------|
|                   | Stroke range    | Without magnet |      | Magnet |      | L  | Q           | Stroke range | A    | B    | L  | Q    |
| 40                | 5~50            | 54             | 40   | 64     | 50   | 7  | 14          | 101~300      | 89   | 55   | 17 | 14   |
|                   | 51~100          | 64             | 50   |        |      |    |             |              |      |      |    |      |
| 50                | 5~50            | 56.5           | 40.5 | 66.5   | 50.5 | 8  | 14          | 101~300      | 91.5 | 55.5 | 18 | 14   |
|                   | 51~100          | 66.5           | 50.5 |        |      |    |             |              |      |      |    |      |
| 63                | 5~50            | 58             | 42   | 68     | 52   | 8  | 15.5        | 101~300      | 93   | 57   | 18 | 16.5 |
|                   | 51~100          | 68             | 52   |        |      |    |             |              |      |      |    |      |
| 80                | 5~50            | 71             | 51   | 81     | 61   | 10 | 18          | 101~300      | 106  | 66   | 20 | 19   |
|                   | 51~100          | 81             | 61   |        |      |    |             |              |      |      |    |      |
| 100               | 5~50            | 84.5           | 60.5 | 94.5   | 70.5 | 12 | 22          | —            |      |      |    |      |
|                   | 51~100          | 94.5           | 70.5 |        |      |    |             |              |      |      |    |      |

| Code<br>Tube I.D. | C  | D  | E   | G <sup>H9</sup>                    | H       | I   | J   | JJ    | K  | M  | N   | OA       | OB   | P                   | RA | RB   | T  | Z1   | Z2   | Z3 |
|-------------------|----|----|-----|------------------------------------|---------|-----|-----|-------|----|----|-----|----------|------|---------------------|----|------|----|------|------|----|
| 40                | 13 | 16 | 52  | 28 <sup>+0</sup> <sub>-0.052</sub> | M8×1.25 | 70  | 5   | 57    | 14 | 40 | 5.5 | M6×1.0   | 9    | Rc1/8               | 10 | 7    | 14 | 6.2  | 8.8  | 1  |
| 50                | 15 | 20 | 64  | 35 <sup>+0</sup> <sub>-0.062</sub> | M10×1.5 | 86  | 7   | 71    | 17 | 50 | 6.6 | M8×1.25  | 11   | Rc1/4               | 14 | 8    | 19 | 8.2  | 10.8 | 1  |
| 63                | 15 | 20 | 77  | 35 <sup>+0</sup> <sub>-0.062</sub> | M10×1.5 | 103 | 7   | 84    | 17 | 60 | 9   | M10×1.5  | 14   | Rc1/4 <sup>*1</sup> | 18 | 10.5 | 19 | 10.2 | 13.8 | 1  |
| 80                | 21 | 25 | 98  | 43 <sup>+0</sup> <sub>-0.062</sub> | M16×2.0 | 132 | 6   | 104   | 22 | 77 | 11  | M12×1.75 | 17.5 | Rc3/8 <sup>*2</sup> | 22 | 13.5 | 26 | 12.2 | 17.3 | 2  |
| 100               | 27 | 30 | 117 | —                                  | M20×2.5 | 156 | 6.5 | 123.5 | 27 | 94 | 11  | M12×1.75 | 17.5 | Rc3/8 <sup>*2</sup> | 22 | 13.5 | 26 | 12.2 | 17.3 | 2  |

\*1. Without magnet with stroke=5mm, P=Rc1/8

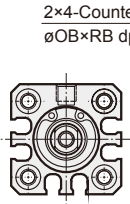
\*2. Without magnet with stroke=5mm, P=Rc1/4

24

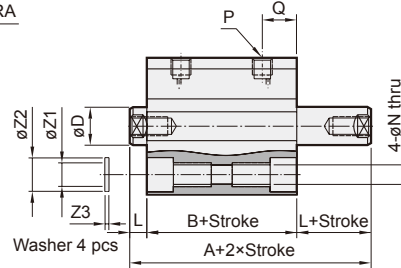
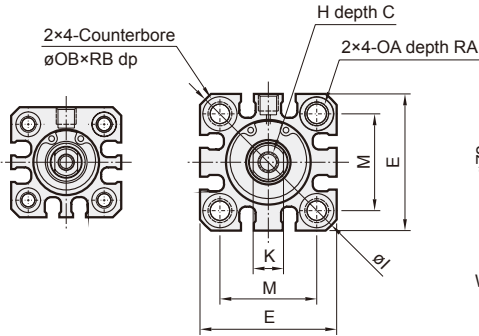
$\phi 12$



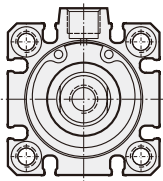
$\phi 16$



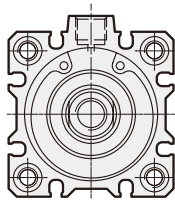
$\phi 20, \phi 25$



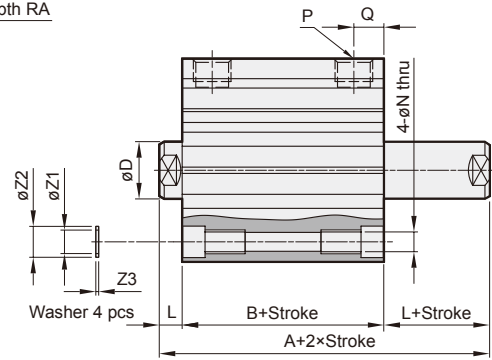
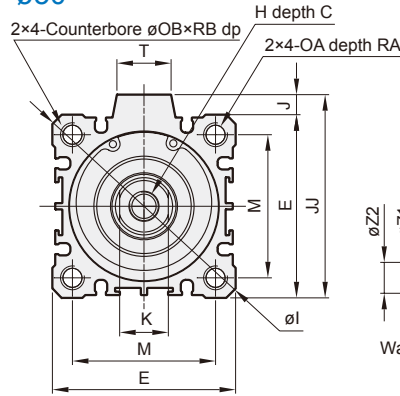
$\phi 32$



$\phi 40$



$\phi 50$



\* L1: Standard stroke

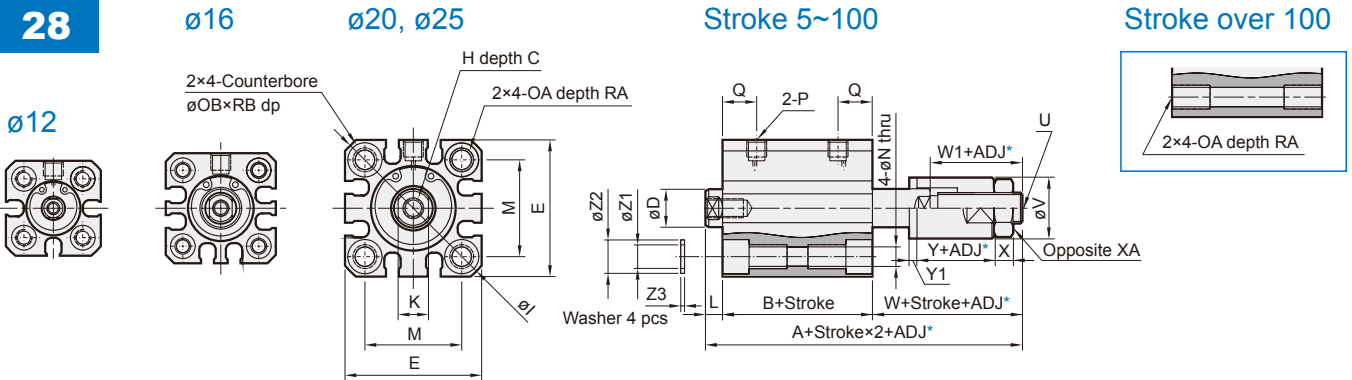
23 Male thread

| Code<br>Tube I.D. | C1   | H1       | L1   | X    |
|-------------------|------|----------|------|------|
| 12                | 9    | M5×0.8   | 14   | 10.5 |
| 16                | 10   | M6×1.0   | 15.5 | 12   |
| 20                | 12   | M8×1.25  | 18.5 | 14   |
| 25                | 15   | M10×1.25 | 22.5 | 17.5 |
| 32                | 20.5 | M14×1.5  | 28.5 | 23.5 |
| 40                | 20.5 | M14×1.5  | 28.5 | 23.5 |
| 50                | 26   | M18×1.5  | 33.5 | 28.5 |

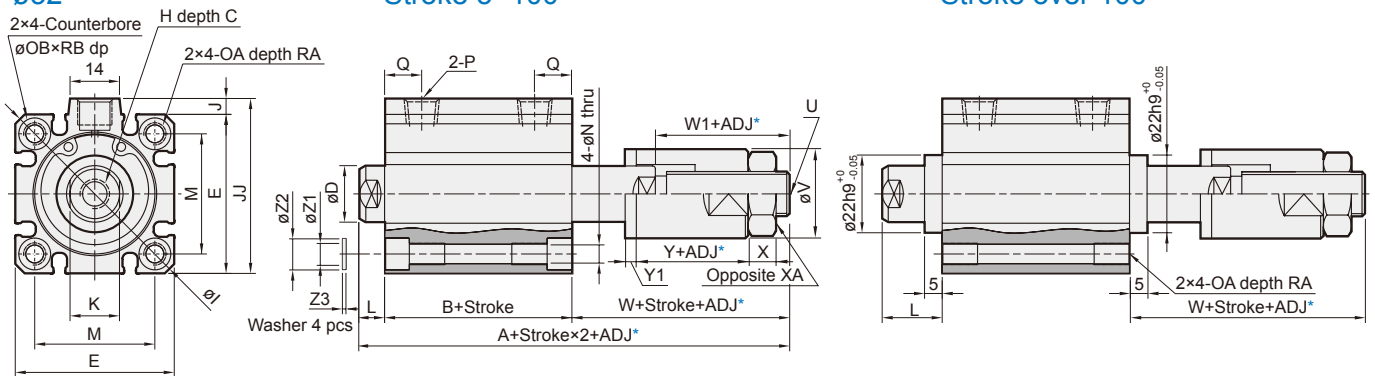
| Code<br>Tube I.D. | Standard stroke |      |        |      | C    | D  | E  | H  | I       | J  | JJ  | K    | L  | M   | N    | OA  | OB      | P   | Q        | RA   | RB | T | Z1 | Z2  | Z3   |     |
|-------------------|-----------------|------|--------|------|------|----|----|----|---------|----|-----|------|----|-----|------|-----|---------|-----|----------|------|----|---|----|-----|------|-----|
|                   | Without magnet  |      | Magnet |      |      |    |    |    |         |    |     |      |    |     |      |     |         |     |          |      |    |   |    |     |      |     |
|                   | A               | B    | A      | B    |      |    |    |    |         |    |     |      |    |     |      |     |         |     |          |      |    |   |    |     |      |     |
| 12                | 5,10            | 29   | 22     | 34   | 27   | 6  | 6  | 25 | M3×0.5  | 32 | –   | –    | 5  | 3.5 | 15.5 | 3.5 | M4×0.7  | 6.5 | M5×0.8   | 7.5  | 7  | 4 | –  | 4.2 | 6.3  | 0.5 |
| 16                | 5,10            | 29   | 22     | 34   | 27   | 8  | 8  | 29 | M4×0.7  | 38 | –   | –    | 6  | 3.5 | 20   | 3.5 | M4×0.7  | 6.5 | M5×0.8   | 7.5  | 7  | 4 | –  | 4.2 | 6.3  | 0.5 |
| 20                | 5,10            | 35   | 26     | 45   | 36   | 7  | 10 | 36 | M5×0.8  | 47 | –   | –    | 8  | 4.5 | 25.5 | 5.5 | M6×1.0  | 9   | M5×0.8   | 9    | 10 | 7 | –  | 6.2 | 8.8  | 1   |
| 25                | 5,10            | 39   | 29     | 49   | 39   | 12 | 12 | 40 | M6×1.0  | 52 | –   | –    | 10 | 5   | 28   | 5.5 | M6×1.0  | 9   | M5×0.8   | 11   | 10 | 7 | –  | 6.2 | 8.8  | 1   |
| 32                | 5,10            | 44.5 | 30.5   | 54.5 | 40.5 | 13 | 16 | 45 | M8×1.25 | 60 | 4.5 | 49.5 | 14 | 7   | 34   | 5.5 | M6×1.0  | 9   | Rc1/8 *1 | 12.5 | 10 | 7 | 14 | 6.2 | 8.8  | 1   |
| 40                | 5,10            | 54   | 40     | 64   | 50   | 13 | 16 | 52 | M8×1.25 | 70 | 5   | 57   | 14 | 7   | 40   | 5.5 | M6×1.0  | 9   | Rc1/8    | 14   | 10 | 7 | 14 | 6.2 | 8.8  | 1   |
| 50                | 5~20            | 56.5 | 40.5   | 66.5 | 50.5 | 15 | 20 | 64 | M10×1.5 | 86 | 7   | 71   | 17 | 8   | 50   | 6.5 | M8×1.25 | 11  | Rc1/4    | 14   | 14 | 8 | 19 | 8.2 | 10.8 | 1   |

\*1. Without magnet with stroke=5mm, P=M5×0.8

28



Ø32



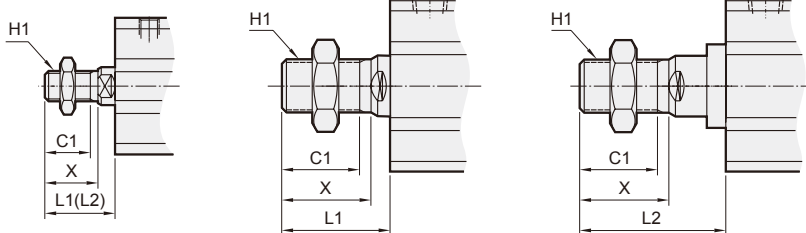
\* ADJ: Adjustable stroke

Ø12~25

Ø32 for stroke 5~100

Ø32 for stroke over 100

27 Male thread



| Code | Tube I.D. | C1       | H1   | L1   | L2   | X |
|------|-----------|----------|------|------|------|---|
| 12   | 9         | M5×0.8   | 14   | 24   | 10.5 |   |
| 16   | 10        | M6×1.0   | 15.5 | 25.5 | 12   |   |
| 20   | 12        | M8×1.25  | 18.5 | 28.5 | 14   |   |
| 25   | 15        | M10×1.25 | 22.5 | 32.5 | 17.5 |   |
| 32   | 20.5      | M14×1.5  | 28.5 | 38.5 | 23.5 |   |

\* L1: Standard stroke, L2: Long stroke

| Code | Stroke range | Standard stroke |      |        |      | Long stroke |      |              |      |      |      |      |
|------|--------------|-----------------|------|--------|------|-------------|------|--------------|------|------|------|------|
|      |              | Without magnet  |      | Magnet |      | L           | W    | Stroke range | A    | B    | L    | W    |
|      |              | A               | B    | A      | B    |             |      |              |      |      |      |      |
| 12   | 5~30         | 45.5            | 22   | 50.5   | 27   | 3.5         | 20   | 31~100       | 65.5 | 32   | 13.5 | 20   |
| 16   | 5~30         | 49              | 22   | 54     | 27   | 3.5         | 23.5 | 31~100       | 69   | 32   | 13.5 | 23.5 |
| 20   | 5~50         | 54.3            | 26   | 64.3   | 36   | 4.5         | 23.8 | 51~200       | 79.3 | 41   | 14.5 | 23.8 |
| 25   | 5~50         | 56.5            | 29   | 66.5   | 39   | 5           | 22.5 | 51~300       | 81.5 | 44   | 15   | 22.5 |
| 32   | 5~50         | 60.9            | 30.5 | 70.9   | 40.5 | 7           | 23.4 | 101~300      | 91.5 | 45.5 | 17   | 29   |
|      | 51~100       | 70.9            | 40.5 |        |      |             |      |              |      |      |      |      |

\*1. Without magnet with stroke=5mm, P=M5×0.8

| Code | C  | D  | E  | H       | I  | J   | JJ   | K  | M    | N   | OA     | OB  | P        | Q    |
|------|----|----|----|---------|----|-----|------|----|------|-----|--------|-----|----------|------|
| 12   | 6  | 6  | 25 | M3×0.5  | 32 | -   | -    | 5  | 15.5 | 3.5 | M4×0.7 | 6.5 | M5×0.8   | 7.5  |
| 16   | 8  | 8  | 29 | M4×0.7  | 38 | -   | -    | 6  | 20   | 3.5 | M4×0.7 | 6.5 | M5×0.8   | 7.5  |
| 20   | 7  | 10 | 36 | M5×0.8  | 47 | -   | -    | 8  | 25.5 | 5.5 | M6×1.0 | 9   | M5×0.8   | 9    |
| 25   | 12 | 12 | 40 | M6×1.0  | 52 | -   | -    | 10 | 28   | 5.5 | M6×1.0 | 9   | M5×0.8   | 11   |
| 32   | 13 | 16 | 45 | M8×1.25 | 60 | 4.5 | 49.5 | 14 | 34   | 5.5 | M6×1.0 | 9   | Rc1/8 *1 | 12.5 |

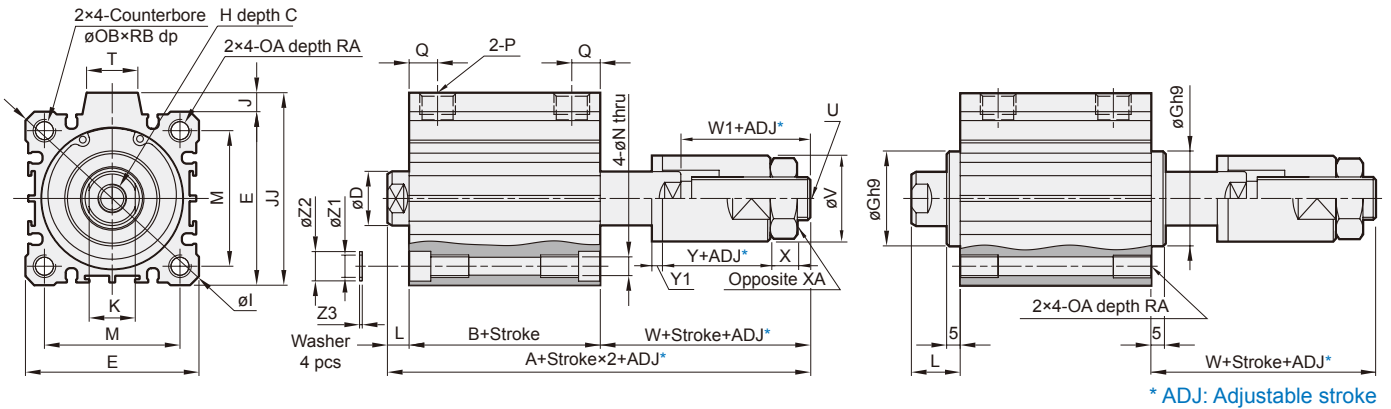
| Code | RA | RB | U        | V  | W1 | X | XA | Y  | Y1 | Z1  | Z2  | Z3  |
|------|----|----|----------|----|----|---|----|----|----|-----|-----|-----|
| 12   | 7  | 4  | M5×0.8   | 12 | 16 | 4 | 8  | 13 | 2  | 4.2 | 6.3 | 0.5 |
| 16   | 7  | 4  | M8×1.25  | 16 | 19 | 5 | 13 | 15 | 2  | 4.2 | 6.3 | 0.5 |
| 20   | 10 | 7  | M8×1.25  | 16 | 19 | 5 | 13 | 15 | 2  | 6.2 | 8.8 | 1   |
| 25   | 10 | 7  | M10×1.25 | 20 | 18 | 6 | 17 | 12 | 2  | 6.2 | 8.8 | 1   |
| 32   | 10 | 7  | M12×1.25 | 30 | 19 | 7 | 19 | 12 | 2  | 6.2 | 8.8 | 1   |

28

$\phi 50\sim\phi 100$

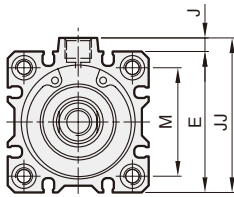
Stroke 5~100

Stroke over 100

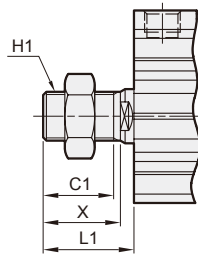


\* ADJ: Adjustable stroke

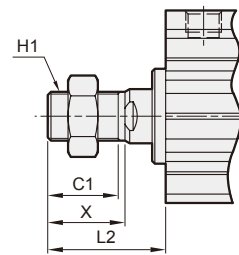
$\phi 40$



$\phi 40\sim\phi 100$   
(Stroke 5~100)



$\phi 40\sim\phi 80$   
(Stroke over 100)



27 Male thread

| Code<br>Tube I.D. | C1   | H1      | L1   | L2   | X    |
|-------------------|------|---------|------|------|------|
| 40                | 20.5 | M14×1.5 | 28.5 | 38.5 | 23.5 |
| 50                | 26   | M18×1.5 | 33.5 | 43.5 | 28.5 |
| 63                | 26   | M18×1.5 | 33.5 | 43.5 | 28.5 |
| 80                | 32.5 | M22×1.5 | 43.5 | 53.5 | 35.5 |
| 100               | 32.5 | M26×1.5 | 43.5 | —    | 35.5 |

| Code<br>Tube I.D. | Standard stroke |                |      |        |      |    |      |      | Long stroke  |       |      |    |      |      |
|-------------------|-----------------|----------------|------|--------|------|----|------|------|--------------|-------|------|----|------|------|
|                   | Stroke range    | Without magnet |      | Magnet |      | L  | Q    | W    | Stroke range | A     | B    | L  | Q    | W    |
|                   |                 | A              | B    | A      | B    |    |      |      |              |       |      |    |      |      |
| 40                | 5~50            | 71             | 40   | 81     | 50   | 7  | 14   | 24   | 101~300      | 102.5 | 55   | 17 | 14   | 30.5 |
|                   | 51~100          | 81             | 50   |        |      |    |      |      |              |       |      |    |      |      |
| 50                | 5~50            | 75             | 40.5 | 85     | 50.5 | 8  | 14   | 26.5 | 101~300      | 105.5 | 55.5 | 18 | 14   | 32   |
|                   | 51~100          | 85             | 50.5 |        |      |    |      |      |              |       |      |    |      |      |
| 63                | 5~50            | 80             | 42   | 90     | 52   | 8  | 15.5 | 30   | 101~300      | 110   | 57   | 18 | 16.5 | 35   |
|                   | 51~100          | 90             | 52   |        |      |    |      |      |              |       |      |    |      |      |
| 80                | 5~50            | 100            | 51   | 110    | 61   | 10 | 18   | 39   | 101~300      | 130   | 66   | 20 | 19   | 44   |
|                   | 51~100          | 110            | 61   |        |      |    |      |      |              |       |      |    |      |      |
| 100               | 5~50            | 111            | 60.5 | 121    | 70.5 | 12 | 22   | 38.5 |              |       |      |    |      |      |
|                   | 51~100          | 121            | 70.5 |        |      |    |      |      |              |       |      |    |      |      |

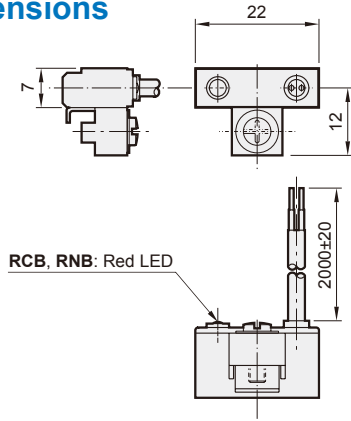
| Code<br>Tube I.D. | C  | D  | E   | G <sup>H9</sup>                    | H       | I   | J   | JJ    | K  | M  | N   | OA       | OB   | P                   | RA | RB   | T  | U        | V  | W1   | X  | XA | Y  | Y1 | Z1   | Z2   | Z3 |
|-------------------|----|----|-----|------------------------------------|---------|-----|-----|-------|----|----|-----|----------|------|---------------------|----|------|----|----------|----|------|----|----|----|----|------|------|----|
| 40                | 13 | 16 | 52  | 28 <sup>+0</sup> <sub>-0.052</sub> | M8×1.25 | 70  | 5   | 57    | 14 | 40 | 5.5 | M6×1.0   | 9    | Rc1/8               | 10 | 7    | 14 | M12×1.25 | 30 | 21   | 7  | 19 | 12 | 2  | 6.2  | 8.8  | 1  |
| 50                | 15 | 20 | 64  | 35 <sup>+0</sup> <sub>-0.062</sub> | M10×1.5 | 86  | 7   | 71    | 17 | 50 | 6.6 | M8×1.25  | 11   | Rc1/4               | 14 | 8    | 19 | M16×1.5  | 40 | 22.5 | 8  | 24 | 15 | 2  | 8.2  | 10.8 | 1  |
| 63                | 15 | 20 | 77  | 35 <sup>+0</sup> <sub>-0.062</sub> | M10×1.5 | 103 | 7   | 84    | 17 | 60 | 9   | M10×1.5  | 14   | Rc1/4 <sup>*1</sup> | 18 | 10.5 | 19 | M16×1.5  | 40 | 25.5 | 8  | 24 | 15 | 2  | 10.2 | 13.8 | 1  |
| 80                | 21 | 25 | 98  | 43 <sup>+0</sup> <sub>-0.062</sub> | M16×2.0 | 132 | 6   | 104   | 22 | 77 | 11  | M12×1.75 | 17.5 | Rc3/8 <sup>*2</sup> | 22 | 13.5 | 26 | M22×1.5  | 50 | 33   | 13 | 32 | 20 | 3  | 12.2 | 17.3 | 2  |
| 100               | 27 | 30 | 117 | —                                  | M20×2.5 | 156 | 6.5 | 123.5 | 27 | 94 | 11  | M12×1.75 | 17.5 | Rc3/8 <sup>*2</sup> | 22 | 13.5 | 26 | M22×1.5  | 50 | 33   | 13 | 32 | 20 | 3  | 12.2 | 17.3 | 2  |

\*1. Without magnet with stroke=5mm, P=Rc1/8

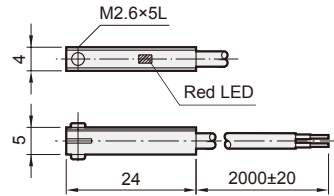
\*2. Without magnet with stroke=5mm, P=Rc1/4

### Dimensions

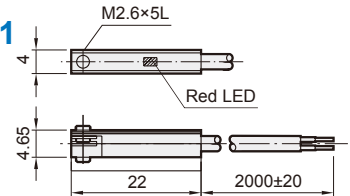
**RCB  
RNB**



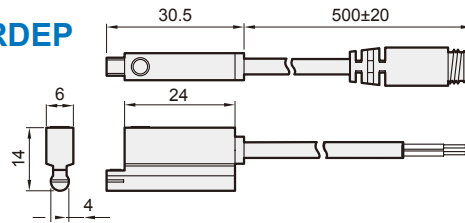
**RCE**



**RCE1  
RNE**

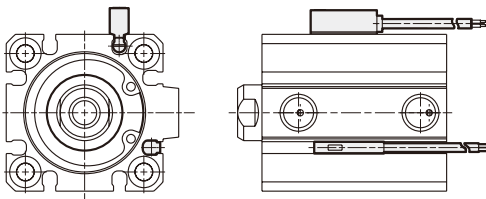


**RDEP**

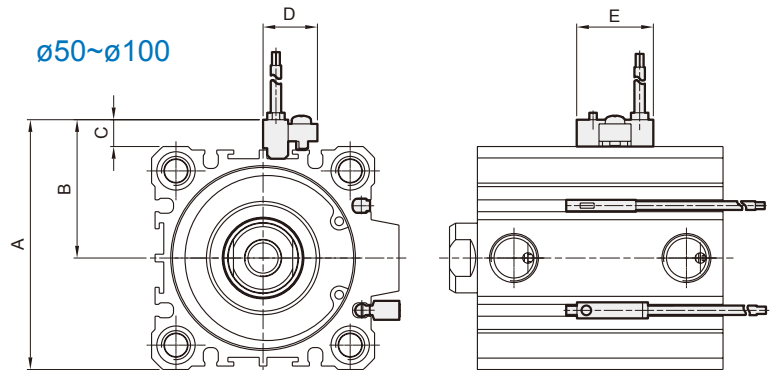


### Installation of sensor switch

$\phi 12\sim\phi 40$



$\phi 50\sim\phi 100$



### Order example

**RCE1** — □

MODEL

RCB / RCE / RCE1 (C: Reed switch)  
RNB / RNE (N: Solid state switch)  
RDEP (Solid state switch)

WIRE LENGTH

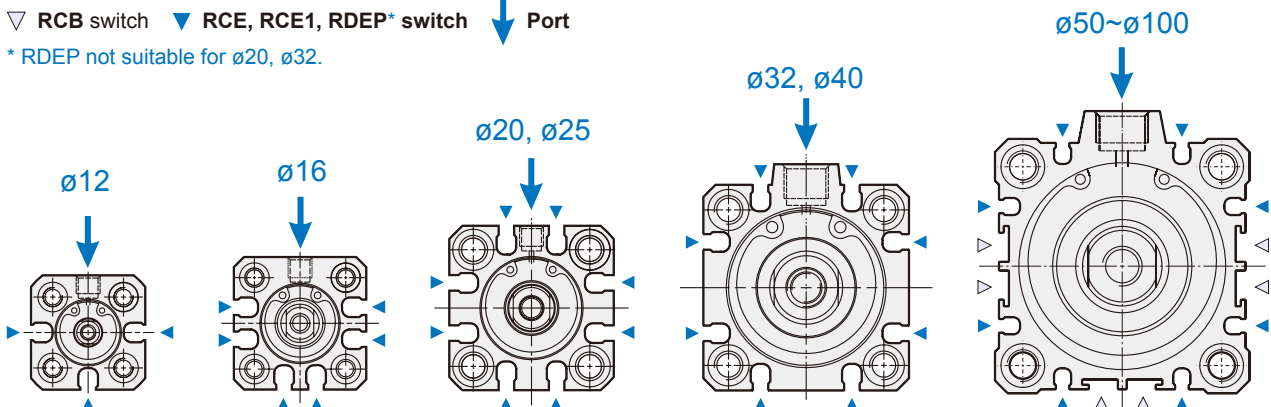
Blank: L=2000m  
1M: L=1000m  
QD: M8 3Pin connector  
EQD: M8 3Pin connector

| Code<br>Tube I.D. | A   | B    | C | D  | E  |
|-------------------|-----|------|---|----|----|
| 50                | 72  | 40   | 8 | 16 | 22 |
| 63                | 85  | 46.5 | 8 | 16 | 22 |
| 80                | 106 | 57   | 8 | 16 | 22 |
| 100               | 125 | 66.5 | 8 | 16 | 22 |

### Description

▽ RCB switch ▼ RCE, RCE1, RDEP\* switch ↓ Port

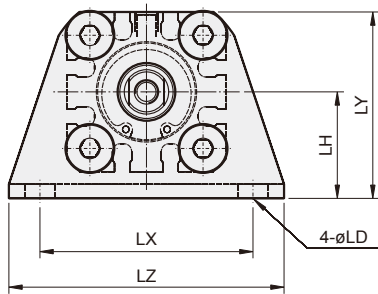
\* RDEP not suitable for  $\phi 20$ ,  $\phi 32$ .



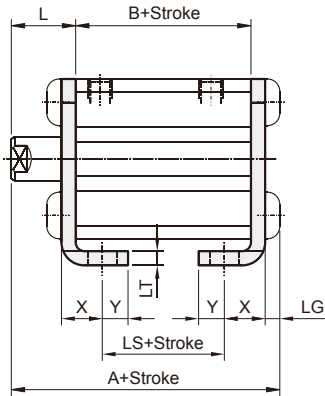


COMPACT CYLINDER

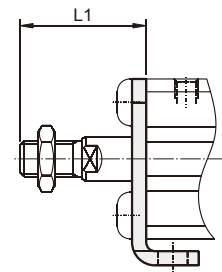
LB



Female thread

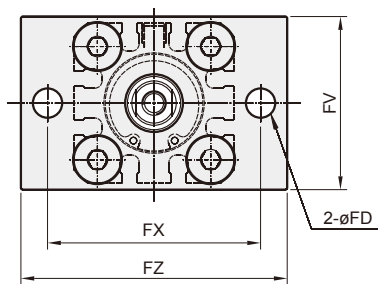


Male thread

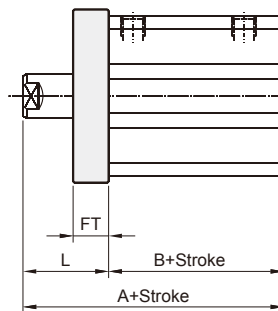


| Code | Standard stroke |                |      |     |        |      |      | Long stroke  |      |    |    |      |      |     |     |    |     |    |      |    |      |     |
|------|-----------------|----------------|------|-----|--------|------|------|--------------|------|----|----|------|------|-----|-----|----|-----|----|------|----|------|-----|
|      | Stroke range    | Without magnet |      |     | Magnet |      |      | Stroke range | A    | B  | LS | L    | L1   | LD  | LG  | LH | LT  | LX | LY   | LZ | X    | Y   |
|      |                 | A              | B    | LS  | A      | B    | LS   |              |      |    |    |      |      |     |     |    |     |    |      |    |      |     |
| 12   | 5~30            | 35.3           | 17   | 5   | 40.3   | 22   | 10   | 35~100       | 50.3 | 32 | 20 | 13.5 | 24   | 4.5 | 2.8 | 17 | 2   | 34 | 29.5 | 44 | 8    | 4.5 |
| 16   | 5~30            | 35.3           | 17   | 5   | 40.3   | 22   | 10   | 35~100       | 50.3 | 32 | 20 | 13.5 | 25.5 | 4.5 | 2.8 | 19 | 2   | 38 | 33.5 | 48 | 8    | 5   |
| 20   | 5~50            | 41.2           | 19.5 | 7.5 | 51.2   | 29.5 | 17.5 | 75~200       | 62.7 | 41 | 29 | 14.5 | 28.5 | 6.6 | 4   | 24 | 3.2 | 48 | 42   | 62 | 9.2  | 5.8 |
| 25   | 5~50            | 44.7           | 22.5 | 7.5 | 54.7   | 32.5 | 17.5 | 75~300       | 66.2 | 44 | 29 | 15   | 32.5 | 6.6 | 4   | 26 | 3.2 | 52 | 46   | 66 | 10.7 | 5.8 |

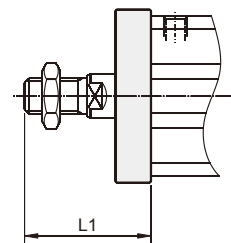
FAC



Female thread



Male thread

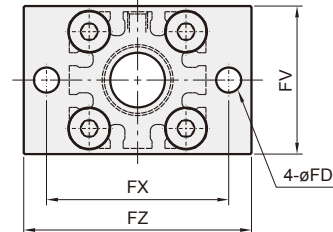
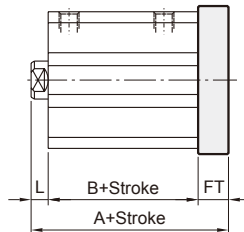
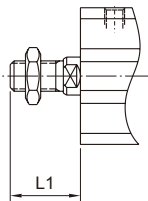


| Code | Standard stroke |                |      |        |      | Long stroke  |      |    |     |     |    |    |    |      |      |  |
|------|-----------------|----------------|------|--------|------|--------------|------|----|-----|-----|----|----|----|------|------|--|
|      | Stroke range    | Without magnet |      | Magnet |      | Stroke range | A    | B  | FD  | FT  | FV | FX | FZ | L    | L1   |  |
|      |                 | A              | B    | A      | B    |              |      |    |     |     |    |    |    |      |      |  |
| 12   | 5~30            | 30.5           | 17   | 35.5   | 22   | 35~100       | 45.5 | 32 | 4.5 | 5.5 | 25 | 45 | 55 | 13.5 | 24   |  |
| 16   | 5~30            | 30.5           | 17   | 35.5   | 22   | 35~100       | 45.5 | 32 | 4.5 | 5.5 | 30 | 45 | 55 | 13.5 | 25.5 |  |
| 20   | 5~50            | 34             | 19.5 | 44     | 29.5 | 75~200       | 55.5 | 41 | 6.6 | 8   | 39 | 48 | 60 | 14.5 | 28.5 |  |
| 25   | 5~50            | 37.5           | 22.5 | 47.5   | 32.5 | 75~300       | 59   | 44 | 6.6 | 8   | 42 | 52 | 64 | 15   | 32.5 |  |

### FBC

Male thread

Female thread

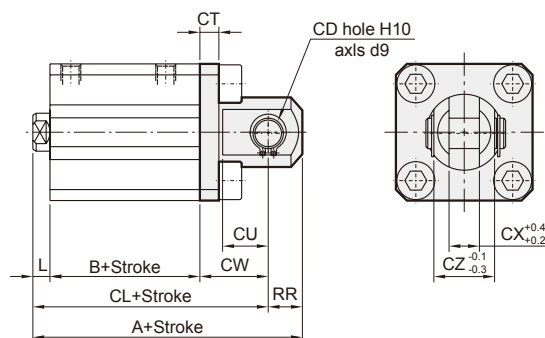
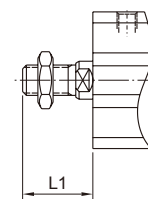


| Code | Standard stroke |                |      |     |      |        |      |     |      |              | Long stroke |    |      |      | FD  | FT  | FV | FX | FZ |
|------|-----------------|----------------|------|-----|------|--------|------|-----|------|--------------|-------------|----|------|------|-----|-----|----|----|----|
|      | Stroke range    | Without magnet |      |     |      | Magnet |      |     |      | Stroke range | A           | B  | L    | L1   |     |     |    |    |    |
|      |                 | A              | B    | L   | L1   | A      | B    | L   | L1   |              |             |    |      |      |     |     |    |    |    |
| 12   | 5~30            | 26             | 17   | 3.5 | 14   | 31     | 22   | 3.5 | 14   | 35~100       | 51          | 32 | 13.5 | 24   | 4.5 | 5.5 | 25 | 45 | 55 |
| 16   | 5~30            | 26             | 17   | 3.5 | 15.5 | 31     | 22   | 3.5 | 15.5 | 35~100       | 51          | 32 | 13.5 | 25.5 | 4.5 | 5.5 | 30 | 45 | 55 |
| 20   | 5~50            | 32             | 19.5 | 4.5 | 18.5 | 42     | 29.5 | 4.5 | 18.5 | 75~200       | 63.5        | 41 | 14.5 | 28.5 | 6.6 | 8   | 39 | 48 | 60 |
| 25   | 5~50            | 35.5           | 22.5 | 5   | 22.5 | 45.5   | 32.5 | 5   | 22.5 | 75~300       | 67          | 44 | 15   | 32.5 | 6.6 | 8   | 42 | 52 | 64 |

### CB

Male thread

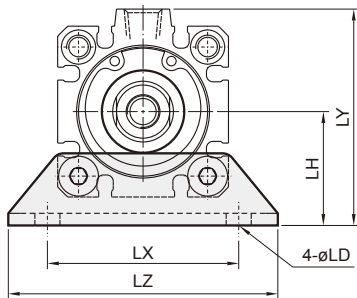
Female thread



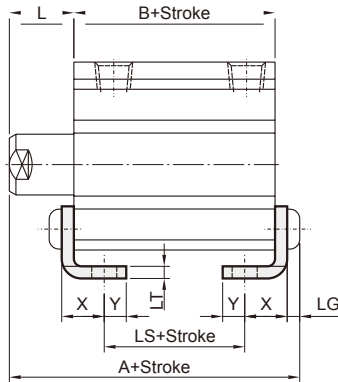
| Code | Standard stroke |                |      |      |     |        |      |      |      |              | Long stroke |        |      |    |      | CD   | CT   | CU | CW | CX | CZ | RR  |    |    |
|------|-----------------|----------------|------|------|-----|--------|------|------|------|--------------|-------------|--------|------|----|------|------|------|----|----|----|----|-----|----|----|
|      | Stroke range    | Without magnet |      |      |     | Magnet |      |      |      | Stroke range | A           | B      | CL   | L  | L1   |      |      |    |    |    |    |     |    |    |
|      |                 | A              | B    | CL   | L   | L1     | A    | B    | CL   |              |             |        |      |    |      |      |      |    |    |    |    |     | L  | L1 |
| 12   | 5~30            | 40.5           | 17   | 34.5 | 3.5 | 14     | 45.5 | 22   | 39.5 | 3.5          | 14          | 35~100 | 65.5 | 32 | 59.5 | 13.5 | 24   | 5  | 4  | 7  | 14 | 5   | 10 | 6  |
| 16   | 5~30            | 41.5           | 17   | 35.5 | 3.5 | 15.5   | 46.5 | 22   | 40.5 | 3.5          | 15.5        | 35~100 | 66.5 | 32 | 60.5 | 13.5 | 25.5 | 5  | 4  | 10 | 15 | 6.5 | 12 | 6  |
| 20   | 5~50            | 51             | 19.5 | 42   | 4.5 | 18.5   | 61   | 29.5 | 52   | 4.5          | 18.5        | 75~200 | 82.5 | 41 | 73.5 | 14.5 | 28.5 | 8  | 5  | 12 | 18 | 8   | 16 | 9  |
| 25   | 5~50            | 57.5           | 22.5 | 47.5 | 5   | 22.5   | 67.5 | 32.5 | 57.5 | 5            | 22.5        | 75~300 | 89   | 44 | 79   | 15   | 32.5 | 10 | 5  | 14 | 20 | 10  | 20 | 10 |

**LB**

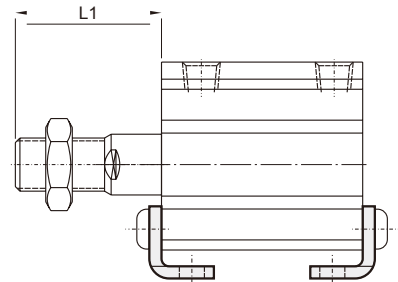
Standard stroke



Female thread

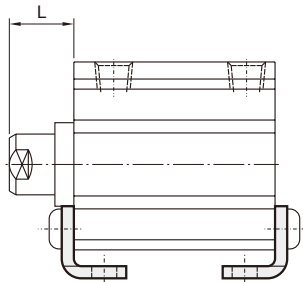


Male thread

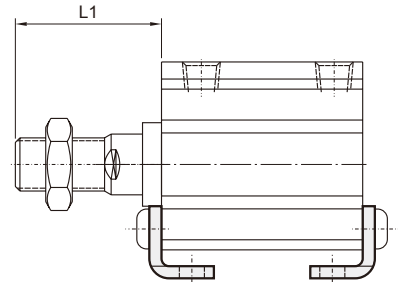


Long stroke

Female thread



Male thread



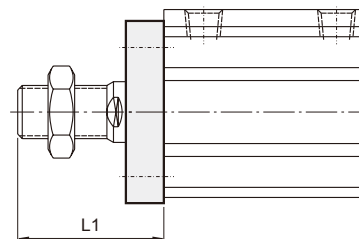
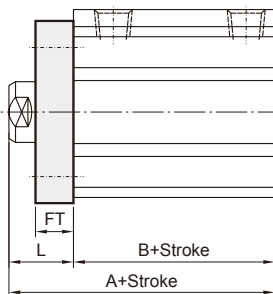
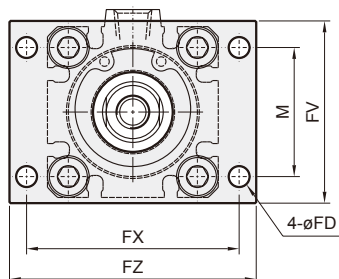
| Code | Standard stroke |                |      |      |        |      |      | Long stroke  |      |      |      | L  | L1   | LD  | LG | LH | LT  | LX  | LY   | LZ  | X    | Y    |
|------|-----------------|----------------|------|------|--------|------|------|--------------|------|------|------|----|------|-----|----|----|-----|-----|------|-----|------|------|
|      | Stroke range    | Without magnet |      |      | Magnet |      |      | Stroke range | A    | B    | LS   |    |      |     |    |    |     |     |      |     |      |      |
| A    |                 | B              | LS   | A    | B      | LS   |      |              |      |      |      |    |      |     |    |    |     |     |      |     |      |      |
| 32   | 5~50            | 47.2           | 23   | 7    | 57.2   | 33   | 17   | 125~300      | 69.7 | 45.5 | 29.5 | 17 | 38.5 | 6.6 | 4  | 30 | 3.2 | 57  | 57   | 71  | 11.2 | 5.8  |
|      | 75,100          | 57.2           | 33   | 17   |        |      |      |              |      |      |      |    |      |     |    |    |     |     |      |     |      |      |
| 40   | 5~50            | 53.7           | 29.5 | 13.5 | 63.7   | 39.5 | 23.5 | 125~300      | 79.2 | 55   | 39   | 17 | 38.5 | 6.6 | 4  | 33 | 3.2 | 64  | 64   | 78  | 11.2 | 7    |
|      | 75,100          | 63.7           | 39.5 | 23.5 |        |      |      |              |      |      |      |    |      |     |    |    |     |     |      |     |      |      |
| 50   | 5~50            | 56.7           | 30.5 | 7.5  | 66.7   | 40.5 | 17.5 | 125~300      | 81.7 | 55.5 | 32.5 | 18 | 43.5 | 9   | 5  | 39 | 3.2 | 79  | 78   | 95  | 14.7 | 8    |
|      | 75,100          | 66.7           | 40.5 | 17.5 |        |      |      |              |      |      |      |    |      |     |    |    |     |     |      |     |      |      |
| 63   | 5~50            | 62.2           | 36   | 10   | 72.2   | 46   | 20   | 125~300      | 83.2 | 57   | 31   | 18 | 43.5 | 11  | 5  | 46 | 3.2 | 95  | 91.5 | 113 | 16.2 | 9    |
|      | 75,100          | 72.2           | 46   | 20   |        |      |      |              |      |      |      |    |      |     |    |    |     |     |      |     |      |      |
| 80   | 5~50            | 75             | 43.5 | 13.5 | 85     | 53.5 | 23.5 | 125~300      | 97.5 | 66   | 36   | 20 | 53.5 | 13  | 7  | 59 | 4.5 | 118 | 114  | 140 | 19.5 | 11   |
|      | 75,100          | 85             | 53.5 | 23.5 |        |      |      |              |      |      |      |    |      |     |    |    |     |     |      |     |      |      |
| 100  | 5~50            | 88             | 53   | 19   | 98     | 63   | 29   | 125~300      | —    | —    | —    | 22 | 53.5 | 13  | 7  | 71 | 6   | 137 | 136  | 162 | 23   | 12.5 |
|      | 75,100          | 98             | 63   | 29   |        |      |      |              |      |      |      |    |      |     |    |    |     |     |      |     |      |      |



**FAC**

Female thread

Male thread



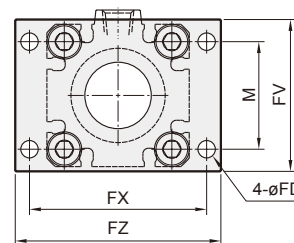
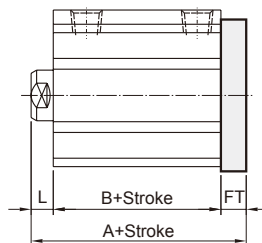
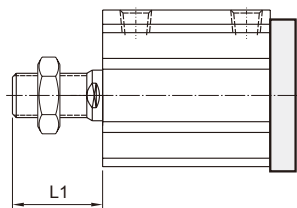
| Code | Standard stroke |              |                |      |        | Long stroke |              |      | FD  | FT | FV  | FX  | FZ  | L  | L1   | M  |   |
|------|-----------------|--------------|----------------|------|--------|-------------|--------------|------|-----|----|-----|-----|-----|----|------|----|---|
|      | Tube I.D.       | Stroke range | Without magnet |      | Magnet |             | Stroke range | A    |     |    |     |     |     |    |      |    | B |
|      |                 |              | A              | B    | A      | B           |              |      |     |    |     |     |     |    |      |    |   |
| 32   | 5~50            | 40           | 23             | 50   | 33     | 125~300     | 62.5         | 45.5 | 5.5 | 8  | 48  | 56  | 65  | 17 | 38.5 | 34 |   |
|      | 75,100          | 50           | 33             |      |        |             |              |      |     |    |     |     |     |    |      |    |   |
| 40   | 5~50            | 46.5         | 29.5           | 56.5 | 39.5   | 125~300     | 72           | 55   | 5.5 | 8  | 54  | 62  | 72  | 17 | 38.5 | 40 |   |
|      | 75,100          | 56.5         | 39.5           |      |        |             |              |      |     |    |     |     |     |    |      |    |   |
| 50   | 5~50            | 48.5         | 30.5           | 58.5 | 40.5   | 125~300     | 73.5         | 55.5 | 6.6 | 9  | 67  | 76  | 89  | 18 | 43.5 | 50 |   |
|      | 75,100          | 58.5         | 40.5           |      |        |             |              |      |     |    |     |     |     |    |      |    |   |
| 63   | 5~50            | 54           | 36             | 64   | 46     | 125~300     | 75           | 57   | 9   | 9  | 80  | 92  | 108 | 18 | 43.5 | 60 |   |
|      | 75,100          | 64           | 46             |      |        |             |              |      |     |    |     |     |     |    |      |    |   |
| 80   | 5~50            | 63.5         | 43.5           | 73.5 | 53.5   | 125~300     | 86           | 66   | 11  | 11 | 99  | 116 | 134 | 20 | 53.5 | 77 |   |
|      | 75,100          | 73.5         | 53.5           |      |        |             |              |      |     |    |     |     |     |    |      |    |   |
| 100  | 5~50            | 75           | 53             | 85   | 63     | 125~300     | —            | —    | 11  | 11 | 117 | 136 | 154 | 22 | 53.5 | 94 |   |
|      | 75,100          | 85           | 63             |      |        |             |              |      |     |    |     |     |     |    |      |    |   |

**FBC**

Standard stroke

Male thread

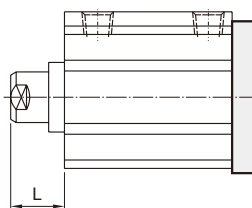
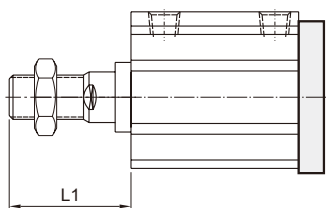
Female thread



Long stroke

Male thread

Female thread



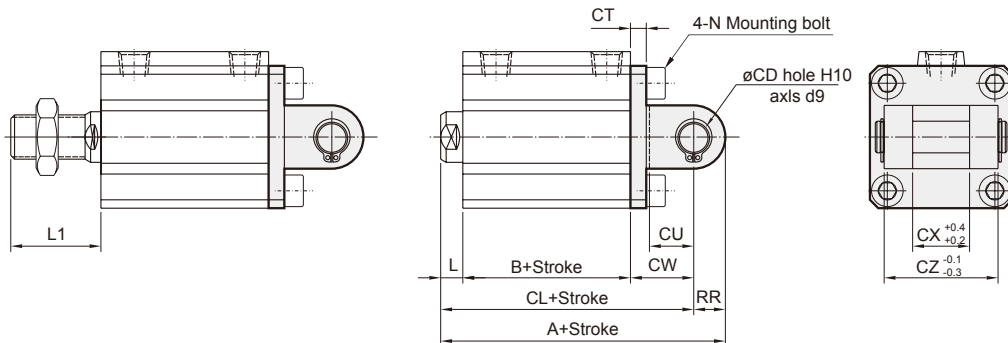
| Code | Standard stroke |                |      |        |      |    |      | Long stroke  |      |      |    |      | FD  | FT | FV  | FX  | FZ  | M  |
|------|-----------------|----------------|------|--------|------|----|------|--------------|------|------|----|------|-----|----|-----|-----|-----|----|
|      | Stroke range    | Without magnet |      | Magnet |      | L  | L1   | Stroke range | A    | B    | L  | L1   |     |    |     |     |     |    |
|      |                 | A              | B    | A      | B    |    |      |              |      |      |    |      |     |    |     |     |     |    |
| 32   | 5~50            | 38             | 23   | 48     | 33   | 7  | 28.5 | 125~300      | 70.5 | 45.5 | 17 | 38.5 | 5.5 | 8  | 48  | 56  | 65  | 34 |
|      | 75,100          | 48             | 33   |        |      |    |      |              |      |      |    |      |     |    |     |     |     |    |
| 40   | 5~50            | 44.5           | 29.5 | 54.5   | 39.5 | 7  | 28.5 | 125~300      | 80   | 55   | 17 | 38.5 | 5.5 | 8  | 54  | 62  | 72  | 40 |
|      | 75,100          | 54.5           | 39.5 |        |      |    |      |              |      |      |    |      |     |    |     |     |     |    |
| 50   | 5~50            | 47.5           | 30.5 | 57.5   | 40.5 | 8  | 33.5 | 125~300      | 82.5 | 55.5 | 18 | 43.5 | 6.6 | 9  | 67  | 76  | 89  | 50 |
|      | 75,100          | 57.5           | 40.5 |        |      |    |      |              |      |      |    |      |     |    |     |     |     |    |
| 63   | 5~50            | 53             | 36   | 63     | 46   | 8  | 33.5 | 125~300      | 84   | 57   | 18 | 43.5 | 9   | 9  | 80  | 92  | 108 | 60 |
|      | 75,100          | 63             | 46   |        |      |    |      |              |      |      |    |      |     |    |     |     |     |    |
| 80   | 5~50            | 64.5           | 43.5 | 74.5   | 53.5 | 10 | 43.5 | 125~300      | 97   | 66   | 20 | 53.5 | 11  | 11 | 99  | 116 | 134 | 77 |
|      | 75,100          | 74.5           | 53.5 |        |      |    |      |              |      |      |    |      |     |    |     |     |     |    |
| 100  | 5~50            | 76             | 53   | 86     | 63   | 12 | 43.5 | 125~300      | -    | -    | -  | -    | 11  | 11 | 117 | 136 | 154 | 94 |
|      | 75,100          | 86             | 63   |        |      |    |      |              |      |      |    |      |     |    |     |     |     |    |

**CB**

**Standard stroke**

**Male thread**

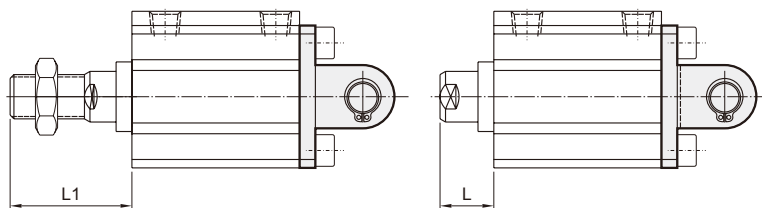
**Female thread**



**Long stroke**

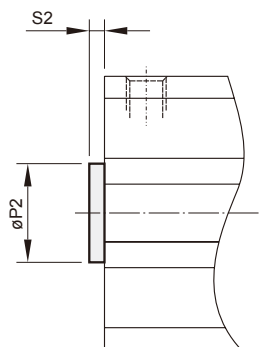
**Male thread**

**Female thread**



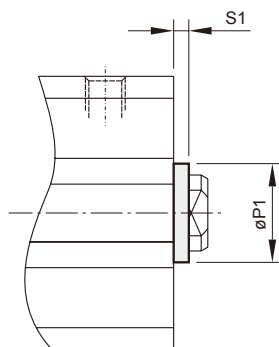
| Code | Standard stroke |                |      |       |        |      |       |    |      |              | Long stroke |      |       |    |      |    |    |    |    |    |    |          |    |
|------|-----------------|----------------|------|-------|--------|------|-------|----|------|--------------|-------------|------|-------|----|------|----|----|----|----|----|----|----------|----|
|      | Stroke range    | Without magnet |      |       | Magnet |      |       | L  | L1   | Stroke range | A           | B    | CL    | L  | L1   | CD | CT | CU | CW | CX | CZ | N        | RR |
|      |                 | A              | B    | CL    | A      | B    | CL    |    |      |              |             |      |       |    |      |    |    |    |    |    |    |          |    |
| 32   | 5~50            | 60             | 23   | 50    | 70     | 33   | 60    | 7  | 28.5 | 125~300      | 92.5        | 45.5 | 82.5  | 17 | 38.5 | 10 | 5  | 14 | 20 | 18 | 36 | M6×1.0   | 10 |
|      | 75,100          | 70             | 33   | 60    |        |      |       |    |      |              |             |      |       |    |      |    |    |    |    |    |    |          |    |
| 40   | 5~50            | 68.5           | 29.5 | 58.5  | 78.5   | 39.5 | 68.5  | 7  | 28.5 | 125~300      | 104         | 55   | 94    | 17 | 38.5 | 10 | 6  | 14 | 22 | 18 | 36 | M6×1.0   | 10 |
|      | 75,100          | 78.5           | 39.5 | 68.5  |        |      |       |    |      |              |             |      |       |    |      |    |    |    |    |    |    |          |    |
| 50   | 5~50            | 80.5           | 30.5 | 66.5  | 90.5   | 40.5 | 76.5  | 8  | 33.5 | 125~300      | 115.5       | 55.5 | 101.5 | 18 | 43.5 | 14 | 7  | 20 | 28 | 22 | 44 | M8×1.25  | 14 |
|      | 75,100          | 90.5           | 40.5 | 76.5  |        |      |       |    |      |              |             |      |       |    |      |    |    |    |    |    |    |          |    |
| 63   | 5~50            | 88             | 36   | 74    | 98     | 46   | 84    | 8  | 33.5 | 125~300      | 119         | 57   | 105   | 18 | 43.5 | 14 | 8  | 20 | 30 | 22 | 44 | M10×1.5  | 14 |
|      | 75,100          | 98             | 46   | 84    |        |      |       |    |      |              |             |      |       |    |      |    |    |    |    |    |    |          |    |
| 80   | 5~50            | 109.5          | 43.5 | 91.5  | 119.5  | 53.5 | 101.5 | 10 | 43.5 | 125~300      | 142         | 66   | 124   | 20 | 53.5 | 18 | 10 | 27 | 38 | 28 | 56 | M12×1.75 | 18 |
|      | 75,100          | 119.5          | 53.5 | 101.5 |        |      |       |    |      |              |             |      |       |    |      |    |    |    |    |    |    |          |    |
| 100  | 5~50            | 132            | 53   | 110   | 142    | 63   | 120   | 12 | 43.5 | 125~300      | —           | —    | —     | —  | —    | 22 | 13 | 31 | 45 | 32 | 64 | M12×1.75 | 22 |
|      | 75,100          | 142            | 63   | 120   |        |      |       |    |      |              |             |      |       |    |      |    |    |    |    |    |    |          |    |

### F Rear flange



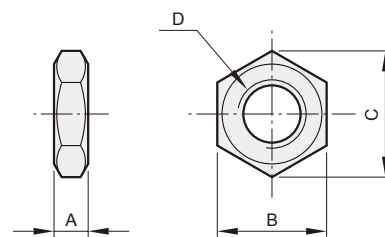
| Code<br>Tube I.D. | P2 <sup>h9</sup> | S2  |
|-------------------|------------------|-----|
| 12                | 6                | 1.5 |
| 16                | 10               | 1.5 |
| 20                | 13               | 2   |
| 25                | 15               | 2   |
| 32                | 21               | 2   |
| 40                | 28               | 2   |
| 50                | 35               | 2   |
| 63                | 35               | 2   |
| 80                | 43               | 2   |
| 100               | 59               | 2   |

### RF



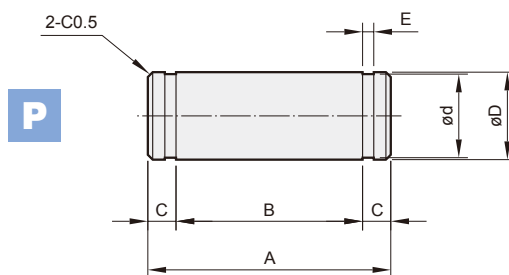
| Code<br>Tube I.D. | P1 <sup>h9</sup> | S1  |
|-------------------|------------------|-----|
| 12                | 15               | 1.5 |
| 16                | 20               | 1.5 |
| 20                | 13               | 2   |
| 25                | 15               | 2   |
| 32                | 21               | 2   |
| 40                | 28               | 2   |
| 50                | 35               | 2   |
| 63                | 35               | 2   |
| 80                | 43               | 2   |
| 100               | 59               | 2   |

### Rod front nut



| Code<br>Tube I.D. | A  | B  | C    | D        |
|-------------------|----|----|------|----------|
| 12                | 4  | 8  | 9.2  | M5×0.8   |
| 16                | 5  | 10 | 11.5 | M6×1.0   |
| 20                | 5  | 13 | 15   | M8×1.25  |
| 25                | 6  | 17 | 19.6 | M10×1.25 |
| 32,40             | 8  | 22 | 25.4 | M14×1.5  |
| 50,63             | 11 | 27 | 31.4 | M18×1.5  |
| 80                | 13 | 32 | 37   | M22×1.5  |
| 100               | 16 | 41 | 47.3 | M26×1.5  |

### Pin for CB









| Code<br>Tube I.D. | A    | B    | C   | $\varnothing D^{g9}$      | $\varnothing d$         | E                       | Snap ring |
|-------------------|------|------|-----|---------------------------|-------------------------|-------------------------|-----------|
| 12                | 14.6 | 10.2 | 2.2 | 5 <sup>-0.03/-0.06</sup>  | 4.8 <sup>0/-0.04</sup>  | 0.7 <sup>+0.10/0</sup>  | STW-5     |
| 16                | 16.6 | 12.2 | 2.2 | 5 <sup>-0.03/-0.06</sup>  | 4.8 <sup>0/-0.04</sup>  | 0.7 <sup>+0.10/0</sup>  | STW-5     |
| 20                | 21   | 16.2 | 2.4 | 8 <sup>-0.04/-0.08</sup>  | 7.6 <sup>0/-0.06</sup>  | 0.9 <sup>+0.10/0</sup>  | STW-8     |
| 25                | 25.6 | 20.2 | 2.7 | 10 <sup>-0.04/-0.08</sup> | 9.6 <sup>0/-0.06</sup>  | 1.15 <sup>+0.14/0</sup> | STW-10    |
| 32,40             | 41.6 | 36.2 | 2.7 | 10 <sup>-0.04/-0.08</sup> | 9.6 <sup>0/-0.09</sup>  | 1.15 <sup>+0.14/0</sup> | STW-10    |
| 50,63             | 50.6 | 44.2 | 3.2 | 14 <sup>-0.05/-0.10</sup> | 13.4 <sup>0/-0.11</sup> | 1.15 <sup>+0.14/0</sup> | STW-14    |
| 80                | 64   | 56.2 | 3.9 | 18 <sup>-0.05/-0.10</sup> | 17.0 <sup>0/-0.11</sup> | 1.35 <sup>+0.14/0</sup> | STW-18    |
| 100               | 72   | 64.2 | 3.9 | 22 <sup>-0.07/-0.12</sup> | 21.0 <sup>0/-0.21</sup> | 1.35 <sup>+0.14/0</sup> | STW-22    |

### Cylinder weight







#### Standard stroke

Unit: g

| Model      |                   | Basic weight<br>MCJQ-11   | Basic weight<br>(magnet)<br>MCJQ-11   | Stroke 5 mm<br>MCJQ-11  | Basic weight<br>MCJQ-12  | Basic weight<br>(magnet)<br>MCJQ-12   | Stroke 5 mm<br>MCJQ-12  |
|------------|-------------------|---|---|---|--|---|---|
| Tube I.D.  | Stroke range (mm) |  |  |  |  |  |  |
| $\phi 12$  | 5~30              | 22  | 31  | 7   | 19   | 28  | 7   |
| $\phi 16$  | 5~30              | 33  | 42  | 8   | 28   | 37  | 8   |
| $\phi 20$  | 5~50              | 55  | 82  | 13  | 48   | 75  | 13  |
| $\phi 25$  | 5~50              | 92  | 140   | 16  | 75   | 123   | 16  |
| $\phi 32$  | 5~50              | 129   | 215   | 22  | 109  | 166   | 22  |
|            | 51~100            | 206   | 215   | 22  | 157  | 166   | 22  |
| $\phi 40$  | 5~50              | 226   | 315   | 24  | 184  | 266   | 24  |
|            | 51~100            | 298   | 315   | 24  | 249  | 266   | 24  |
| $\phi 50$  | 5~50              | 367   | 500   | 35  | 317  | 409   | 35  |
|            | 51~100            | 476   | 500   | 35  | 386  | 409   | 35  |
| $\phi 63$  | 5~50              | 530   | 714   | 41  | 446  | 622   | 41  |
|            | 51~100            | 685   | 714   | 41  | 594  | 622   | 41  |
| $\phi 80$  | 5~50              | 1032  | 1278  | 65  | 904  | 1109  | 65  |
|            | 51~100            | 1240  | 1278  | 65  | 1072   | 1109  | 65  |
| $\phi 100$ | 5~50              | 1864  | 2278  | 90  | 1679   | 2030  | 90  |
|            | 51~100            | 2230  | 2278  | 90  | 1982   | 2030  | 90  |








#### Long stroke

Unit: g

| Model     |                   | Basic weight<br>MCJQ-11   | Basic weight<br>(magnet)<br>MCJQ-11   | Stroke 5 mm<br>MCJQ-11  | Basic weight<br>MCJQ-12  | Basic weight<br>(magnet)<br>MCJQ-12   | Stroke 5 mm<br>MCJQ-12  |
|-----------|-------------------|---|---|---|--|---|---|
| Tube I.D. | Stroke range (mm) |  |  |  |  |  |  |
| $\phi 12$ | 31~100            | 46  | 47  | 7   | 43   | 44  | 7   |
| $\phi 16$ | 31~100            | 68  | 70  | 8   | 63   | 65  | 8   |
| $\phi 20$ | 51~200            | 116   | 120   | 13  | 106  | 110   | 13  |
| $\phi 25$ | 51~300            | 172   | 180   | 16  | 153  | 161   | 16  |
| $\phi 32$ | 101~300           | 287   | 295   | 22  | 238  | 247   | 22  |
| $\phi 40$ | 101~300           | 409   | 426   | 24  | 360  | 377   | 24  |
| $\phi 50$ | 101~300           | 658   | 682   | 35  | 566  | 589   | 35  |
| $\phi 63$ | 101~300           | 852   | 881   | 41  | 760  | 789   | 41  |
| $\phi 80$ | 101~300           | 1531  | 1568  | 65  | 1398   | 1436  | 65  |

#### Accessories weight

Unit: g

| Model      | LB  | CB  | FAC/FBC   | F   | RF  | Pin   | Nut   |
|------------|---|---|---|---|---|---|---|
| Tube I.D.  |  |  |  |  |  |  |  |
| $\phi 12$  | 51  | 31  | 56  | 1   | 1   | 2   | 1   |
| $\phi 16$  | 60  | 37  | 67  | 2   | 1   | 3   | 2   |
| $\phi 20$  | 145   | 61  | 135   | 3   | 1   | 8   | 4   |
| $\phi 25$  | 166   | 94  | 153   | 4   | 2   | 16  | 6   |
| $\phi 32$  | 107   | 136   | 165   | 9   | 3   | 25  | 18  |
| $\phi 40$  | 125   | 171   | 203   | 17  | 9   | 25  | 18  |
| $\phi 50$  | 209   | 331   | 357   | 28  | 16  | 61  | 32  |
| $\phi 63$  | 296   | 538   | 547   | 52  | 30  | 61  | 32  |
| $\phi 80$  | 586   | 1034  | 1046  | 107   | 52  | 127   | 56  |
| $\phi 100$ | 960   | 1765  | 1328  | 175   | 82  | 214   | 56  |