

# ISO Cylinder: Standard/Non-rotating Type Double Acting, Single/Double Rod

## Series C85

ø8, ø10, ø12, ø16, ø20, ø25

### How to Order

|                                     |          |          |             |          |           |           |           |           |          |          |           |
|-------------------------------------|----------|----------|-------------|----------|-----------|-----------|-----------|-----------|----------|----------|-----------|
| <b>Double acting<br/>Single rod</b> | <b>C</b> | <b>D</b> | <b>85</b>   | <b>K</b> | <b>N</b>  | <b>16</b> | <b>40</b> | <b>C</b>  | <b>J</b> | <b>A</b> | <b>R2</b> |
| <b>Double acting<br/>Double rod</b> | <b>C</b> | <b>D</b> | <b>85 W</b> | <b>E</b> | <b>16</b> | <b>40</b> | <b>C</b>  | <b>JJ</b> | <b>B</b> |          |           |

**Built-in magnet**

|     |                 |
|-----|-----------------|
| Nil | None            |
| D   | Built-in magnet |

**Type**

|     |                                        |
|-----|----------------------------------------|
| Nil | Standard                               |
| K   | Non-rotating rod (Rubber cushion only) |

**Mounting style**

| Symbol | Mounting                |
|--------|-------------------------|
| N      | Basic integrated clevis |
| E**    | Double end              |
| F**    | Front nose              |
| Y**    | Front nose in line port |

\* Double acting, Double rod:  
Only double end style (E).  
\*\* Except air cushion type.

**Bore size**

| Bore size (mm) | Standard stroke (mm)**                 | Max. stroke (mm) |              |            |
|----------------|----------------------------------------|------------------|--------------|------------|
|                |                                        | Standard         | Non-rotating | Double rod |
| 8*             | 10, 25, 40, 50, 80, 100                | 400              | 100          | 100        |
| 10             |                                        |                  |              |            |
| 12             |                                        |                  |              |            |
| 16             | 10, 25, 40, 50, 80, 100, 125, 160, 200 | 1000             | 1000         | 500        |
| 20             |                                        |                  |              |            |
| 25             |                                        |                  |              |            |

\* Not available with air cushion.  
\*\* Other strokes available on request.

**Stroke**

**Cushion**

|     |                                                     |
|-----|-----------------------------------------------------|
| Nil | Rubber cushion (Standard)                           |
| C   | Air cushion (Only "N" execution, bores 10 to 25 mm) |

**Auto switch mounting type**

|   |               |
|---|---------------|
| A | Rail mounting |
| B | Band mounting |

Applicable auto switches and bands are shown on page 6-11-44. Please order auto switches and bands separately.

**Option**

|    |                                                          |
|----|----------------------------------------------------------|
| R  | Stainless steel piston rod, rod end nut and mounting nut |
| R2 | Stainless steel piston rod and rod end nut               |

Note) Please refer to page 6-11-47 for additional options. Only one option can be selected.

**Rod boot (Only ø20, ø25)**

|     |                                     |
|-----|-------------------------------------|
| Nil | Without rod boot                    |
| J   | Nylon tarpaulin one side            |
| K   | Heat resistant tarpaulin one side   |
| JJ* | Nylon tarpaulin both sides          |
| KK* | Heat resistant tarpaulin both sides |

\* In the case of double acting/double rod.

### Mounting Bracket Part No.

| Bore size (mm)   |                                       | 8          | 10         | 12         | 16          | 20 | 25 |
|------------------|---------------------------------------|------------|------------|------------|-------------|----|----|
| Mounting bracket | Foot (1 pc.)                          | C85L10A    | C85L16A    | C85L25A    |             |    |    |
|                  | Foot (2 pcs. with mounting nut 1 pc.) | C85L10B    | C85L16B    | C85L25B    |             |    |    |
|                  | Flange                                | C85F10     | C85F16     | C85F25     |             |    |    |
|                  | Trunnion                              | C85T10     | C85T16     | C85T25     |             |    |    |
|                  | Clevis                                | C85C10     | C85C16     | C85C25     |             |    |    |
| Accessory        | Single knuckle joint                  | KJ4D       | KJ6D       | KJ8D       | KJ10D       |    |    |
|                  | Double knuckle joint                  | GKM4-8     | GKM6-10    | GKM8-16    | GKM10-20    |    |    |
|                  | Floating joint                        | JA10-4-070 | JA15-6-100 | JA20-8-125 | JA30-10-125 |    |    |

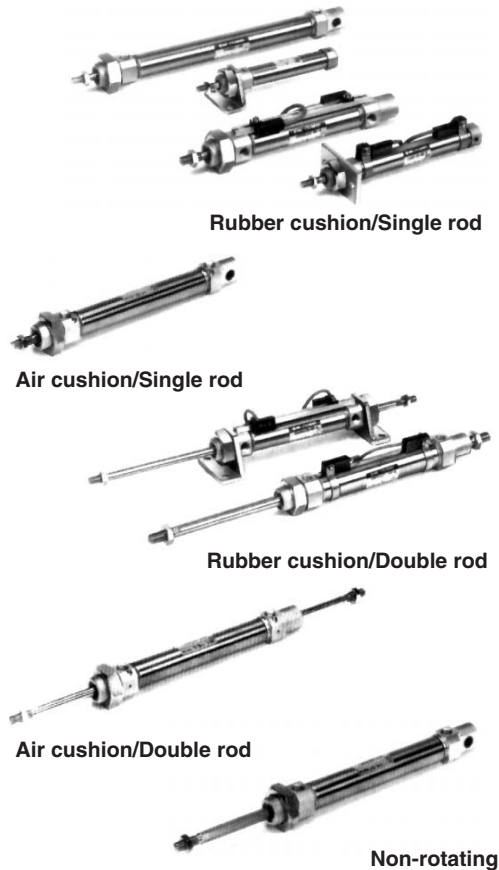
### Replacement Parts For Standard Cylinders

| Bore size (mm) | Part no. | Note                                            |
|----------------|----------|-------------------------------------------------|
| 20             | C85-20PS | Every set includes:<br>n°1 rod seal             |
| 25             | C85-25PS | n°1 seal retaining washer<br>n°1 retaining ring |

### For Non-rotating Cylinders ("K")

| Bore size (mm) | Part no.  | Note                                            |
|----------------|-----------|-------------------------------------------------|
| 20             | C85K-20PS | Every set includes:<br>n°1 rod seal             |
| 25             | C85K-25PS | n°1 seal retaining washer<br>n°1 retaining ring |

# ISO Cylinder: Standard/Non-rotating Type Double Acting, Single/Double Rod **Series C85**



## Specifications

| Bore size (mm)                |                          | 8                                                                          | 10       | 12       | 16       | 20                              | 25         |
|-------------------------------|--------------------------|----------------------------------------------------------------------------|----------|----------|----------|---------------------------------|------------|
| Piston rod dia. (mm)          |                          | 4                                                                          | 4        | 6        | 6        | 8                               | 10         |
| Piston rod thread             |                          | M4 x 0.7                                                                   | M4 x 0.7 | M6 x 1   | M6 x 1   | M8 x 1.25                       | M10 x 1.25 |
| Port size                     |                          | M5 x 0.8                                                                   | M5 x 0.8 | M5 x 0.8 | M5 x 0.8 | G 1/8                           | G 1/8      |
| Action                        |                          | Double acting, Single/Double rod                                           |          |          |          |                                 |            |
| Fluid                         |                          | Air                                                                        |          |          |          |                                 |            |
| Proof pressure                |                          | 1.5 MPa                                                                    |          |          |          |                                 |            |
| Max. operating pressure       |                          | 1.0 MPa                                                                    |          |          |          |                                 |            |
| Min. operating pressure       | Spring return            | 0.1 MPa                                                                    | 0.08 MPa | 0.05 MPa | 0.05 MPa |                                 |            |
|                               | Spring extended          |                                                                            |          |          | 0.08 MPa |                                 |            |
| Ambient and fluid temperature |                          | -20 to 80°C (Built-in magnet: -10 to 60°C)                                 |          |          |          |                                 |            |
| Cushion                       |                          | Rubber cushion, Air cushion (Except ø8) (Non-rotating: Rubber bumper only) |          |          |          |                                 |            |
| Lubrication                   |                          | Not required. Use turbine oil Class 1 ISO VG32, if lubricated.             |          |          |          |                                 |            |
| Rod boot                      | Nylon tarpaulin          | —                                                                          |          |          |          | Max. ambient temperature 60°C   |            |
|                               | Heat resistant tarpaulin | —                                                                          |          |          |          | Max. ambient temperature 110°C* |            |
| Piston speed                  |                          | 50 to 1500 mm/s                                                            |          |          |          |                                 |            |
| Allowable kinetic energy      | Rubber cushion           | 0.02 J                                                                     | 0.03 J   | 0.04 J   | 0.09 J   | 0.27J                           | 0.4 J      |
|                               | Air cushion              | —                                                                          | 0.17 J   | 0.19 J   | 0.4 J    | 0.66 J                          | 0.97 J     |
| Non-rotating accuracy         |                          | ±1° 30'                                                                    | ±1° 30'  | ± 1°     | ±1°      | ±0° 42'                         | ±0° 42'    |
| Stroke tolerance (mm)         |                          | 0/+1                                                                       |          |          |          | 0/+1.4                          |            |

\* Maximum ambient temperature of rod boots only.

## JIS Symbol

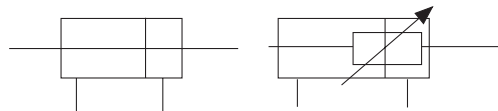
Double acting, Single rod



Rubber cushion

Air cushion

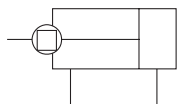
Double acting, Double rod



Rubber cushion

Air cushion

Non-rotating rod: Double acting, Single rod



## Weight (Standard, Non-rotating rod)

(g)

| Bore size (mm)   |                                       | 8       | 10  | 12  | 16  | 20       | 25       |
|------------------|---------------------------------------|---------|-----|-----|-----|----------|----------|
| Double action    | Basic weight                          | 45      | 49  | 96  | 109 | 183(203) | 258(286) |
|                  | Add'l weight for each 10 mm of stroke | 3       | 3.2 | 6.2 | 7.2 | 11.8     | 18.4     |
| Mounting bracket |                                       | C85L□A  | 20  | 40  | 95  |          |          |
|                  |                                       | C85L□B  | 55  | 105 | 210 |          |          |
|                  |                                       | C85F□   | 12  | 25  | 90  |          |          |
|                  |                                       | C85T□   | 20  | 50  | 75  |          |          |
|                  |                                       | C85C□   | 20  | 40  | 85  |          |          |
| Accessory        | Single knuckle joint                  | KJID    | 17  | 25  | 45  | 70       |          |
|                  | Double knuckle joint                  | GKM□-□  | 10  | 20  | 50  | 100      |          |
|                  | Floating joint                        | JA□-□-□ | 10  | 20  | 50  | 70       |          |

Calculation: (Example) C85N10-50, C85F10

Basic weight ——— 49 (ø10)g

Additional weight ——— 3.2/10 mm of stroke

Cylinder stroke ——— 50 mm

Mounting bracket ——— 12g

49 + 3.2 x 50/10 = 65g    65 + 12 = 77g

( ) : In the case of air cushion

# Series C85

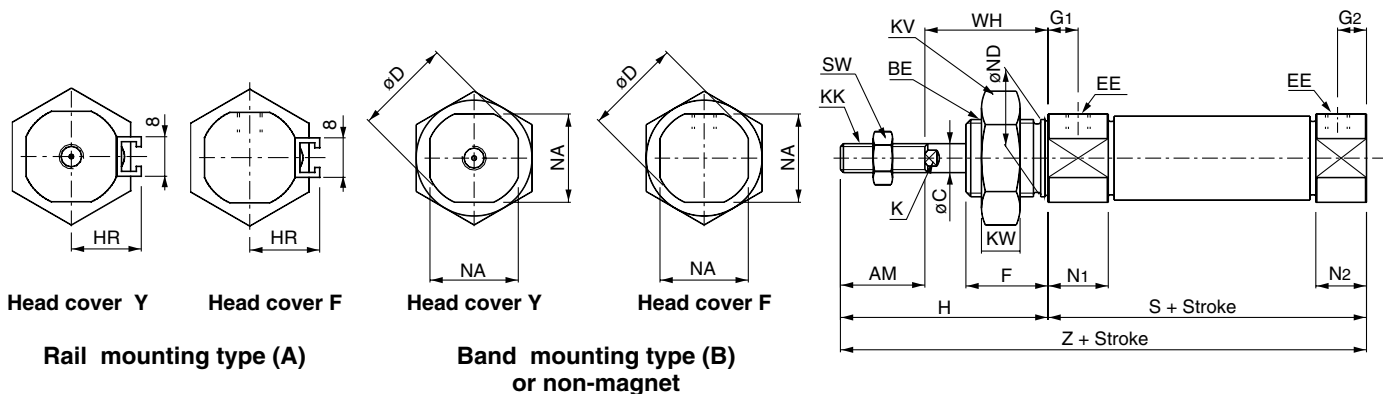
## Dimensions

[First angle projection]

Double acting, Single rod

Rubber cushion: C□85F/Y **Bore** **Stroke** □

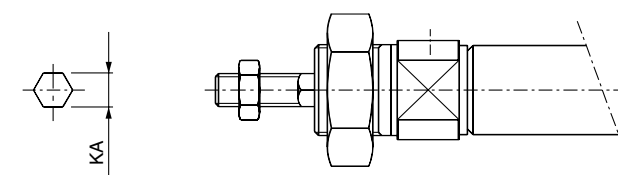
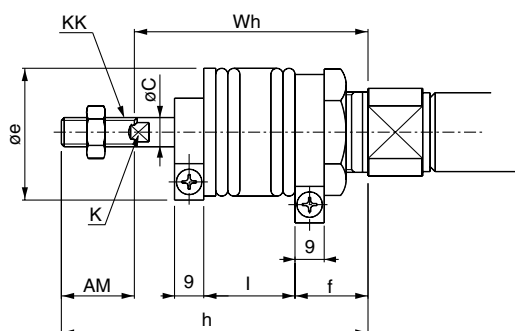
Without magnet, Built-in magnet



With rod boot

C□85KF/Y **Bore** **Stroke**

Non-rotating, Piston rod (Rubber cushion only)



Rod cross section

(mm)

| Bore | AM | BE         | øC | øD   | EE       | F  | G1 | G2 | H  | HR   | K | KA   | KK         | KV | KW | N1   | N2   | NA   | øND h8 | S  | SW | WH | Z   |
|------|----|------------|----|------|----------|----|----|----|----|------|---|------|------------|----|----|------|------|------|--------|----|----|----|-----|
| 8    | 12 | M12 x 1.25 | 4  | 16.7 | M5 x 0.8 | 12 | 7  | 5  | 28 | 10   | — | 4.2  | M4 x 0.7   | 19 | 6  | 11.5 | 9.5  | 15   | 12     | 46 | 7  | 16 | 74  |
| 10   | 12 | M12 x 1.25 | 4  | 16.7 | M5 x 0.8 | 12 | 7  | 5  | 28 | 10.5 | — | 4.2  | M4 x 0.7   | 19 | 6  | 11.5 | 9.5  | 15   | 12     | 46 | 7  | 16 | 74  |
| 12   | 16 | M16 x 1.5  | 6  | 19.7 | M5 x 0.8 | 17 | 8  | 6  | 38 | 14   | 5 | 6.2  | M6 x 1     | 24 | 8  | 12.5 | 10.5 | 18.3 | 16     | 50 | 10 | 22 | 88  |
| 16   | 16 | M16 x 1.5  | 6  | 19.7 | M5 x 0.8 | 17 | 8  | 6  | 38 | 14   | 5 | 6.2  | M6 x 1     | 24 | 8  | 12.5 | 10.5 | 18.3 | 16     | 50 | 10 | 22 | 88  |
| 20   | 20 | M22 x 1.5  | 8  | 28   | G 1/8    | 20 | 8  | 8  | 44 | 17   | 6 | 8.2  | M8 x 1.25  | 32 | 11 | 15   | 15   | 24   | 22     | 62 | 13 | 24 | 106 |
| 25   | 22 | M22 x 1.5  | 10 | 33.5 | G 1/8    | 22 | 8  | 8  | 50 | 20   | 8 | 10.2 | M10 x 1.25 | 32 | 11 | 15   | 15   | 30   | 22     | 65 | 17 | 28 | 115 |

With Rod Boot

(mm)

| Bore | Item<br>Stroke | AM | øC | øe | f  | K | KK         | h       |           |            |            |            |            |            |
|------|----------------|----|----|----|----|---|------------|---------|-----------|------------|------------|------------|------------|------------|
|      |                |    |    |    |    |   |            | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 |
| 20   |                | 20 | 8  | 36 | 20 | 6 | M8 x 1.25  | 71      | 84        | 96         | 109        | 134        | 159        | —          |
| 25   |                | 22 | 10 | 36 | 20 | 8 | M10 x 1.25 | 74      | 87        | 99         | 112        | 137        | 162        | 187        |

| Bore | Item<br>Stroke | I       |           |            |            |            |            |            | Wh      |           |            |            |            |            |            |
|------|----------------|---------|-----------|------------|------------|------------|------------|------------|---------|-----------|------------|------------|------------|------------|------------|
|      |                | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 | 1 to 50 | 51 to 100 | 101 to 150 | 151 to 200 | 201 to 300 | 301 to 400 | 401 to 500 |
| 20   |                | 12.5    | 25        | 37.5       | 50         | 75         | 100        | —          | 51      | 64        | 76         | 89         | 114        | 139        | —          |
| 25   |                | 12.5    | 25        | 37.5       | 50         | 75         | 100        | 125        | 52      | 65        | 77         | 90         | 115        | 140        | 165        |