# **MCCG** series

## **ROUND CYLINDERS**





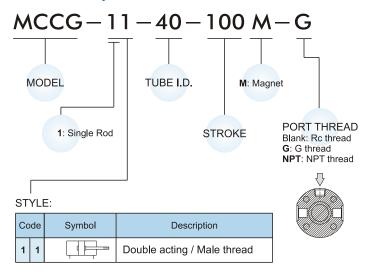
### **Table for standard stroke**

| Tube I.D.(mm)                    | Stroke (mm)                              |
|----------------------------------|--|
| φ20                              | 25, 50, 75, 100, 125, 150, 200           |
| $\phi$ 25, 32, 40, $\phi$ 50, 63 | 25, 50, 75, 100, 125, 150, 200, 250, 300 |

#### Long storke

Please reconfirm the dimension with our sales department when the stroke over our standard.

# Order example



\* Order example for special specification, refer to page J-03.

#### **Features**

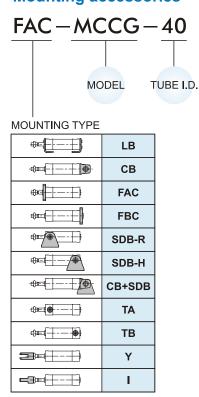
- Many mounting options available.
- Interchangeable with other manufacturers.

# **Specification**

| Model                   |                         |             | МС     | CG      |        |       |  |  |  |  |  |  |
|-------------------------|-------------------------|-------------|--------|---------|--------|-------|--|--|--|--|--|--|
| Acting type             |                         |             | Double | acting  |        |       |  |  |  |  |  |  |
| Tube I.D. (mm)          | 20                      | 25          | 32     | 40      | 50     | 63    |  |  |  |  |  |  |
| Port size Rc(PT)        |                         | Ro          | 1/8    |         | Rc     | 1/4   |  |  |  |  |  |  |
| Medium                  |                         |             | A      | ir      |        |       |  |  |  |  |  |  |
| Max operating pressure  | 1 MPa                   |             |        |         |        |       |  |  |  |  |  |  |
| Min operating pressure  | 0.05 MPa                |             |        |         |        |       |  |  |  |  |  |  |
| Proof pressure          |                         |             | 1.5 N  | ЛРа     |        |       |  |  |  |  |  |  |
| Stroke length tolerance |                         | 1~          | 1000 S | T:+1.4  | 1      |       |  |  |  |  |  |  |
| Ambient temperature     |                         | <b>−</b> 5~ | +60℃   | (No fre | ezing) |       |  |  |  |  |  |  |
| Lubrication             |                         |             | Not re | quired  |        |       |  |  |  |  |  |  |
| Available speed range   |                         | 5           | 0~500  | mm/se   | С      |       |  |  |  |  |  |  |
| Cushion                 | With rubber cushion pad |             |        |         |        |       |  |  |  |  |  |  |
| Sensor switch (*)       |                         |             | R      | CA      |        |       |  |  |  |  |  |  |
| Sensor switch holder    | BGA20                   | BGA25       | BGA32  | BGA40   | BGA50  | BGA63 |  |  |  |  |  |  |

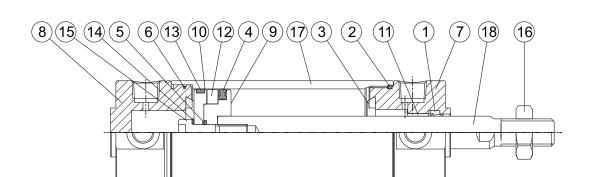
\* RCA specification, please refer to page V-07.

# **Mounting accessories**







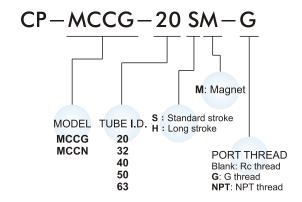


#### **Material**

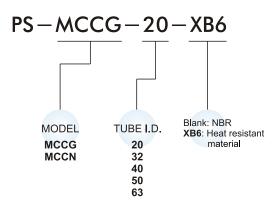
| No.  | Part name       | Material        | Q'y    | Α      | В      | Note                    |
|------|-----------------|-----------------|--------|--------|--------|-------------------------|
| INO. | 1 art riairie   | iviaterial      | Q y    | (inclu | ision) | Note                    |
| 1    | Rod packing     | NBR             | 1      | •      | •      |                         |
| 2    | O-ring          | NBR             | 1 or 2 | •      | •      | φ 50, 63 (Q'y =2)       |
| 3    | Cushion pad     | NBR             | 2      | •      | •      |                         |
| 4    | Pistion packing | NBR             | 1      | •      | •      |                         |
| 5    | O-ring          | NBR             | 1      | •      | •      |                         |
| 6    | O-ring          | NBR             | 1      | •      |        | for φ 50, φ 63          |
| 7    | Rod cover       | Aluminum alloy  | 1      | •      |        |                         |
| 8    | Head cover      | Aluminum alloy  | 1      | •      |        |                         |
| 9    | Piston-R        | Aluminum alloy  | 1      | •      |        |                         |
| 10   | Piston-H        | Aluminum alloy  | 1      | •      |        |                         |
| 11   | Bush            | Bearing alloy   | 1      | •      |        |                         |
| 12   | Magnet ring     | Magnet material | 1      | 0      |        | ○ Option                |
| 12   | Spacer ring     | Aluminum alloy  | 1      | •      |        | for φ20~φ32             |
| 13   | Wear ring       | Teflon          | 1      | •      |        |                         |
| 14   | Washer          | Carbon steel    | 1      | •      |        | φ 20 without            |
| 15   | Piston bolt     | Carbon steel    | 1      | •      |        |                         |
| 16   | Nut             | Carbon steel    | 1      | •      |        |                         |
| 17   | Cylinder tube   | Aluminum alloy  | 1      |        |        |                         |
| 18   | Piston rod      | Carbon steel    | 1      |        |        | φ 20~25 stainless steel |

A: Component parts, B: Repair kits

# Order example of component parts



# Order example of repair kits

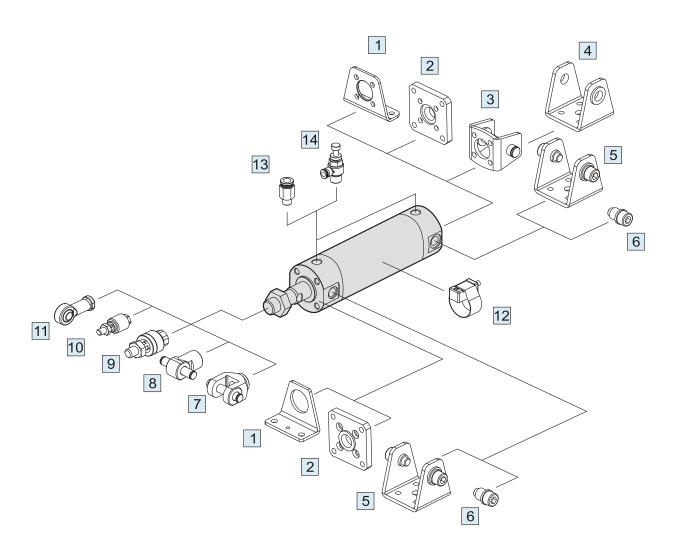




# MCCG Accessories



# **ROUND CYLINDERS**



| No. | Accessories                  | Page    |
|-----|------------------------------|---------|
| 1   | Mounting accessories LB      | L-82    |
| 2   | Mounting accessories FAC/FBC | L-83    |
| 3   | Mounting accessories CB+PIN  | L-82,85 |
| 4   | Mounting accessories SDB     | L-84    |
| 5   | Mounting accessories SDB-R/H | L-84,86 |
| 6   | Mounting accessories TA/TB   | L-84    |
| 7   | Accessories Y+PIN            | L-85    |
| 8   | Accessories I+PIN            | L-85    |

| No. | Accessories                  | Page |
|-----|------------------------------|------|
| 9   | Floating joint MFC           | V-01 |
| 10  | Floating joint MFCS          | V-03 |
| 11  | Female rod ends PHS          | V-04 |
| 12  | Sensor switch RCA+BGA**      | V-05 |
| 13  | Fitting PC (PISCO)           | H-03 |
| 14  | Speed controller JSC (PISCO) | H-14 |

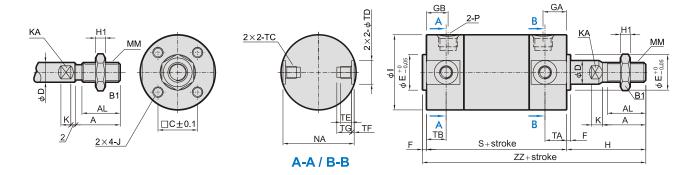


# MCCG Dimensions $\phi 20 \sim \phi 63$

# 

# **ROUND CYLINDERS**

 $\phi$  20,  $\phi$  25  $\phi$  32~ $\phi$  63



|                   |                       |                      |    |      |    |      |    |    |   |    |    |    |    |    |                               |     |    | uni      | it: mm |
|-------------------|-----------------------|----------------------|----|------|----|------|----|----|---|----|----|----|----|----|-------------------------------|-----|----|----------|--------|
| Code<br>Tube I.D. | Standard stroke range | Long<br>stroke range | A  | AL   | В1 | С    | D  | Е  | F | GA | GB | н  | Н1 | ı  | J                             | K   | KA | ММ       | NA     |
| 20                | ~200                  | 201~350              | 18 | 15.5 | 13 | 14   | 8  | 12 | 2 | 12 | 12 | 35 | 5  | 26 | $M4 \times 0.7 \times 7 dp$   | 4   | 6  | M8×1.25  | 24     |
| 25                | ~300                  | 301~400              | 22 | 19.5 | 17 | 16.5 | 10 | 14 | 2 | 12 | 12 | 40 | 6  | 31 | $M5 \times 0.8 \times 7.5 dp$ | 5   | 8  | M10×1.25 | 29     |
| 32                | ~300                  | 301~450              | 22 | 19.5 | 17 | 20   | 12 | 18 | 2 | 12 | 11 | 40 | 6  | 38 | $M5 \times 0.8 \times 8 dp$   | 5.5 | 10 | M10×1.25 | 36     |
| 40                | ~300                  | 301~800              | 30 | 27   | 22 | 26   | 16 | 25 | 2 | 13 | 12 | 50 | 8  | 47 | $M6 \times 1.0 \times 12 dp$  | 6   | 14 | M14×1.5  | 44     |
| 50                | ~300                  | 301~1200             | 35 | 32   | 27 | 32   | 20 | 30 | 2 | 14 | 13 | 58 | 11 | 58 | $M8 \times 1.25 \times 16 dp$ | 7   | 18 | M18×1.5  | 55     |
| 63                | ~300                  | 301~1200             | 35 | 32   | 27 | 38   | 20 | 32 | 2 | 14 | 13 | 58 | 11 | 72 | M10×1.5×16 dp                 | 7   | 18 | M18×1.5  | 69     |

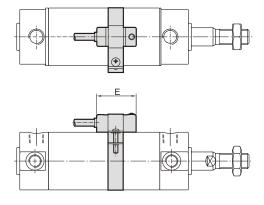
| Code<br>Tube I.D. | Р     | S        | TA | тв | тс       | ТД нэ                | TE   | TF   | TG   | ZZ        |
|-------------------|-------|----------|----|----|----------|----------------------|------|------|------|-----------|
| 20                | Rc1/8 | 69 (77)  | 11 | 11 | M5×0.8   | 8 <sup>+0.036</sup>  | 4    | 0.5  | 5.5  | 106 (114) |
| 25                | Rc1/8 | 69 (77)  | 11 | 11 | M6×0.75  | 10 <sup>+0.036</sup> | 5    | 1    | 6.5  | 111 (119) |
| 32                | Rc1/8 | 71 (79)  | 11 | 10 | M8×1.0   | 12 <sup>+0.043</sup> | 5.5  | 1.25 | 7.5  | 113 (121) |
| 40                | Rc1/8 | 78 (87)  | 12 | 10 | M10×1.25 | 14 +0.043            | 6    | 1.25 | 8.5  | 130 (139) |
| 50                | Rc1/4 | 90 (102) | 13 | 12 | M12×1.25 | 16 <sup>+0.043</sup> | 7.5  | 2    | 10   | 150 (162) |
| 63                | Rc1/4 | 90 (102) | 13 | 12 | M14×1.5  | 18 <sup>+0.043</sup> | 11.5 | 3    | 14.5 | 150 (162) |

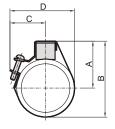
( ): Dimension for long stroke.

# ■ Installation of sensor switch

Sensor switch: RCA

Sensor switch band: BGA\*\*

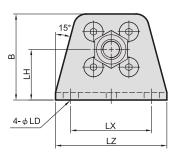


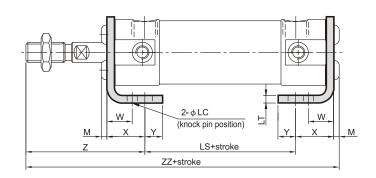


| Code<br>Tube I.D. | Α  | В  | С  | D  | Е  |
|-------------------|----|----|----|----|----|
| 20                | 18 | 31 | 25 | 38 | 26 |
| 25                | 20 | 35 | 27 | 42 | 26 |
| 32                | 24 | 43 | 31 | 50 | 26 |
| 40                | 29 | 53 | 36 | 60 | 26 |
| 50                | 34 | 63 | 41 | 70 | 26 |
| 63                | 41 | 77 | 48 | 84 | 26 |



LB

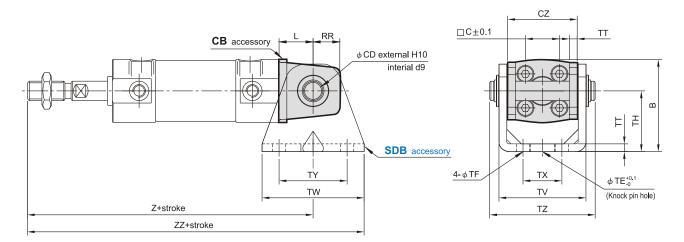




| Code<br>Tube I.D. | В    | LC | LD  | LH | LS      | LT  | LX | LZ  | M   | w    | Х    | Υ   | Z    | ZZ            |
|-------------------|------|----|-----|----|---------|-----|----|-----|-----|------|------|-----|------|---------------|
| 20                | 34   | 4  | 6   | 20 | 45 (53) | 3   | 32 | 44  | 2.2 | 10   | 15   | 7   | 47   | 109.2 (117.2) |
| 25                | 38.5 | 4  | 6   | 22 | 45 (53) | 3   | 36 | 49  | 2.8 | 10   | 15   | 7   | 52   | 114.8 (122.8) |
| 32                | 45   | 4  | 6.6 | 25 | 45 (53) | 3   | 44 | 58  | 2.8 | 10   | 16   | 8   | 53   | 116.8 (124.8) |
| 40                | 54.5 | 4  | 6.6 | 30 | 51 (60) | 3   | 54 | 71  | 3.3 | 10   | 16.5 | 8.5 | 63.5 | 134.3 (143.3) |
| 50                | 70.5 | 5  | 9   | 40 | 55 (67) | 4.5 | 66 | 86  | 4.4 | 17.5 | 22   | 11  | 75.5 | 156.9 (168.9) |
| 63                | 82.5 | 5  | 11  | 45 | 55 (67) | 4.5 | 82 | 106 | 5.5 | 17.5 | 22   | 13  | 75.5 | 158.0 (170.0) |

( ): Dimension for long stroke.

# SDB+Pin (Extra purchase)



| Code<br>Tube I.D. | В    | CD | CZ | L  | RR | TE | TF  | TH | TT  | TV   | TW | TX | TY | TZ    | Z         | ZZ        |
|-------------------|------|----|----|----|----|----|-----|----|-----|------|----|----|----|-------|-----------|-----------|
| 20                | 38   | 8  | 29 | 14 | 11 | 10 | 5.5 | 25 | 3.2 | 35.8 | 42 | 16 | 28 | 43.4  | 118 (126) | 139 (147) |
| 25                | 45.5 | 10 | 33 | 16 | 13 | 10 | 5.5 | 30 | 3.2 | 39.8 | 42 | 20 | 28 | 48    | 125 (133) | 146 (154) |
| 32                | 54   | 12 | 40 | 20 | 15 | 10 | 6.6 | 35 | 4.5 | 49.4 | 48 | 22 | 28 | 59.4  | 131 (139) | 155 (163) |
| 40                | 63.5 | 14 | 49 | 22 | 18 | 10 | 6.6 | 40 | 4.5 | 58.4 | 56 | 30 | 30 | 71.4  | 150 (159) | 178 (187) |
| 50                | 79   | 16 | 60 | 25 | 20 | 20 | 9   | 50 | 6   | 72.4 | 64 | 36 | 36 | 86    | 173 (185) | 205 (217) |
| 63                | 96   | 18 | 74 | 30 | 22 | 20 | 11  | 60 | 8   | 90.4 | 74 | 46 | 46 | 105.4 | 178 (190) | 215 (227) |

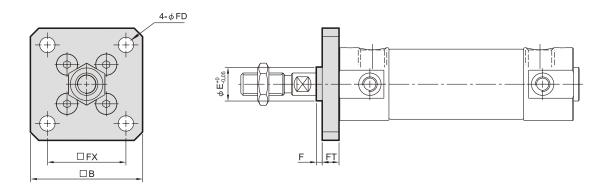
<sup>( ):</sup> Dimension for long stroke.



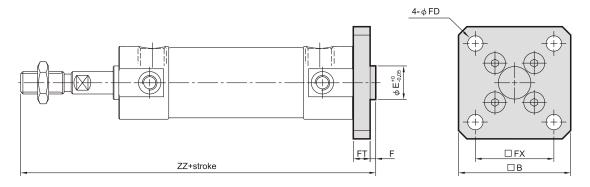
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# **ROUND CYLINDERS**

# FAC



# FBC



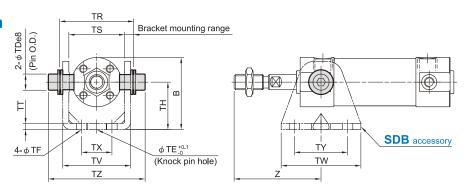
| Code<br>Tube I.D. | В  | Е  | F | FX | FD  | FT | ZZ        |
|-------------------|----|----|---|----|-----|----|-----------|
| 20                | 40 | 12 | 2 | 28 | 5.5 | 6  | 112 (120) |
| 25                | 44 | 14 | 2 | 32 | 5.5 | 7  | 118 (126) |
| 32                | 53 | 18 | 2 | 38 | 6.6 | 7  | 120 (128) |
| 40                | 61 | 25 | 2 | 46 | 6.6 | 8  | 138 (147) |
| 50                | 76 | 30 | 2 | 58 | 9   | 9  | 159 (171) |
| 63                | 92 | 32 | 2 | 70 | 11  | 9  | 159 (171) |

( ): Dimension for long stroke.



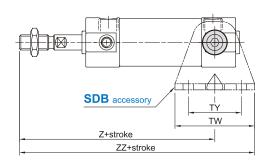
# TA

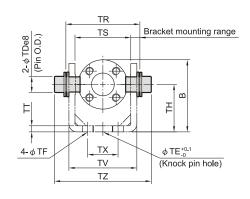
# **Front trunnion**



# TB

### **Rear trunnion**

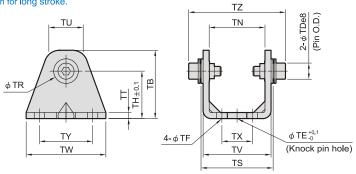




| Code     | В    | TDe8              | TE | TF  | ТН  | TR   | TS | тт  | TV   | TW   | TX | TY | TZ    | Front | Rear      |           |
|----------|------|-------------------|----|-----|-----|------|----|-----|------|------|----|----|-------|-------|-----------|-----------|
| Tube I.D |      | i Deo             | 16 | 11  | 111 | IK   | 13 | ''' | 1 V  | 1 00 | 17 | 11 | 12    | Z     | Z         | ZZ        |
| 20       | 38   | 8-0.025<br>0.047  | 10 | 5.5 | 25  | 39   | 29 | 3.2 | 35.8 | 42   | 16 | 28 | 51    | 46    | 93 (101)  | 114 (122) |
| 25       | 45.5 | 10-0.025          | 10 | 5.5 | 30  | 43   | 33 | 3.2 | 39.8 | 42   | 20 | 28 | 57.9  | 51    | 98 (106)  | 119 (127) |
| 32       | 54   | 12-0.032          | 10 | 6.6 | 35  | 53.5 | 40 | 4.5 | 49.4 | 48   | 22 | 28 | 73.3  | 51    | 101 (109) | 125 (133) |
| 40       | 63.5 | 14-0.032          | 10 | 6.6 | 40  | 64.5 | 49 | 4.5 | 58.4 | 56   | 30 | 30 | 89.5  | 62    | 118 (127) | 146 (155) |
| 50       | 79   | 16-0.032<br>0.059 | 20 | 9   | 50  | 80   | 60 | 6   | 72.4 | 64   | 36 | 36 | 109.2 | 71    | 136 (148) | 168 (180) |
| 63       | 96   | 18-0.032<br>0.059 | 20 | 11  | 60  | 98   | 74 | 8   | 90.4 | 74   | 46 | 46 | 131   | 71    | 136 (148) | 173 (185) |

## ( ): Dimension for long stroke.





| Code<br>Tube I.D. | тв | TE | TF  | тн | TN   | TR | TT  | TU   | TV   | TW | TX | TY | TS   | TZ    | Applicable pin O.D. |
|-------------------|----|----|-----|----|------|----|-----|------|------|----|----|----|------|-------|---------------------|
| 20                | 36 | 10 | 5.5 | 25 | 29.3 | 13 | 3.2 | 18.1 | 35.8 | 42 | 16 | 28 | 38   | 51    | 8d9 0.040<br>0.076  |
| 25                | 43 | 10 | 5.5 | 30 | 33.1 | 15 | 3.2 | 20.7 | 39.8 | 42 | 20 | 28 | 42   | 57.9  | 10d9 0.040<br>0.076 |
| 32                | 50 | 10 | 6.6 | 35 | 40.4 | 17 | 4.5 | 23.6 | 49.4 | 48 | 22 | 28 | 52.4 | 73.3  | 12d9 0.050<br>0.093 |
| 40                | 58 | 10 | 6.6 | 40 | 49.2 | 21 | 4.5 | 27.3 | 58.4 | 56 | 30 | 30 | 63.4 | 89.5  | 14d9 0.050<br>0.093 |
| 50                | 70 | 20 | 9   | 50 | 60.4 | 24 | 6   | 29.7 | 72.4 | 64 | 36 | 36 | 78.8 | 109.2 | 16d9 0.050<br>0.093 |
| 63                | 82 | 20 | 11  | 60 | 74.6 | 26 | 8   | 34.3 | 90.4 | 74 | 46 | 46 | 76.6 | 131   | 18d9 0.050<br>0.093 |



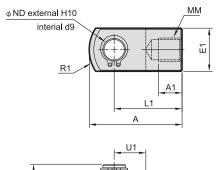
# MCCG Accessories $\phi 20 \sim \phi 63$

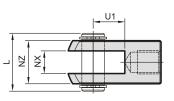
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# **ROUND CYLINDERS**

# Y connector

## $\phi$ 20~ $\phi$ 32



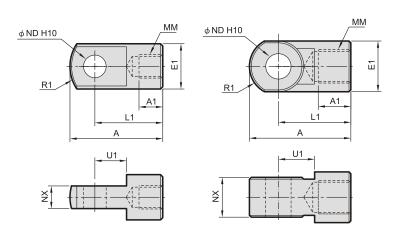


| Code<br>Tube I.I |    | Α  | A1   | E1  | L    | L1 | MM       | R1 | U1   | ND | NX      | NZ    |
|------------------|----|----|------|-----|------|----|----------|----|------|----|---------|-------|
| 20               |    | 34 | 8.5  | □16 | 21   | 25 | M8×1.25  | 14 | 11.5 | 8  | 8 +0.4  | 15.88 |
| 25,3             | 32 | 41 | 10.5 | □20 | 25.6 | 30 | M10×1.25 | 18 | 14   | 10 | 10 +0.4 | 19.05 |
| 40               |    | 42 | 16   | φ22 | 41.6 | 30 | M14×1.5  | 12 | 14   | 10 | 18 +0.5 | 36    |
| 50,6             | 3  | 56 | 20   | φ28 | 50.6 | 40 | M18×1.5  | 16 | 20   | 14 | 22 +0.5 | 44    |

 $\phi$  40~  $\phi$  63

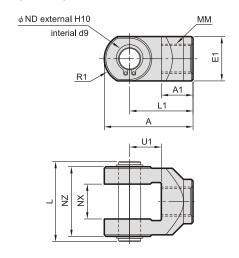
# connector

# $\phi$ 20~ $\phi$ 32

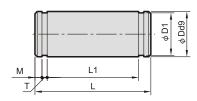


| Code<br>Tube I.D. | Α  | A1   | E1  | L1 | ММ       | R1 | U1   | ND <sub>H10</sub>   | NX      |
|-------------------|----|------|-----|----|----------|----|------|---------------------|---------|
| 20                | 34 | 8.5  | φ16 | 25 | M8×1.25  | 14 | 11.5 | 8 <sup>+0.058</sup> | 8 0.2   |
| 25,32             | 41 | 10.5 | φ20 | 30 | M10×1.25 | 18 | 14   | 10 +0.058           | 10 -0.2 |
| 40                | 42 | 14   | φ22 | 30 | M14×1.5  | 12 | 14   | 10 +0.058           | 18 0.3  |
| 50,63             | 56 | 18   | φ28 | 40 | M18×1.5  | 16 | 20   | 14 +0.070           | 22 0.3  |

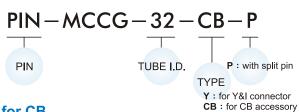
### $\phi$ 40~ $\phi$ 63



# Pin



# **Order example**



# for CB

| Code<br>Tube I.D. | Dd9       | D1   | L     | L1   | M    | Т    | Snap ring |
|-------------------|-----------|------|-------|------|------|------|-----------|
| 20                | 8 -0.040  | 7.6  | 43.4  | 38.6 | 1.5  | 0.9  | STW-8     |
| 25                | 10 -0.040 | 9.6  | 48    | 42.6 | 1.55 | 1.15 | STW-10    |
| 32                | 12 0.050  | 11.5 | 59.4  | 54   | 1.55 | 1.15 | STW-12    |
| 40                | 14 -0.050 | 13.4 | 71.4  | 65   | 2.05 | 1.15 | STW-14    |
| 50                | 16 -0.050 | 15.2 | 86    | 79.6 | 2.05 | 1.15 | STW-16    |
| 63                | 18 -0.050 | 17.0 | 105.4 | 97.8 | 2.45 | 1.35 | STW-18    |

# for Y & I connector

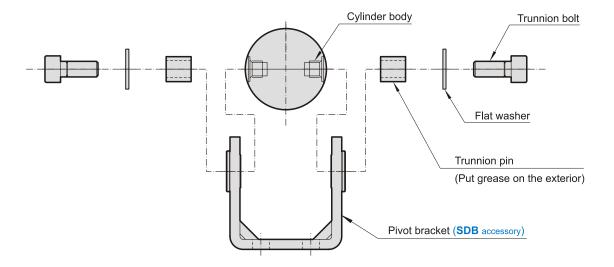
| Code<br>Tube I.D. | Dd9      | D1   | L    | L1   | M    | Т    | Snap ring |
|-------------------|----------|------|------|------|------|------|-----------|
| 20                | 8 -0.04  | 7.6  | 21   | 16.2 | 1.5  | 0.9  | STW-8     |
| 25,32             | 10 -0.04 | 9.6  | 25.6 | 20.2 | 1.55 | 1.15 | STW-10    |
| 40                | 10 -0.04 | 9.6  | 41.6 | 36.2 | 1.55 | 1.15 | STW-10    |
| 50,63             | 14 0.05  | 13.4 | 50.6 | 44.2 | 2.05 | 1.15 | STW-14    |





# **Trunnion**

Follow the procedures below when mounting a pivot bracket on the trunnion.



# **Clevis**

Follow the procedures below when mounting a pivot bracket on the clevis.

