

Series QCT and QCB cylinders with integrated guide

Double-acting, magnetic piston, guided
 ø 20, 25, 32, 40, 50, 63 mm



- » Magnetic sensors can be mounted on both sides
- » QCT: bronze bushings version
- » QCB: ball bearing guide version
- » Movement and guidance in one unit

These actuators, suitable for use in very limited space, are available in two versions.
QCT version: with sintered bronze bushes, suitable when the side loads applied to the cylinder are high.
QCB version: with linear ball bearings, suitable for high precision and fast cycling applications.

Both versions are equipped with fixed cushioning to prevent direct impact with the end covers. The design of the cylinder body allows the mounting of the cylinder using either top, bottom or side faces. Several "T" shaped grooves in two faces allow sensors to be fitted in a number of positions. Out of standard strokes are available on demand only.

GENERAL DATA

| | |
|------------------------------|---|
| Type of construction | compact guided QCT = sintered bronze bushes QCB = linear ball bearings |
| Operation | double-acting |
| Materials | body = anodized AL flange = zinc-plated steel piston rod = rolled stainless steel AISI 303 QCT columns = rolled stainless steel 420B QCB columns = hardened steel C50 seals = PU |
| Mounting | threaded and non-threaded holes in the body |
| Strokes min. max | see table |
| Operating temperature | 0°C ÷ 80°C (with dry air - 20°C) |
| Speed | 50 ÷ 500 mm/s |
| Operating pressure | 1 ÷ 10 bar |
| Fluid | clean air, non lubricated. If lubricated air is used, it is recommended to use oil ISOVG32. Once applied the lubrication should never be interrupted. |

STANDARD STROKES FOR DOUBLE-ACTING CYLINDERS SERIES QC

■ = Double-acting
 Out of standard intermediate strokes available on request (strokes multiple of 5 mm)

| STANDARD STROKES | | | | | | | | | | | |
|------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| ∅ | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
| 20 | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 25 | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 32 | | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 40 | | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 50 | | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 63 | | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

CODING EXAMPLE

| | | | | | | |
|------------|---|----------|----------|------------|---------------------------|------------|
| QC | T | 2 | A | 020 | A | 050 |
| QC | SERIES | | | | | |
| T | VERSION: T = sintered bronze bushes B = linear ball bearings | | | | | |
| 2 | OPERATION: 2 = double-acting | | | | PNEUMATIC SYMBOLS CD07 | |
| A | MATERIALS: A = anodized aluminium body - rolled stainless steel AISI 303 piston rod rolled stainless steel AISI 420B columns for QCT - hardened steel C50 columns for QCB | | | | | |
| 020 | BORE: 020 = 20 mm - 025 = 25 mm - 032 = 32 mm - 040 = 40 mm - 050 = 50 mm - 063 = 63 mm | | | | | |
| A | TYPE OF DESIGN: A = standard | | | | | |
| 050 | STROKE (see the table) | | | | | |

PNEUMATIC SYMBOLS

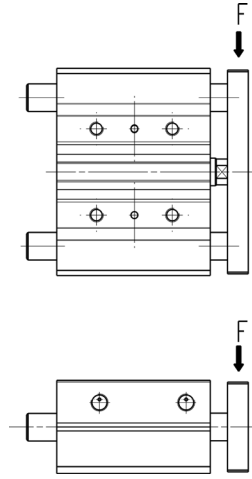
The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.



TABLE OF PERMISSIBLE LOADS (F)

For sintered bronze bushes
QCT version
For linear ball bearings
QCB version

F (N) 1N = 0.102 kgf
Ex.: QCT2A025A020 = F = 140N

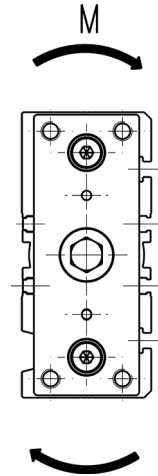


| STROKE | | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 20 | QCT | 100 | - | 93 | 81 | 73 | 114 | 93 | 98 | 85 | 75 | 67 |
| 25 | QCT | 140 | - | 120 | 115 | 103 | 165 | 135 | 150 | 131 | 116 | 104 |
| 32 | QCT | - | 253 | - | - | 214 | 225 | 208 | 225 | 198 | 176 | 159 |
| 40 | QCT | - | 251 | - | - | 197 | 215 | 206 | 224 | 196 | 175 | 157 |
| 50 | QCT | - | 317 | - | - | 273 | 267 | 299 | 257 | 225 | 200 | 179 |
| 63 | QCT | - | 316 | - | - | 273 | 267 | 299 | 257 | 225 | 200 | 179 |
| 20 | QCB | 110 | - | 100 | 125 | 121 | 90 | 86 | 69 | 58 | 49 | 43 |
| 25 | QCB | 142 | - | 85 | 154 | 148 | 106 | 82 | 97 | 81 | 70 | 61 |
| 32 | QCB | - | 222 | - | - | 91 | 167 | 129 | 145 | 122 | 104 | 90 |
| 40 | QCB | - | 221 | - | - | 93 | 167 | 128 | 145 | 121 | 104 | 90 |
| 50 | QCB | - | 203 | - | - | 152 | 161 | 193 | 156 | 130 | 110 | 95 |
| 63 | QCB | - | 201 | - | - | 151 | 158 | 195 | 157 | 130 | 110 | 94 |

TABLE OF PERMISSIBLE MOMENTS (M)

For sintered bronze bushes
QCT version
For linear ball bearings
QCB version

M (N*m) 1N*m = 0,102 kgf *m
Ex.: QCT2A025A020 = M = 3,4 Nm



| STROKE | | 20 | 25 | 30 | 40 | 50 | 75 | 100 | 125 | 150 | 175 | 200 |
|--------|-----|-----|------|-----|-----|------|------|------|------|------|------|-----|
| 20 | QCT | 1,7 | - | 1,5 | 1,2 | 1,0 | 2,9 | 2,8 | 2,6 | 2,3 | 2,0 | 1,8 |
| 25 | QCT | 3,4 | - | 2,9 | 3,6 | 3,3 | 4,2 | 4,3 | 3,8 | 3,2 | 2,7 | 2,3 |
| 32 | QCT | - | 6,7 | - | - | 6,5 | 7,2 | 7,0 | 6,6 | 5,6 | 4,8 | 4,1 |
| 40 | QCT | - | 8,7 | - | - | 7,3 | 9,2 | 8,8 | 9,6 | 8,4 | 7,5 | 6,7 |
| 50 | QCT | - | 15,4 | - | - | 12,9 | 12,6 | 13,4 | 12,1 | 11,3 | 10,7 | 8,8 |
| 63 | QCT | - | 15,1 | - | - | 14,3 | 16,6 | 17 | 14 | 11,3 | 9,7 | 9,1 |
| 20 | QCB | 3,0 | - | 2,7 | 3,4 | 3,3 | 2,4 | 2,3 | 1,9 | 1,6 | 1,3 | 1,2 |
| 25 | QCB | 3,5 | - | 2,7 | 4,9 | 4,7 | 3,4 | 2,6 | 3,1 | 2,6 | 2,2 | 2,0 |
| 32 | QCB | - | 6,3 | - | - | 3,6 | 6,5 | 5,1 | 5,7 | 4,8 | 4,1 | 3,5 |
| 40 | QCB | - | 8,5 | - | - | 4,0 | 7,2 | 5,5 | 6,2 | 5,2 | 4,5 | 3,9 |
| 50 | QCB | - | 11,1 | - | - | 8,3 | 8,8 | 10,6 | 8,6 | 7,1 | 6,0 | 5,2 |
| 63 | QCB | - | 8,3 | - | - | 7,2 | 9,8 | 12,1 | 9,7 | 8,1 | 6,8 | 5,8 |

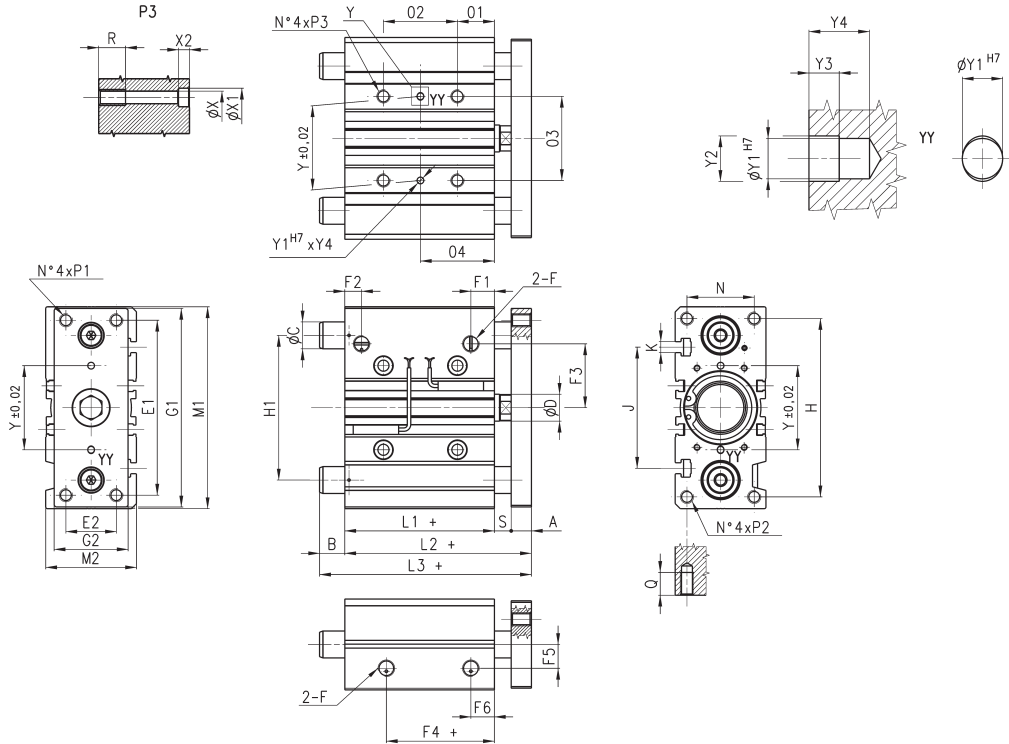
Cylinders Series QC



Note: for out of standard intermediate strokes (ex. stroke 35), consider the immediately higher stroke dimensions (ex. stroke 40).

For $\emptyset C$, B, L3 dimensions, see the following page.

+ = add the stroke



In case of use of lateral ports, unscrew the related threaded caps, screw them in the front ports and tighten them up to the cylinder surface (not tighter) having care to use a proper sealer.

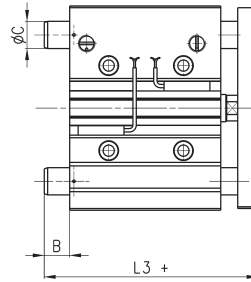
| DIMENSIONS | | | | | | | | | | | | | |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Dimension 02 (mm) | $\emptyset 20$ | $\emptyset 25$ | $\emptyset 32$ | $\emptyset 40$ | $\emptyset 50$ | $\emptyset 63$ | Dimension 04 (mm) | $\emptyset 20$ | $\emptyset 25$ | $\emptyset 32$ | $\emptyset 40$ | $\emptyset 50$ | $\emptyset 63$ |
| 20 ÷ 30 | 24 | 24 | 24 | 24 | 24 | 28 | 20 ÷ 30 | 29 | 29 | 33 | 34 | 36 | 38 |
| 40 ÷ 100 | 44 | 44 | 48 | 48 | 48 | 52 | 40 ÷ 100 | 39 | 39 | 45 | 46 | 48 | 50 |
| 125 ÷ 200 | 120 | 120 | 124 | 124 | 124 | 128 | 125 ÷ 200 | 77 | 77 | 83 | 84 | 86 | 88 |

| DIMENSIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------|----|---------------|-----|----|------|------|------|------|------|------|------|-----|----|-----|-----|------|------|-----|----|----|----|----|---------|---------|----|----|----|----|----|-----|----|----|-----|----|-----|-----|-----|
| \emptyset | A | $\emptyset D$ | E1 | E2 | F | F1 | F2 | F3 | F4 | F5 | F6 | G1 | G2 | H | H1 | L1 | L2 | M1 | M2 | N | O1 | O3 | P1/P2 | P3 | Q | R | S | Y | Y1 | Y2 | Y3 | Y4 | X | X1 | X2 | J | K |
| 20 | 10 | 10 | 70 | 18 | G1/8 | 10.5 | 10.5 | 25 | 12.5 | 11.5 | 10.5 | 81 | 30 | 72 | 54 | 37 | 53 | 83 | 36 | 24 | 17 | 28 | M5X0.8 | M6X1 | 13 | 12 | 6 | 28 | 3 | 3.5 | 3 | 6 | 5.5 | 9 | 5 | 44 | M5 |
| 25 | 10 | 12 | 78 | 26 | G1/8 | 11.5 | 8 | 28.5 | 12.5 | 13.5 | 11.5 | 91 | 40 | 82 | 64 | 37.5 | 53.5 | 93 | 42 | 30 | 17 | 34 | M6X1 | M6X1 | 15 | 12 | 6 | 34 | 4 | 4.5 | 3 | 6 | 5.5 | 9 | 5 | 50 | M5 |
| 32 | 12 | 16 | 96 | 30 | G1/8 | 12.5 | 9.5 | 34 | 7 | 15 | 12.5 | 110 | 45 | 98 | 78 | 37.5 | 59.5 | 112 | 48 | 34 | 21 | 42 | M8X1.25 | M8X1.25 | 20 | 16 | 10 | 42 | 4 | 4.5 | 3 | 6 | 6.5 | 11 | 6.5 | 63 | M6 |
| 40 | 12 | 16 | 104 | 30 | G1/8 | 13 | 12 | 38 | 13 | 18 | 13 | 118 | 45 | 106 | 86 | 44 | 66 | 120 | 54 | 40 | 22 | 50 | M8X1.25 | M8X1.25 | 20 | 16 | 10 | 50 | 4 | 4.5 | 3 | 6 | 6.5 | 11 | 6.5 | 72 | M6 |
| 50 | 15 | 20 | 130 | 40 | G1/4 | 14 | 11 | 47 | 8 | 21.5 | 12 | 146 | 60 | 130 | 110 | 44 | 72 | 148 | 64 | 46 | 24 | 66 | M10X1.5 | M10X1.5 | 22 | 20 | 13 | 66 | 5 | 6 | 4 | 8 | 8.5 | 14 | 8.5 | 92 | M8 |
| 63 | 15 | 20 | 130 | 50 | G1/4 | 14.5 | 11.4 | 55 | 12 | 28 | 14.5 | 158 | 70 | 142 | 124 | 49 | 77 | 162 | 78 | 58 | 24 | 80 | M10X1.5 | M10X1.5 | 22 | 20 | 13 | 80 | 5 | 6 | 4 | 8 | 8.5 | 14 | 8.5 | 110 | M10 |

QCB: total length (L3), projection (B) and guide columns Ø (ØC)



Note: for out of standard intermediate strokes (ex. stroke 35), consider the immediately higher stroke dimensions (ex. stroke 40). Standard strokes can be found in the dedicated table on page 4.05.02.



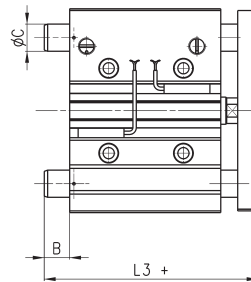
Dimensions L3 and B change according to the different strokes of QCB.

| DIMENSIONS | | | | | | | | | | | | | | | |
|------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|-------------------------|-------------------------|----------------------|----------------------|----------------------|-----------------------|-----------------------|------------------------|------------------------|----|
| Ø | L3 (strokes 20-30 mm) | L3 (strokes 25-50 mm) | L3 (strokes 25-75 mm) | L3 (strokes 40-100 mm) | L3 (strokes 75-100 mm) | L3 (strokes 100-200 mm) | L3 (strokes 125-200 mm) | B (strokes 20-30 mm) | B (strokes 25-50 mm) | B (strokes 25-75 mm) | B (strokes 40-100 mm) | B (strokes 75-100 mm) | B (strokes 100-200 mm) | B (strokes 125-200 mm) | ØC |
| 20 | 72 | - | - | 75 | - | - | 85 | 19 | - | - | 22 | - | - | 32 | 10 |
| 25 | 74.5 | - | - | 85.5 | - | - | 98 | 21 | - | - | 32 | - | - | 44.5 | 12 |
| 32 | - | 86 | - | - | 95 | - | 110 | - | 26.5 | - | - | 35.5 | - | 50.5 | 16 |
| 40 | - | 86 | - | - | 95 | - | 110 | - | 20 | - | - | 29 | - | 44 | 16 |
| 50 | - | - | 93 | - | - | 112 | - | - | - | 21 | - | - | 40 | - | 20 |
| 63 | - | - | 93 | - | - | 112 | - | - | - | 16 | - | - | 35 | - | 20 |

QCT: total length (L3), projection (B) and columns Ø (ØC)



Note: for out of standard intermediate strokes (ex. stroke 35), consider the immediately higher stroke dimensions (ex. stroke 40). Standard strokes can be found in the dedicated table on page 4.05.02.



Dimensions L3 and B change according to the different strokes of QCT.

| DIMENSIONS | | | | | | | | | | | | | | | |
|------------|-----------------------|-------------------|-------------------|-----------------------|------------------------|------------------------|------------------------|----------------------|------------------|------------------|----------------------|-----------------------|-----------------------|-----------------------|----|
| Ø | L3 (strokes 20-50 mm) | L3 (stroke 20 mm) | L3 (stroke 25 mm) | L3 (strokes 30-50 mm) | L3 (strokes 25-200 mm) | L3 (strokes 75-200 mm) | L3 (strokes 50-200 mm) | B (strokes 20-50 mm) | B (stroke 20 mm) | B (stroke 25 mm) | B (strokes 30-50 mm) | B (strokes 25-200 mm) | B (strokes 75-200 mm) | B (strokes 50-200 mm) | ØC |
| 20 | 74.5 | - | - | - | - | 79.5 | - | 21.5 | - | - | - | - | 26.5 | - | 12 |
| 25 | - | 74.5 | - | 80.5 | - | 85 | - | 21 | - | 21 | 27 | - | 31.5 | - | 16 |
| 32 | - | - | 73.5 | - | - | - | 91.5 | - | - | 14 | - | - | - | 32 | 20 |
| 40 | - | - | 73.5 | - | - | - | 91.5 | - | - | 7.5 | - | - | - | 25.5 | 20 |
| 50 | - | - | - | - | 98.5 | - | - | - | - | - | - | 26.5 | - | - | 25 |
| 63 | - | - | - | - | 98.5 | - | - | - | - | - | - | 21.5 | - | - | 25 |