# TWIN CYLINDERS
## SERIES QX

Double-acting, magnetic, guided
Ø 10x2, 16x2, 20x2, 25x2, 32x2 mm

- High force
- Precise movement
- Integrated guide
- QXB:
  - Linear ball bearings
- QXT:
  - Sintered bronze bushes

Series QX actuators offer a wide range of solutions covering a great number of applications which require a guided linear movement.

The design of the double piston, besides assuring a solid and effective guide, offers double force in compact dimensions.
Where a high force with precise movement is required, along with a non-rotation function and integrated guide, the QX cylinders are the ideal solution.

The range includes two guide versions with sintered bronze bushes or with linear ball bearings.

## General Data

| | |
|---|---|
| **Type of construction** | Compact, non magnetic<br>QXT = sintered bronze bushes - QXB = linear ball bearings |
| **Operation** | Double-acting |
| **Materials** | Body and flange = anodized AL<br>QXT piston rod = stainless steel AISI 303 - QXB piston rod = hardened steel C50<br>Seals = PU |
| **Mounting method** | By means of threaded holes |
| **Strokes** | From 10 to 100 |
| **Operating temperature** | 0° ÷ 80°C (with dry air - 20°C) |
| **Operating speed** | 50 ÷ 500 mm/s |
| **Operating pressure** | 1 ÷ 10 bar |
| **Fluid** | Clean air, without lubrication.<br>If lubricated air is used, it is recommended to use oil ISOVG32.<br>Once applied the lubrication should never be interrupted. |

TWIN CYLINDERS
SERIES QX - STROKES



## Standard strokes

■ = Double-acting

| Ø | 10 | 20 | 30 | 40 | 50 | 75 | 100 |
|---|---|---|---|---|---|---|---|
| 10 | ■ | ■ | ■ | ■ | ■ | ■ | |
| 16 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 20 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 25 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 32 | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

## Coding Examples

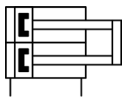
| QX | T | 2 | A | 020 | A | 050 |
|---|---|---|---|---|---|---|

| | | |
|---|---|---|
| QX | SERIES | |
| T | VERSION<br>T = sintered bronze bushes<br>B = linear ball bearings | |
| 2 | OPERATION<br>2 = double-acting (1 flange) radial/axial pressure supply (Ø10 on the side only)<br>3 = double-acting through-rod (double-flange), radial pressure supply | PNEUMATIC SYMBOLS<br>CD15<br>CD16 |
| A | MATERIALS<br>A = anodized aluminium body, rolled stainless steel AISI 303 (QXT) or hardened steel C50 (QXB) piston rod | |
| 020 | BORE<br>010 = 10 mm<br>016 = 16 mm<br>020 = 20 mm<br>025 = 25 mm<br>032 = 32 mm | |
| A | TYPE OF DESIGN<br>A = standard | |
| 050 | STROKE (see the table) | |

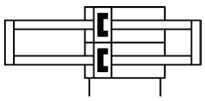
## Pneumatic symbols

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

**CD15**

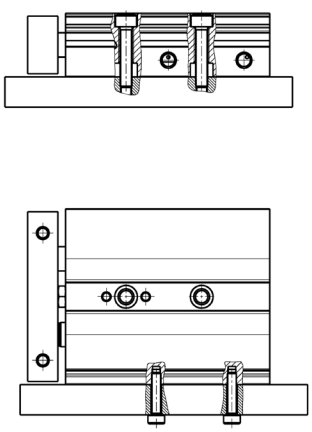


**CD16**

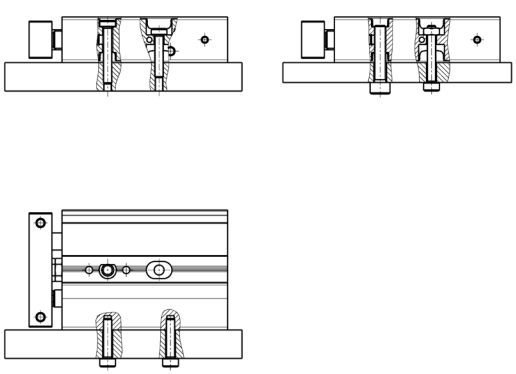


## Fixing examples with flange in motion

(1) For diameters from 16 to 32
(2) To mount the sensors of QX cylinders ø 10 in the middle grooves, it is advisable to use M3 screws UNI 9327 and nuts M3 UNI 5589.



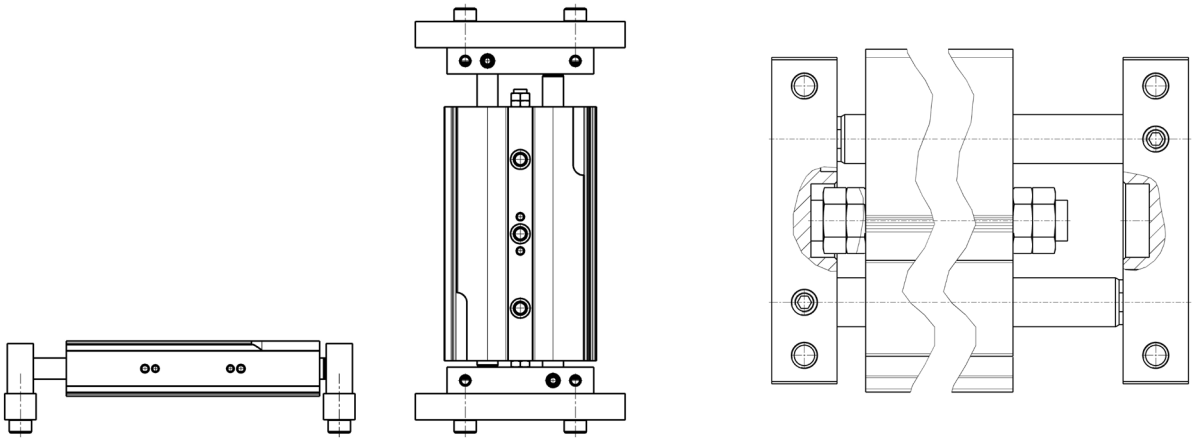
(1)



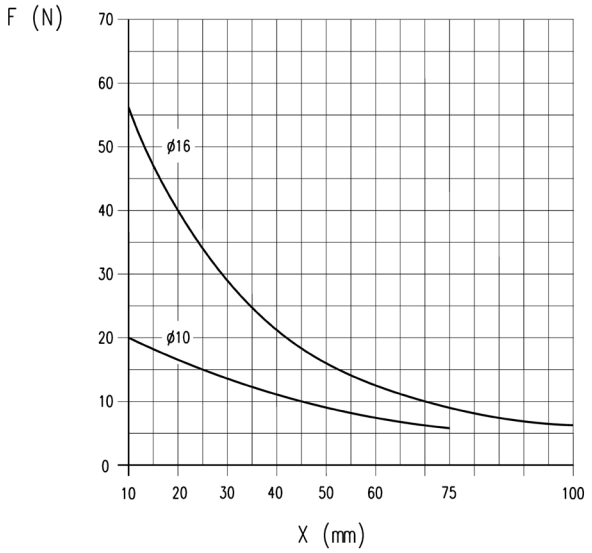
(2)

## Fixing examples with cylinder body in motion

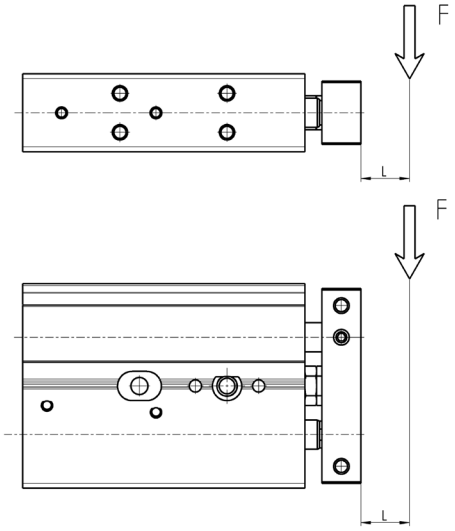
The front and rear regulation screw allows the adjustment of the stroke up to -10mm.



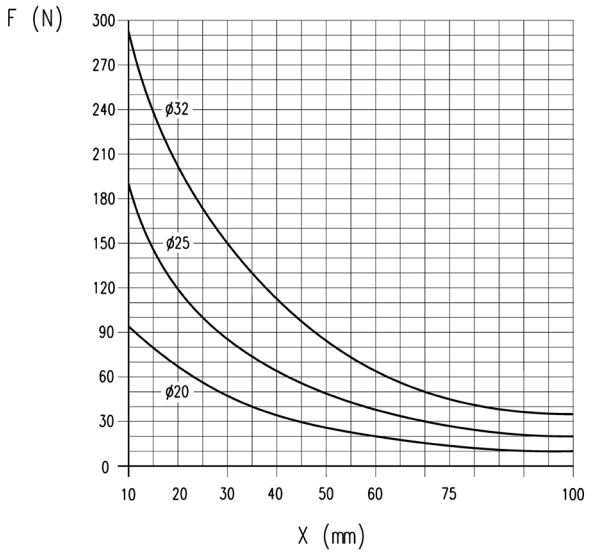
## Diagram of max. applicable loads depending on the stroke (X)



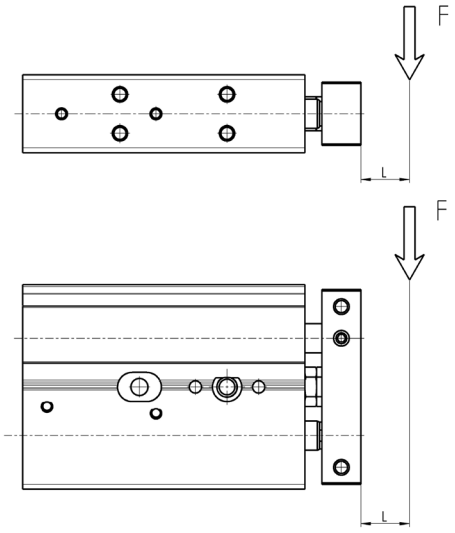

X = cylinder stroke mm
F = load applied on the flange in N




Load "F" should be considered fixed on the flange of the cylinder and with a theorical projection of L = 0 mm.

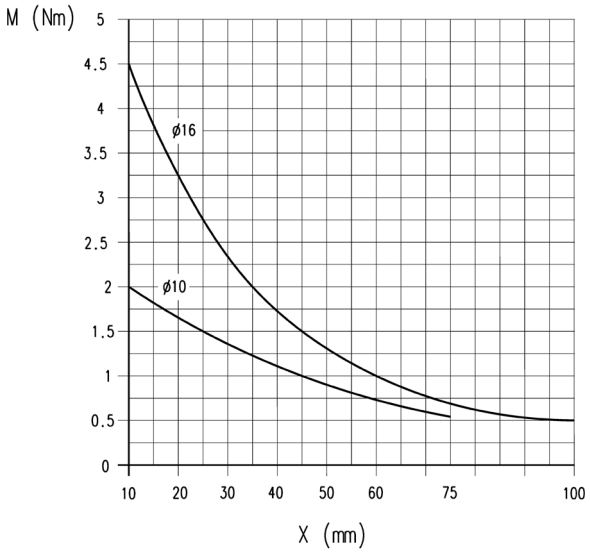


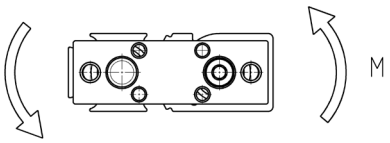

X = cylinder stroke mm.
F = load applied on the flange in N.



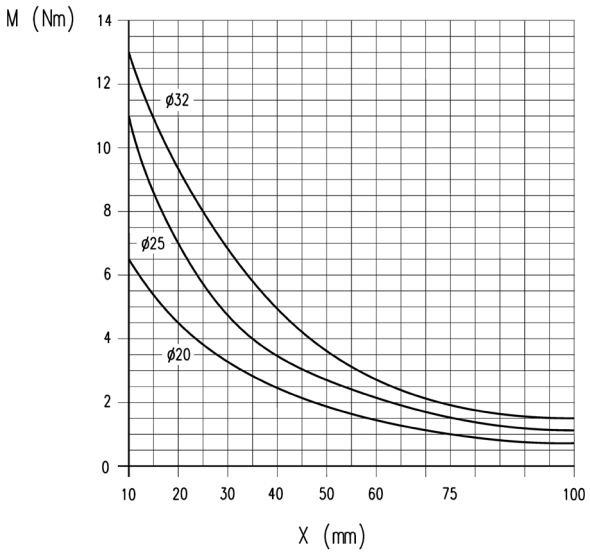

Load "F" should be considered fixed on the flange of the cylinder and with a theorical projection of L = 0 mm.

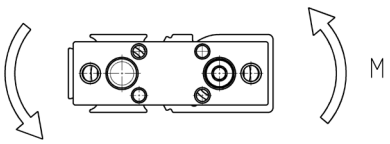
## Diagram of max. torque moment depending on the stroke (X)



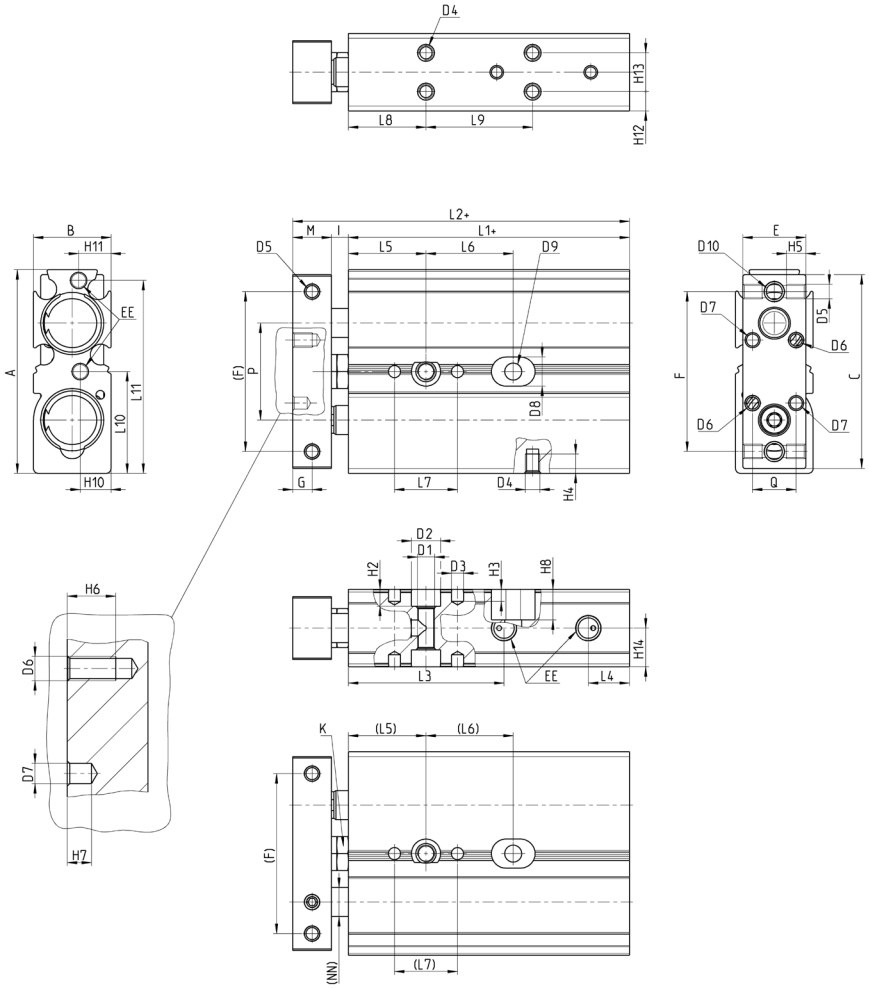

**X = cylinder stroke in mm**
**M = torque moment applied on the flange in Nm**




**X = cylinder stroke in mm**
**M = torque moment applied on the flange in Nm**

## Cylinders, single flange



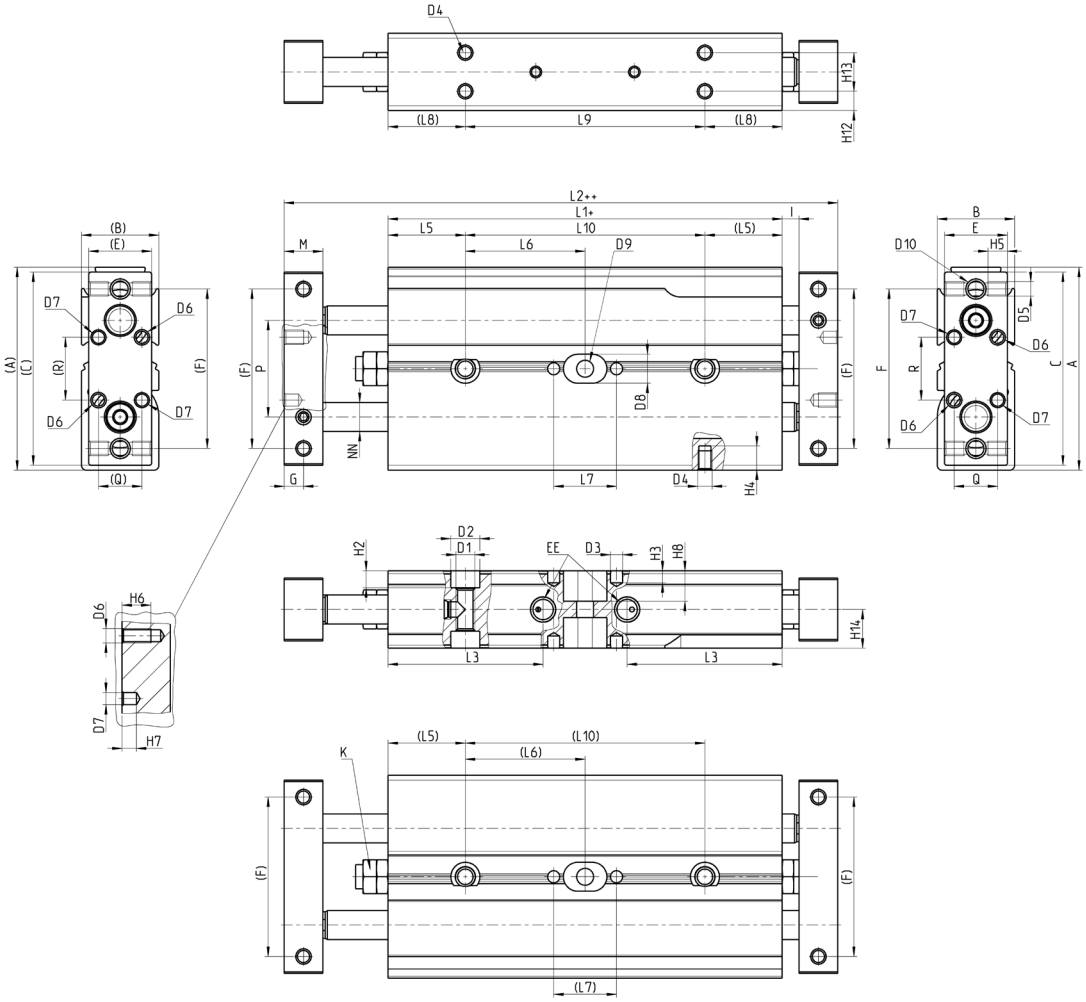

**+ = add the stroke**

+ = add the stroke

| | Stroke [mm] | Ø 10 | Ø 16 | Ø 20 | Ø 25 | Ø 32 |
|---|---|---|---|---|---|---|
| **A** | | 42 | 58 | 62 | 76 | 94 |
| **B** | | 16 | 21 | 25 | 30 | 37 |
| **C** | | 40 | 56 | 60 | 71 | 92 |
| **E** | | 13 | 19 | 22 | 27 | 35 |
| **F** | | 33 | 42 | 50 | 60 | 75 |
| **G** | | 4 | 5 | 6 | 6 | 8 |
| **I** | | 3,5 | 2,5 | 4,5 | 4,5 | 4 |
| **M** | | 8 | 10 | 12 | 12 | 16 |
| **Q** | | 9 | 11 | 16 | 16 | 16 |
| **R** | | 13 | 13 | 18 | 18 | 18 |
| **L1+** | | 48 | 57,5 | 67,5 | 70,5 | 80,5 |
| **L2+** | | 59,5 | 70 | 84 | 87 | 100,5 |
| **L3** | | 32,1 | 34 | 39,5 | 44,0 | 46,5 |
| **L4** | | 8,5 | 8,5 | 9 | 8,5 | 12 |
| **L5** | | 16 | 20 | 25 | 30 | 30 |
| **L6** | 10 | 18 | 25 | 30 | 30 | 40 |
| **L6** | 20 | 28 | 25 | 30 | 30 | 40 |
| **L6** | 30 | 38 | 35 | 40 | 40 | 50 |
| **L6** | 40 | 48 | 35 | 40 | 40 | 50 |
| **L6** | 50 | 58 | 35 | 40 | 40 | 50 |
| **L6** | 75 | 83 | 45 | 60 | 60 | 70 |
| **L6** | 100 | - | 55 | 60 | 60 | 70 |
| **L7** | | 13 | 13 | 20 | 20 | 20 |
| **L8** | | 16 | 30 | 30 | 30 | 30 |
| **L9** | 10 | 22 | 25 | 30 | 30 | 40 |
| **L9** | 20 | 32 | 25 | 30 | 30 | 40 |
| **L9** | 30 | 42 | 35 | 40 | 40 | 50 |
| **L9** | 40 | 52 | 35 | 40 | 40 | 50 |
| **L9** | 50 | 62 | 35 | 40 | 40 | 50 |
| **L9** | 75 | 87 | 45 | 60 | 60 | 70 |
| **L9** | 100 | - | 55 | 60 | 60 | 70 |
| **L10** | | - | 29 | 31 | 38 | 47 |
| **L11** | | - | 52 | 57,2 | 71,5 | 47 |
| **H2** | | 3,5 | 4,5 | 5,5 | 6,5 | 6,5 |
| **H3** | | 2,5 | 4,0 | 4,0 | 4,0 | 4,0 |
| **H4** | | 4,0 | 5,0 | 4,5 | 5,0 | 7,5 |
| **H5** | | 6,5 | 6,0 | 6,0 | 6,0 | 7,5 |
| **H6** | | 8,0 | 6,0 | 8,0 | 8,0 | 8,0 |
| **H7** | | 3,0 | 3,0 | 4,0 | 4,0 | 4,0 |
| **H8** | | 6,3 | - | - | - | - |
| **H10** | | - | 10,5 | 10,5 | 15 | 8,5 |
| **H11** | | - | 16,5 | 20,2 | 21,5 | 28,5 |
| **H12** | | 4 | 10,5 | 8,00 | 8,5 | 8,5 |
| **H13** | | 8 | - | 9,0 | 13,0 | 20,0 |
| **H14** | | 8 | 5,5 | 12,5 | 15,0 | 18,5 |
| **D1** | | M4 | M5 | M6 | M8 | M8 |
| **D2** | | 6 | 7,5 | 9,5 | 10,5 | 10,5 |
| **D3** | | 2,5 | 2,5 | 4 | 4 | 4 |
| **D4** | | M3 | M3 | M4 | M5 | M5 |
| **D5** | | M3 | M4 | M4 | M5 | M5 |
| **D6** | | M3 | M3 | M4 | M4 | M4 |
| **D7** | | 2,5 | 2,5 | 4,0 | 4,0 | 4,0 |
| **D8** | | 6,0 | - | - | - | - |
| **D9** | | 3,5 | - | - | - | - |
| **D10** | | M4 | M5 | M5 | M6 | M6 |
| **NN** | | 6 | 8 | 10 | 12 | 16 |
| **EE** | | M5 | M5 | M5 | M5 | G1/8 |
| **K** | | 7 | 7 | 8 | 8 | 10 |
| **P** | | 20 | 25 | 29 | 35 | 45 |

For out of standard intermediate strokes (ex. stroke 37), you have to consider the dimensions referring to the immediately higher stroke (ex. stroke 40) with a maximum permitted reduction of 10 mm.

## Cylinders, double flange



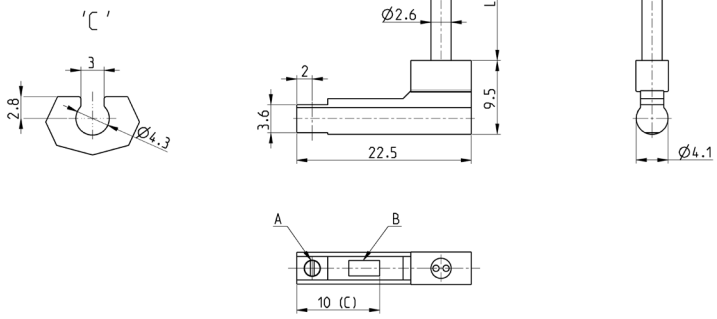

**+ = add the stroke**

+ = add the stroke
++ = add the stroke 2 times

| | Stroke [mm] | Ø 10 | Ø 16 | Ø 20 | Ø 25 | Ø 32 |
|---|---|---|---|---|---|---|
| **A** | | 42 | 58 | 62 | 76 | 94 |
| **B** | | 16 | 21 | 25 | 30 | 37 |
| **C** | | 40 | 56 | 60 | 71 | 92 |
| **E** | | 13 | 19 | 22 | 27 | 35 |
| **F** | | 33 | 42 | 50 | 60 | 45 |
| **G** | | 4 | 5 | 6 | 6 | 6 |
| **I** | | 3,5 | 2,5 | 4,5 | 4,5 | 4 |
| **M** | | 8 | 10 | 12 | 12 | 16 |
| **Q** | | 9 | 11 | 16 | 16 | 16 |
| **R** | | 13 | 13 | 18 | 18 | 18 |
| **L1+** | | 72 | 86,6 | 98 | 104,2 | 115,6 |
| **L2++** | | 95 | 111,6 | 131 | 137,2 | 155,6 |
| **L3** | | 32,1 | 34 | 39,5 | 44 | 46,5 |
| **L5** | | 16 | 20 | 25 | 30 | 30 |
| **L6** | 10 | 25 | 28,3 | 29,0 | 27,1 | 32,8 |
| **L6** | 20 | 30 | 33,3 | 34,0 | 32,1 | 37,8 |
| **L6** | 30 | 35 | 38,3 | 39,0 | 37,1 | 42,8 |
| **L6** | 40 | 40 | 43,3 | 44,0 | 42,1 | 47,8 |
| **L6** | 50 | 45 | 48,3 | 49,0 | 47,1 | 52,8 |
| **L6** | 75 | 57,3 | 60,8 | 61,5 | 59,6 | 65,3 |
| **L6** | 100 | - | 73,3 | 74,0 | 72,1 | 77,8 |
| **L7** | | 13 | 13 | 20 | 20 | 20 |
| **L8** | | 16 | 30 | 30 | 30 | 30 |
| **L9** | 10 | 49,6 | 36,6 | 48 | 54,2 | 65,6 |
| **L9** | 20 | 59,6 | 46,6 | 58 | 64,2 | 75,6 |
| **L9** | 30 | 69,6 | 56,6 | 68 | 74,2 | 85,6 |
| **L9** | 40 | 79,6 | 66,6 | 78 | 84,2 | 95,6 |
| **L9** | 50 | 89,6 | 76,6 | 88 | 94,2 | 105,6 |
| **L9** | 75 | 114,6 | 101,6 | 113 | 119,2 | 130,6 |
| **L9** | 100 | - | 126,6 | 138 | 144,2 | 155,6 |
| **L10** | 10 | 49,6 | 56,6 | 58,0 | 54,2 | 65,6 |
| **L10** | 20 | 59,6 | 66,6 | 68,0 | 64,2 | 75,6 |
| **L10** | 30 | 69,6 | 76,6 | 78,0 | 74,2 | 85,6 |
| **L10** | 40 | 79,6 | 86,6 | 88,0 | 84,2 | 95,6 |
| **L10** | 50 | 89,6 | 96,6 | 98,0 | 94,2 | 105,6 |
| **L10** | 75 | 114,6 | 121,6 | 123,0 | 119,2 | 130,6 |
| **L10** | 100 | - | 146,6 | 148,0 | 144,2 | 155,6 |
| **H2** | | 6,3 | 4,5 | 5,50 | 6,5 | 6,5 |
| **H3** | | 2,5 | 4,0 | 4,00 | 4 | 4 |
| **H4** | | 4 | 5,0 | 4,50 | 5 | 7,5 |
| **H5** | | 6,5 | 6,0 | 6,00 | 6 | 7,5 |
| **H6** | | 8 | 6,0 | 8,00 | 8 | 8 |
| **H7** | | 3 | 3,0 | 4,00 | 4 | 4 |
| **H8** | | 6,3 | - | - | - | - |
| **D1** | | M4 | M5 | M6 | M8 | M8 |
| **D2** | | 6 | 7,5 | 9,5 | 10,5 | 10,5 |
| **D3** | | 2,5 | 2,5 | 4 | 4 | 4 |
| **D4** | | M3 | M3 | M4 | M5 | M5 |
| **D5** | | M3 | M4 | M4 | M5 | M5 |
| **D6** | | M3 | M3 | M4 | M4 | M4 |
| **D7** | | 2,5 | 2,5 | 4 | 4 | 4 |
| **D8** | | 6 | - | - | - | - |
| **D9** | | 3,5 | - | - | - | - |
| **D10** | | M4 | M5 | M5 | M6 | M6 |
| **NN** | | 6 | 8 | 10 | 12 | 16 |
| **EE** | | M5 | M5 | M5 | M5 | G1/8 |
| **K** | | 7 | 7 | 8 | 8 | 10 |
| **P** | | 20 | 25 | 29 | 35 | 40 |

For out of standard intermediate strokes (ex. stroke 37), you have to consider the dimensions referring to the immediately higher stroke (ex. stroke 40) with a maximum permitted reduction of 10 mm.

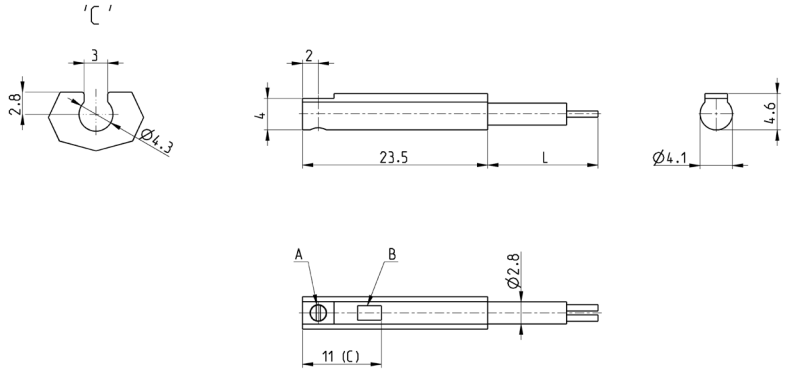
## Magnetic proximity switch with 2-wire 90° cable for C-slot Mod. CSC-H-220




**A = fixing screw**
**B = Led indicator**
**S = ideal position detection**

| Mod. | Operation | Connections | Voltage | Output | Max. current | Max Load | Protection | L = length cable |
|---|---|---|---|---|---|---|---|---|
| **CSC-H-220** | Reed | 2 wires | 10÷110 V AC/DC | PNP | 50 mA | 8 W / 10 VA | Against polarity reversing and overvoltage | 2 m |

## Magnetic proximity switch with 2-wire cable for C-slot Mod. CSC-D-220




**A = fixing screw**
**B = Led indicator**
**S = ideal position detection**

| Mod. | Operation | Connections | Voltage | Output | Max. current | Max Load | Protection | L = length cable |
|---|---|---|---|---|---|---|---|---|
| **CSC-D-220** | Reed | 2 wires | 10÷110 V AC/DC | PNP | 50 mA | 8 W / 10 VA | Against polarity reversing and overvoltage | 2 m |