

# COMPACT GUIDED CYLINDER SERIES MULTIFIX

This functional and heavy-duty cylinder is a further development of the well-known and proven CMPG series. It is designed to allow the fixing on multiple sides using different methods, compressed air supply on both sides and double sensor slots, on both the upper and lower side. The bushing guides of the piston rods are fitted directly into the anodized aluminium alloy cylinder liner.

There are two possible guiding solutions: sliding bushings coupled with piston rods made of ground chromed carbon steel or ball recirculating bushings coupled with hardened, chromed and ground steel.

A silenced version with elastic end-stroke elements and a version with pneumatic cushioning (excluding bore Ø12) with adjustable pins to control the braking are also available.



| TECHNICAL DATA                        |                                      | Ø12                                                                   | Ø16                     | Ø20  | Ø25 | Ø32 | Ø40 | Ø50 | Ø63 | Ø80 |
|---------------------------------------|--------------------------------------|-----------------------------------------------------------------------|-------------------------|------|-----|-----|-----|-----|-----|-----|
| Operating pressure                    | bar                                  | 1 to 10                                                               |                         |      |     |     |     |     |     |     |
|                                       | MPa                                  | 0.1 to 1                                                              |                         |      |     |     |     |     |     |     |
|                                       | psi                                  | 14.5 to 145                                                           |                         |      |     |     |     |     |     |     |
|                                       | °C                                   | -20 to +80                                                            |                         |      |     |     |     |     |     |     |
| Temperature range                     | °F                                   | 14 to 176                                                             |                         |      |     |     |     |     |     |     |
|                                       |                                      | Unlubricated air. Lubrication, if used, must be continuous.           |                         |      |     |     |     |     |     |     |
|                                       |                                      | With sliding bushings, with ball recirculating bearings               |                         |      |     |     |     |     |     |     |
|                                       |                                      | Silenced or with pneumatic cushioning                                 |                         |      |     |     |     |     |     |     |
| Fluid                                 |                                      | Yes                                                                   |                         |      |     |     |     |     |     |     |
| Version                               |                                      | See diagram page A1.166                                               |                         |      |     |     |     |     |     |     |
| Magnet for sensors                    |                                      | Yes                                                                   |                         |      |     |     |     |     |     |     |
| Maximum impact energy                 | silenced J                           | 0.03                                                                  | 0.06                    | 0.14 | 0.2 | 0.4 | 0.6 | 0.9 | 1.3 | 2   |
|                                       | with pneumatic cushioning J          | -                                                                     | See diagram page A1.166 |      |     |     |     |     |     |     |
|                                       | with slidings bushings bar           | 1                                                                     | 0.8                     | 0.8  | 0.8 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 |
| Inrush pressure                       | with ball recirculating bearings bar | 0.8                                                                   | 0.6                     | 0.6  | 0.6 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 |
| Forces generated in thrust/retraction |                                      | See cylinder "General technical data" at the beginning of the chapter |                         |      |     |     |     |     |     |     |

## WEIGHTS [kg] - STROKES

### SILENCED VERSION

| Bore | Strokes [mm] |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |
|------|--------------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
|      | 10           | 20   | 25   | 30   | 40   | 50   | 75   | 100  | 125  | 150   | 175   | 200   | 250   | 300   | 350   | 400   |
| 12   | 0.19         | 0.23 | 0.25 | 0.27 | 0.30 | 0.34 | 0.46 | 0.55 | 0.67 | 0.76  | 0.86  | 0.96  | 1.15  | -     | -     | -     |
| 16   | 0.3          | 0.35 | -    | 0.4  | 0.45 | 0.5  | 0.7  | 0.85 | 1    | 1.15  | 1.3   | 1.45  | 1.6   | -     | -     | -     |
| 20   | -            | 0.55 | -    | 0.65 | 0.75 | 0.85 | 1.15 | 1.35 | 1.55 | 1.75  | 1.95  | 2.15  | 2.5   | 2.9   | 3.3   | 3.7   |
| 25   | -            | 0.9  | -    | 1.05 | 1.2  | 1.35 | 1.9  | 2.25 | 2.55 | 2.85  | 3.15  | 3.35  | 4     | 4.35  | 4.7   | 5     |
| 32   | -            | -    | 1.5  | -    | -    | 1.85 | 2.25 | 2.6  | 3    | 3.35  | 3.7   | 4.05  | 5.2   | 5.9   | 6.6   | 7.3   |
| 40   | -            | -    | 1.75 | -    | -    | 2.15 | 2.55 | 2.95 | 3.35 | 3.75  | 4.15  | 4.55  | 5.8   | 6.6   | 7.4   | 8.2   |
| 50   | -            | -    | 2.56 | -    | -    | 3.18 | 4.26 | 4.89 | 5.51 | 6.13  | 6.75  | 7.37  | 8.90  | 10.14 | 11.38 | 12.73 |
| 63   | -            | -    | 3.17 | -    | -    | 3.90 | 5.10 | 5.84 | 6.57 | 7.31  | 8.04  | 8.78  | 10.63 | 12.11 | 13.58 | 15.05 |
| 80   | -            | -    | 5    | -    | -    | 5.89 | 7.60 | 8.46 | 9.32 | 10.18 | 11.14 | 11.91 | 13.94 | 15.66 | 18.35 | 19.11 |

Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above.

### VERSION WITH PNEUMATIC CUSHIONING

| Bore | Strokes [mm] |      |      |      |       |       |       |       |       |       |       |
|------|--------------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
|      | 25           | 50   | 75   | 100  | 125   | 150   | 175   | 200   | 250   | 300   | 400   |
| 16   | 0.55         | 0.65 | 0.8  | 0.95 | 1.2   | 1.35  | 1.5   | 1.65  | 1.8   | -     | -     |
| 20   | 0.8          | 1    | 1.25 | 1.5  | 1.75  | 2     | 2.25  | 2.5   | 2.75  | 3     | 3.25  |
| 25   | 1.3          | 1.6  | 2    | 2.4  | 2.7   | 3     | 3.3   | 3.6   | 4.2   | 4.8   | 5.4   |
| 32   | 1.8          | 2.1  | 2.5  | 2.9  | 3.3   | 3.7   | 4.1   | 4.5   | 5.3   | 6.1   | 6.9   |
| 40   | 2.1          | 2.5  | 2.9  | 3.4  | 3.8   | 4.2   | 4.6   | 5     | 6.1   | 7.1   | 8.2   |
| 50   | 3.35         | 3.70 | 4.79 | 5.41 | 6.03  | 6.65  | 7.27  | 7.90  | 9.42  | 10.66 | 11.90 |
| 63   | 3.87         | 4.07 | 5.80 | 6.54 | 7.28  | 8.01  | 8.75  | 9.48  | 11.29 | 12.71 | 14.18 |
| 80   | 5.82         | 6.85 | 8.59 | 9.46 | 10.91 | 11.20 | 12.08 | 12.95 | 15.11 | 16.96 | 19.33 |

## COMPONENTS SILENCED VERSION Ø12 - 80

- ① BODY: anodized extruded aluminium alloy
  - ② PISTON ROD: grinded chromed steel
  - ③ REAR BASE: anodized aluminium alloy
  - ④ FRONT BASE: anodized aluminium alloy
  - ⑤ PISTON: aluminium alloy
  - ⑥ MAGNET: plastoferrite
  - ⑦ PISTON GASKET: NBR or polyurethane
  - ⑧ GASKET O-Ring: NBR
  - ⑨ FLANGE: anodized aluminium alloy
  - ⑩ ELASTIC BUFFER: polyurethane
  - ⑪ THREADED PLUG: nickel-plated brass with O-Ring
- N.B.: when using side compressed air supplies, unscrew the caps and tighten them onto the threads of the compressed air supplies on the upper side.

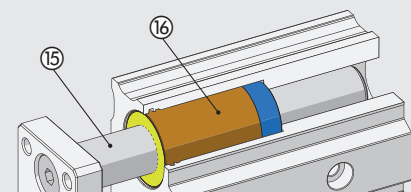
## Version with bronze bushings

- ⑫ GUIDE ROD: grinded chromed steel
- ⑬ SLIDING BUSHING: Ø12 steel strip with bronze and PTFE insert  
Ø16-80 bronze
- ⑭ WIPER RING: NBR (only for Ø 16-80)

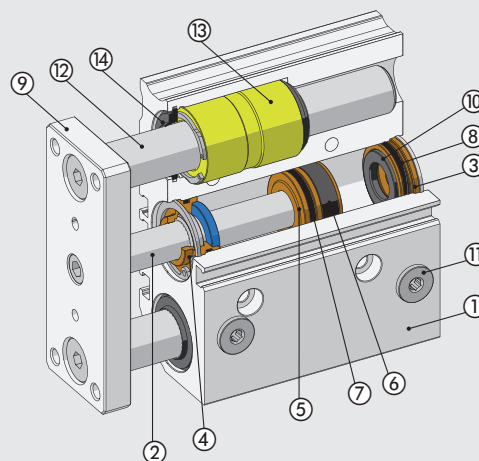
## Version with ball recirculating bearings

- ⑮ GUIDE ROD: tempered and chromed chrome steel
- ⑯ BALL RECIRCULATING BEARING

## Version with ball recirculating bearings



## Version with sliding bushings



## COMPONENTS VERSION WITH PNEUMATIC CUSHIONING Ø 16 - 80

- ① BODY: anodized extruded aluminium alloy
  - ② PISTON ROD: grinded chromed steel
  - ③ REAR BASE: anodized aluminium alloy
  - ④ FRONT BASE: anodized aluminium alloy
  - ⑤ PISTON: aluminium alloy
  - ⑥ MAGNET: plastoferrite
  - ⑦ PISTON GASKET: NBR or polyurethane
  - ⑧ GASKET O-Ring: NBR
  - ⑨ FLANGE: anodized aluminium alloy
  - ⑩ CUSHIONING GASKET: NBR
  - ⑪ CUSHIONING NEEDLE: brass
  - ⑫ THREADED PLUG: nickel-plated brass with O-Ring
- N.B.: when using side compressed air supplies, unscrew the caps and tighten them onto the threads of the compressed air supplies on the upper side.

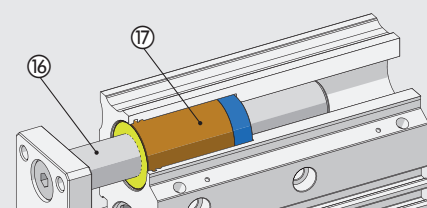
## Version with bronze bushings

- ⑬ GUIDE ROD: grinded chromed steel
- ⑭ SLIDING BUSHING: bronze
- ⑮ WIPER RING: NBR (only for Ø 16-80)

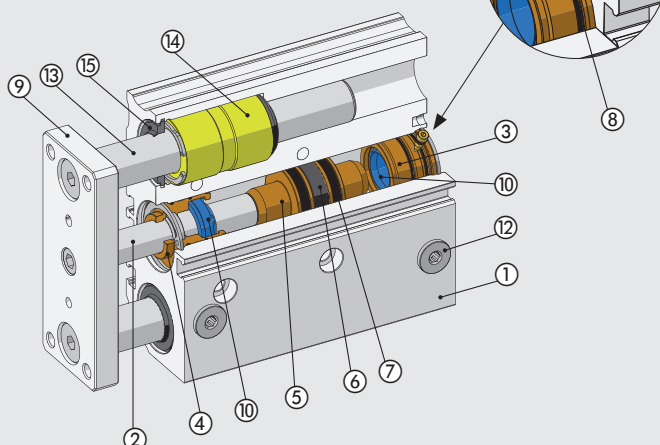
## Version with ball recirculating bearings

- ⑯ GUIDE ROD: tempered and chromed chrome steel
- ⑰ BALL RECIRCULATING BEARING

## Version with ball recirculating bearings



## Version with sliding bushings

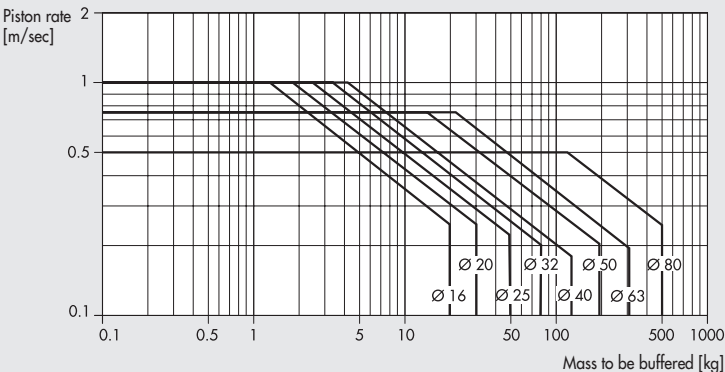


# DIAGRAM OF SPEED AND MAXIMUM CUSHIONABLE LOAD Ø16-80

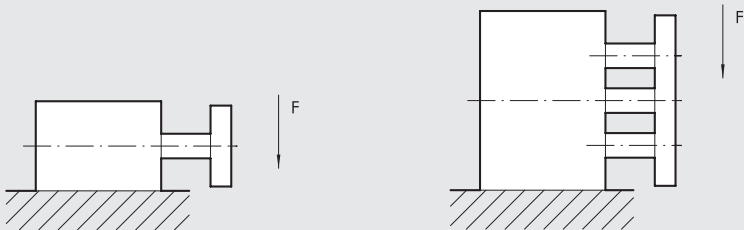
For the cylinder to reach the end-of-stroke position without intense or repeated impact which would damage it, it is necessary to annul the kinetic energy of the moving mass and the work generated.

The maximum cushionable load depends on the traversing speed and the absorption of the air buffer supplied standard with the various cylinders.

The diagram shows the speeds and cushionable mass for the various diameters at a pressure of 6 bar.



## MAXIMUM SIDE LOAD

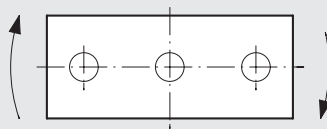


| Ø<br>[mm] | Guide unit | Strokes [mm] |    |     |    |    |     |     |     |     |     |     |     |     |     |     |     |
|-----------|------------|--------------|----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|           |            | 10           | 20 | 25  | 30 | 40 | 50  | 75  | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 350 | 400 |
| 12        | Bushings   | 10           | 9  | 8.5 | 8  | 7  | 6.5 | 20  | 15  | 12  | 10  | 8   | 7.5 | 5.5 | -   | -   | -   |
|           | Balls      | 16           | 12 | 11  | 10 | 9  | 8   | 16  | 13  | 11  | 9   | 8   | 7   | 5.5 | -   | -   | -   |
| 16        | Bushings   | 40           | 35 | 32  | 29 | 25 | 24  | 25  | 20  | 19  | 18  | 16  | 13  | 10  | -   | -   | -   |
|           | Balls      | 35           | 38 | 33  | 30 | 29 | 28  | 35  | 24  | 21  | 19  | 16  | 13  | 10  | -   | -   | -   |
| 20        | Bushings   | -            | 40 | 35  | 33 | 32 | 30  | 63  | 52  | 49  | 40  | 36  | 32  | 26  | 22  | 14  | 10  |
|           | Balls      | -            | 40 | 34  | 32 | 31 | 28  | 55  | 50  | 45  | 38  | 34  | 30  | 25  | 21  | 12  | 8   |
| 25        | Bushings   | -            | 70 | 60  | 50 | 40 | 36  | 80  | 70  | 65  | 55  | 50  | 45  | 35  | 25  | 18  | 10  |
|           | Balls      | -            | 70 | 60  | 50 | 40 | 36  | 65  | 55  | 62  | 52  | 45  | 42  | 30  | 23  | 15  | 6   |
| 32        | Bushings   | -            | -  | 140 | -  | -  | 120 | 150 | 120 | 110 | 90  | 80  | 70  | 50  | 40  | 20  | 10  |
|           | Balls      | -            | -  | 120 | -  | -  | 100 | 180 | 140 | 125 | 120 | 110 | 90  | 80  | 60  | 30  | 15  |
| 40        | Bushings   | -            | -  | 140 | -  | -  | 120 | 150 | 120 | 110 | 90  | 80  | 70  | 50  | 40  | 20  | 10  |
|           | Balls      | -            | -  | 120 | -  | -  | 100 | 180 | 140 | 125 | 120 | 110 | 90  | 80  | 60  | 30  | 15  |
| 50        | Bushings   | -            | -  | 180 | -  | -  | 150 | 200 | 170 | 150 | 140 | 130 | 100 | 70  | 55  | 25  | 15  |
|           | Balls      | -            | -  | 125 | -  | -  | 110 | 220 | 190 | 185 | 180 | 160 | 150 | 130 | 110 | 60  | 40  |
| 63        | Bushings   | -            | -  | 180 | -  | -  | 150 | 200 | 170 | 150 | 140 | 130 | 100 | 70  | 55  | 25  | 15  |
|           | Balls      | -            | -  | 125 | -  | -  | 110 | 220 | 190 | 185 | 180 | 160 | 150 | 130 | 110 | 65  | 40  |
| 80        | Bushings   | -            | -  | 250 | -  | -  | 190 | 250 | 220 | 200 | 150 | 130 | 125 | 95  | 70  | 30  | 20  |
|           | Balls      | -            | -  | 170 | -  | -  | 170 | 320 | 300 | 280 | 250 | 200 | 190 | 160 | 140 | 70  | 60  |

Centre of gravity distance from the front plane = 50 mm

N.B.: Forces are expressed in N

## MAXIMUM TORQUE ON PLATE



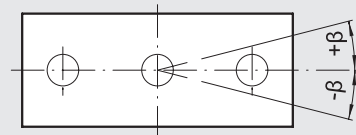
| Ø<br>[mm] | Guide unit | Strokes [mm] |      |       |      |      |       |       |       |       |       |       |       |       |       |       |      |
|-----------|------------|--------------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
|           |            | 10           | 20   | 25    | 30   | 40   | 50    | 75    | 100   | 125   | 150   | 175   | 200   | 250   | 300   | 350   | 400  |
| 12        | Bushings   | 0.4          | 0.33 | 0.30  | 0.28 | 0.25 | 0.22  | 0.44  | 0.37  | 0.32  | 0.28  | 0.25  | 0.23  | 0.2   | -     | -     | -    |
|           | Balls      | 0.62         | 0.46 | 0.41  | 0.36 | 0.59 | 0.51  | 0.38  | 0.3   | 0.25  | 0.21  | 0.19  | 0.17  | 0.13  | -     | -     | -    |
| 16        | Bushings   | 0.71         | 0.60 | 0.54  | 0.50 | 0.44 | 0.39  | 0.71  | 0.60  | 0.52  | 0.45  | 0.41  | 0.37  | 0.31  | -     | -     | -    |
|           | Balls      | 1.02         | 0.76 | 0.62  | 0.61 | 1.02 | 0.89  | 0.67  | 0.54  | 0.44  | 0.38  | 0.33  | 0.29  | 0.24  | -     | -     | -    |
| 20        | Bushings   | -            | 1.08 | 1.03  | 0.96 | 0.85 | 0.77  | 1.94  | 1.68  | 1.48  | 1.32  | 1.19  | 1.09  | 0.93  | 0.80  | 0.71  | 0.64 |
|           | Balls      | -            | 1.30 | 1.13  | 1.06 | 2.24 | 2.00  | 1.57  | 1.29  | 1.38  | 1.21  | 1.06  | 0.96  | 0.78  | 0.67  | 0.58  | 0.50 |
| 25        | Bushings   | -            | 1.81 | 1.67  | 1.60 | 1.42 | 1.29  | 3.05  | 2.65  | 2.33  | 2.08  | 1.88  | 1.72  | 1.46  | 1.28  | 1.12  | 1.01 |
|           | Balls      | -            | 2.17 | 2.01  | 1.80 | 3.47 | 3.11  | 2.45  | 2.03  | 2.11  | 1.83  | 1.63  | 1.45  | 1.19  | 1.01  | 0.88  | 0.76 |
| 32        | Bushings   | -            | -    | 6.54  | -    | -    | 5.28  | 5.86  | 5.12  | 4.55  | 4.10  | 3.72  | 3.41  | 2.93  | 2.55  | 2.27  | 2.04 |
|           | Balls      | -            | -    | 6.13  | -    | -    | 5.04  | 5.26  | 4.65  | 6.53  | 5.96  | 5.49  | 5.08  | 4.42  | 3.89  | 3.48  | 3.13 |
| 40        | Bushings   | -            | -    | 7.21  | -    | -    | 5.83  | 6.46  | 5.64  | 5.02  | 4.51  | 4.10  | 3.76  | 3.22  | 2.82  | 2.50  | 2.26 |
|           | Balls      | -            | -    | 6.75  | -    | -    | 5.55  | 5.79  | 5.11  | 7.19  | 6.57  | 6.05  | 5.59  | 4.86  | 4.28  | 3.82  | 3.45 |
| 50        | Bushings   | -            | -    | 13.39 | -    | -    | 11.12 | 12.36 | 10.92 | 9.79  | 8.86  | 8.10  | 7.46  | 6.43  | 5.65  | 5.05  | 4.56 |
|           | Balls      | -            | -    | 9.45  | -    | -    | 7.85  | 10.12 | 9.00  | 11.95 | 11.02 | 10.12 | 9.39  | 8.19  | 7.23  | 6.45  | 5.80 |
| 63        | Bushings   | -            | -    | 15.14 | -    | -    | 12.46 | 13.91 | 12.26 | 11.02 | 9.98  | 9.13  | 8.40  | 7.25  | 6.38  | 5.69  | 5.14 |
|           | Balls      | -            | -    | 10.51 | -    | -    | 8.73  | 11.33 | 10.03 | 13.39 | 12.26 | 11.33 | 10.51 | 9.11  | 8.03  | 7.15  | 6.43 |
| 80        | Bushings   | -            | -    | 22.55 | -    | -    | 19.15 | 23.58 | 21.11 | 19.15 | 17.51 | 16.06 | 14.93 | 12.97 | 11.53 | 10.30 | 9.38 |
|           | Balls      | -            | -    | 15.55 | -    | -    | 23.99 | 23.38 | 21.21 | 19.46 | 17.81 | 16.48 | 15.24 | 13.28 | 11.63 | 10.30 | 9.20 |

N.B.: Forces are expressed in Nm

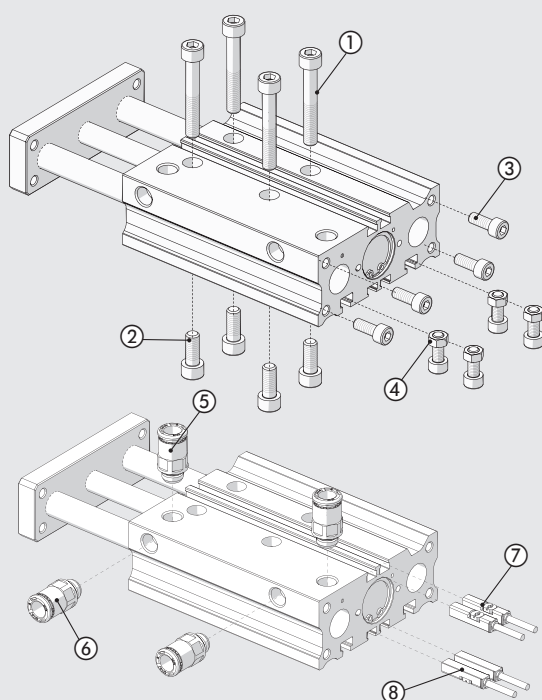
## TORSIONAL BACKLASH

Torsional backlash  $\beta$  with piston rods retracted and without applied loads.

|                                  | Ø [mm] |       |       |       |       |       |       |       |       |
|----------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Torsional backlash β [°]         | 12     | 16    | 20    | 25    | 32    | 40    | 50    | 63    | 80    |
| With slidings bushings           | ±0.07  | ±0.07 | ±0.06 | ±0.06 | ±0.05 | ±0.05 | ±0.04 | ±0.04 | ±0.03 |
| With ball recirculating bearings | ±0.05  | ±0.05 | ±0.04 | ±0.04 | ±0.03 | ±0.03 | ±0.03 | ±0.03 | ±0.03 |

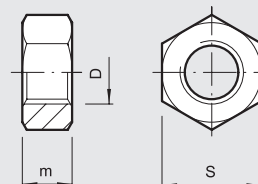


## MOUNTING OPTIONS



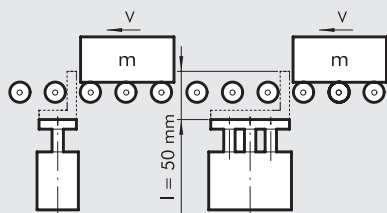
- ① Fixing with through screws
- ② Fixing with threaded holes
- ③ Fixing from the back side, using threaded holes
- ④ Fixing with DIN 834 hexagonal nuts inserted into the T-slots

| Ø  | Hexagonal nut DIN 834<br>(UNI 5588) |     |    |
|----|-------------------------------------|-----|----|
|    | D                                   | m   | S  |
| 12 | M4                                  | 3.2 | 7  |
| 16 | M4                                  | 3.2 | 7  |
| 20 | M5                                  | 4   | 8  |
| 25 | M5                                  | 4   | 8  |
| 32 | M6                                  | 5   | 10 |
| 40 | M6                                  | 5   | 10 |
| 50 | M8                                  | 6.5 | 13 |
| 63 | M10                                 | 8   | 17 |
| 80 | M12                                 | 10  | 19 |

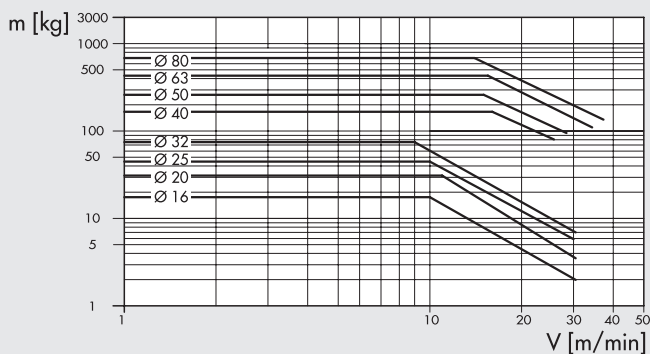


- ⑤ Compressed air supply on the upper side
- ⑥ Compressed air supply on the lateral side
- ⑦ Two sensor slots on the upper side
- ⑧ Two sensor slots on the lower side

## STOPPER FUNCTIONS Ø 16 - 80

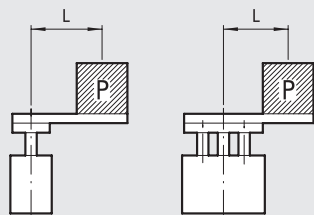


The graph refers to a cylinder with a maximum stroke of 50 mm and with slidings bushing guide.

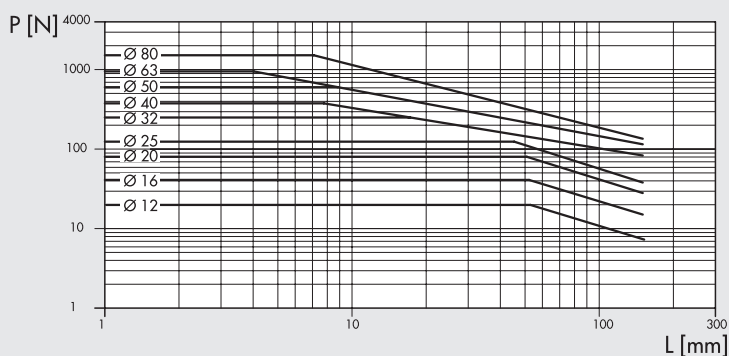


**N.B.:** The version with a ball bushing must not be used as a stopper.

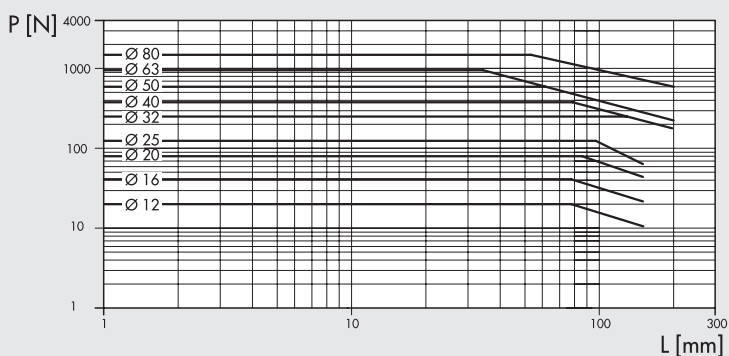
## LIFTING FUNCTIONS Ø 12 - 80



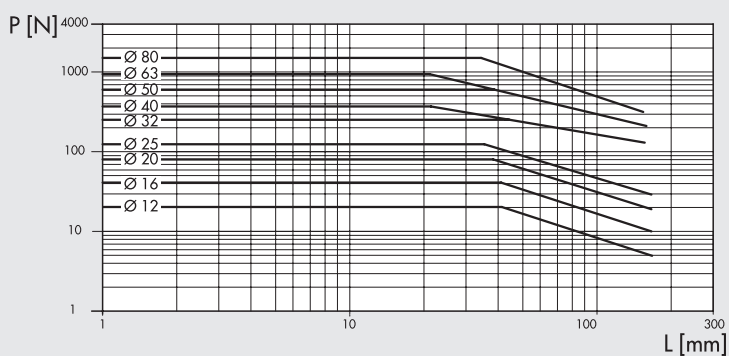
The graph refers to cylinders with a stroke of up to 50 mm with a ball recirculation guide.

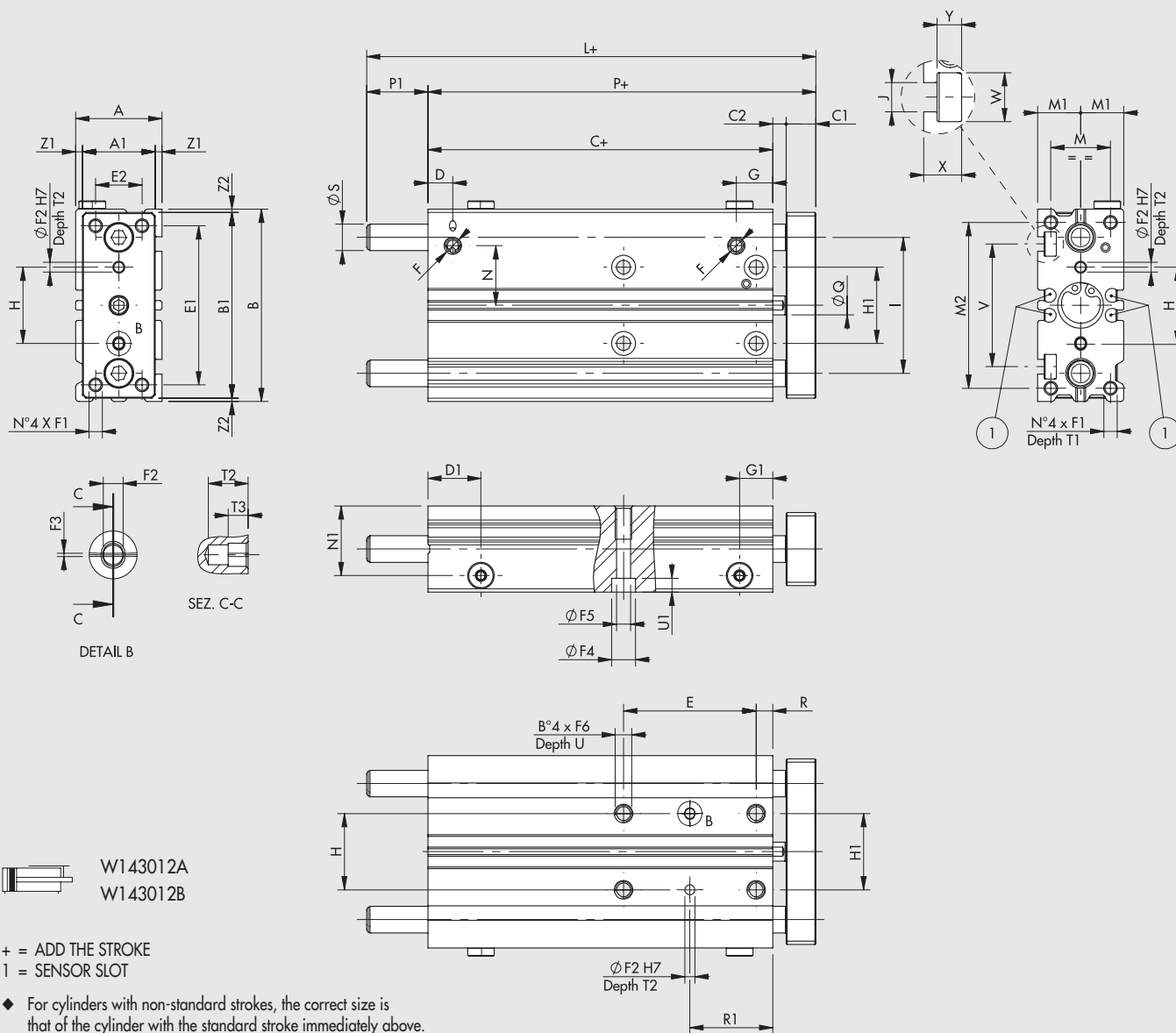


The graph refers to cylinders with a stroke greater than 50 mm with a ball recirculation guide.



The graph refers to cylinders with a slidings bushing guide.



**DIMENSIONS SILENCED VERSION Ø 12**


| Ø  | A  | A1 | B  | B1 | C ♦ | C1 | C2 | D   | D1 | E1 | E2 | F  | F1 | F2 <sup>97</sup> | F3  | F4  | F5  | F6 | G  | G1 | H <sup>0.025</sup> | H1 | I  | J   | M  | M1 |
|----|----|----|----|----|-----|----|----|-----|----|----|----|----|----|------------------|-----|-----|-----|----|----|----|--------------------|----|----|-----|----|----|
| 12 | 26 | 22 | 58 | 56 | 29  | 9  | 4  | 7.5 | 16 | 48 | 14 | M5 | M4 | 3                | 0.5 | 7.2 | 4.3 | M5 | 11 | 10 | 23                 | 23 | 41 | 4.4 | 18 | 13 |

| Ø  | M2 | N  | N1 | P ♦ | Q | R | T1 | T2 | T3 | U    | U1  | V  | W   | X   | Y   | Z1 | Z2 |
|----|----|----|----|-----|---|---|----|----|----|------|-----|----|-----|-----|-----|----|----|
| 12 | 50 | 18 | 21 | 42  | 6 | 5 | 10 | 6  | 3  | 10.5 | 4.2 | 37 | 7.4 | 5.7 | 3.7 | 2  | 1  |

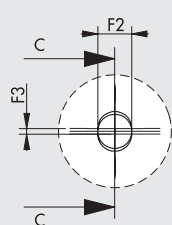
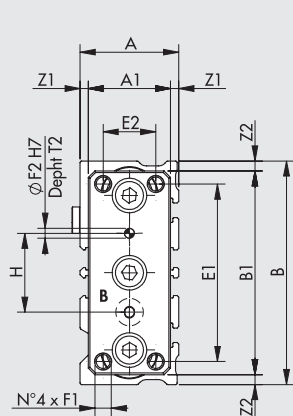
**SLIDING BUSHINGS**

| Ø  | E<br>Strokes |        |         |     | R1<br>Strokes |        |         |     | L ♦<br>Strokes |        |         | P1<br>Strokes |        |         | S |
|----|--------------|--------|---------|-----|---------------|--------|---------|-----|----------------|--------|---------|---------------|--------|---------|---|
|    | 10-30        | 40-100 | 125-200 | 250 | 10-30         | 40-100 | 125-200 | 250 | 10-50          | 75-100 | 125-250 | 10-50         | 75-100 | 125-250 |   |
| 12 | 20           | 40     | 110     | 200 | 15            | 25     | 60      | 105 | 42             | 60.5   | 82.5    | 0             | 18.5   | 40.5    | 8 |

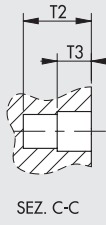
**BALL BEARINGS**

| Ø  | E<br>Strokes |        |         |     | R1<br>Strokes |        |         |     | L ♦<br>Strokes |        |         | P1<br>Strokes |        |         | S |
|----|--------------|--------|---------|-----|---------------|--------|---------|-----|----------------|--------|---------|---------------|--------|---------|---|
|    | 10-30        | 40-100 | 125-200 | 250 | 10-30         | 40-100 | 125-200 | 250 | 10-50          | 75-100 | 125-250 | 10-50         | 75-100 | 125-250 |   |
| 12 | 20           | 40     | 110     | 200 | 15            | 25     | 60      | 105 | 43             | 55     | 84.5    | 1             | 13     | 42.5    | 6 |

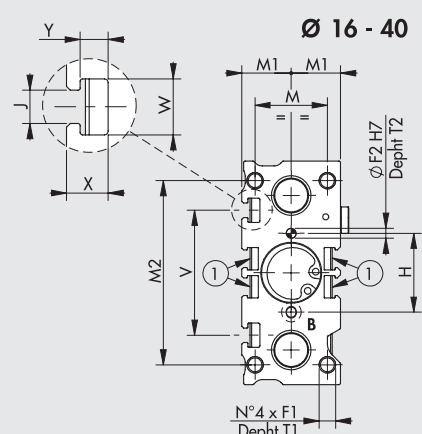
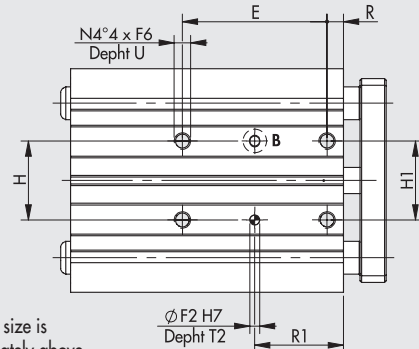
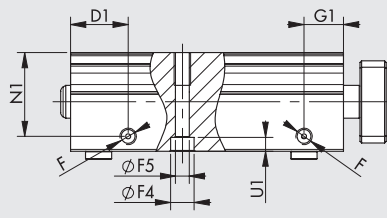
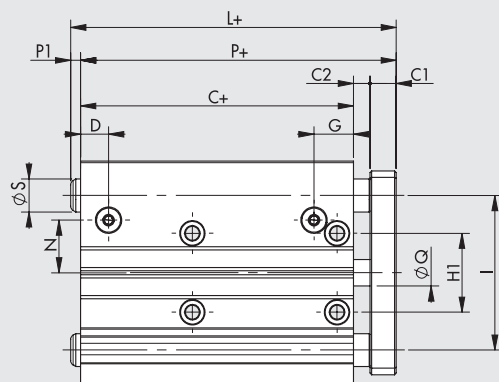
## DIMENSIONS SILENCED VERSION Ø 16 - 63



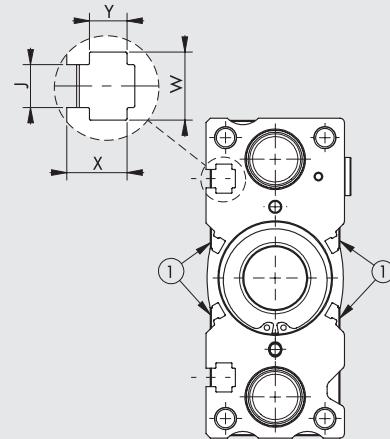
DETAIL B



SEZ. C-C



Ø 50 - 63



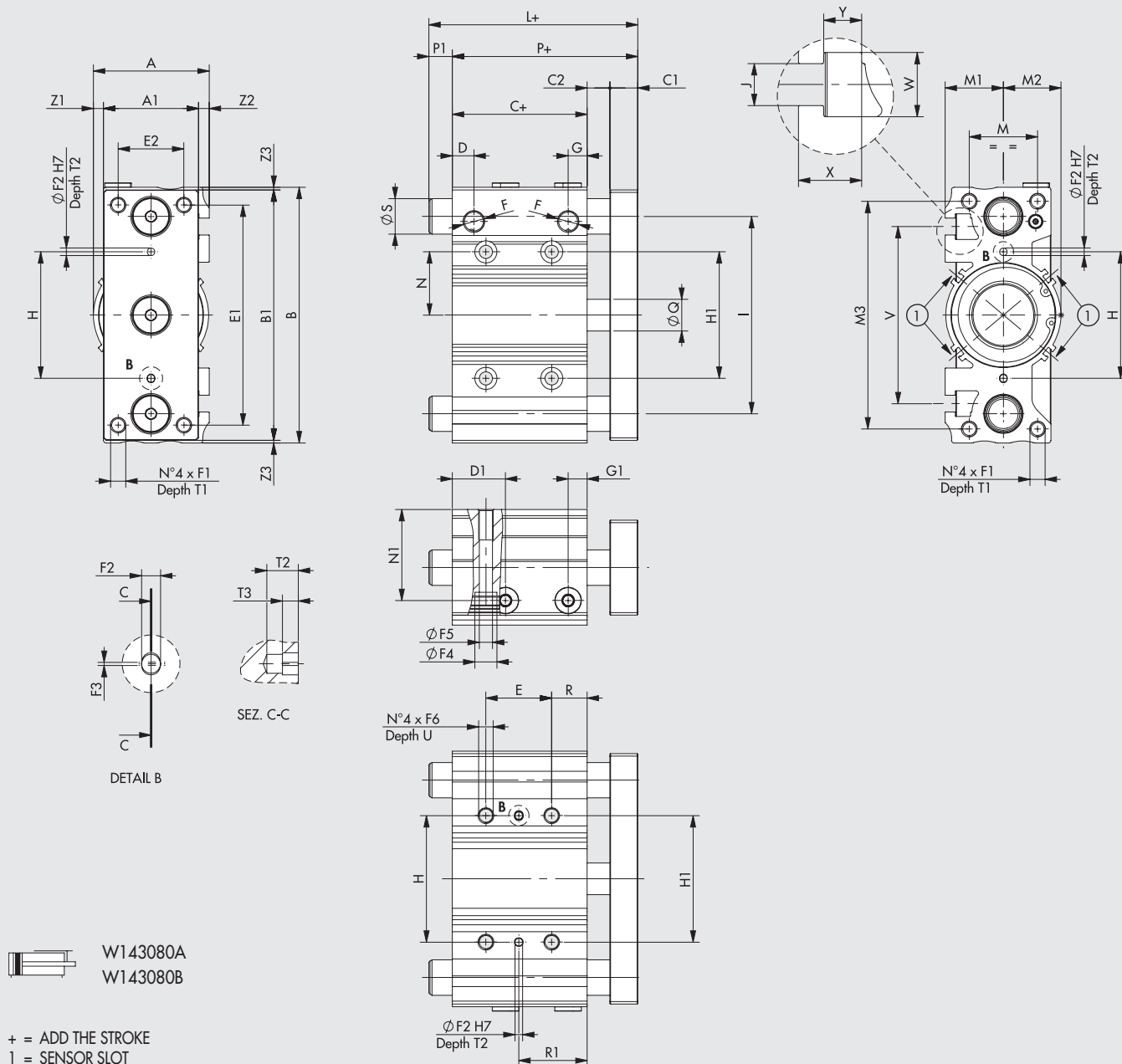
+ = ADD THE STROKE  
1 = SENSOR SLOT

♦ For cylinders with non-standard strokes, the correct size is that of the cylinder with the standard stroke immediately above.

| Ø  | A  | A1 | B   | B1  | C♦   | C1 | C2 | D    | D1   | E1  | E2 | F    | F1  | F2 <sup>H7</sup> | F3  | F4   | F5  | F6  | G    | G1   | H <sup>±0.025</sup> | H1 | I   | J   | M  | M1 |
|----|----|----|-----|-----|------|----|----|------|------|-----|----|------|-----|------------------|-----|------|-----|-----|------|------|---------------------|----|-----|-----|----|----|
| 16 | 30 | 25 | 68  | 62  | 33   | 8  | 5  | 8.5  | 17.5 | 54  | 16 | M5   | M5  | 3                | 0.5 | 7.2  | 4.2 | M5  | 12   | 12   | 24                  | 24 | 47  | 4.4 | 22 | 15 |
| 20 | 36 | 30 | 83  | 81  | 37   | 10 | 6  | 9.5  | 24.5 | 70  | 18 | G1/8 | M5  | 3                | 0.5 | 8.8  | 5.2 | M6  | 10.5 | 10.5 | 28                  | 28 | 54  | 5.4 | 24 | 18 |
| 25 | 42 | 38 | 101 | 91  | 37.5 | 10 | 6  | 10   | 24.5 | 78  | 26 | G1/8 | M6  | 4                | 0.5 | 8.8  | 5.2 | M6  | 10   | 10   | 34                  | 34 | 68  | 5.4 | 30 | 21 |
| 32 | 48 | 44 | 112 | 110 | 37.5 | 12 | 10 | 10   | 28   | 96  | 30 | G1/8 | M8  | 4                | 0.5 | 10.2 | 6.8 | M8  | 10.5 | 10.5 | 42                  | 42 | 78  | 6.5 | 34 | 24 |
| 40 | 54 | 44 | 120 | 118 | 44   | 12 | 10 | 12.5 | 31   | 104 | 30 | G1/8 | M8  | 4                | 0.5 | 10.2 | 6.8 | M8  | 12.5 | 12.5 | 50                  | 50 | 86  | 6.5 | 40 | 27 |
| 50 | 64 | 60 | 148 | 146 | 44   | 16 | 12 | 11   | 35   | 130 | 40 | G1/4 | M10 | 5                | 1   | 14   | 8.6 | M10 | 14   | 12   | 66                  | 66 | 110 | 8.5 | 46 | 32 |
| 63 | 78 | 70 | 162 | 158 | 49   | 16 | 12 | 13.5 | 35   | 130 | 50 | G1/4 | M10 | 5                | 1   | 14   | 8.6 | M10 | 16.5 | 16.5 | 80                  | 80 | 124 | 11  | 58 | 39 |

| Ø  | M2  | N    | N1   | P♦   | Q  | R  | S        |          | T1 | T2 | T3 | U  | U1  | V   | W    | X   | Y   | Z1  | Z2 |
|----|-----|------|------|------|----|----|----------|----------|----|----|----|----|-----|-----|------|-----|-----|-----|----|
|    |     |      |      |      |    |    | W143...A | W143...B |    |    |    |    |     |     |      |     |     |     |    |
| 16 | 56  | 16   | 25.5 | 46   | 8  | 5  | 10       | 8        | 10 | 6  | 3  | 10 | 4.2 | 38  | 7.4  | 5.5 | 3.7 | 2.5 | 3  |
| 20 | 72  | 25   | 29.5 | 53   | 10 | 17 | 12       | 10       | 12 | 6  | 3  | 12 | 5.2 | 44  | 8.4  | 7   | 4.5 | 3   | 1  |
| 25 | 82  | 25.5 | 36   | 53.5 | 12 | 17 | 16       | 16       | 12 | 6  | 3  | 12 | 5.2 | 50  | 8.4  | 7   | 4.5 | 2   | 5  |
| 32 | 98  | 35.5 | 41   | 59.5 | 16 | 21 | 20       | 20       | 16 | 6  | 3  | 16 | 6.2 | 63  | 10.5 | 7.5 | 5.5 | 2   | 1  |
| 40 | 106 | 36   | 46.5 | 66   | 16 | 22 | 20       | 20       | 16 | 6  | 3  | 16 | 6.2 | 72  | 10.5 | 7.5 | 5.5 | 5   | 1  |
| 50 | 130 | 47   | 54   | 72   | 20 | 24 | 25       | 25       | 21 | 8  | 4  | 20 | 9   | 92  | 13.5 | 12  | 7.5 | 2   | 1  |
| 63 | 142 | 55   | 67   | 77   | 20 | 24 | 25       | 25       | 21 | 8  | 4  | 20 | 9   | 110 | 17.8 | 17  | 10  | 4   | 2  |

| Ø  | E       |        |         |         |         | R1      |        |         |         |         | L♦      |        |         | P1      |        |         |
|----|---------|--------|---------|---------|---------|---------|--------|---------|---------|---------|---------|--------|---------|---------|--------|---------|
|    | Strokes |        |         |         |         | Strokes |        |         |         |         | Strokes |        |         | Strokes |        |         |
|    | 10-30   | 40-100 | 125-200 | 250-300 | 350-400 | 10-30   | 40-100 | 125-200 | 250-300 | 350-400 | 10-50   | 75-200 | 250-400 | 10-50   | 75-200 | 250-400 |
| 16 | 24      | 44     | 110     | 200     | -       | 17      | 27     | 60      | 105     | -       | 49      | 79     | 109     | 3       | 33     | 63      |
| 20 | 24      | 44     | 120     | 200     | 300     | 29      | 39     | 77      | 117     | 167     | 58      | 88     | 118     | 5       | 35     | 65      |
| 25 | 24      | 44     | 120     | 200     | 300     | 29      | 39     | 77      | 117     | 167     | 70.5    | 103    | 118     | 17      | 49.5   | 64.5    |
| 32 | 24      | 48     | 124     | 200     | 300     | 33      | 45     | 83      | 121     | 171     | 88      | 88     | 138     | 28.5    | 28.5   | 78.5    |
| 40 | 24      | 48     | 124     | 200     | 300     | 34      | 46     | 84      | 122     | 172     | 88      | 88     | 138     | 22      | 22     | 72      |
| 50 | 24      | 48     | 124     | 200     | 300     | 36      | 48     | 86      | 124     | 174     | 79      | 112    | 160     | 7       | 40     | 88      |
| 63 | 28      | 52     | 128     | 200     | 300     | 38      | 50     | 88      | 124     | 174     | 78.5    | 111.5  | 159.5   | 1.5     | 34.5   | 82.5    |

**DIMENSIONS SILENCED VERSION Ø 80**


| Ø  | A    | A1 | B   | B1  | C◆   | C1 | C2 | D  | D1 | E1  | E2 | F    | F1  | F2 <sup>H7</sup> | F3 | F4   | F5   | F6  | G  | G1 | H <sup>±0.025</sup> | H1  | I   | J    | M  | M1 |
|----|------|----|-----|-----|------|----|----|----|----|-----|----|------|-----|------------------|----|------|------|-----|----|----|---------------------|-----|-----|------|----|----|
| 80 | 91.5 | 75 | 202 | 198 | 56.5 | 22 | 18 | 17 | 42 | 174 | 52 | G3/8 | M12 | 6                | 1  | 17.5 | 10.5 | M12 | 15 | 15 | 100                 | 100 | 156 | 13.3 | 54 | 46 |

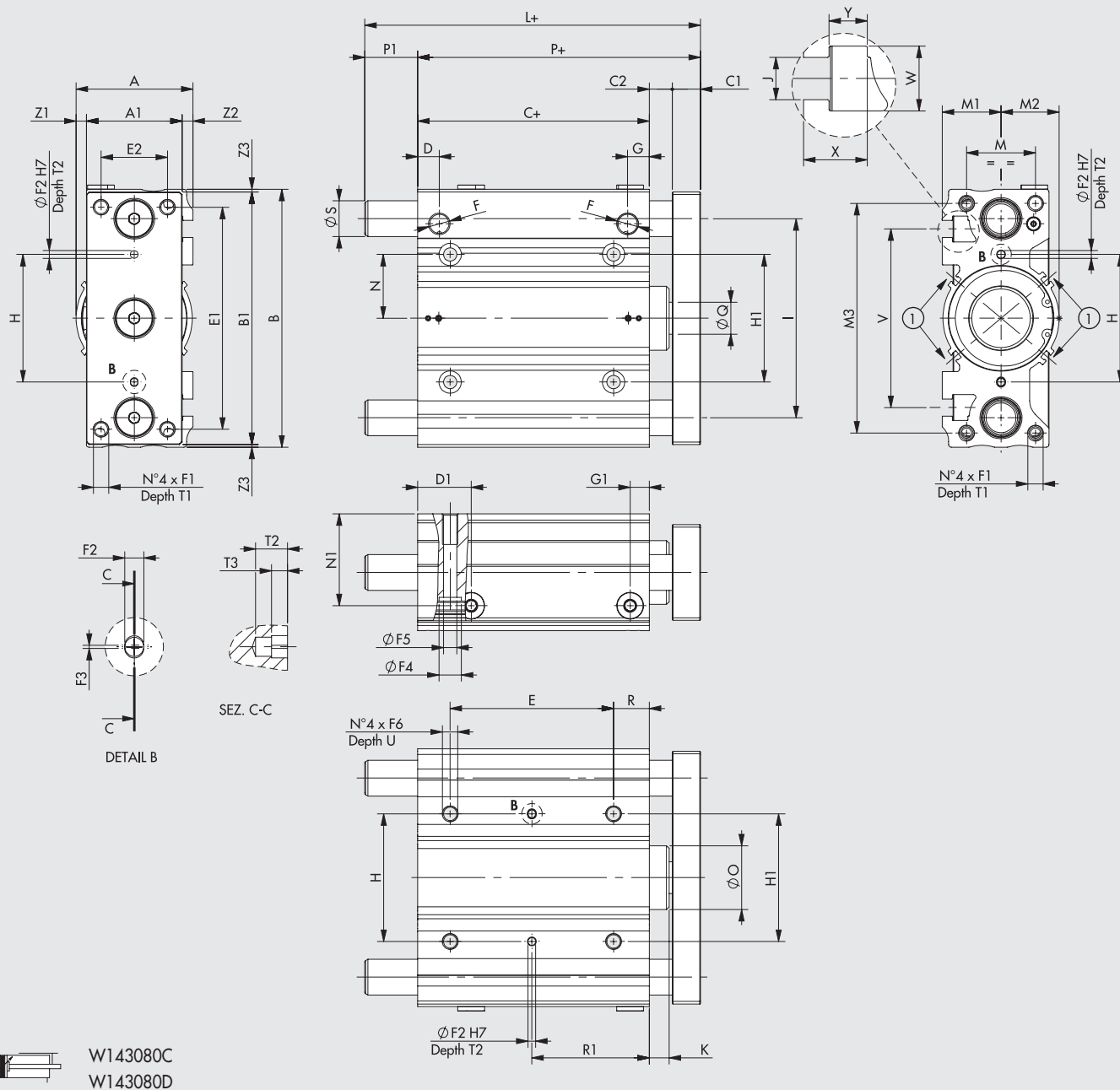
  

| Ø  | M2   | M3  | N  | N1 | P◆   | Q  | R  | S        |          | T1 | T2 | T3 | U  | V   | W    | X  | Y  | Z1 | Z2  | Z3 |
|----|------|-----|----|----|------|----|----|----------|----------|----|----|----|----|-----|------|----|----|----|-----|----|
|    |      |     |    |    |      |    |    | W143080A | W143080B |    |    |    |    |     |      |    |    |    |     |    |
| 80 | 45.5 | 180 | 50 | 72 | 96.5 | 25 | 28 | 28       | 25       | 25 | 10 | 5  | 24 | 140 | 20.3 | 20 | 12 | 8  | 8.5 | 2  |

| Ø  | E  |        |         |         |         | R1 |        |         |         |         | L◆    |        |         | P1    |        |         |
|----|----|--------|---------|---------|---------|----|--------|---------|---------|---------|-------|--------|---------|-------|--------|---------|
|    | 25 | 50-100 | 125-200 | 250-300 | 350-400 | 25 | 50-100 | 125-200 | 250-300 | 350-400 | 25-50 | 75-200 | 250-400 | 25-50 | 75-200 | 250-400 |
| 80 | 28 | 52     | 128     | 200     | 300     | 42 | 54     | 92      | 128     | 178     | 115   | 163    | 194     | 18.5  | 66.5   | 97.5    |





**DIMENSIONS WITH PNEUMATIC CUSHIONING VERSION Ø 80**


| Ø  | A    | A1 | B   | B1  | C    | C1 | C2 | D  | D1 | E1  | E2 | F    | F1  | F2 <sup>H7</sup> | F3 | F4   | F5   | F6  | G  | G1 | H±0.025 | H1  | I   | J    | K    | M  |
|----|------|----|-----|-----|------|----|----|----|----|-----|----|------|-----|------------------|----|------|------|-----|----|----|---------|-----|-----|------|------|----|
| 80 | 91.5 | 75 | 202 | 198 | 81.5 | 22 | 18 | 17 | 42 | 174 | 52 | G3/8 | M12 | 6                | 1  | 17.5 | 10.5 | M12 | 17 | 15 | 100     | 100 | 156 | 13.3 | 15.5 | 54 |

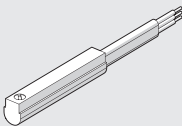
| Ø  | M1 | M2   | M3  | N  | N1 | O  | P     | Q  | R  | S        |          | T1 | T2 | T3 | U  | V   | W    | X  | Y  | Z1 | Z2  | Z3 |
|----|----|------|-----|----|----|----|-------|----|----|----------|----------|----|----|----|----|-----|------|----|----|----|-----|----|
|    |    |      |     |    |    |    |       |    |    | W143080C | W143080D |    |    |    |    |     |      |    |    |    |     |    |
| 80 | 46 | 45.5 | 180 | 50 | 72 | 50 | 121.5 | 25 | 28 | 28       | 25       | 25 | 10 | 5  | 24 | 140 | 20.3 | 20 | 12 | 8  | 8.5 | 2  |

| Ø  | E       |         |         |         | R1      |         |         |         | L       |        |         | P1      |        |         |
|----|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|--------|---------|
|    | Strokes |         |         |         | Strokes |         |         |         | Strokes |        |         | Strokes |        |         |
|    | 25-75   | 100-175 | 200-300 | 350-400 | 25-75   | 100-200 | 250-300 | 350-400 | 25-50   | 75-200 | 250-400 | 25-50   | 75-200 | 250-400 |
| 80 | 52      | 128     | 200     | 300     | 54      | 92      | 128     | 150     | 121.5   | 163    | 194     | 0       | 41.5   | 72.5    |

| KEY TO CODES            |     |          |   |                                                       |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------|-----|----------|---|-------------------------------------------------------|-------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| W 1 4 3                 |     | 0 2 0    |   | D                                                     | 0 7 5 |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| TYPE                    |     | DIAMETER |   | VERSION                                               |       | STROKE |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Compact guided cylinder | 012 | Ø 12     | A | Sliding bushings, silenced                            |       |        | <b>SILENCED VERSION ♦</b><br>Ø 12: 10, 20, 25, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250<br>Ø 16: 10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250<br>Ø 20 to 25: 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400<br>Ø 32 to 80: 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400<br><br>WITH PNEUMATIC CUSHIONING VERSION<br>Ø 16: 25, 50, 75, 100, 125, 150, 175, 200, 250<br>Ø 20 to 80: 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400<br><br>♦ Other strokes on request but with the same cylinder dimensions as the standard stroke immediately above. |
|                         | 016 | Ø 16     | B | Ball recirculating bearings, silenced                 |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | 020 | Ø 20     | C | Sliding bushings with pneumatic cushioning            |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | 025 | Ø 25     |   |                                                       |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | 032 | Ø 32     | D | Ball recirculating bearings with pneumatic cushioning |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | 040 | Ø 40     |   |                                                       |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | 050 | Ø 50     |   |                                                       |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | 063 | Ø 63     |   |                                                       |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                         | 080 | Ø 80     |   |                                                       |       |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

ACCESSORIES

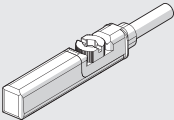
SENSOR Ø 4, FOR MULTIFIX Ø 12



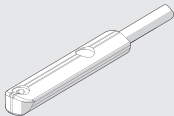
For codes and technical data, see [chapter A6](#).

RETRACTABLE SENSOR, FOR MULTIFIX Ø 16 - 80

**SENSOR, SQUARE TYPE**   
Latest generation,  
secure fixing



**SENSOR, OVAL TYPE**   
Traditional



For codes and technical data, see [chapter A6](#).

NOTES