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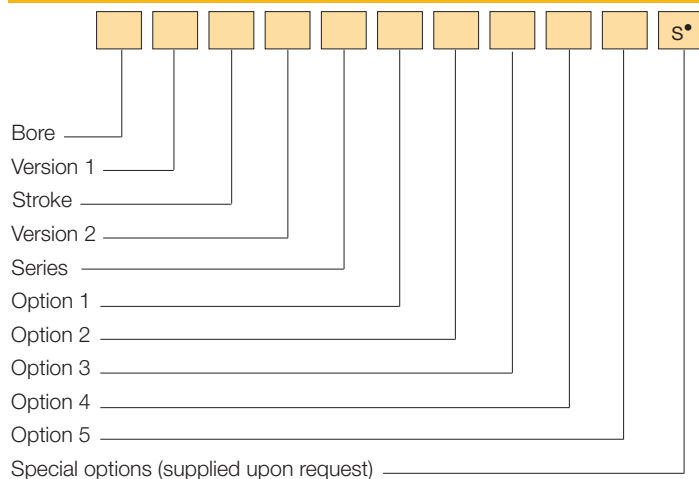
### DESCRIPTION

Cylinders series "HB" are manufactured to be fixed directly on the machinery without the use of fixings accessories. In fact the end caps act as a mounting device in the versions: hinge-mounted, screw-mounted, feet-mounted, front flange-mounted, rear flange-mounted. The double acting hinge-mounted versions and rear flange-mounted are available with reduced end caps. Upon request, cylinders series "HB" comply with ATEX directive, 2GD category.

### TECHNICAL DATA

|  |   |
|--|---|
| Operating pressure                                       | 1,5 ÷ 10 bar  |
| Working temperature                                      | 0 ÷ +80 °C (-20 °C with dry air)<br>0 ÷ +150 °C with seals for high temperatures<br>(-20 °C with dry air) |
| Fluid  | Filtered, unlubricated, continuous lubricated or dry compressed air                                       |
| Versions   | Double acting; Single acting front spring; Single acting rear spring; Through rod                         |
| Bore   | Ø 20, 27, 35, 40, 50, 58, 70, 85, 100   |
| Port size  | Ø 20 ÷ 50 = G 1/8<br>Ø 58 ÷ 100 = G 1/4   |
| Standard strokes (mm)                                    | 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 150, 200, 250  |
| Max. strokes double acting (mm)                          | Ø 20 ÷ 58 = 2000; Ø 70 ÷ 100 = 1000   |
| Maximum strokes single acting                            | Ø 20 27 35 40 50 58 70 85 100<br>mm 20 25 35 60 70 60 70 90 100   |
| Maximum strokes single acting (version "S") with spacers | Ø 20 27 35 40 50 58 70 85 100<br>mm 60 75 105 180 210 180 210 270 300                                     |
| Spring theoretical tractive force                        | See technical data on page 0.13   |

### ORDER KEY



• See Chapter 1 on page 1.1.

### ORDER EXAMPLES

Basic cylinder Ø 27, 25 mm stroke, single acting front spring, feet-mounted: **27/25 SPB**

Cylinder Ø 20, through rod, 100 mm stroke, double acting, feet-mounted: **20R100 DPB**

Basic cylinder Ø 58, 50 mm stroke, double acting, hinge-mounted, stainless steel piston rod, brass cylinder barrel: **58/50 DVB 14**

Basic cylinder Ø 35, 70 mm stroke, double acting, hinge-mounted, reduced end cap: **35/70 DCBC**

Basic cylinder Ø 40, 50 mm stroke, double acting, hinge-mounted, ATEX: **40/50 DCB/EX**



### MATERIALS

|                    |  |
|--------------------|--|
| End caps           | Aluminium alloy  |
| Cylinder barrel    | Ø 20 ÷ 100: Extruded tube, anodized aluminium alloy;<br>Extruded tube, brass (supplied upon request) |
| Piston rod         | C45 chromium-plated steel<br>AISI 303 rolled stainless steel   |
| End cap nut        | Steel  |
| Piston rod bearing | Bronze-iron 20%, sintered, self-lubricating  |
| Piston guide shoe  | Acetal resin   |
| Piston             | Aluminium alloy  |
| Seals              | NBR rubber<br>Viton®   |
| Springs            | Springs steel  |

### VERSION 1

/ Basic cylinder **R** Through rod\*

### VERSION 2

**D** Double acting **Y** Single acting front spring\*\*  
**S** Single acting front spring

### SERIES

**CB** Hinge-mounted **FAB** Front flange-mounted  
**VB** Screw-mounted **FPB** Rear flange-mounted  
**PB** Feet-mounted

### OPTION 1

**C** Reduced end cap\*\*\*

### OPTION 2

**1** Stainless steel piston rod **3** Stainless steel piston rod and seals for high temperatures  
**2** Seals for high temperatures

### OPTION 3

**4** Brass cylinder barrel

### OPTION 4

**5** Rod wipers (supplied as standard from Ø 20 ÷ 70 with option "C" - reduced end cap)

### OPTION 5

/EX Consistent with the ATEX directive II 2GD c T5 T100°C<Ta<80°C

\* Series "FPB" excluded

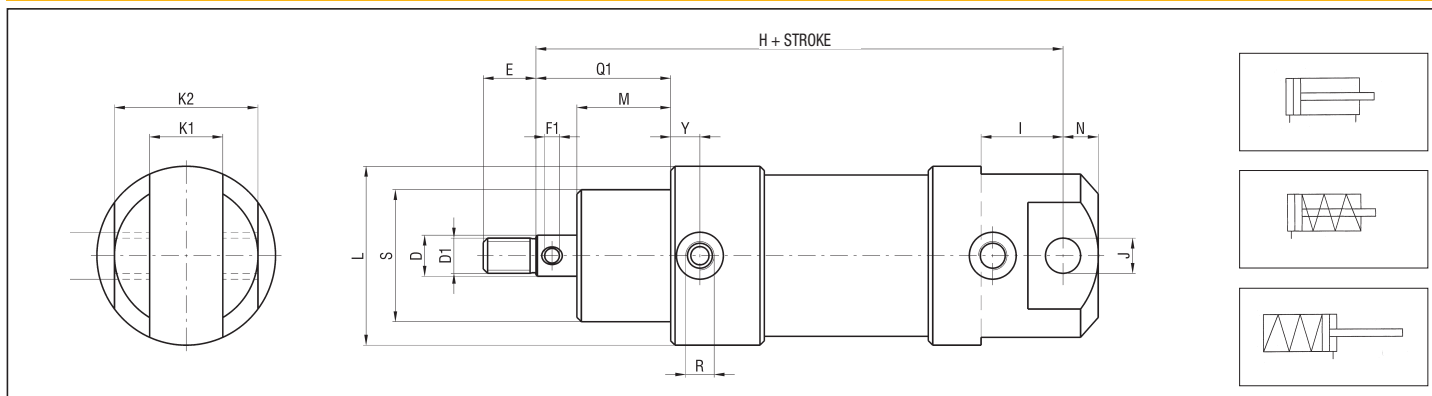
\*\* Dimensions are different from the versions "D" and "S"

\*\*\* Supplied only with series "DCB", "YCB", "DFPB", "YFPB" and with the version "R" of series "DFAB" and "DVB"

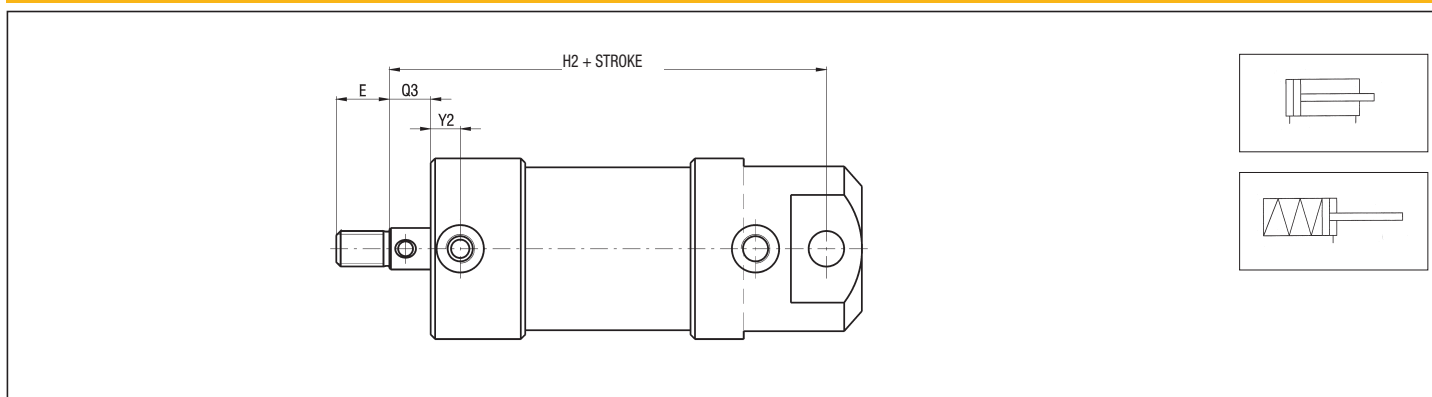
### SPARE PARTS

|                 |           |                                    |            |
|-----------------|-----------|------------------------------------|------------|
| SEALS KIT       |           |                                    |            |
| NBR             | Ø/SG/HB   | For high temperatures              | Ø/SG/HB2   |
| Through rod NBR | Ø/SG/R/HB | Through rod, for high temperatures | Ø/SG/R/HB2 |

## BASIC CYLINDER HINGE-MOUNTED - CB



## REDUCED END CAP



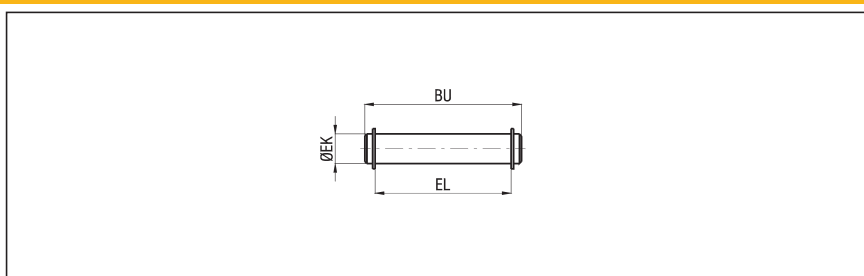
## DIMENSIONS AND WEIGHTS BASIC CYLINDER CB

| Ø   | D  | D1  | E  | F1 | H   | H2  | I  | J<br>H8 | K1<br>0/+0,2 | K2<br>0/-0,2 | L   | M    | N  | Q1   | Q3 | R     | S  | Y    | Y2   | WEIGHT<br>(g) | INCREM.<br>(g)<br>every 10 mm |
|-----|----|-----|----|----|-----|-----|----|---------|--------------|--------------|-----|------|----|------|----|-------|----|------|------|---------------|-------------------------------|
| 20  | 8  | M6  | 9  | 3  | 85  | 72  | 10 | 5       | 8            | 22           | 30  | 16   | 6  | 24   | 8  | G 1/8 | 24 | 10   | 11,5 | 200           | 15                            |
| 27  | 10 | M8  | 12 | 4  | 96  | 76  | 21 | 6       | 9            | 25           | 35  | 20   | 7  | 30   | 10 | G 1/8 | 28 | 9,5  | 11,5 | 289           | 20                            |
| 35  | 12 | M10 | 15 | 4  | 106 | 84  | 23 | 8       | 12           | 32           | 45  | 24   | 9  | 36   | 12 | G 1/8 | 32 | 9,5  | 10   | 396           | 32                            |
| 40  | 12 | M10 | 15 | 4  | 121 | 90  | 26 | 10      | 18           | 40           | 50  | 32   | 10 | 44   | 12 | G 1/8 | 36 | 10   | 10   | 503           | 35                            |
| 50  | 14 | M12 | 18 | 5  | 130 | 101 | 28 | 12      | 25           | 49           | 61  | 32   | 12 | 46   | 14 | G 1/8 | 42 | 10   | 10   | 793           | 44                            |
| 58  | 16 | M14 | 21 | 5  | 140 | 110 | 33 | 14      | 26           | 54           | 70  | 32   | 14 | 48   | 16 | G 1/4 | 45 | 12   | 14   | 1181          | 53                            |
| 70  | 18 | M16 | 24 | 5  | 151 | 122 | 35 | 16      | 35           | 67           | 82  | 35   | 16 | 53   | 18 | G 1/4 | 50 | 14   | 16   | 1474          | 64                            |
| 85  | 20 | M18 | 27 | 6  | 168 | 128 | 36 | 18      | 40           | 76           | 98  | 44,5 | 18 | 64,5 | 20 | G 1/4 | 60 | 12,5 | 14   | 2033          | 89                            |
| 100 | 24 | M20 | 30 | 6  | 191 | 142 | 45 | 20      | 40           | 80           | 114 | 50   | 20 | 74   | 24 | G 1/4 | 70 | 14   | 19   | 3250          | 110                           |

## ACCESSORIES

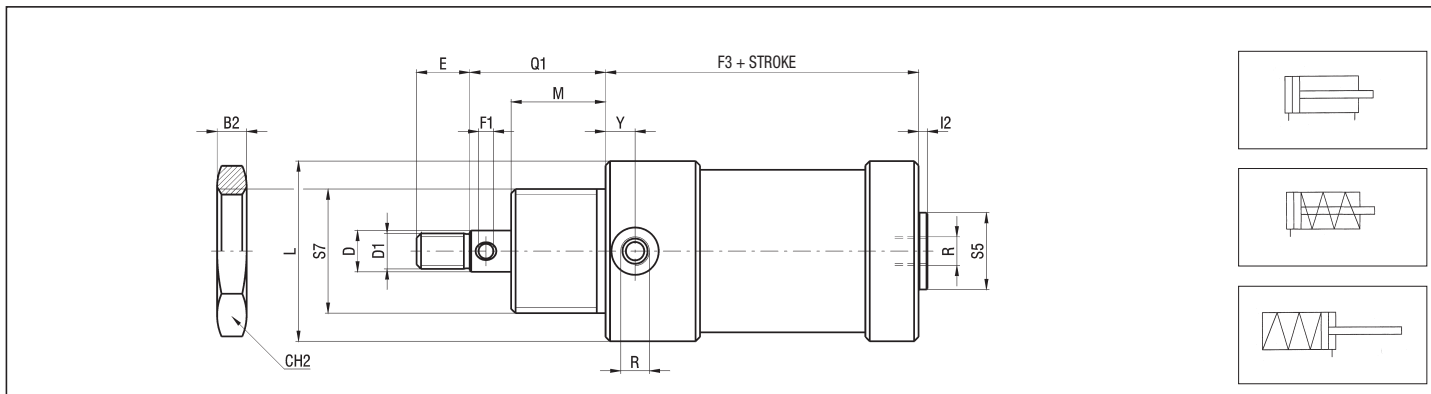
### PIVOT FOR FEMALE REAR HINGE - STEEL - HB/SEC Ø

| Ø   | BU | EK<br>f7 | EL | WEIGHT<br>(g) |
|-----|----|----------|----|---------------|
| 20  | 28 | 5        | 23 | 4,5           |
| 27  | 31 | 6        | 26 | 7             |
| 35  | 38 | 8        | 33 | 15            |
| 40  | 47 | 10       | 41 | 29            |
| 50  | 56 | 12       | 50 | 50            |
| 58  | 62 | 14       | 55 | 76            |
| 70  | 75 | 16       | 68 | 118           |
| 85  | 84 | 18       | 77 | 168           |
| 100 | 88 | 20       | 81 | 217           |



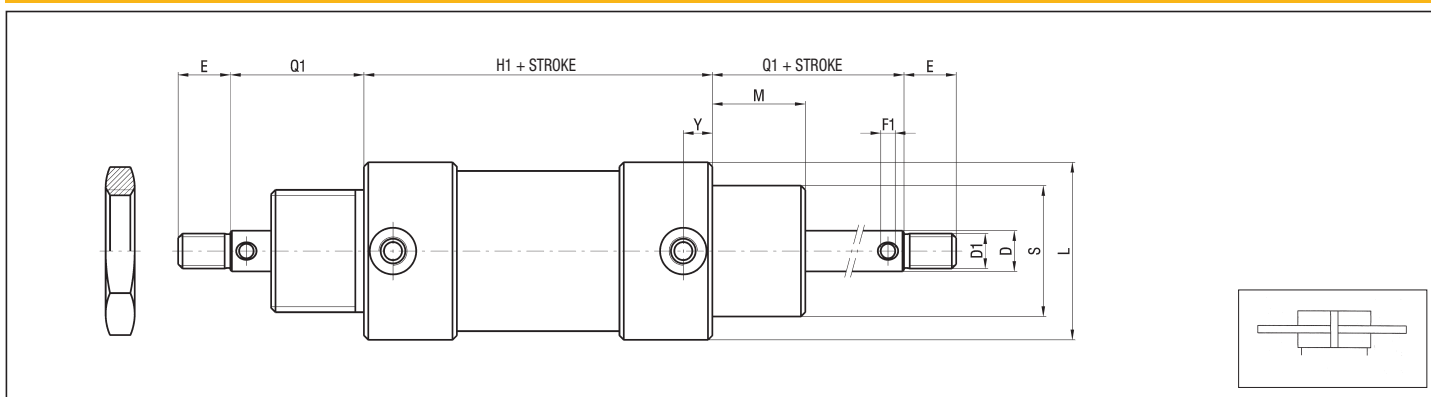
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### BASIC CYLINDER SCREW-MOUNTED - VB



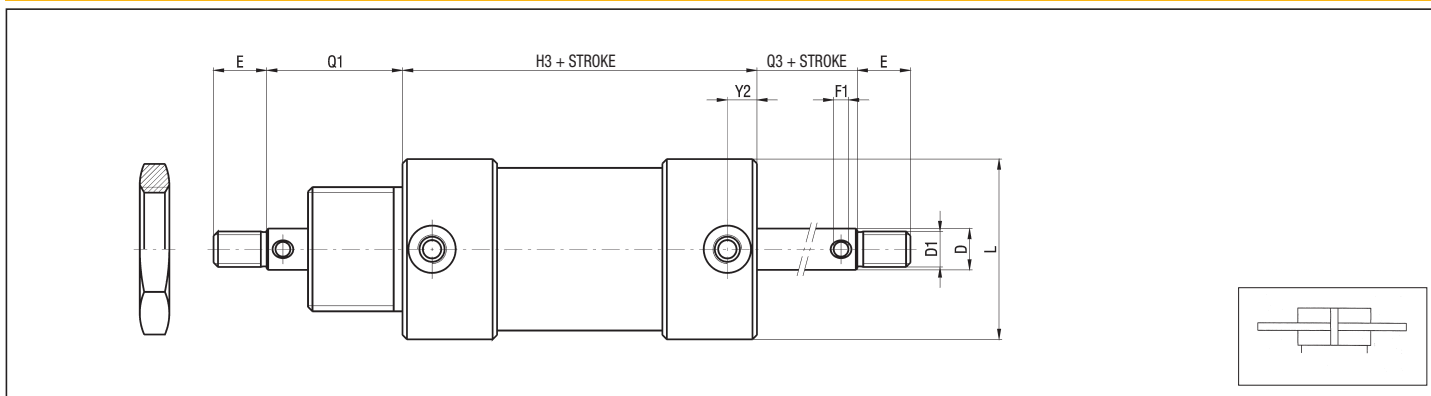
P.S.: End cap nut (HB/DT Ø) supplied as standard. Contact the commercial office for further nuts.

### THROUGH ROD



P.S.: End cap nut (HB/DT Ø) supplied as standard. Contact the commercial office for further nuts.

### THROUGH ROD, REDUCED END CAP

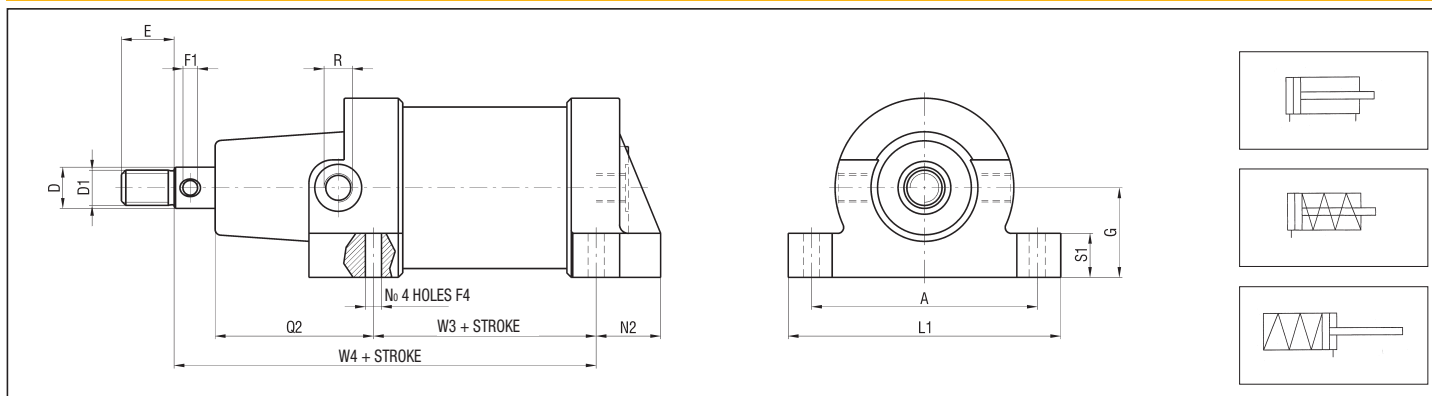


P.S.: End cap nut (HB/DT Ø) supplied as standard. Contact the commercial office for further nuts.

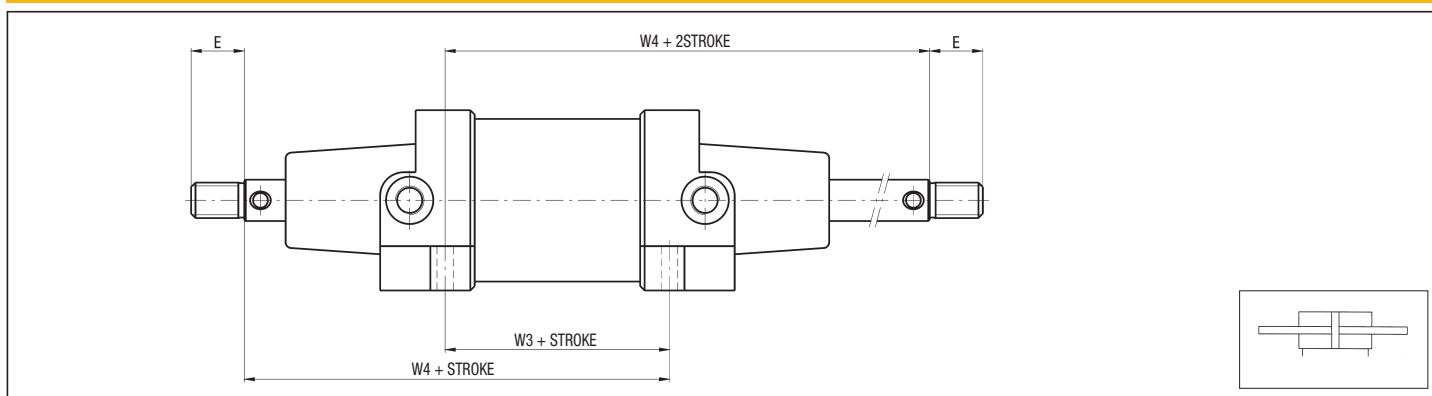
### DIMENSIONS AND WEIGHTS BASIC CYLINDER VB

| Ø   | B2 | CH2 | D  | D1  | E  | F1 | F3   | H1   | H3   | I2  | L   | M    | Q1   | Q3 | R     | S  | S5 | S7    | Y    | Y2   | WEIGHT (g) | INCREM. (g) every 10 mm |
|-----|----|-----|----|-----|----|----|------|------|------|-----|-----|------|------|----|-------|----|----|-------|------|------|------------|-------------------------|
| 20  | 5  | 32  | 8  | M6  | 9  | 3  | 41   | 58   | 61   | 3,5 | 30  | 16   | 24   | 8  | G 1/8 | 24 | 14 | M24x2 | 10   | 11,5 | 129        | 15                      |
| 27  | 6  | 35  | 10 | M8  | 12 | 4  | 45,5 | 60,5 | 62,5 | 3,5 | 35  | 20   | 30   | 10 | G 1/8 | 28 | 14 | M28x2 | 9,5  | 11,5 | 160        | 20                      |
| 35  | 7  | 40  | 12 | M10 | 15 | 4  | 47,5 | 61,5 | 63,5 | 3,5 | 45  | 24   | 36   | 12 | G 1/8 | 32 | 18 | M32x2 | 9,5  | 10   | 299,5      | 32                      |
| 40  | 8  | 45  | 12 | M10 | 15 | 4  | 51   | 68   | 69   | 3   | 50  | 32   | 44   | 12 | G 1/8 | 36 | 24 | M36x3 | 10   | 10   | 416        | 35                      |
| 50  | 10 | 50  | 14 | M12 | 18 | 5  | 56   | 70   | 73   | 3   | 61  | 32   | 46   | 14 | G 1/8 | 42 | 26 | M42x3 | 10   | 10   | 691        | 44                      |
| 58  | 10 | 55  | 16 | M14 | 21 | 5  | 59   | 75   | 77   | 4   | 70  | 32   | 48   | 16 | G 1/4 | 45 | 30 | M45x3 | 12   | 14   | 1028       | 53                      |
| 70  | 10 | 60  | 18 | M16 | 24 | 5  | 63   | 80   | 86   | 4   | 82  | 35   | 53   | 18 | G 1/4 | 50 | 30 | M50x3 | 14   | 16   | 1388       | 64                      |
| 85  | 12 | 70  | 20 | M18 | 27 | 6  | 67,5 | 84   | 88,5 | 4   | 98  | 44,5 | 64,5 | 20 | G 1/4 | 60 | 40 | M60x4 | 12,5 | 14   | 2024       | 89                      |
| 100 | 14 | 85  | 24 | M20 | 30 | 6  | 72   | 89   | 90   | 4   | 114 | 50   | 74   | 24 | G 1/4 | 70 | 40 | M70x4 | 14   | 19   | 3060       | 110                     |

BASIC CYLINDER FEET-MOUNTED - PB



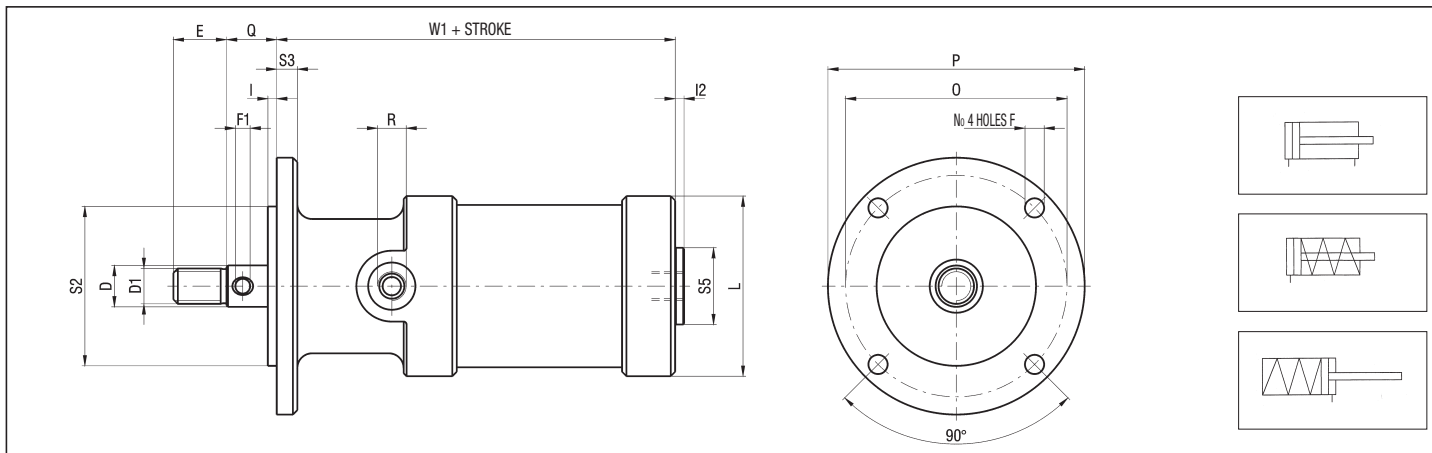
THROUGH ROD



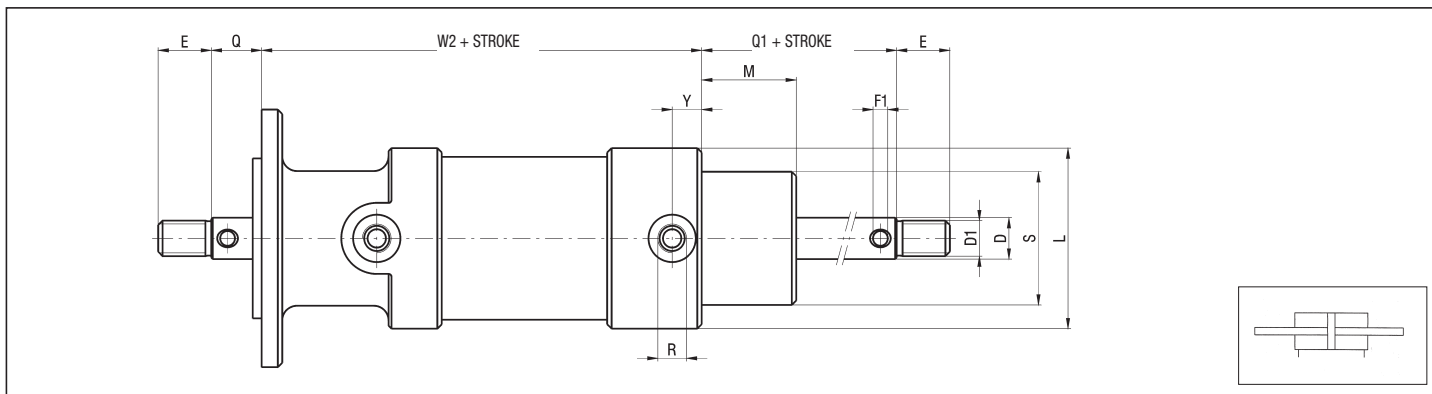
DIMENSIONS AND WEIGHTS BASIC CYLINDER PB

| Ø   | A   | D  | D1  | E  | F1 | F4   | G    | L1  | N2 | Q2 | R     | S1 | W3 | W4  | WEIGHT (g) | INCREMENT (g) every 10 mm |
|-----|-----|----|-----|----|----|------|------|-----|----|----|-------|----|----|-----|------------|---------------------------|
| 20  | 42  | 8  | M6  | 9  | 3  | 4,25 | 17   | 52  | 13 | 36 | G 1/8 | 8  | 18 | 62  | 181        | 15                        |
| 27  | 45  | 10 | M8  | 12 | 4  | 4,5  | 19,5 | 55  | 17 | 40 | G 1/8 | 10 | 20 | 70  | 269        | 20                        |
| 35  | 57  | 12 | M10 | 15 | 4  | 5,5  | 22,5 | 69  | 17 | 44 | G 1/8 | 12 | 21 | 77  | 359        | 32                        |
| 40  | 64  | 12 | M10 | 15 | 4  | 5,5  | 25   | 78  | 22 | 56 | G 1/8 | 14 | 20 | 88  | 502        | 35                        |
| 50  | 77  | 14 | M12 | 18 | 5  | 5,5  | 30,5 | 93  | 22 | 54 | G 1/8 | 16 | 26 | 94  | 743        | 44                        |
| 58  | 86  | 16 | M14 | 21 | 5  | 6,5  | 35   | 102 | 25 | 56 | G 1/4 | 16 | 27 | 99  | 996        | 53                        |
| 70  | 100 | 18 | M16 | 24 | 5  | 6,5  | 41   | 118 | 26 | 61 | G 1/4 | 18 | 28 | 107 | 1363       | 64                        |
| 85  | 118 | 20 | M18 | 27 | 6  | 8,5  | 49   | 138 | 27 | 72 | G 1/4 | 20 | 30 | 122 | 2043       | 89                        |
| 100 | 136 | 24 | M20 | 30 | 6  | 8,5  | 57   | 158 | 28 | 76 | G 1/4 | 22 | 33 | 133 | 3019       | 110                       |

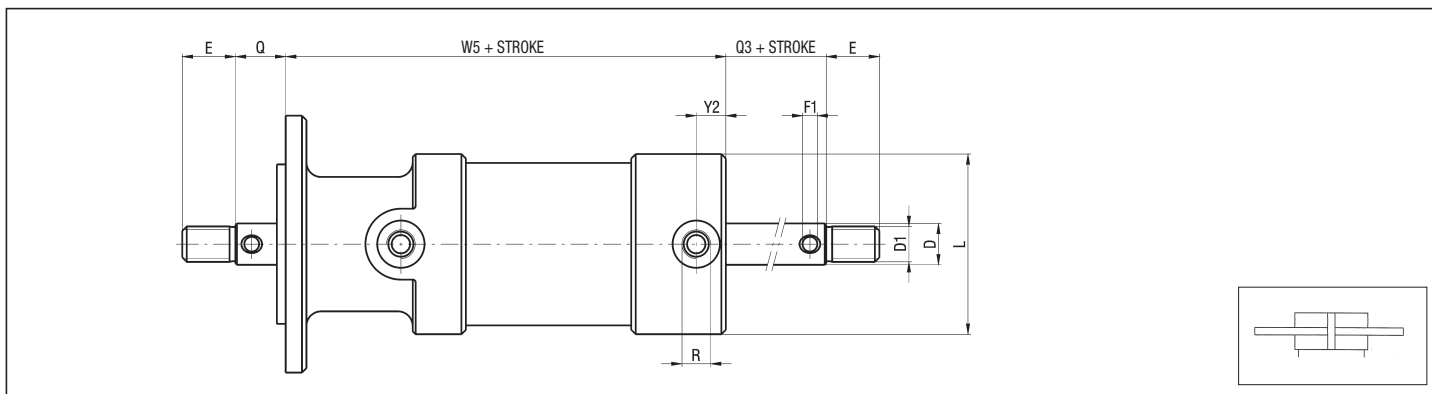
### BASIC CYLINDER FRONT FLANGE-MOUNTED - FAB



### THROUGH ROD



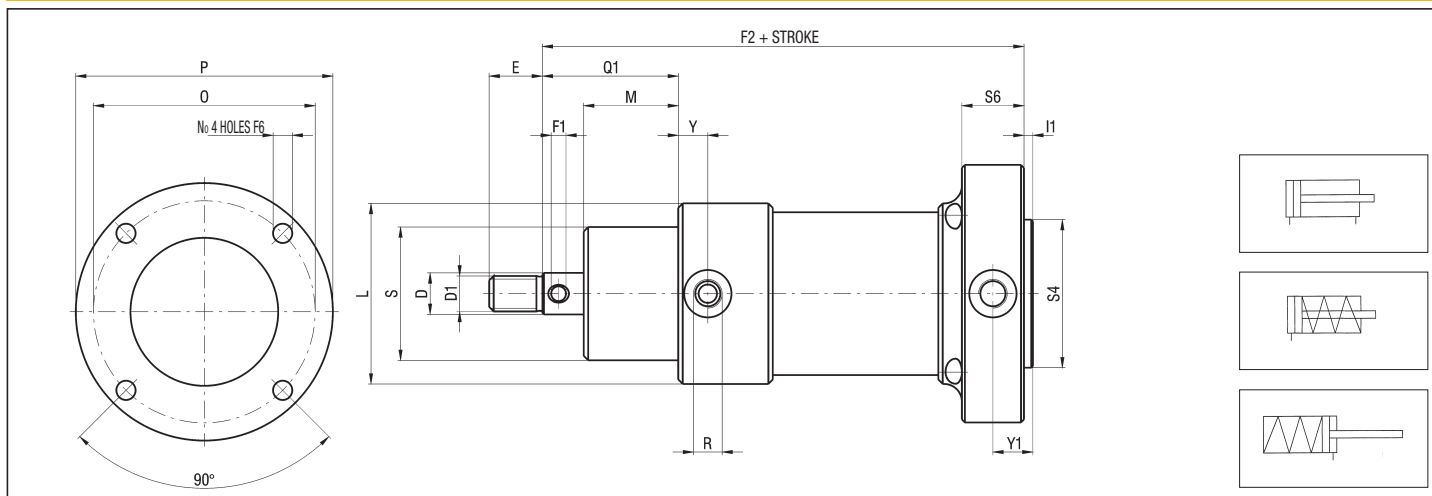
### THROUGH ROD, REDUCED END CAP



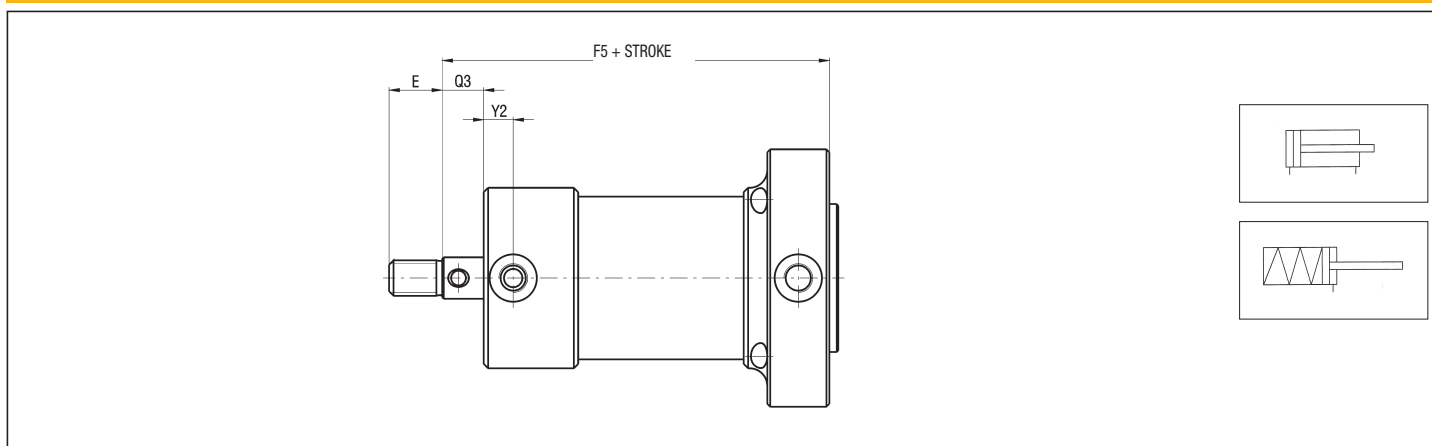
### DIMENSIONS AND WEIGHTS BASIC CYLINDER - FAB

| Ø   | D  | D1  | E  | F    | F1 | I | I2  | L   | M    | O   | P   | Q  | Q1   | Q3 | R     | S  | S2 | S3 | S5 | W1   | W2    | W5   | Y    | Y2   | WEIGHT (g) | INCREM. (g) every 10 mm |
|-----|----|-----|----|------|----|---|-----|-----|------|-----|-----|----|------|----|-------|----|----|----|----|------|-------|------|------|------|------------|-------------------------|
| 20  | 8  | M6  | 9  | 4,2  | 3  | 2 | 3,5 | 30  | 16   | 39  | 50  | 10 | 24   | 8  | G 1/8 | 24 | 23 | 4  | 14 | 55   | 72    | 75   | 10   | 11,5 | 91         | 15                      |
| 27  | 10 | M8  | 12 | 4,5  | 4  | 2 | 3,5 | 35  | 20   | 48  | 58  | 12 | 30   | 10 | G 1/8 | 28 | 30 | 6  | 14 | 63,5 | 78,5  | 80,5 | 9,5  | 11,5 | 178        | 20                      |
| 35  | 12 | M10 | 15 | 5,5  | 4  | 2 | 3,5 | 45  | 24   | 54  | 66  | 14 | 36   | 12 | G 1/8 | 32 | 36 | 6  | 18 | 69,5 | 83,5  | 85,5 | 9,5  | 10   | 317        | 32                      |
| 40  | 12 | M10 | 15 | 6,5  | 4  | 3 | 3   | 50  | 32   | 57  | 69  | 15 | 44   | 12 | G 1/8 | 36 | 40 | 7  | 24 | 80   | 97    | 98   | 10   | 10   | 427        | 35                      |
| 50  | 14 | M12 | 18 | 6,5  | 5  | 3 | 3   | 61  | 32   | 75  | 87  | 17 | 46   | 14 | G 1/8 | 42 | 54 | 7  | 26 | 85   | 99    | 102  | 10   | 10   | 689        | 44                      |
| 58  | 16 | M14 | 21 | 6,5  | 5  | 3 | 4   | 70  | 32   | 82  | 100 | 19 | 48   | 16 | G 1/4 | 45 | 60 | 8  | 30 | 88   | 104   | 106  | 12   | 14   | 915        | 53                      |
| 70  | 18 | M16 | 24 | 8,5  | 5  | 4 | 4   | 82  | 35   | 100 | 119 | 22 | 53   | 18 | G 1/4 | 50 | 70 | 10 | 30 | 94   | 111   | 117  | 14   | 16   | 1244       | 64                      |
| 85  | 20 | M18 | 27 | 10,5 | 6  | 4 | 4   | 98  | 44,5 | 120 | 140 | 24 | 64,5 | 20 | G 1/4 | 60 | 80 | 11 | 40 | 103  | 119,5 | 124  | 12,5 | 14   | 2113       | 89                      |
| 100 | 24 | M20 | 30 | 10,5 | 6  | 4 | 4   | 114 | 50   | 137 | 160 | 28 | 74   | 24 | G 1/4 | 70 | 88 | 12 | 40 | 118  | 135   | 136  | 14   | 19   | 3200       | 110                     |

## BASIC CYLINDER REAR FLANGE-MOUNTED - FPB



## REDUCED END CAP



## DIMENSIONS AND WEIGHTS BASIC CYLINDER FPB

| Ø   | D  | D1  | E  | F1 | F2  | F5  | F6   | I1 | L   | M    | O   | P   | Q1   | Q3 | R     | S  | S4 | S6 | Y    | Y1   | Y2   | WEIGHT (g) | INCREM. (g) every 10 mm |
|-----|----|-----|----|----|-----|-----|------|----|-----|------|-----|-----|------|----|-------|----|----|----|------|------|------|------------|-------------------------|
| 20  | 8  | M6  | 9  | 3  | 78  | 65  | 4,2  | 2  | 30  | 16   | 39  | 50  | 24   | 8  | G 1/8 | 24 | 23 | 18 | 10   | 11   | 11,5 | 91         | 15                      |
| 27  | 10 | M8  | 12 | 4  | 89  | 69  | 4,5  | 2  | 35  | 20   | 48  | 58  | 30   | 10 | G 1/8 | 28 | 30 | 19 | 9,5  | 11,5 | 11,5 | 178        | 20                      |
| 35  | 12 | M10 | 15 | 4  | 97  | 75  | 5,5  | 2  | 45  | 24   | 59  | 69  | 36   | 12 | G 1/8 | 32 | 38 | 19 | 9,5  | 11,5 | 10   | 317        | 32                      |
| 40  | 12 | M10 | 15 | 4  | 109 | 78  | 5,5  | 3  | 50  | 32   | 62  | 74  | 44   | 12 | G 1/8 | 36 | 40 | 21 | 10   | 13,5 | 10   | 427        | 35                      |
| 50  | 14 | M12 | 18 | 5  | 113 | 84  | 6,5  | 3  | 61  | 32   | 75  | 87  | 46   | 14 | G 1/8 | 42 | 50 | 21 | 10   | 13,5 | 10   | 689        | 44                      |
| 58  | 16 | M14 | 21 | 5  | 122 | 92  | 8,5  | 3  | 70  | 32   | 86  | 100 | 48   | 16 | G 1/4 | 45 | 62 | 24 | 12   | 15   | 14   | 915        | 53                      |
| 70  | 18 | M16 | 24 | 5  | 131 | 102 | 8,5  | 4  | 82  | 35   | 100 | 119 | 53   | 18 | G 1/4 | 50 | 72 | 22 | 14   | 15   | 16   | 1244       | 64                      |
| 85  | 20 | M18 | 27 | 6  | 147 | 107 | 10,5 | 4  | 98  | 44,5 | 120 | 140 | 64,5 | 20 | G 1/4 | 60 | 80 | 25 | 12,5 | 16,5 | 14   | 2113       | 89                      |
| 100 | 24 | M20 | 30 | 6  | 164 | 115 | 10,5 | 4  | 114 | 50   | 137 | 160 | 74   | 24 | G 1/4 | 70 | 88 | 28 | 14   | 18   | 19   | 3200       | 110                     |