

## AVENTICS Series SH

The AVENTICS Series GPC is distinguished by high side load capacity and torsion protection. The drive and guide rods are robust and precise with high torque and transverse force absorption.



## Technical data

|                                    |                      |
|------------------------------------|----------------------|
| Industry                           | Industrial           |
| Piston Ø                           | 25 mm                |
| Piston rod Ø                       | 10 mm                |
| Stroke                             | 75 mm                |
| Functional principle               | Double-acting        |
| Bearing type                       | ball bearing         |
| Magnetic piston                    | with magnetic piston |
| Cushioning                         | elastic              |
| Min. working pressure              | 1.5 bar              |
| Max. working pressure              | 10 bar               |
| Min. ambient temperature           | -10 °C               |
| Min. ambient temperature           | 14 °F                |
| Max. ambient temperature           | 70 °C                |
| Max. ambient temperature           | 158 °F               |
| Min. oil content of compressed air | 0 mg/m <sup>3</sup>  |
| Max. oil content of compressed air | 5 mg/m <sup>3</sup>  |
| Port                               | G 1/8                |
| Retracting piston force            | 260 N                |
| Retracting piston force            | 58.45 lbf            |

# Guide cylinders, Series GPC-BV

0822063105

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|                                        |                |
|----------------------------------------|----------------|
| Extracting piston force                | 309 N          |
| Extracting piston force                | 69.46 lbf      |
| Max. speed                             | 0.8 m/s        |
| Impact energy                          | 0.35 J         |
| Medium                                 | Compressed air |
| Max. particle size                     | 50 µm          |
| Pressure for determining piston forces | 6,3 bar        |
| Weight                                 | 1.45 kg        |

## Material

|                      |                      |
|----------------------|----------------------|
| Housing material     | Aluminum             |
| Surface housing      | anodized             |
| Seal material        | Polyurethane         |
| Material front plate | Steel, chrome-plated |
| Surface front plate  | galvanized           |
| Material guide rods  | Steel, chrome-plated |
| Surface guide rods   | hardened             |
| Bearing material     | Steel, chrome-plated |
| Surface bearing      | hardened             |
| Material piston rod  | Stainless Steel      |
| Part No.             | 0822063105           |

## Technical information

Note: Only the Ø10 variants fits to sensor series ST4. The sensor series ST6 and SN3 can be used for all other Ø variants.

The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in <https://www.emerson.com/en-us/support>).

## Dimensions

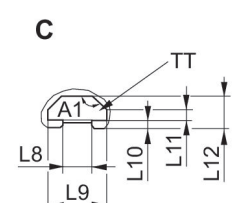
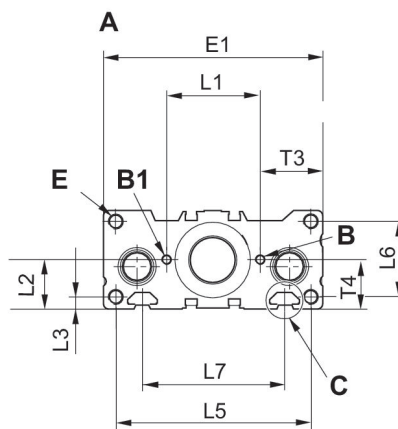
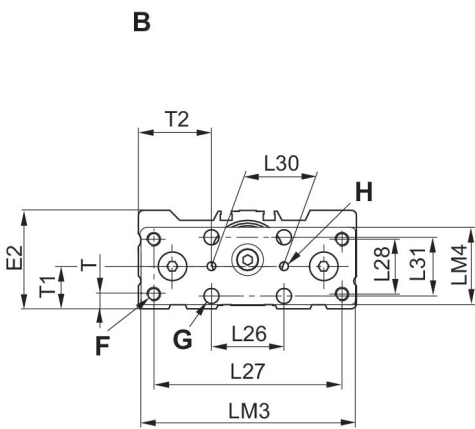
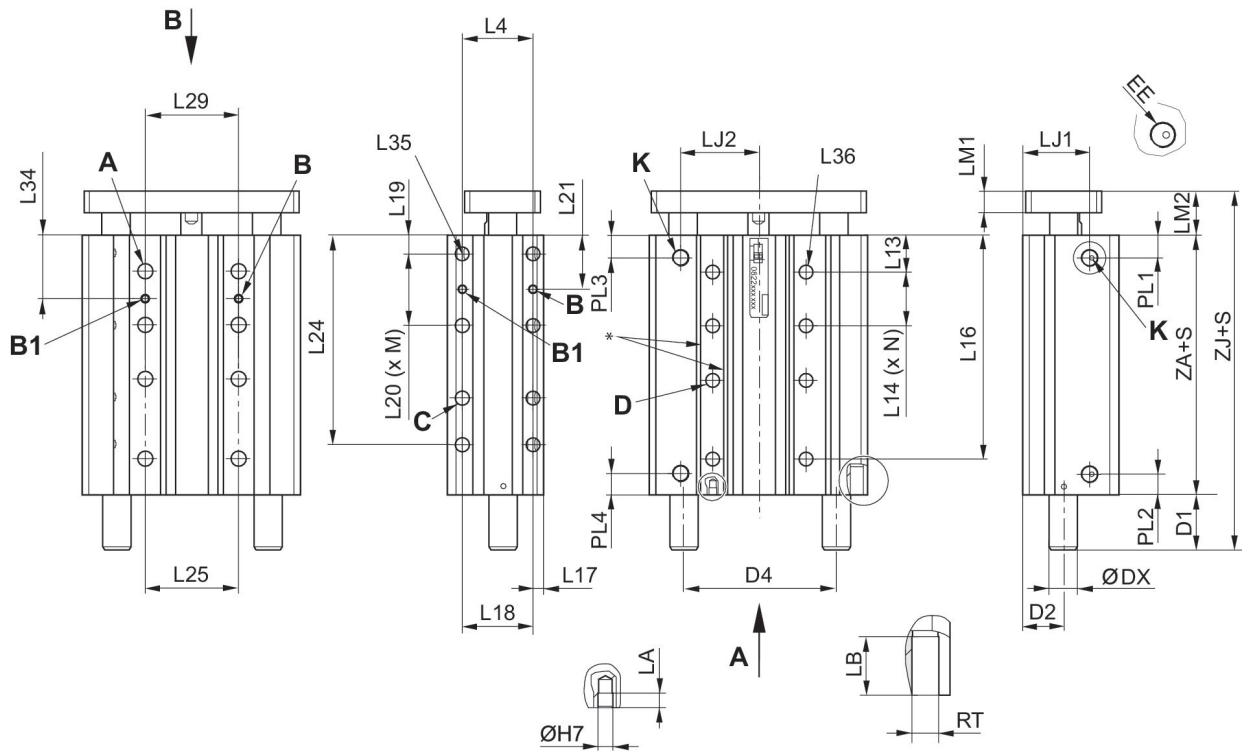
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Ø 25 ... 100



\* Suitable for screws according to ISO 4762

S = stroke

Note: Only the Ø10 variants fits to sensor series ST4. The sensor series ST6 and SN3 can be used for all other Ø variants.

| Piston Ø | S=10 L36 | S=20 L36 | S=25 L36 | S=30 L36 | S=40 L36 | S=50 L36 | S=75 L36 | S=100 L36 | S=125 L36 |
|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|
| 25       | 4        | 4        | 4        | 4        | 6        | 6        | 8        | 10        | 10        |
| 32       | 4        | 4        | 4        | 4        | 4        | 6        | 6        | 8         | 10        |
| 40       | 4        | 4        | 4        | 4        | 4        | 4        | 6        | 6         | 8         |
| 50       | 4        | 4        | 4        | 4        | 4        | 4        | 4        | 6         | 8         |
| 63       | 4        | 4        | 4        | 4        | 4        | 4        | 4        | 6         | 6         |

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| Piston Ø | S=160 L36 | S=200 L36 | S=10 ZJ | S=20 ZJ | S=25 ZJ | S=30 ZJ | S=40 ZJ | S=50 ZJ | S=75 ZJ |
|----------|-----------|-----------|---------|---------|---------|---------|---------|---------|---------|
| 25       | 10        | 10        | 76.5    | 76.5    | 76.5    | 76.5    | 86.5    | 86.5    | 86.5    |
| 32       | 10        | 10        | -       | -       | 85      | -       | -       | 85      | 100     |
| 40       | 10        | 10        | -       | -       | 85      | -       | -       | 85      | 100.5   |
| 50       | 8         | 10        | -       | -       | 89.5    | -       | -       | 89.5    | 115.5   |
| 63       | 8         | 10        | -       | -       | 89.5    | -       | -       | 89.5    | 115.5   |

| Piston Ø | S=100 ZJ | S=125 ZJ | S=160 ZJ | S=200 ZJ |
|----------|----------|----------|----------|----------|
| 25       | 86.5     | 104.5    | 104.5    | 104.5    |
| 32       | 100      | 116      | 116      | 116      |
| 40       | 100.5    | 116.5    | 116.5    | 116.5    |
| 50       | 115.5    | 133.5    | 133.5    | 133.5    |
| 63       | 115.5    | 133.5    | 133.5    | 133.5    |

| Piston Ø | S=10 L34 | S=20 L34 | S=25 L34 | S=30 L34 | S=40 L34 | S=50 L34 | S=75 L34 | S=100 L34 | S=125 L34 |
|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|
| 25       | 26       | 29       | 29       | 29       | 29       | 29       | 29       | 29        | 29        |
| 32       | 35.5     | 35.5     | 35.5     | 37       | 37       | 37       | 37       | 37        | 37        |
| 40       | 35       | 35       | 35       | 40       | 40       | 40       | 40       | 40        | 40        |
| 50       | 35.5     | 35.5     | 35.5     | 47       | 47       | 47       | 47       | 47        | 47        |
| 63       | 38       | 38       | 38       | 38       | 38       | 38       | 54       | 54        | 54        |

| Piston Ø | S=160 L34 | S=200 L34 | S=10 L35 | S=20 L35 | S=25 L35 | S=30 L35 | S=40 L35 | S=50 L35 | S=75 L35 |
|----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|
| 25       | 29        | 29        | 4        | 4        | 4        | 4        | 6        | 6        | 8        |
| 32       | 37        | 37        | 4        | 4        | 4        | 4        | 4        | 4        | 6        |
| 40       | 40        | 40        | 4        | 4        | 4        | 4        | 4        | 4        | 6        |
| 50       | 47        | 47        | 4        | 4        | 4        | 4        | 4        | 4        | 4        |
| 63       | 54        | 54        | 4        | 4        | 4        | 4        | 4        | 4        | 4        |

| Piston Ø | S=100 L35 | S=125 L35 | S=160 L35 | S=200 L35 |
|----------|-----------|-----------|-----------|-----------|
| 25       | 8         | 10        | 10        | 10        |
| 32       | 8         | 8         | 10        | 10        |
| 40       | 6         | 6         | 8         | 10        |
| 50       | 6         | 6         | 8         | 8         |
| 63       | 4         | 6         | 6         | 8         |

S = stroke

| Piston Ø | S=10 M | S=20 M | S=25 M | S=30 M | S=40 M | S=50 M | S=75 M | S=100 M | S=125 M |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| 25       | 1      | 1      | 1      | 1      | 1      | 1      | 2      | 3       | 3       |
| 32       | -      | -      | 1      | 1      | 1      | 1      | 2      | 2       | 3       |
| 40       | -      | -      | 1      | 1      | 1      | 1      | 1      | 2       | 2       |
| 50       | -      | -      | 1      | 1      | 1      | 1      | 1      | 1       | 2       |
| 63       | -      | -      | 1      | 1      | 1      | 1      | 1      | 1       | 1       |

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| Piston Ø | S=160 M | S=200 M | S=40 L24 | S=50 L24 | S=75 L24 | S=100 L24 | S=125 L24 | S=160 L24 | S=200 L24 |
|----------|---------|---------|----------|----------|----------|-----------|-----------|-----------|-----------|
| 25       | 3       | 3       | 60       | 70       | 95       | -         | 145       | 180       | 220       |
| 32       | 3       | 3       | -        | -        | -        | 122.5     | -         | 182.5     | 222.5     |
| 40       | 3       | 3       | -        | -        | 91       | -         | -         | -         | 216       |
| 50       | 2       | 3       | -        | -        | -        | 116       | -         | 176       | -         |
| 63       | 2       | 2       | -        | -        | -        | -         | 140       | -         | 217       |

S = stroke

| Piston Ø | S=20 L20 | S=25 L20 | S=30 L20 | S=40 L20 | S=50 L20 | S=75 L20 | S=100 L20 | S=125 L20 | S=160 L20 |
|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|
| 25       | 22       | 32       | 32       | 32       | 32       | 32       | 32        | 32        | 32        |
| 32       | 35       | 35       | 42       | 42       | 42       | 42       | 42        | 42        | 42        |
| 40       | 30       | 30       | 53       | 53       | 53       | 53       | 53        | 53        | 53        |
| 50       | 30       | 30       | 30       | 30       | 30       | 63       | 63        | 63        | 63        |
| 63       | 30       | 30       | 30       | 30       | 30       | 30       | 30        | 30        | 30        |

| Piston Ø | S=200 L20 | S=20 L21 | S=25 L21 | S=30 L21 | S=40 L21 | S=50 L21 | S=75 L21 | S=100 L21 | S=125 L21 |
|----------|-----------|----------|----------|----------|----------|----------|----------|-----------|-----------|
| 25       | 32        | 19       | 24       | 24       | 24       | 24       | 24       | 24        | 24        |
| 32       | 42        | 27.5     | 27.5     | 31       | 31       | 31       | 31       | 31        | 31        |
| 40       | 53        | 25       | 25       | 36.5     | 36.5     | 36.5     | 36.5     | 36.5      | 36.5      |
| 50       | 63        | 27       | 27       | 27       | 27       | 27       | 43.5     | 43.5      | 43.5      |
| 63       | 30        | 27       | 27       | 27       | 27       | 27       | 52       | 52        | 52        |

| Piston Ø | S=160 L21 | S=200 L21 |
|----------|-----------|-----------|
| 25       | 24        | 24        |
| 32       | 31        | 31        |
| 40       | 36.5      | 36.5      |
| 50       | 43.5      | 43.5      |
| 63       | 52        | 52        |

S = stroke

| Piston Ø | S=10 N | S=20 N | S=25 N | S=30 N | S=40 N | S=50 N | S=75 N | S=100 N | S=125 N |
|----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| 25       | 1      | 1      | 1      | 1      | 1      | 2      | 3      | 3       | 3       |
| 32       | -      | -      | 1      | 1      | 1      | 1      | 2      | 3       | 3       |
| 40       | -      | -      | 1      | 1      | 1      | 1      | 2      | 2       | 3       |
| 50       | -      | -      | 1      | 1      | 1      | 1      | 1      | 2       | 2       |
| 63       | -      | -      | 1      | 1      | 1      | 1      | 1      | 1       | 2       |

| Piston Ø | S=160 N | S=200 N | S=40 L16 | S=50 L16 | S=100 L16 | S=125 L16 | S=160 L16 | S=200 L16 |
|----------|---------|---------|----------|----------|-----------|-----------|-----------|-----------|
| 25       | 3       | 3       | 65.5     | -        | 12.5      | 150.5     | 185.5     | 225.5     |
| 32       | 3       | 3       | -        | 76       | -         | 151       | 186       | 226       |
| 40       | 3       | 3       | -        | -        | -         | -         | 184       | 224       |
| 50       | 3       | 3       | -        | -        | -         | 148       | -         | 223       |
| 63       | 2       | 3       | -        | -        | 127       | -         | 187       | -         |

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| Piston Ø | S=10 D1 | S=20 D1 | S=25 D1 | S=30 D1 | S=40 D1 | S=50 D1 | S=75 D1 | S=100 D1 | S=125 D1 |
|----------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| 25       | 19      | 19      | 19      | 19      | 29      | 29      | 29      | 29       | 47       |
| 32       | -       | -       | 20      | 20      | 20      | 20      | 35      | 35       | 51       |
| 40       | -       | -       | 21.5    | 21.5    | 21.5    | 21.5    | 37      | 37       | 53       |
| 50       | -       | -       | 20      | 20      | 20      | 20      | 46      | 46       | 64       |
| 63       | -       | -       | 14      | 14      | 14      | 14      | 40      | 40       | 58       |

| Piston Ø | S=150 D1 | S=160 D1 | S=200 D1 | S=10 L14 | S=20 L14 | S=25 L14 | S=30 L14 | S=40 L14 | S=50 L14 |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 25       | 47       | 47       | 47       | 25       | 25       | 25       | 25       | 25       | 25       |
| 32       | 51       | 51       | 51       | 30       | 30       | 30       | 33       | 33       | 33       |
| 40       | 53       | 53       | 53       | 30       | 30       | 30       | 40       | 40       | 40       |
| 50       | 64       | 64       | 64       | 25       | 25       | 25       | 48       | 48       | 48       |
| 63       | 58       | 58       | 58       | 28       | 28       | 28       | 28       | 28       | 28       |

| Piston Ø | S=75 L14 | S=100 L14 | S=125 L14 | S=160 L14 | S=200 L14 |
|----------|----------|-----------|-----------|-----------|-----------|
| 25       | 25       | 25        | 25        | 25        | 25        |
| 32       | 33       | 33        | 33        | 33        | 33        |
| 40       | 40       | 40        | 40        | 40        | 40        |
| 50       | 48       | 48        | 48        | 48        | 48        |
| 63       | 60       | 60        | 60        | 60        | 60        |

S = stroke

| Piston Ø | A RTxLB | A1   | B ØdxLA | B1 ØdxD | C RTxLB | D Ø 1) | D2   | D4   | DX |
|----------|---------|------|---------|---------|---------|--------|------|------|----|
| 25       | M6x10   | 135° | 4x4     | 4x5     | M6x10   | 5.5    | 18   | 59   | 12 |
| 32       | M8x14   | 135° | 4x4     | 4x5     | M8x14   | 7.4    | 23   | 75.6 | 16 |
| 40       | M8x14   | 135° | 4x4     | 4x5     | M8x14   | 7.4    | 23   | 86   | 16 |
| 50       | M10x20  | 135° | 5x5     | 5x6     | M10x20  | 9.3    | 27.5 | 104  | 20 |
| 63       | M10x20  | 135° | 5x5     | 5x6     | M10x20  | 9.3    | 35   | 124  | 20 |

| Piston Ø | E RTxLB | E1  | E2   | F Ø 1) | G Ø 2) | H Ø 2) | K EE  | L1       | L2   |
|----------|---------|-----|------|--------|--------|--------|-------|----------|------|
| 25       | M6x12   | 95  | 43   | M6     | 6.5    | 4H8    | G 1/8 | 35 ±0,1  | 20.5 |
| 32       | M6x12   | 114 | 48.5 | M8     | 6.5    | 4H8    | G 1/8 | 44 ±0,1  | 24   |
| 40       | M8x16   | 124 | 54.5 | M8     | 8.5    | 4H8    | G 1/8 | 53 ±0,15 | 27   |
| 50       | M8x16   | 148 | 64   | M8     | 8.5    | 4H8    | G 1/4 | 66 ±0,15 | 32   |
| 63       | M10x20  | 162 | 78.5 | M10    | 10.5   | 5H8    | G 1/4 | 84 ±0,15 | 39   |

| Piston Ø | L3  | L4       | L5  | L6   | L7  | L8   | L9   | L10 | L11 |
|----------|-----|----------|-----|------|-----|------|------|-----|-----|
| 25       | 4.5 | 25 ±0,1  | 85  | 34   | 52  | 6.15 | 12   | 1.5 | 1.5 |
| 32       | 5   | 33 ±0,1  | 105 | 26   | 70  | 8.2  | 16.7 | 2.2 | 2.8 |
| 40       | 6   | 40 ±0,15 | 110 | 42   | 80  | 8.2  | 16.7 | 2.2 | 2.8 |
| 50       | 8   | 48 ±0,15 | 133 | 34.5 | 93  | 8.2  | 16.7 | 2.2 | 2.8 |
| 63       | 8   | 60 ±0,15 | 147 | 62   | 112 | 10.2 | 20.3 | 6   | 6   |

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| Piston Ø | L12 | L13  | L15 | L17 | L18 | L19 | L22 | L25 | L26 |
|----------|-----|------|-----|-----|-----|-----|-----|-----|-----|
| 25       | 5.5 | 16.5 | 25  | 5.5 | 25  | 8   | 32  | 32  | 30  |
| 32       | 9   | 20.5 | 33  | 6.5 | 33  | 10  | 42  | 42  | 32  |
| 40       | 9   | 20   | 40  | 6   | 40  | 10  | 53  | 53  | 42  |
| 50       | 9   | 23   | 48  | 7.5 | 48  | 12  | 63  | 63  | 53  |
| 63       | 16  | 24   | 60  | 11  | 60  | 12  | 80  | 80  | 63  |

| Piston Ø | L27 | L28 | L29      | L30     | L31  | LJ1  | LJ2  | LM1 | LM2  |
|----------|-----|-----|----------|---------|------|------|------|-----|------|
| 25       | 81  | 23  | 32 ±0,1  | 30 ±0,2 | 24   | 29.6 | 32   | 10  | 15.5 |
| 32       | 97  | 30  | 42 ±0,1  | 32 ±0,2 | 25   | 40   | 40.5 | 12  | 18.5 |
| 40       | 107 | 30  | 53 ±0,15 | 42 ±0,2 | 32.5 | 37.8 | 44   | 12  | 19.5 |
| 50       | 134 | 40  | 63 ±0,15 | 53 ±0,2 | 40   | 54.5 | 50.5 | 15  | 23.5 |
| 63       | 140 | 48  | 80 ±0,15 | 63 ±0,2 | 48   | 57   | 59   | 15  | 24   |

| Piston Ø | LM3 | LM4 | PL1  | PL2  | PL3  | PL4  | T   | T1        | T2        |
|----------|-----|-----|------|------|------|------|-----|-----------|-----------|
| 25       | 93  | 33  | 11   | 11   | 11   | 11   | 6.5 | 18 ±0,4   | 32,5 ±0,4 |
| 32       | 112 | 43  | 13.5 | 13.5 | 13.5 | 13.5 | 8   | 23 ±0,4   | 41 ±0,4   |
| 40       | 122 | 43  | 12   | 12   | 12   | 12   | 8   | 23 ±0,4   | 41 ±0,4   |
| 50       | 146 | 52  | 13   | 13   | 13   | 13   | 7.5 | 27,5 ±0,4 | 47,5 ±0,4 |
| 63       | 160 | 67  | 13.7 | 13.7 | 13.7 | 13.7 | 11  | 35 ±0,4   | 49,5 ±0,5 |

| Piston Ø | T3        | T4         | TT  | ZA    |
|----------|-----------|------------|-----|-------|
| 25       | 30 ±0,05  | 20,5 ±0,05 | N6  | 42 3) |
| 32       | 35 ±0,05  | 24 ±0,05   | N8  | 46.5  |
| 40       | 35,5 ±0,1 | 27 ±0,1    | N8  | 44    |
| 50       | 41 ±0,1   | 32 ±0,1    | N8  | 46    |
| 63       | 39 ±0,1   | 39 ±0,1    | N10 | 51    |

S = stroke

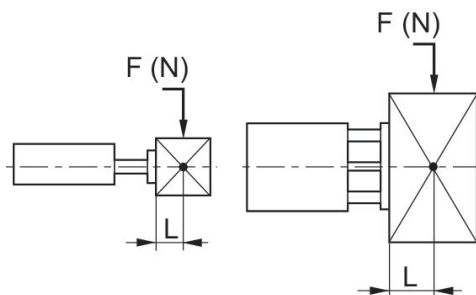
To determine the cylinder length (ZA) for intermediate strokes (i.e. stroke 10 with dia. 40), the next available standard stroke size must be used

1) Through hole with thread

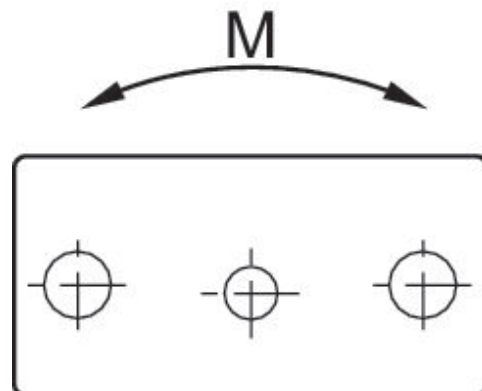
2) through-hole

3) For stroke 10/150, ZA = 52, for stroke 25, ZA = 47  
Two holes C-C 10 mm.

Permissible static side load F [N] at distance L



Permissible static moment M [Nm]



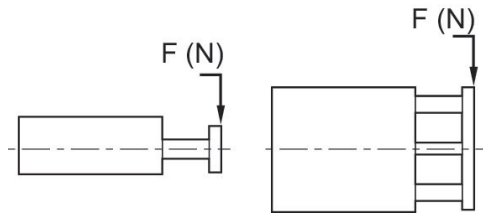
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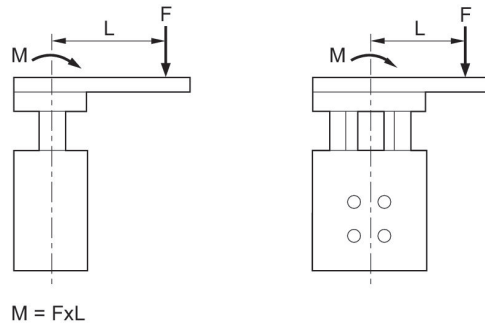
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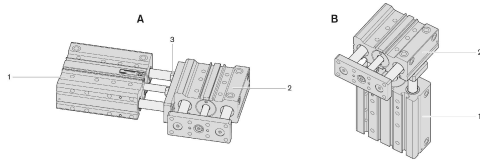
Permissible static side force  $F$  [N]



Permissible static moment  $M$  [Nm]



## GPC combinations



- 1) Cylinder 1
- 2) Cylinder 2
- 3) Screw



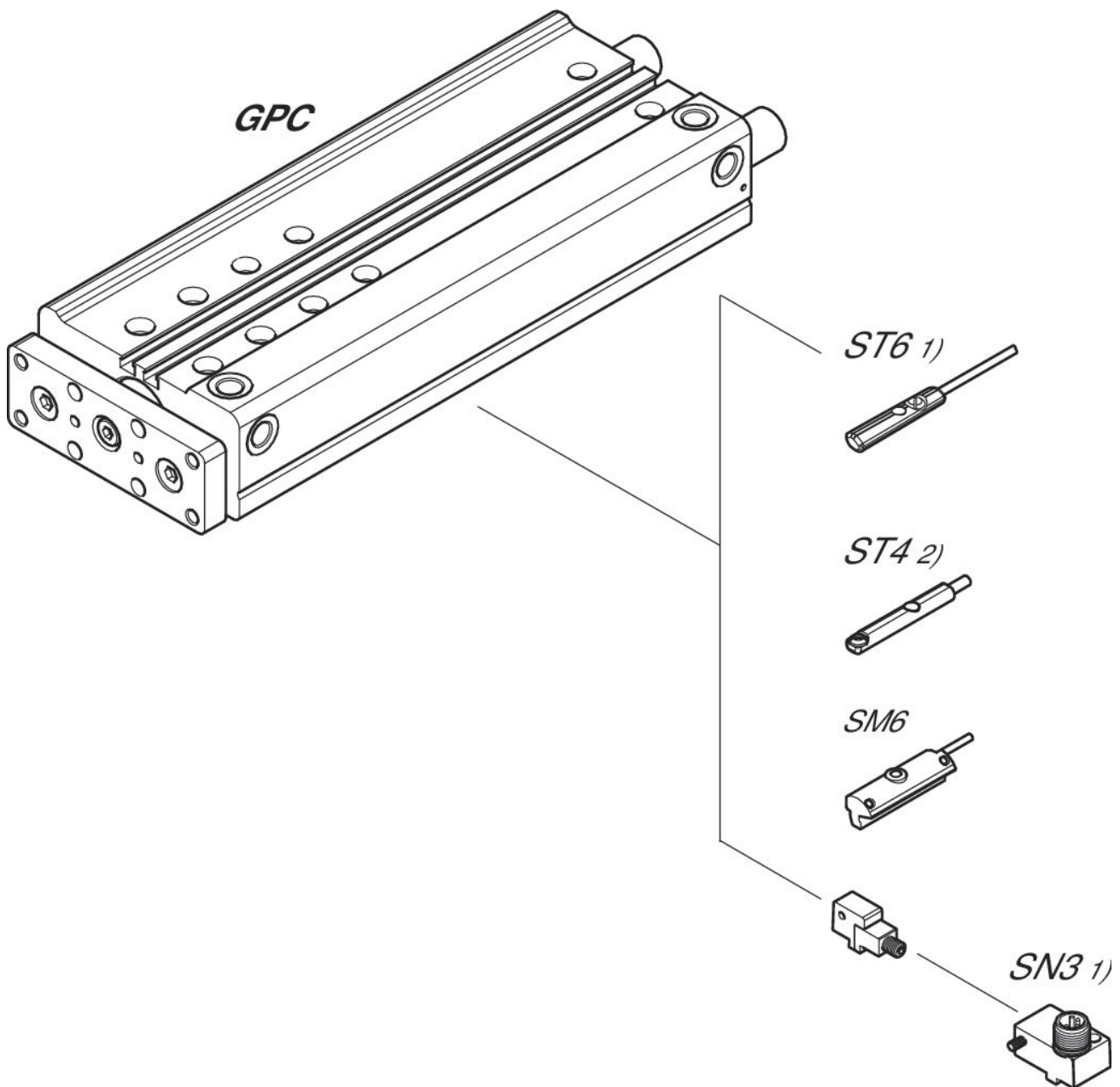
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## Overview drawing



1)  $\leq \text{Ø}12$  mm (GPC-BV, GPC-E, GPC-TL)

2) Only for  $\text{Ø}10$  mm (GPC-BV) and all  $\text{Ø}$  (GPC-ST)

NOTE: This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.