

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.

- Two guide rods with high side load capacity and high precision
- Anti-twist protection for more safety
- Stroke adjustment possible (GPC-E and GPC-ST)
- Compact design
- Cost-effective solution
- Direct combinations with Easy-2-Combine possible



Technical data

Industry

Industrial

Type

Basic version

Piston Ø 25 ... 100

Piston Ø

100 mm

Piston rod Ø

25 mm

Stroke

160 mm

Functional principle

Double-acting

Bearing type

Plain bearing

Magnetic piston

with magnetic piston

Cushioning

elastic cushioning

Min. working pressure

1 bar

Max. working pressure

8 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/m³

Max. oil content of compressed air

5 mg/m³

Port

G 3/8

Retracting piston force

4639 N

Retracting piston force	1042.85 lbf
Extracting piston force	4948 N
Extracting piston force	1112.31 lbf
Max. speed	0.4 m/s
Impact energy	1 J
Medium	Compressed air
Max. particle size	50 µm
Pressure for determining piston forces	6,3 bar
Weight	15.2 kg

Material

Housing material	Aluminum
Surface housing	anodized
Seal material	Polyurethane
Material front plate	Steel, chrome-plated
Surface front plate	galvanized
Material guide rods	Stainless Steel
Bearing material	Sintered bronze
Material piston rod	Stainless Steel
Part No.	R402000933

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.

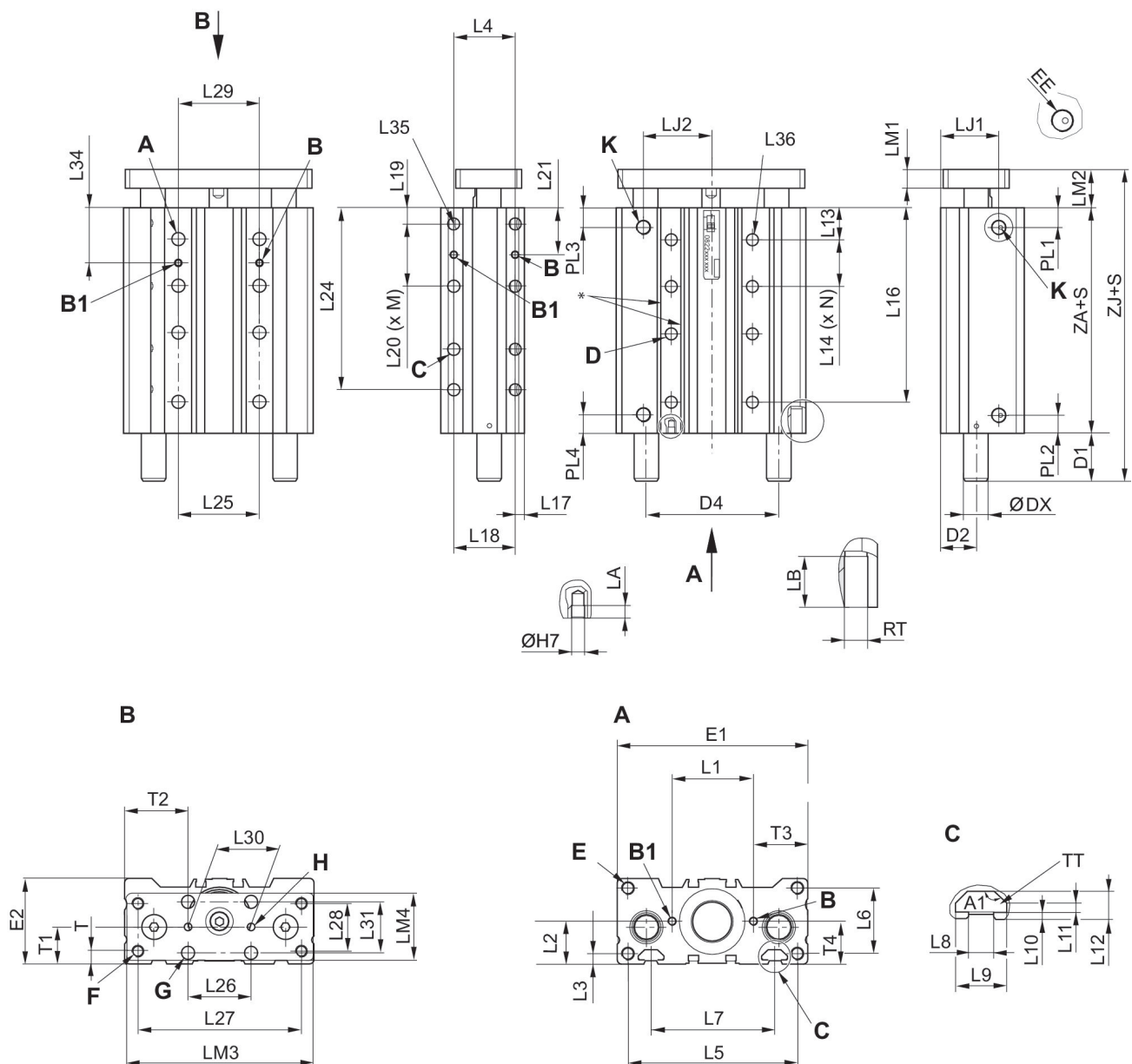
R402000933

Series GPC

2026-03-31

Dimensions

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.

Stroke-independent dimensions of piston Ø 25 ... 100 mm

Piston Ø	A RTxLB	A1	B ØdxLA	B1 ØdxD	C RTxLB	D Ø 1)	D2	D4	DX	E RTxLB
25	M6x10	135°	4x4	4x5	M6x10	5.5	18	59	16	M6x12
32	M8x14	135°	4x4	4x5	M8x14	7.4	23	75.6	20	M6x12
40	M8x14	135°	4x4	4x5	M8x14	7.4	23	86	20	M8x16
50	M10x20	135°	5x5	5x6	M10x20	9.3	27.5	104	25	M8x16
63	M10x20	135°	5x5	5x6	M10x20	9.3	35	124	25	M10x20
80	M12x24	135°	6x6	6x7	M12x25	11.2	39.5	152	32	M12x25
100	M12x24	135°	6x6	6x7	M12x25	11.2	39.5	174	32	M12x25

Piston Ø	E1	E2	F Ø 1)	G Ø 2)	H Ø 2)	K EE	L1	L2	L3	L4
25	95	43	M6	6.5	4H8	G 1/8	35 ±0,1	20.5	4.5	25 ±0,1
32	114	48.5	M8	6.5	4H8	G 1/8	44 ±0,1	24	5	33 ±0,1
40	124	54.5	M8	8.5	4H8	G 1/8	53 ±0,15	27	6	40 ±0,15
50	148	64	M8	8.5	4H8	G 1/4	66 ±0,15	32	8	48 ±0,15
63	162	78.5	M10	10.5	5H8	G 1/4	84 ±0,15	39	8	60 ±0,15
80	202	91.5	M12	10.5	5H8	G 1/4	100 ±0,15	46	9	60 ±0,15
100	226	111	M12	12.5	6H8	G 3/8	120 ±0,15	55.5	9	60 ±0,15

Piston Ø	L5	L6	L7	L8	L9	L10	L11	L12	L13	L15
25	85	34	52	6.15	12	1.5	1.5	5.5	16.5	25
32	105	26	70	8.2	16.7	2.2	2.8	9	20.5	33
40	110	42	80	8.2	16.7	2.2	2.8	9	20	40
50	133	34.5	93	8.2	16.7	2.2	2.8	9	23	48
63	147	62	112	10.2	20.3	6	6	16	24	60
80	182	54.5	132	10.2	20.3	6	6	16	33.5	60
100	206	76	155	10.2	20.3	6	6	16	32.5	60

Piston Ø	L17	L18	L19	L22	L25	L26	L27	L28	L29	L30
25	5.5	25	8	32	32	30	81	23	32 ±0,1	30 ±0,2
32	6.5	33	10	42	42	32	97	30	42 ±0,1	32 ±0,2
40	6	40	10	53	53	42	107	30	53 ±0,15	42 ±0,2
50	7.5	48	12	63	63	53	134	40	63 ±0,15	53 ±0,2
63	11	60	12	80	80	63	140	48	80 ±0,15	63 ±0,2
80	12	60	13	96	96	80	176	52	96 ±0,15	80 ±0,2
100	12	60	13	119	119	96	204	64	119 ±0,15	96 ±0,2

Piston Ø	L31	LJ1	LJ2	LM1	LM2	LM3	LM4	PL1	PL2	PL3
25	24	29.6	32	10	15.5	93	33	11	11	11
32	25	40	40.5	12	18.5	112	43	13.5	13.5	13.5
40	32.5	37.8	44	12	19.5	122	43	12	12	12
50	40	54.5	50.5	15	23.5	146	52	13	13	13
63	48	57	59	15	24	160	67	13.7	13.7	13.7
80	60	77.5	74.5	20	30	200	76	23	23	23
100	60	68.5	86.5	20	31	224	84	21.5	21.5	21.5

Piston Ø	PL4	T	T1	T2	T3	T4	TT	ZA
25	11	6.5	18 ±0,4	32,5 ±0,4	30 ±0,05	20,5 ±0,05	N6	42 3)
32	13.5	8	23 ±0,4	41 ±0,4	35 ±0,05	24 ±0,05	N8	46.5
40	12	8	23 ±0,4	41 ±0,4	35,5 ±0,1	27 ±0,1	N8	44
50	13	7.5	27,5 ±0,4	47,5 ±0,4	41 ±0,1	32 ±0,1	N8	46
63	13.7	11	35 ±0,4	49,5 ±0,5	39 ±0,1	39 ±0,1	N10	51
80	23	13.5	39,5 ±0,45	61 ±0,5	51 ±0,2	46 ±0,2	N10	77
100	21.5	18.5	50,5 ±0,45	65 ±0,5	53 ±0,2	55,5 ±0,2	N10	77

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 150, ZA = 52, for stroke 25, ZA = 47

Two holes C-C 10 mm.

Stroke-dependent dimensions

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	S=150 D1
25	0	0	0	0	0	0	11	11	27	27
32	-	-	17	17	17	17	17	17	35	35
40	-	-	19	19	19	19	19	19	37	37
50	-	-	25	25	25	25	25	25	55	55
63	-	-	19	19	19	19	19	19	49	49
80	-	-	10.5	10.5	10.5	10.5	10.5	10.5	38.5	38.5
100	-	-	9.5	9.5	9.5	9.5	9.5	9.5	37.5	37.5

Piston Ø	S=160 D1	S=200 D1	S=10 L14	S=20 L14	S=25 L14	S=30 L14	S=40 L14	S=50 L14	S=75 L14	S=100 L14
25	27	27	19	25	25	25	25	25	25	25
32	35	35	30	30	30	33	33	33	33	33
40	37	37	30	30	30	40	40	40	40	40
50	55	55	25	25	25	48	48	48	48	48
63	49	49	28	28	28	28	28	28	60	60
80	38.5	38.5	35	35	35	60	60	60	60	60
100	37.5	37.5	37	37	37	60	60	60	60	60

Piston Ø	S=125 L14	S=160 L14	S=200 L14
25	25	25	25
32	33	33	33
40	40	40	40
50	48	48	48
63	60	60	60
80	60	60	60
100	60	60	60

S = stroke

Stroke-dependent dimensions N ... L16

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	S=160 N
25	1	1	1	1	1	2	3	3	3	3
32	-	-	1	1	1	1	2	3	3	3
40	-	-	1	1	1	1	2	2	3	3
50	-	-	1	1	1	1	1	2	2	3
63	-	-	1	1	1	1	1	1	2	2
80	-	-	1	1	1	1	1	1	2	2
100	-	-	1	1	1	1	1	1	2	2

Piston Ø	S=200 N	S=40 L16	S=50 L16	S=100 L16	S=125 L16	S=160 L16	S=200 L16
25	3	65.5	-	125.5	150.5	185.5	225.5
32	3	-	76	-	151	186	226
40	3	-	-	-	-	184	224
50	3	-	-	-	148	-	223
63	3	-	-	127	-	187	-
80	3	-	-	143.5	-	203.5	-
100	3	-	-	144.5	-	204.5	-

S = stroke

Stroke-dependent dimensions L20 ... L21

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	S=200 L20
25	22	32	32	32	32	32	32	32	32	32
32	35	35	42	42	42	42	42	42	42	42
40	30	30	53	53	53	53	53	53	53	53
50	30	30	30	30	30	63	63	63	63	63
63	30	30	30	30	30	80	80	80	80	80
80	47	47	47	47	47	96	96	96	96	96
100	49	49	49	49	49	49	119	119	119	119

Piston Ø	S=20 L21	S=25 L21	S=30 L21	S=40 L21	S=50 L21	S=75 L21	S=100 L21	S=125 L21	S=160 L21	S=200 L21
25	19	24	24	24	24	24	24	24	24	24
32	27.5	27.5	31	31	31	31	31	31	31	31
40	25	25	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5
50	27	27	27	27	27	43.5	43.5	43.5	43.5	43.5
63	27	27	27	27	27	52	52	52	52	52
80	36.5	36.5	36.5	36.5	36.5	61	61	61	61	61
100	37.5	37.5	37.5	37.5	37.5	37.5	72.5	72.5	72.5	72.5

S = stroke

Stroke-dependent dimensions M ... L24

Piston Ø	S10 M	S20 M	S25 M	S30 M	S40 M	S50 M	S75 M	S100 M	S125 M	S160 M
25	1	1	1	1	1	1	2	3	3	3
32	-	-	1	1	1	1	2	2	3	3
40	-	-	1	1	1	1	1	2	2	3
50	-	-	1	1	1	1	1	1	2	2
63	-	-	1	1	1	1	1	1	1	2
80	-	-	1	1	1	1	1	1	1	1
100	-	-	1	1	1	1	1	1	1	1

Piston Ø	S200 M	S40 L24	S50 L24	S75 L24	S100 L24	S125 L24	S160 L24	S200 L24
25	3	60	70	95	-	145	180	220
32	3	-	-	-	122.5	-	182.5	222.5
40	3	-	-	91	-	-	-	216
50	3	-	-	-	116	-	176	-
63	2	-	-	-	-	142	-	217
80	2	-	-	-	-	160	195	-
100	1	-	-	-	-	-	195	235

S = stroke

Stroke-dependent dimensions L34 ... L35

Piston Ø	S10 L34	S20 L34	S25 L34	S30 L34	S40 L34	S50 L34	S75 L34	S100 L34	S125 L34	S160 L34
25	26	29	29	29	29	29	29	29	29	29
32	35.5	35.5	35.5	37	37	37	37	37	37	37
40	35	35	35	40	40	40	40	40	40	40
50	35.5	35.5	35.5	47	47	47	47	47	47	47
63	38	38	38	38	38	38	54	54	54	54
80	51	51	51	51	51	63.5	63.5	63.5	63.5	63.5
100	51	51	51	51	51	62.5	62.5	62.5	62.5	62.5

Piston Ø	S200 L34	S10 L35	S20 L35	S25 L35	S30 L35	S40 L35	S50 L35	S75 L35	S100 L35	S125 L35
25	29	4	4	4	4	6	6	8	8	10
32	37	4	4	4	4	4	4	6	8	8
40	40	4	4	4	4	4	4	6	6	6
50	47	4	4	4	4	4	4	4	6	6
63	54	4	4	4	4	4	4	4	4	6
80	63.5	4	4	4	4	4	4	4	4	6
100	62.5	4	4	4	4	4	4	4	4	4

Piston Ø	S160 L35	S200 L35
25	10	10
32	10	10
40	8	10
50	8	8
63	6	8
80	6	6
100	6	6

S = stroke

Stroke-dependent dimensions

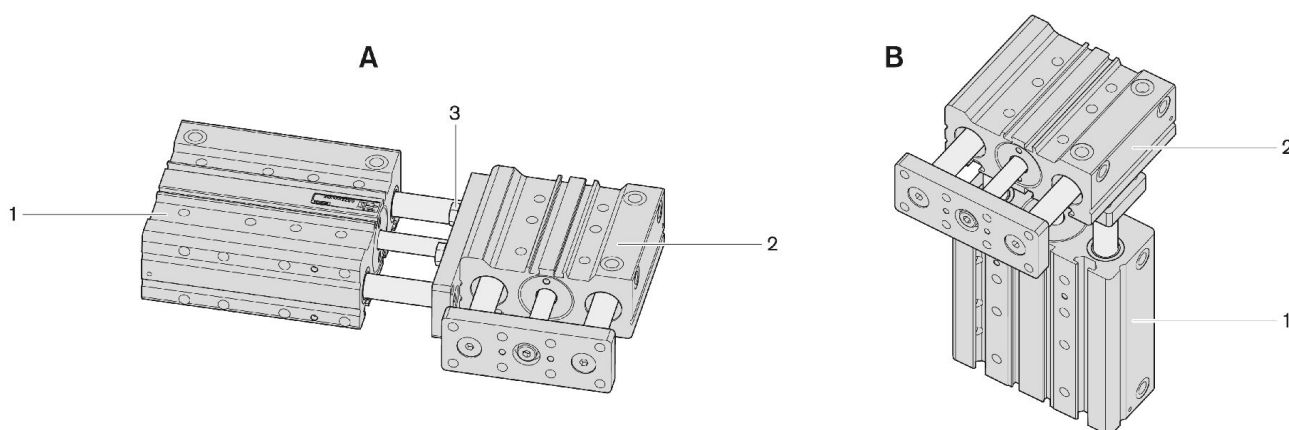
Piston Ø	S10 L36	S20 L36	S25 L36	S30 L36	S40 L36	S50 L36	S75 L36	S100 L36	S125 L36	S160 L36
25	4	4	4	4	6	6	8	10	10	10
32	4	4	4	4	4	6	6	8	10	10
40	4	4	4	4	4	4	6	6	8	10
50	4	4	4	4	4	4	4	6	8	8
63	4	4	4	4	4	4	4	6	6	8
80	4	4	4	4	4	4	4	6	6	8
100	4	4	4	4	4	4	4	6	6	8

Piston Ø	S200 L36	S10 ZJ	S20 ZJ	S25 ZJ	S30 ZJ	S40 ZJ	S50 ZJ	S75 ZJ	S100 ZJ	S125 ZJ
25	10	57.5	57.5	57.5	57.5	57.5	57.5	68.5	68.5	84.5
32	10	-	-	82	-	-	82	82	82	100
40	10	-	-	82.6	-	-	82.6	82.6	82.6	124.5
50	10	-	-	94.5	-	-	94.5	94.5	94.5	124.6
63	10	-	-	94.6	-	-	94.6	94.6	94.6	145.5
80	8	-	-	117.5	-	-	117.5	117.5	117.5	145.5
100	8	-	-	117.5	-	-	117.5	117.5	117.5	145.5

Piston Ø	S160 ZJ	S200 ZJ
25	84.5	84.5
32	100	100
40	124.5	124.5
50	124.6	124.6
63	145.5	145.5
80	145.5	145.5
100	145.5	145.5

S = stroke

GPC combinations



1) Cylinder 1

2) Cylinder 2

3) Screw

Minimum strokes for cylinder 1 when using 2 assembled guide cylinders

Piston Ø	S
32	25
40	25
50	30
63	30
80	35
100	40

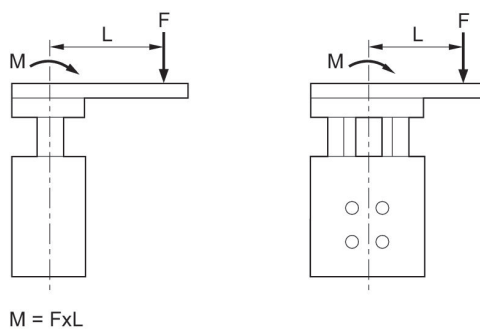
S = stroke

Minimum strokes for cylinder 2 when using 2 assembled guide cylinders

Piston Ø	Ø 2	A	B	3
10	12	–	–	M4x12
12	16	–	–	M5x15
16	20	–	–	M5x18
20	25	–	–	M6x20
25	32	25	15	M6x20
32	40	30	30	M8x25
40	50	30	30	M8x30
50	63	55	30	M10x30
63	80	55	55	M10x35
80	100	55	30	M12x40

A = min.stroke: assembly A B = min.stroke: assembly B 3 = screw

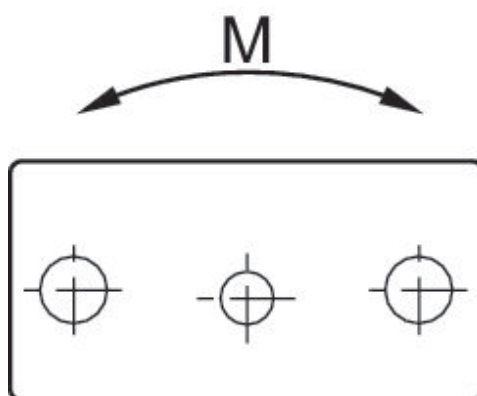
Permissible static moment M [Nm]



Piston Ø	S 5–30	S >30	S 35–50	S 55–100	S >100
10	1,5	1,5	–	–	–
12	2	3.5	–	–	–
16	4.5	14	–	–	–
20	4.5	14	–	–	–
25	4.6	–	4.9	9.4	14.5
32	15.2	–	16.5	17.2	26.4
40	15.3	–	15.3	17.2	26.4
50	26	–	26	28.9	51.6
63	26	–	26	28.9	51.6
80	52.1	–	52.1	57.9	90.3
100	52.3	–	52.3	57.9	90.4

S = stroke

Permissible static moment M [Nm]

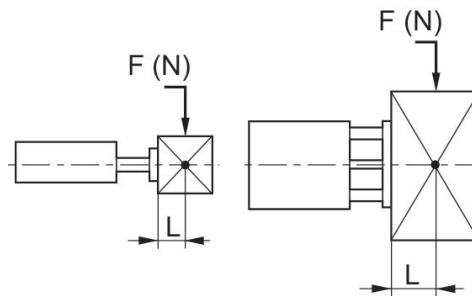


Piston Ø	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=160
10	1.75	1.5	1.4	1.3	1.2	1.1	0.85	0.75	–	–
12	0.56	0.48	0.46	0.42	0.62	0.56	0.44	0.38	0.32	0.26
16	1.48	1.32	1.25	1.2	1.72	1.57	1.29	1.15	0.99	0.82
20	1.7	1.51	1.43	1.38	1.97	1.81	1.49	1.32	1.13	0.95
25	3.11	2.6	–	2.23	1.96	1.74	2.41	2.02	2.42	2.05
32	–	–	8.17	–	–	6.4	5.26	4.47	5.45	4.67
40	–	–	9.19	–	–	7.22	5.95	5.05	6.17	5.29
50	–	–	17	–	–	13.6	11.4	9.73	13.6	11.8
63	–	–	20.1	–	–	16.1	13.4	11.5	16.1	14
80	–	–	42.1	–	–	34.9	29.8	26	32.4	28.5
100	–	–	47.8	–	–	39.7	33.9	29.6	37	32.5

Piston Ø	S=200
10	–
12	–
16	–
20	–
25	1.75
32	4.01
40	4.55
50	10.3
63	12.2
80	24.9
100	28.5

S = stroke

Permissible static side load F [N] at distance L



Permissible static side load F [N] at distance L

Piston Ø	L	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125
10	25	12	11	11	10	10	9	8	7	–
12	25	28	24	23	21	31	28	22	19	16
16	50	63	56	53	51	73	67	55	49	42
20	50	63	56	53	51	73	67	55	49	42
25	50	53.2	48.4	–	44.4	41	38.1	59	51.9	65.4
32	50	–	–	139	–	–	118	103	90.8	116
40	50	–	–	138	–	–	118	102	90.4	116
50	50	–	–	218	–	–	187	164	146	215
63	50	–	–	217	–	–	186	163	145	214
80	50	–	–	392	–	–	342	304	273	356
100	50	–	–	390	–	–	341	302	272	354

Piston Ø	S=150	S=160	S=200
10	–	–	–
12	13	–	–
16	35	–	–
20	35	–	–
25	–	57.3	50.1
32	–	102	90.2
40	–	102	89.9
50	–	191	169
63	–	190	169
80	–	318	284
100	–	318	284

S = stroke

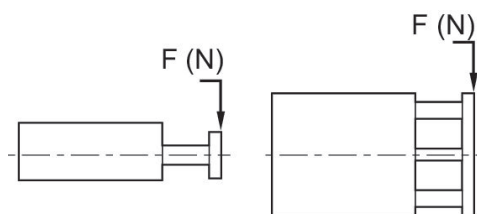
Permissible static side force F [N]

Guide cylinders, Series GPC-BV

R402000933

Series GPC

2026-03-31

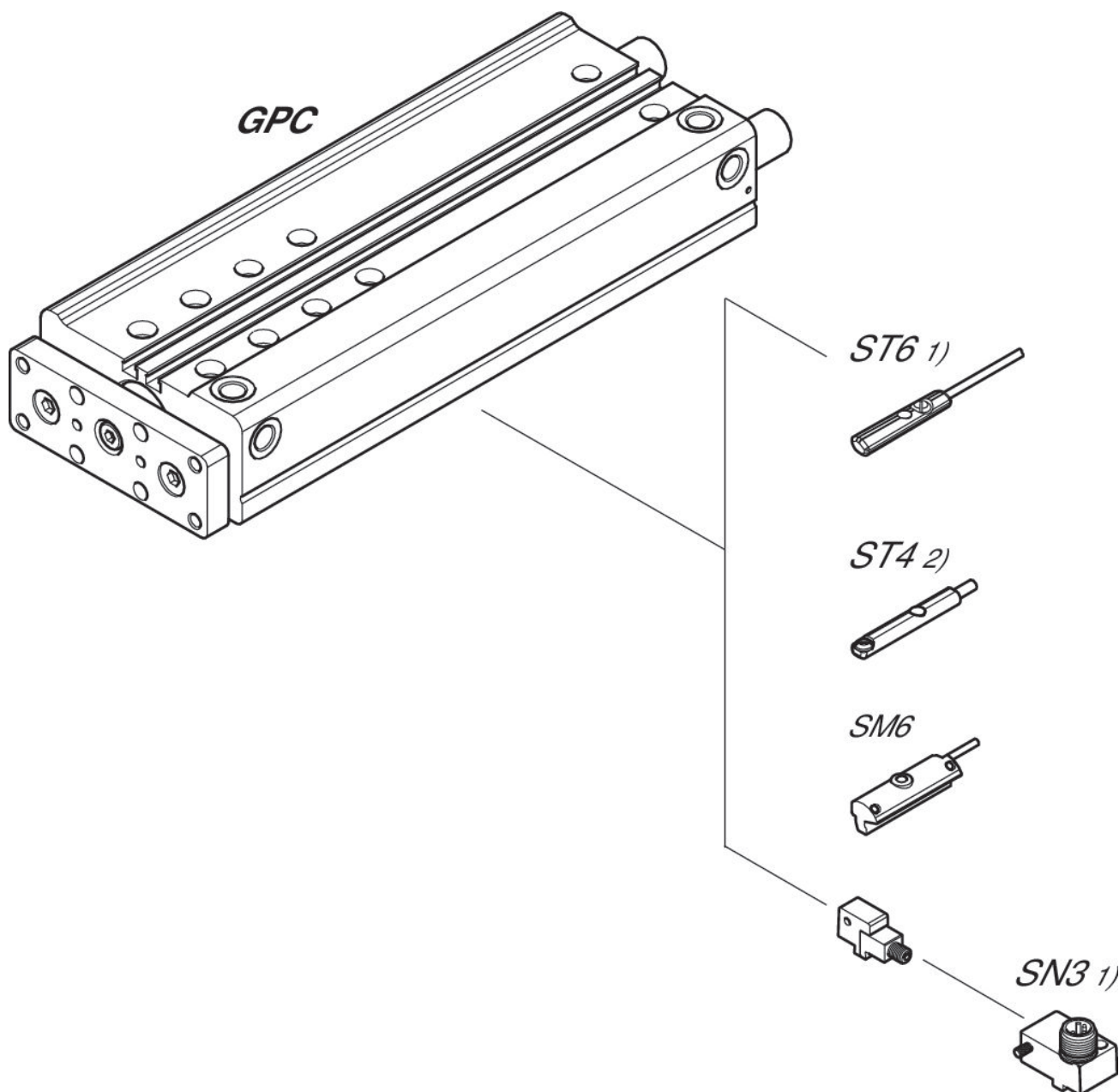


Piston Ø	S=10	S=20	S=25	S=30	S=40	S=50	S=75	S=100	S=125	S=150
25	106	88	–	76	66	59	82	69	82	–
32	–	–	216	–	–	169	139	118	144	–
40	–	–	214	–	–	168	138	118	144	–
50	–	–	327	–	–	262	218	187	261	–
63	–	–	324	–	–	260	217	186	260	–
80	–	–	554	–	–	459	392	342	427	–
100	–	–	549	–	–	456	390	341	425	–

Piston Ø	S=160	S=200
25	70	59
32	124	106
40	123	106
50	227	197
63	226	196
80	374	328
100	373	327

S = stroke

Overview drawing



1) $\leq \varnothing 12$ mm (GPC-BV, GPC-E, GPC-TL)

2) Only for $\varnothing 10$ mm (GPC-BV) and all $\varnothing$ (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.