

# S1

## Rodless Cylinders standard version - Ø 16÷50 mm

- Extruded aluminium profile Ø 16÷50 mm
- Stroke length up to 6 m
- Different possibilities of end-cap supply
- Different carriage types: standard, medium, long
- High translation speed until 3 m/s
- Magnetic version standard supplied for Ø 16
- Assembly with integrated slide unit - series J30-31- available upon request

Available ATEX version upon request



### TECNICAL CHARACTERISTICS

Ambient temperature	-20÷80 °C
Fluid	filtered air, with or without lubrication
Working pressure	3÷10 bar
Bores	Ø 16 - 25 - 32 - 40 - 50 mm
Cushionings	adjustable on both sides

### CONSTRUCTIVE CHARACTERISTICS

End-caps	zamak (Ø16), die-cast aluminium (Ø25÷50)
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston seal	double lip nitrile rubber (NBR)
Shock absorber seals	nitrile rubber (NBR) on both sides
Magnet	neodimio

### CODIFICATION KEY

S	1	0	1	1	2	5	0	8	5	0		
1	2	3	4	5	6	7	8					

#### 1 Series

S1 = Ø 16÷50 mm - Rodless cylinders standard version

#### 2 Carriage type

- 0 = Standard carriage
- 2 = Medium carriage (except for Ø16)
- 3 = Long carriage (except for Ø16)

#### 3 Left end-cap supply port

- 0 = No supply port (both chambers are supplied from the right end-cap)
- 1 = Side supply port (except for Ø16)
- 2 = Bottom supply port (except for Ø16)
- 3 = Rear supply port (except for Ø16)

#### 4 Right end-cap supply port

- 1 = Side supply port (except for Ø16)
- 2 = Bottom supply port (except for Ø16)
- 3 = Rear supply port (except for Ø16)
- 4 = Rear supply ports for both chambers on the right end-cap
- 5 = Side supply ports for both chambers on the right end-cap (only for Ø16)

#### 5 Bore (mm)

- 16 = Ø16
- 25 = Ø25
- 32 = Ø32
- 40 = Ø40
- 50 = Ø50

#### 6 Stroke (mm)

- Up to 5000 (Ø 16)
- Up to 6000 (Ø 25÷50)

#### 7 Magnetic

M = Magnetic version standard supplied (Ø 16) upon request (Ø 25÷50)

#### 8 Atex option

X = Atex (upon request)

For types and versions, see ATEX catalogue

### Standard version Ø 16÷50 mm

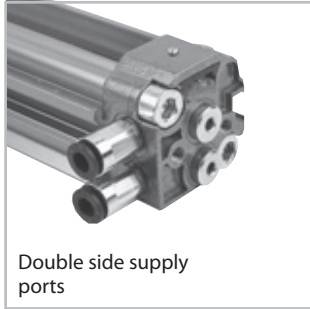


CONSTRUCTIVE CHARACTERISTICS

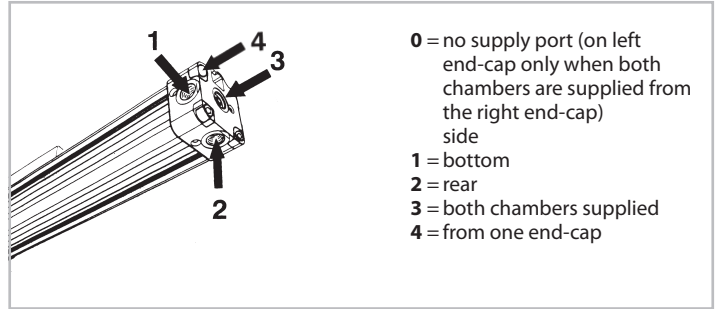
**END-CAPS**

End-caps in die-cast light alloy with various supply port options. The unique method of stripseal attachment permits easy assembly and disassembly, without the need for tools or the necessity for continuous adjustment.

Ø 16 mm



Ø 25÷50 mm

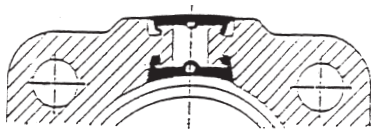


**SLIDEWAY SEALING**

The pneumatic sealing is achieved through an axial elastomer stripseal reinforced with Kevlar. This system guarantees dimensional stability even with high speeds.

The external protection seal consists of a thermoplastic stripseal reinforced with Kevlar.

1  
CYLINDERS



**PISTON-CARRIAGE ASSEMBLY**

In extruded aluminium alloy with thermoplastic plane guide bearings. The piston is fitted with double lip seals which automatically self-compensate against wear. Pistons with permanent magnets are available upon request (S1 series only).

**BARREL**

In extruded aluminium alloy with internal and external anodisation.

**CUSHIONINGS**

Pneumatic adjustable cushionings with two regulation screws in each end-cap allow an improved regulation of piston deceleration.

**MECHANICAL SHOCK ABSORBERS**

Mechanical rubber shock absorbers avoid mechanical stress and reduce machinery noise (below 50 dB).

Stroke tolerances

Ø	mm
16	+2,5 - 0
25	+2,5 - 0
32	+3,2 - 0
40	+3,2 - 0
50	+3,2 - 0

Cylinder mass  
Standard carriage

Cylinder mass  
Medium carriage

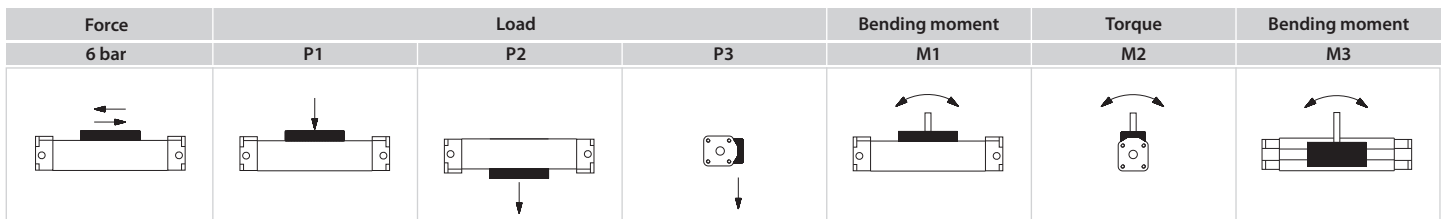
Cylinder mass  
Long carriage

Ø	Cylinder - stroke 0		Cylinder - stroke 0	
	g	Increase for 100 mm stroke	g	Increase for 100 mm stroke
16	310	104	-	-
25	750	210	840	1050
32	1310	325	1480	1930
40	2600	555	2910	3800
50	4785	955	5550	7330

Theoretical forces (N) at different working pressure (bar)  
Static load value (N) and torque (Nm)

Please note that in dynamic conditions, the load must be reduced due to effects associated with the speed.

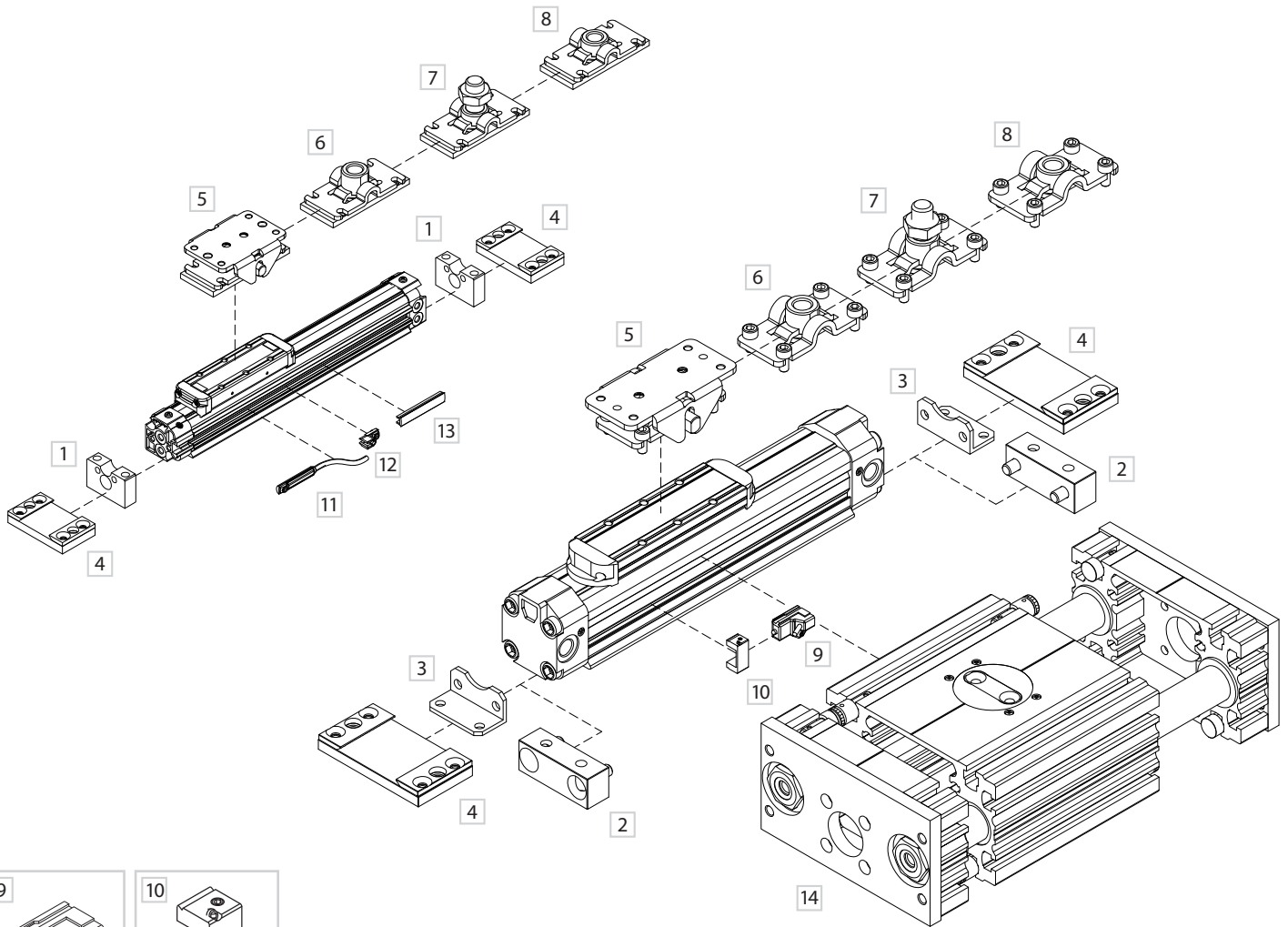
A moment is the product of the load (Newton) and the arm (meters), i.e the distance between the centre of gravity of the load and the longitudinal axis of the piston.



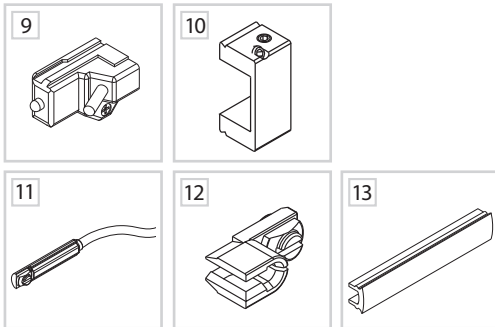
Ø	Force F (N)	Load			Standard carriage			Medium carriage			Long carriage		
		P1 (N)	P2 (N)	P3 (N)	M1 (Nm)	M2 <sup>(a)</sup> (Nm)	M3 (Nm)	M1 (Nm)	M2 <sup>(a)</sup> (Nm)	M3 (Nm)	M1 (Nm)	M2 (Nm)	M3 (Nm)
16	125	100	100	25	5	0,2	0,8	-	-	-	-	-	-
25	250	200	200	50	8	2	3	14	3	5	15	6	9
32	420	250	250	65	9	3	4	15	4	7	28	8	12
40	640	350	350	90	11	9	14	16	14	20	31	27	39
50	1050	500	500	125	19	13	19	29	20	30	52	36	53

(a) = Using the cylinder with heavy stress is not recommended

Fixing elements and accessories

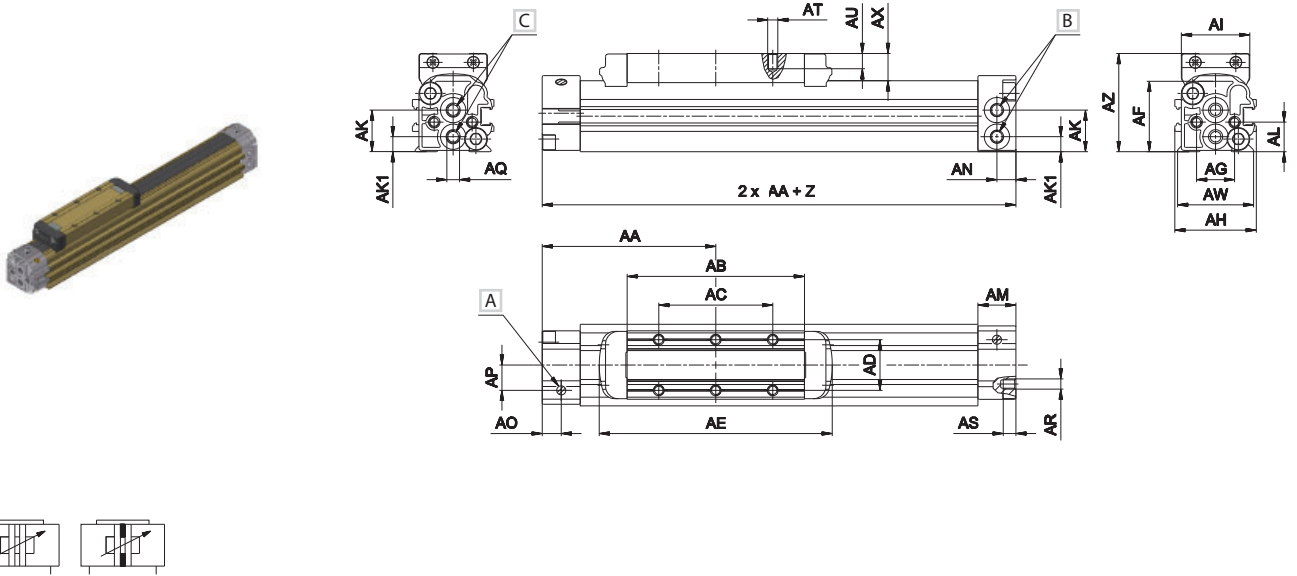


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CYLINDERS

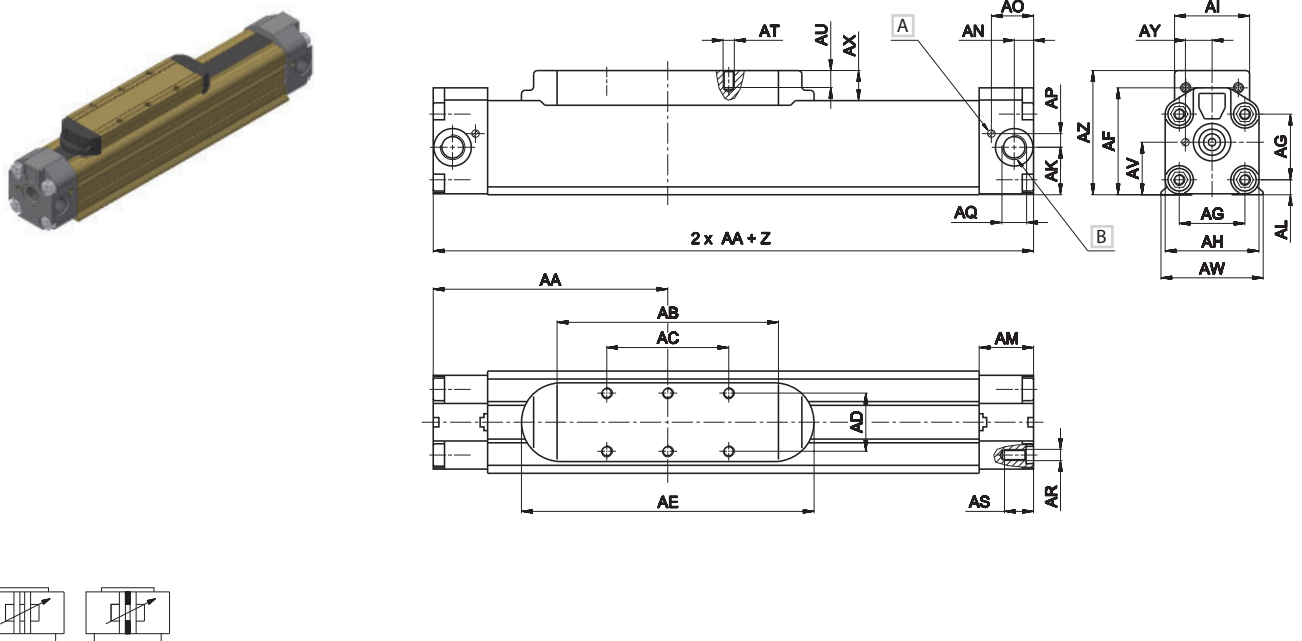


DESCRIPTION	NOTE	PART NO.
1 Bracket Ø16	Anodized aluminium	SF-13_ _ _
2 Bracket Ø40-50	Anodized aluminium	SF-13_ _ _
3 Angle bracket Ø25-32	Zinc-plated steel	SF-13_ _ _
4 Fixing plate	Zinc-plated steel	SF-12_ _ _
5 Oscillating bracket	Zinc-plated steel	SF-24_ _ _
6 Female threaded connection	Zinc-plated steel	SF-26_ _ _
7 Male threaded pin	Zinc-plated steel	SF-27_ _ _
8 Female connection without thread	Zinc-plated steel	SF-28_ _ _
9 DH sensor	-	DH- _ _ _
10 DH sensor fixing plate	-	DH-S_ _ _
11 DF sensor (Ø16 only)	-	DF- _ _ _
12 Cable clamping for DF sensor (Ø16 only)	-	DF-001
13 DHF covering strip (Ø16 only)	Nitrile rubber (NBR)	DHF-0020100
14 Slide unit J30_31	-	J30A530050A

Rodless cylinder with standard carriage - 6 fixing holes Ø 16 mm



Rodless cylinder with standard carriage - 6 fixing holes Ø 25÷50 mm



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CYLINDERS

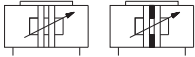
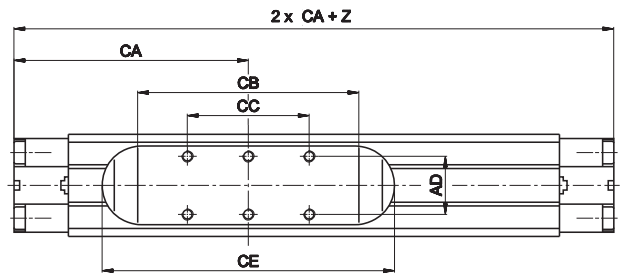
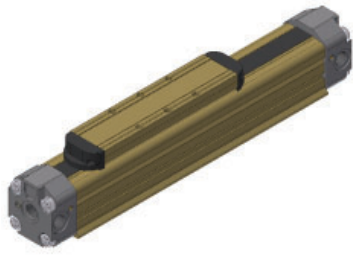
Z = Stroke

Ø	AA	AB	AC	AD	AE	AF	AG	AH	AI	AK	AK1	AL	AM
16	68,5	70	45	20	92	30	18	32	27	16,5	6	11,5	15
25	100	95	50	24	130	48,3	28	40,5	33	20,2	-	7	24
32	125	118	65	31	156	57	35	50	40	25,3	-	8	29
40	150	134	65	31	177	74	44	64	44	33,8	-	11,8	33
50	175	164	105	39	211	90,7	55	80	54	41,4	-	14,7	33

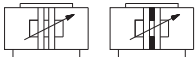
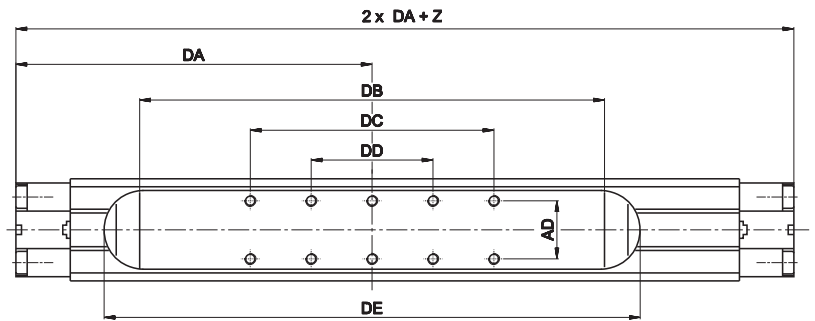
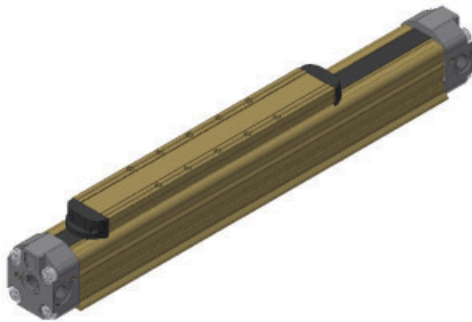
Ø	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ
16	7,5	7,5	10	M5	M4	5	M4	6	-	30	11	-	39
25	7,4	18,2	5,7	G1/8	M5	12	M5	9	22,8	42,8	16	12,2	57,6
32	10,3	22,5	7,3	G1/4	M6	15,5	M6	9	28	54,5	16	14,2	66,2
40	12,5	26,5	8,7	G3/8	M8	20	M6	11	37	67	19,5	16,5	85,8
50	14,2	25,7	11,8	G3/8	M10	20	M8	12	47,7	86	20,5	19,1	103

- A Pneumatic cushioning adjusting screw
- B Side supply port
- C Rear supply port

Rodless cylinder with medium carriage - 6 fixing holes Ø 25 ÷ 50 mm



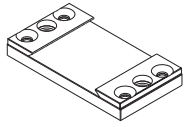
Rodless cylinder with long carriage - 10 fixing holes Ø 25 ÷ 50 mm



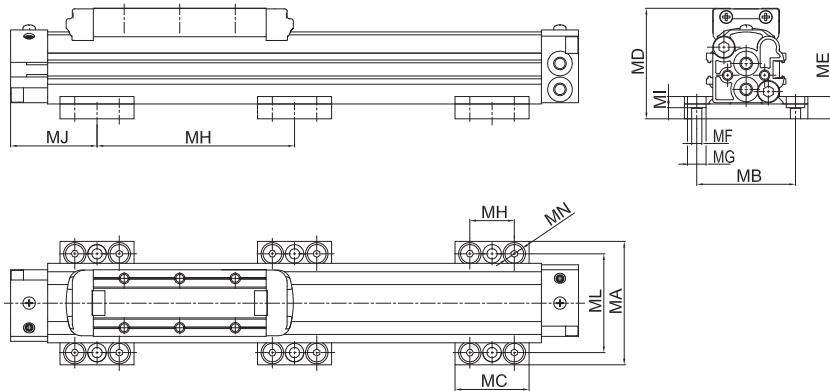
Z = Stroke

Ø	AD	CA	CB	CC	CE	DA	DB	DC	DD	DE
25	24	114,5	125	50	160	147,5	190	100	50	225
32	31	142,5	153	65	191	190	248	130	65	286
40	31	169	172	65	215	225	284	130	65	327
50	39	205	224	105	271	277	364	315	105	411

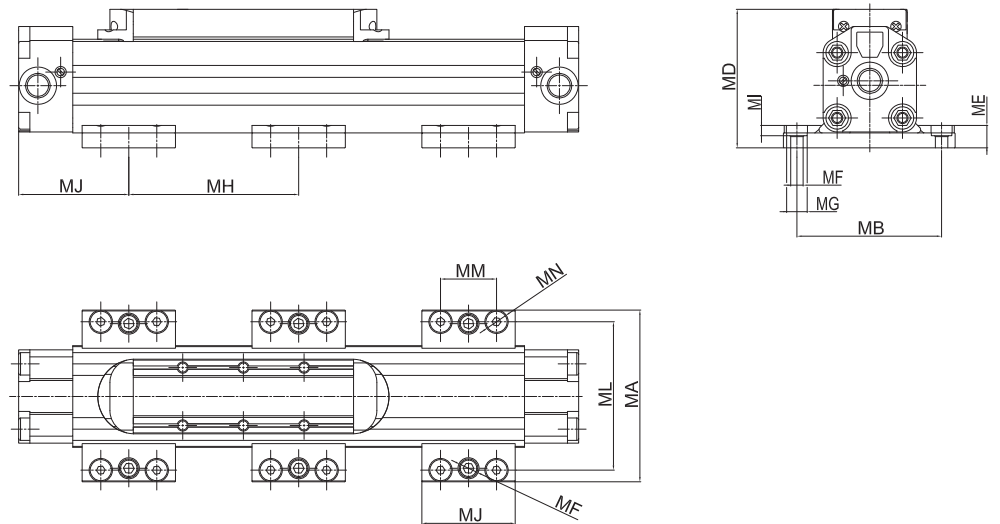
Fixing plate



Ø 16 mm



Ø 25÷50 mm



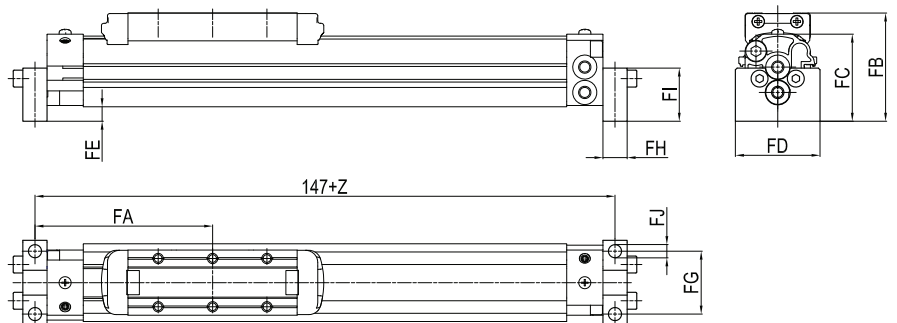
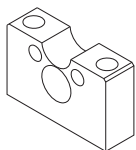
Material: zinc-plated steel

Cylinder Ø	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	ML <sup>(b)</sup>	MM	MN	Mass g	Part no.
16	50	40	30	44,8	9	M5	8	400 (a)	4,5	35	40	-	M6	83	SF-12016
25	78,5	63,5	50	65,6	12	M8	11	500 (a)	6,5	55	65,5	30	M6	310	SF-12025
32	92	77,5	50	74,2	12	M8	11	600 (a)	8,5	60	79,5	30	M6	340	SF-12032
40	117	96	60	95,8	15	M10	14	700 (a)	8	70	96	37,5	M8	660	SF-12040
50	136	115	60	113	15	M10	14	800 (a)	8	70	115	37,5	M8	700	SF-12050

(a) = Max allowable dimension to limit the bending of the cylinder according to the stroke and to provide a correct fixing

(b) = For Ø 16 - 40 - 50 mm, MB and ML dimensions are the same

Bracket

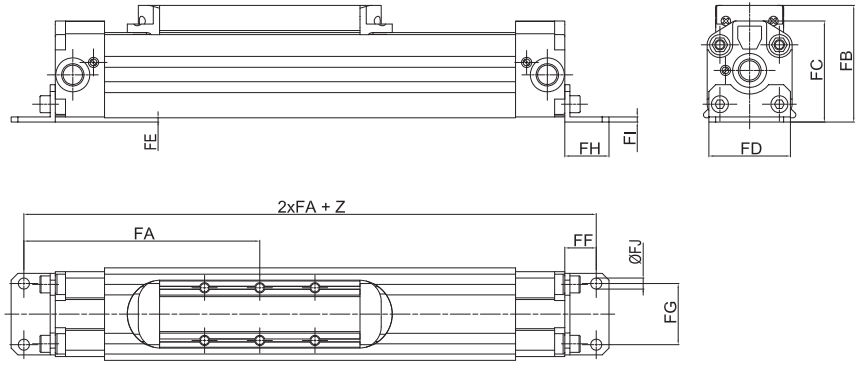
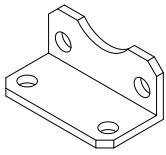


Material: Anodized aluminium

Cylinder Ø	FA	FB	FC	FD	FE	FG	FH	FI	FJ	Mass g	Part no.
16	73,5	45	36	35	6	26	10	22	5,5	15	SF-13016

Subject to change

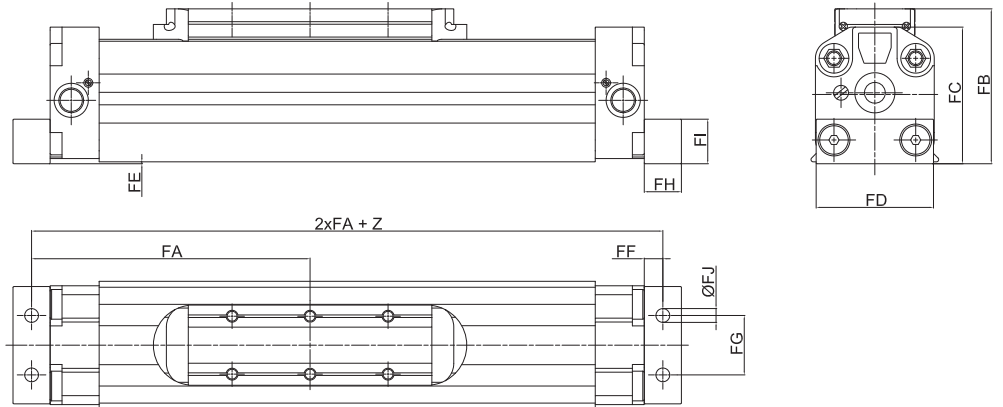
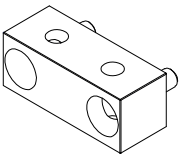
Angle bracket



Material: Zinc-plated steel

Cylinder Ø	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	Mass g	Part no.
25	116	58,1	48,8	40	0,5	16	27	22	2,5	5,5	34	SF-13025
32	143,5	68,7	59,2	48	2,5	18,5	36	26	3	6,5	53	SF-13032

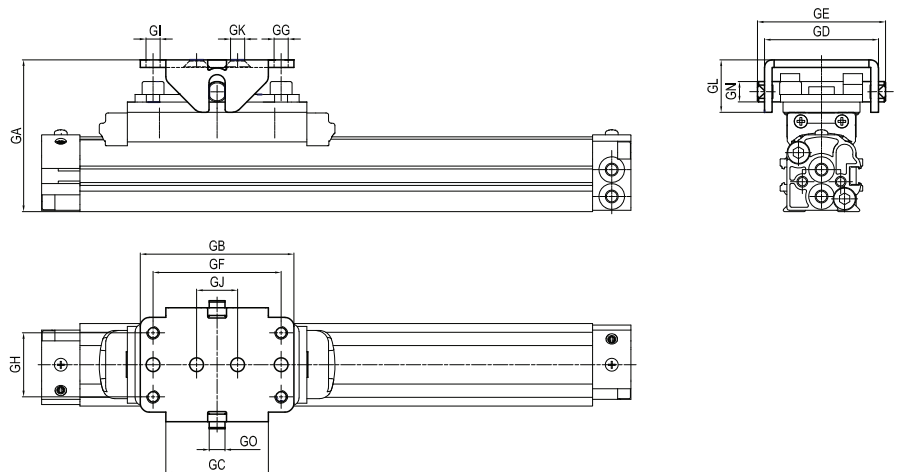
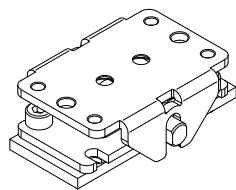
Bracket



Material: Anodized aluminium

Cylinder Ø	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	Mass g	Part no.
40	162,5	86,5	74,9	63	0,7	12,5	30	25	25	9	116	SF-13040
50	187,5	104,3	92,4	79	1,3	12,5	40	25	30	9,3	170	SF-13050

Oscillating bracket



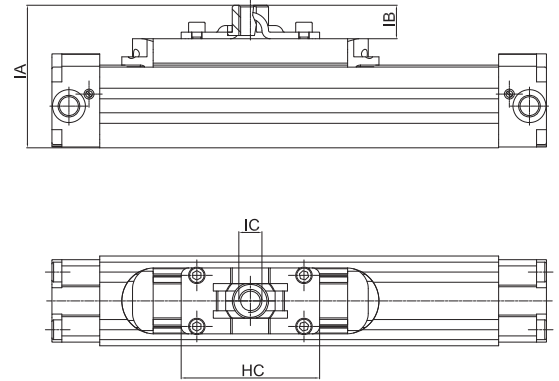
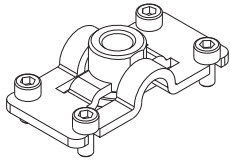
Material: Zinc-plated steel

Cylinder Ø	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	Mass g	Part no.
16	58	60	40	44,5 ± 0,25	50	50	5,5	25	M5	16	5,5	20,5	3	8	6	195	SF-24016
25	73,5 ± 2,5	60	40	44,5 ± 2,5	50	50	5,5	25	M5	16	5,5	20,5	3	8	6,15	142	SF-24025
32	89 ± 4	100	60	56 ± 4	64	80	5,5	30	M6	40	6,5	30	4	12	8,2	362	SF-24032
40	108,5 ± 4	100	60	56 ± 4	64	80	5,5	30	M6	40	6,5	30	4	12	8,2	362	SF-24032
50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Use in case of external guide



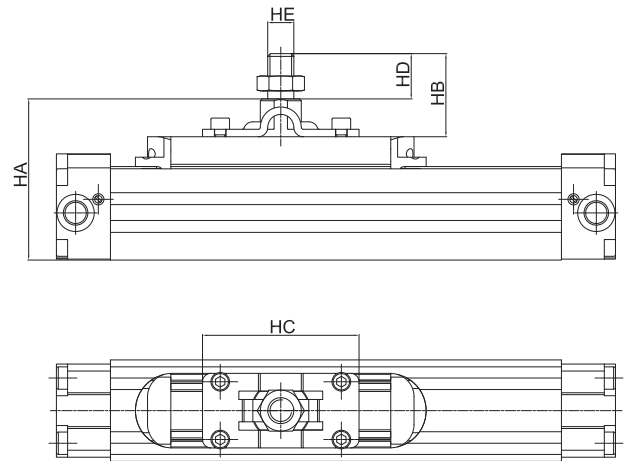
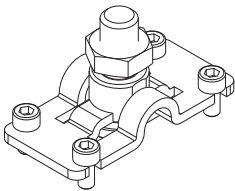
**Female threaded connection**



Material: Zinc-plated steel

Cylinder Ø	IA	IB	IC	HC	Mass g	Part no.
16	61	22	M12	64	132	SF-26016
25	75,6	18	M12	64	76	SF-26025
32	87,2	21	M14	84	157	SF-26032
40	106,8	21	M14	84	157	SF-26032
50	-	-	-	-	-	-

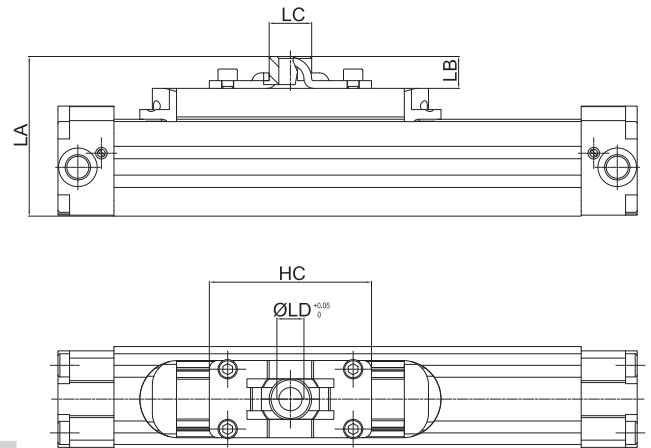
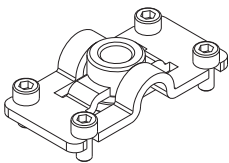
**Male threaded pin**



Material: Zinc-plated steel

Cylinder Ø	HA	HB	HC	HD Ø	HE	Mass g	Part no.
16	76,5	37,5	64	22	M12	160	SF-27016
25	91,1	33,5	64	22	M12	105	SF-27025
32	107,7	41,5	84	24,3	M14	260	SF-27032
40	127,3	41,5	84	24,3	M14	260	SF-27032
50	-	-	-	-	-	-	-

**Female connection without thread**



Material: Zinc-plated steel

Cylinder Ø	LA	LB	LC	LD Ø	LH	Mass g	Part no.
16	56	17	18	10	64	129	SF-28016
25	70,6	13	18	10	64	73	SF-28025
32	83,4	17,2	22	12	84	152	SF-28032
40	103	17,2	22	12	84	152	SF-28032
50	-	-	-	-	-	-	-