

Compact magnetic cylinders Series 31

Double-acting / Single-acting (31M-31F)
 Double-acting, non-rotating (31R)
 Bores from $\varnothing 12$ to $\varnothing 100$

The compact dimensions allow the cylinders to be installed within confined spaces. These cylinders are suitable for use with feet, flange and trunnion.

The compact single and double-acting cylinders Series 31 are available in 10 different bore sizes from $\varnothing 12$ to $\varnothing 100$. The guides are inserted in the external profile parallel to the sliding axis on three sides. These guides are used to locate the switches that sense the piston position. The construction design of these cylinders provides excellent axis stability. They are available either with a male or female thread.

Sensors and relative supports on page 1.25.



- ▶ Compact design
- ▶ Wide variety of models available
- ▶ Standard magnetic

GENERAL DATA

Type of construction	compact profile
Operation	single and double-acting
Materials	aluminium body and end-blocks - rolled stainless steel rod aluminium piston rod - PU seals
Brackets	flange, feet, trunnion
Stroke min. - max.	Series 31R all bores: 10-200mm; Series 31M/F: $\varnothing 12=\varnothing 25$: 10-200mm; $\varnothing 32=\varnothing 100$: 10-300mm
Bore	see table
Connections	see table
Assembly position	as preferred
Operating temperature	0°C ÷ 80°C (with dry air -20°C)

PNEUMATIC SPECIFICATIONS	
Operating pressure	1 ÷ 10 bar (double-acting); 2 ÷ 10 bar (single-acting)
Fluid	clean air, with or without lubrication
Speed	10 ÷ 1000 mm/sec (without load)

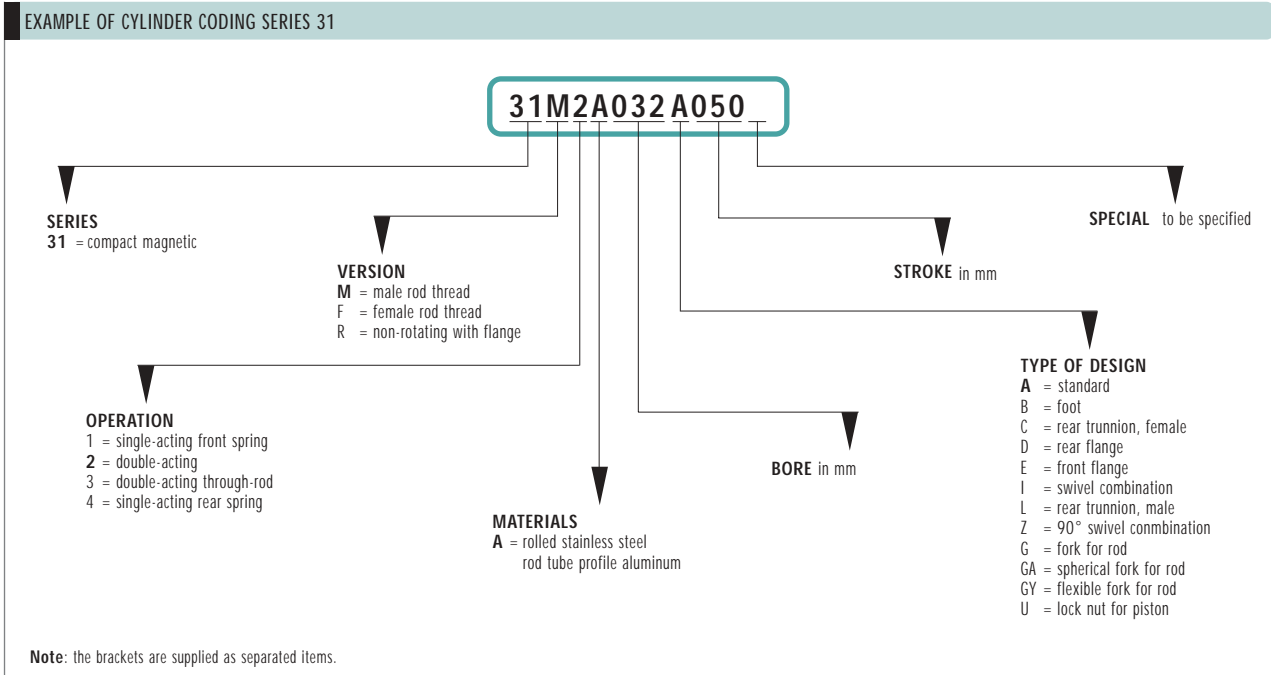


TABLE SHOWING STANDARD STROKE FOR COMPACT MAGNETIC CYLINDERS SERIES 31

- Single-acting female, male
- Double-acting female, male
- × Non-rotating

Series	ø	Standard strokes											
		5	10	15	20	25	30	40	50	60	75	80	100
31	12	●■×	●■×	●■×	●■×	●■×	■×	■×					
31	16	●■×	●■×	●■×	●■×	●■×	■×	■×					
31	20	●■×	●■×	●■×	●■×	●■×	■×	■×	■×				
31	25	●■×	●■×	●■×	●■×	●■×	■×	■×	■×	■×			
31	32	●■×	●■×	●■×	●■×	●■×	■×	■×	■×	■×	■×	■×	■×
31	40	●■×	●■×	●■×	●■×	●■×	■×	■×	■×	■×	■×	■×	■×
31	50	●■×	●■×	●■×	●■×	●■×	■×	■×	■×	■×	■×	■×	■×
31	63		●■×	●■×	●■×	●■×	■×	■×	■×	■×	■×	■×	■×
31	80		●■×	●■×	●■×	●■×	■×	■×	■×	■×	■×	■×	■×
31	100		●■×	●■×	●■×	●■×	■×	■×	■×	■×	■×	■×	■×

TABLE SHOWING THE OUTPUT FORCE OF CYLINDERS SERIES 31

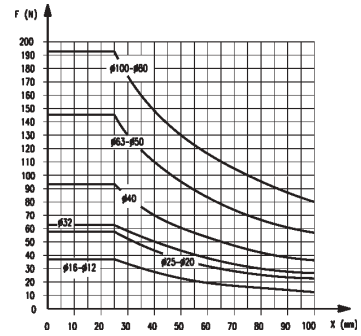
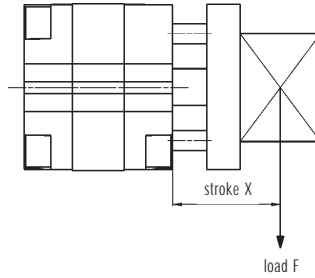
ø Cylinders	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Stroke	10	25	25	25	25	25	25	25	25	25
Force of spring at rest (N)	5	6	6	15	17	35	42	52	85	140
Force of spring at 6 bar (N)	61	111	179	270	456	725	1121	1799	2902	4516

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TABLE OF MAXIMUM ALLOWED LOADS

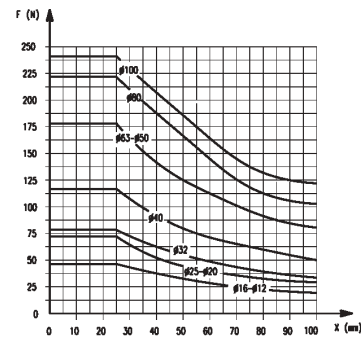
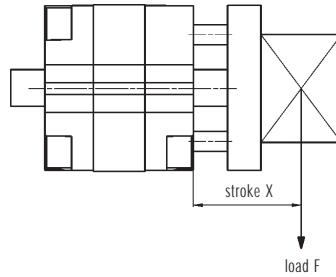
ANTI-ROTATION

Transversal load dependant on stroke same below.



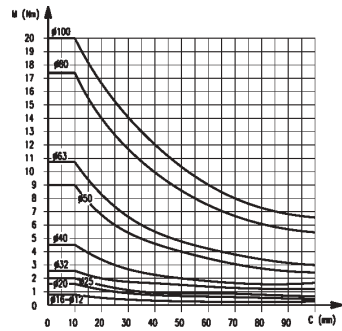
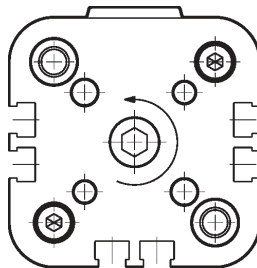
ANTI-ROTATION THROUGH-ROD

Transversal load dependant on stroke.



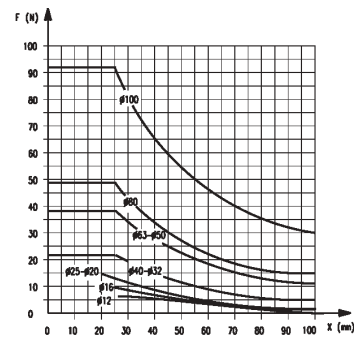
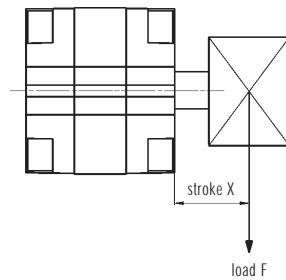
TORQUE MOMENT

dependant on stroke.



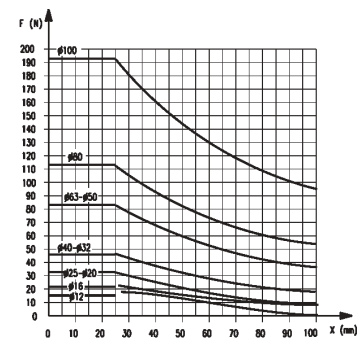
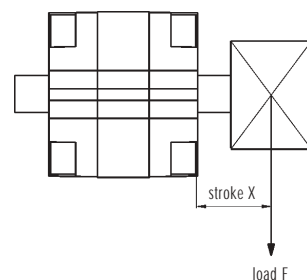
TRANSVERSAL LOAD

dependant on stroke.



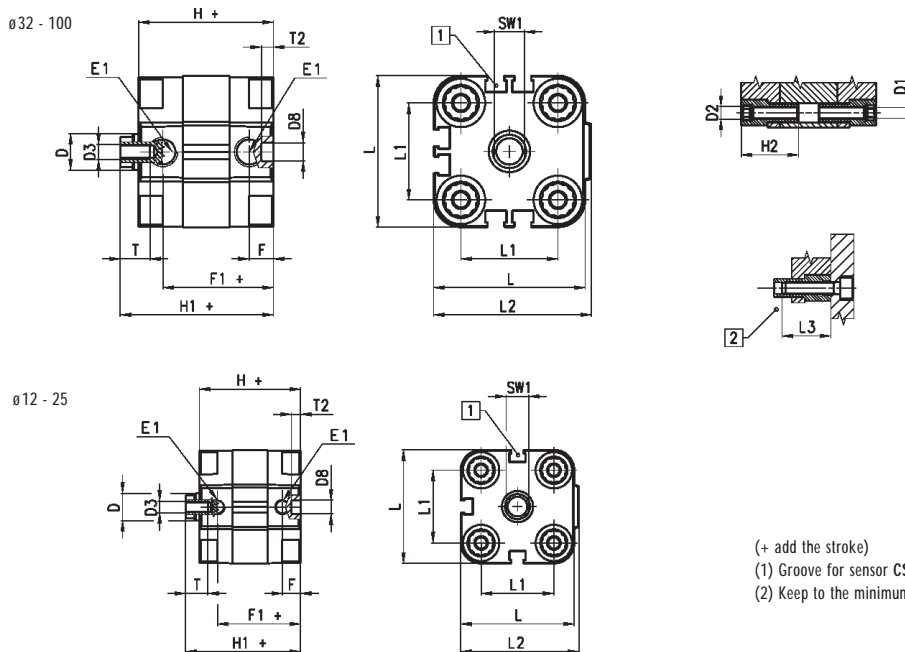
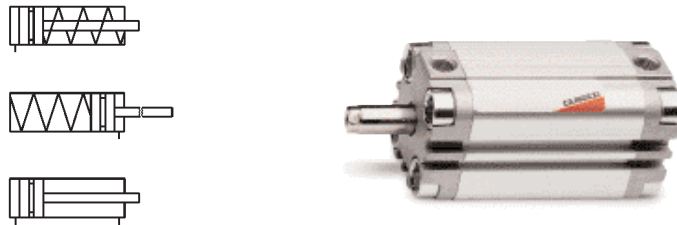
TRANSVERSAL LOAD THROUGH-ROD

dependant on stroke.



Compact magnetic cylinders Mod. 31F..

Female rod thread.



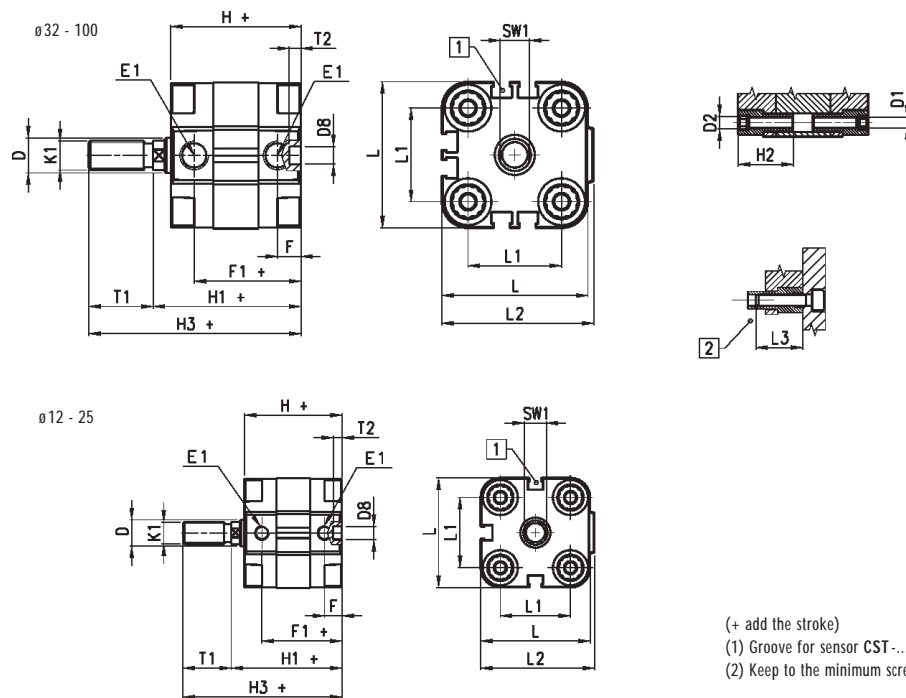
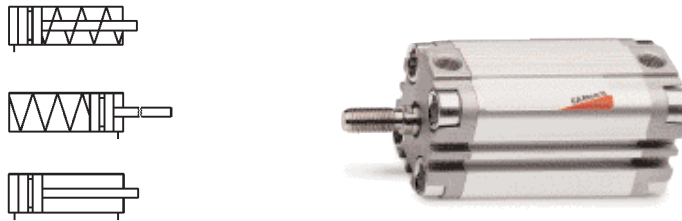
(+ add the stroke)
 (1) Groove for sensor CST-...
 (2) Keep to the minimum screwing depth

DIMENSIONS																		
ø cyl.	ø D	ø D1	D2	D3	ø D8 (H9)	E1	F	F1	H	H1	H2	L	L1	L2	L3	T	T2	SW1
12	6	3,5	M4	M3	6	M5	8	30	38	42,5	18,5	29	18	30	16	6	4	5
16	8	3,5	M4	M4	6	M5	8	30	38	42,5	18,5	29	18	30	16	8	4	7
20	10	4,5	M5	M5	6	M5	8	30	38	42,5	18,5	36	22	37,5	18	10	4	8
25	10	4,5	M5	M5	6	M5	8	31,5	39,5	45	18,5	40	26	41,5	18	10	4	8
32	12	5,5	M6	M6	6	G1/8	8	36,5	44,5	50,5	21,5	50	32	52	20	12	4	10
40	12	5,5	M6	M6	6	G1/8	8	37,5	45,5	52	21,5	60	42	62,5	20	12	4	10
50	16	6,5	M8	M8	6	G1/8	8	37,5	45,5	53	22,5	68	50	71	20	12	4	13
63	16	8,5	M10	M8	8	G1/8	8	42	50	57,5	24,5	87	62	91	25	12	4	13
80	20	8,5	M10	M10	8	G1/8	8,5	47,5	56	64	24,5	107	82	111	25	16	4	17
100	25	8,5	M10	M12	8	G1/4	10,5	56	66,5	76,5	31,5	128	103	133	25	20	4	22

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Compact magnetic cylinders Mod. 31M...

Male rod thread.

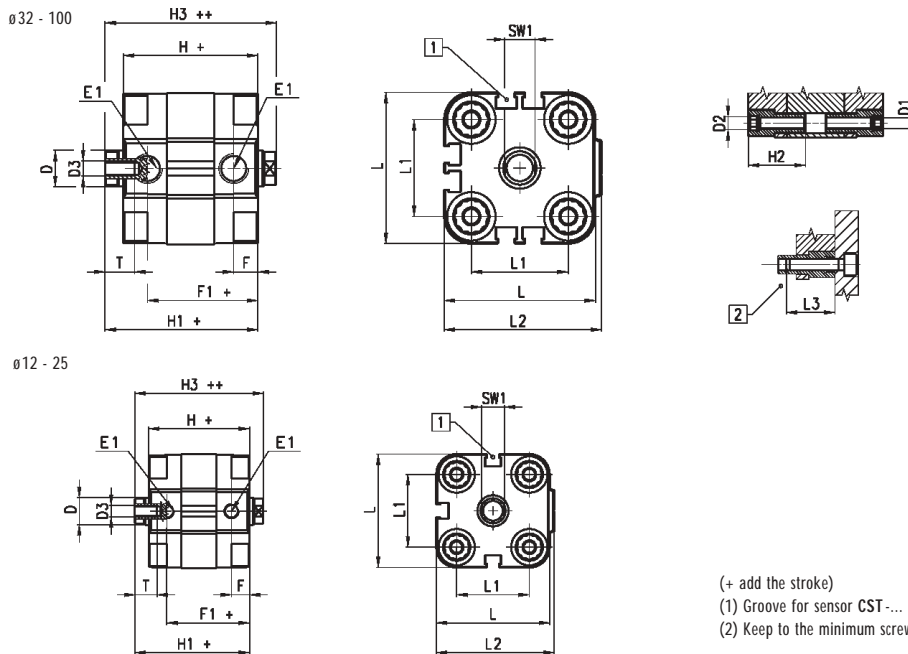
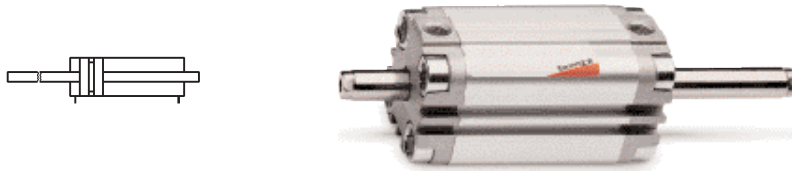


(+ add the stroke)
 (1) Groove for sensor CST-...
 (2) Keep to the minimum screwing depth

DIMENSIONS																			
ø cyl.	ø D	ø D1	D2	ø D8 (H9)	E1	F	F1	H	H1	H2	H3	K1	L	L1	L2	L3	T1	T2	SW1
12	6	3,5	M4	6	M5	8	30	38	42,5	18,5	58,5	M6	29	18	30	16	16	4	5
16	8	3,5	M4	6	M5	8	30	38	42,5	18,5	62,5	M8	29	18	30	16	20	4	7
20	10	4,5	M5	6	M5	8	30	38	42,5	18,5	64,5	M10x1,25	36	22	37,5	18	22	4	8
25	10	4,5	M5	6	M5	8	31,5	39,5	45	18,5	67	M10x1,25	40	26	41,5	18	22	4	8
32	12	5,5	M6	6	G1/8	8	36,5	44,5	50,5	21,5	72,5	M10x1,25	50	32	52	20	22	4	10
40	12	5,5	M6	6	G1/8	8	37,5	45,5	52	21,5	74	M10x1,25	60	42	62,5	20	22	4	10
50	16	6,5	M8	6	G1/8	8	37,5	45,5	53	22,5	77	M12x1,25	68	50	71	20	24	4	13
63	16	8,5	M10	8	G1/8	8	42	50	57,5	24,5	81,5	M12x1,25	87	62	91	25	24	4	13
80	20	8,5	M10	8	G1/8	8,5	47,5	56	64	24,5	96	M16x1,5	107	82	111	25	32	4	17
100	25	8,5	M10	8	G1/4	10,5	56	66,5	76,5	31,5	116,5	M20x1,5	128	103	133	25	40	4	22

Compact magnetic cylinders Mod. 31F..

With female thread through rod.



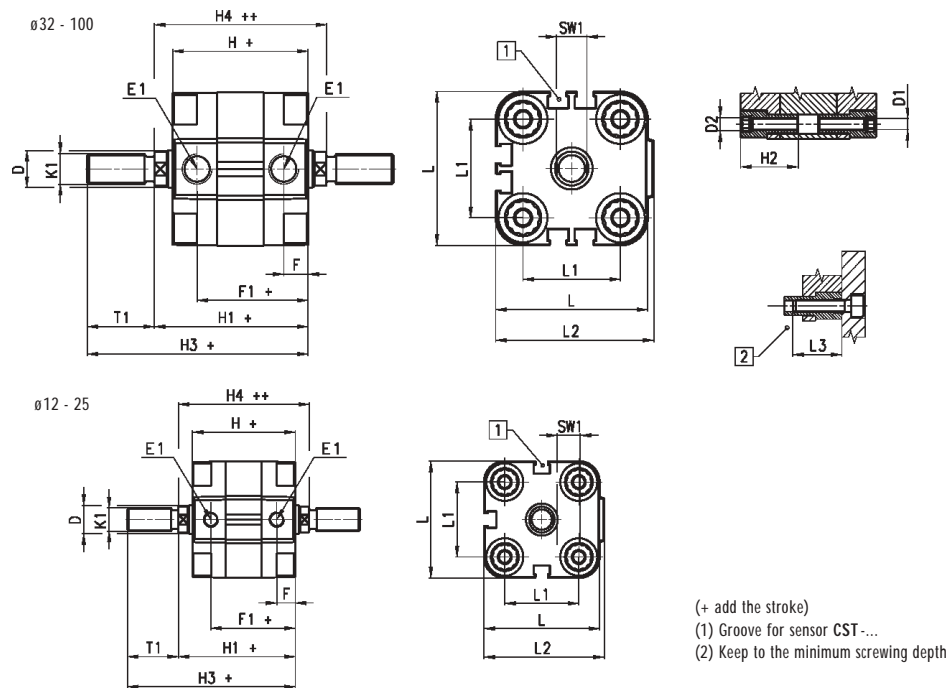
(+ add the stroke)
 (1) Groove for sensor CST-...
 (2) Keep to the minimum screwing depth

DIMENSIONS																		
ø cyl.	øD	øD1	D2	D3	E1	F	F1	H	H1	H2	H3	L	L1	L2	L3	T	T2	SW1
12	6	3,5	M4	M3	M5	8	30	38	42,5	18,5	47	29	18	30	16	6	4	5
16	8	3,5	M4	M4	M5	8	30	38	42,5	18,5	47	29	18	30	16	8	4	7
20	10	4,5	M5	M5	M5	8	30	38	42,5	18,5	47	36	22	37,5	18	10	4	8
25	10	4,5	M5	M5	M5	8	31,5	39,5	45	18,5	50,5	40	26	41,5	18	10	4	8
32	12	5,5	M6	M6	G1/8	8	36,5	44,5	50,5	21,5	56,5	50	32	52	20	12	4	10
40	12	5,5	M6	M6	G1/8	8	37,5	45,5	52	21,5	58,5	60	42	62,5	20	12	4	10
50	16	6,5	M8	M8	G1/8	8	37,5	45,5	53	22,5	60,5	68	50	71	20	12	4	13
63	16	8,5	M10	M8	G1/8	8	42	50	57,5	24,5	65	87	62	91	25	12	4	13
80	20	8,5	M10	M10	G1/8	8,5	47,5	56	64	24,5	72	107	82	111	25	16	4	17
100	25	8,5	M10	M12	G1/4	10,5	56	66,5	76,5	31,5	86,5	128	103	133	25	20	4	22

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Compact magnetic cylinders Mod. 31M...

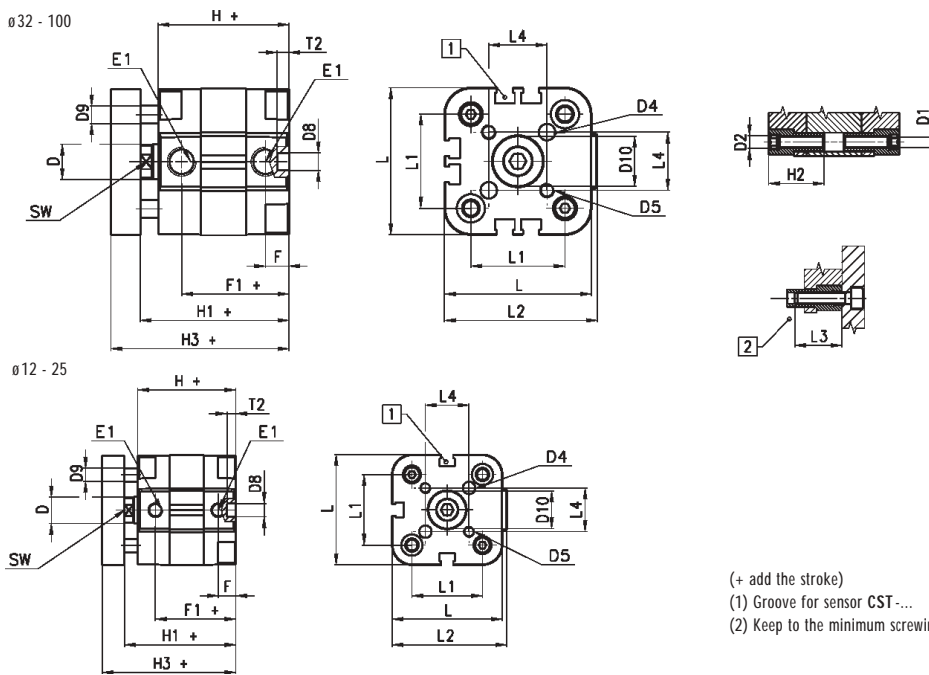
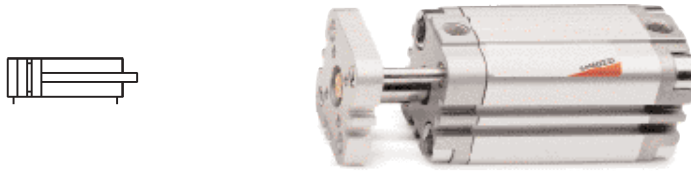
With male thread through rod.



DIMENSIONS																		
ø cyl.	øD	øD1	D2	E1	F	F1	H	H1	H2	H3	H4	K1	L	L1	L2	L3	T1	SW1
12	6	3,5	M4	M5	8	30	38	42,5	18,5	58,5	47	M6	29	18	30	16	16	5
16	8	3,5	M4	M5	8	30	38	42,5	18,5	62,5	47	M8	29	18	30	16	20	7
20	10	4,5	M5	M5	8	30	38	42,5	18,5	64,5	47	M10x1,25	36	22	37,5	18	22	8
25	10	4,5	M5	M5	8	31,5	39,5	45	18,5	67	50,5	M10x1,25	40	26	41,5	18	22	8
32	12	5,5	M6	G1/8	8	36,5	44,5	50,5	21,5	72,5	56,5	M10x1,25	50	32	52	20	22	10
40	12	5,5	M6	G1/8	8	37,5	45,5	52	21,5	74	58,5	M10x1,25	60	42	62,5	20	22	10
50	16	6,5	M8	G1/8	8	37,5	45,5	53	22,5	77	60,5	M12x1,25	68	50	71	20	24	13
63	16	8,5	M10	G1/8	8	42	50	57,5	24,5	81,5	65	M12x1,25	87	62	91	25	24	13
80	20	8,5	M10	G1/8	8,5	47,5	56	64	24,5	96	72	M16x1,5	107	82	111	25	32	17
100	25	8,5	M10	G1/4	10,5	56	66,5	76,5	31,5	116,5	86,5	M20x1,5	128	103	133	25	40	22

Compact magnetic cylinders Mod. 31R...

Anti-rotation.



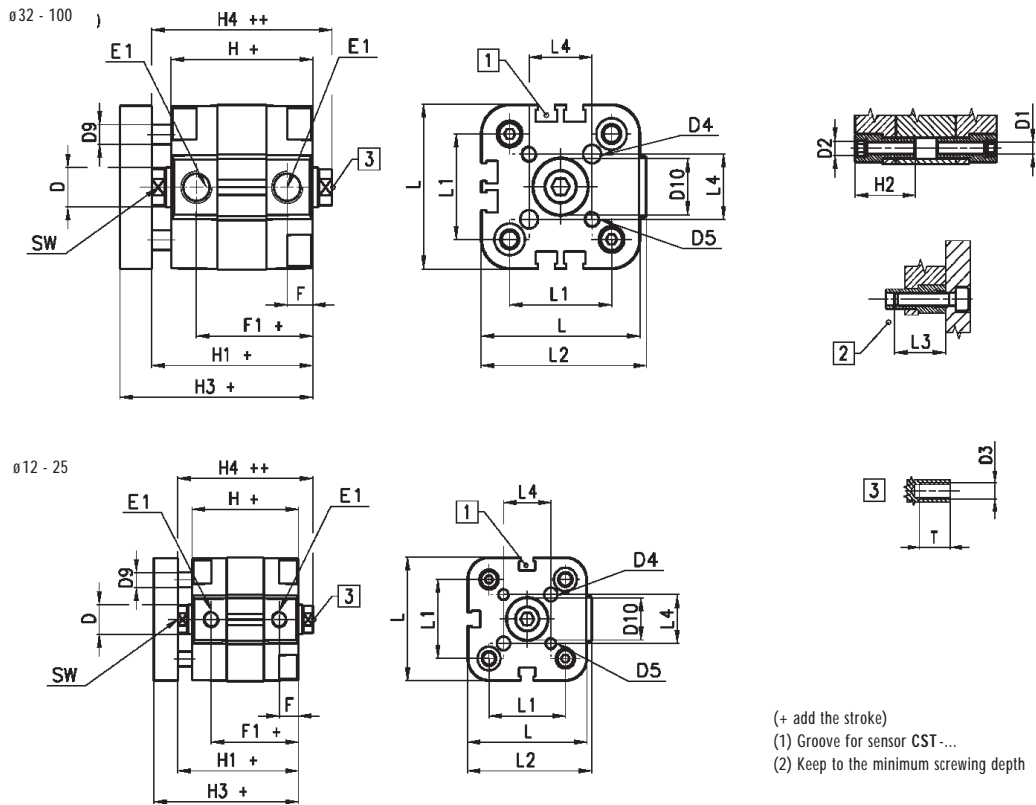
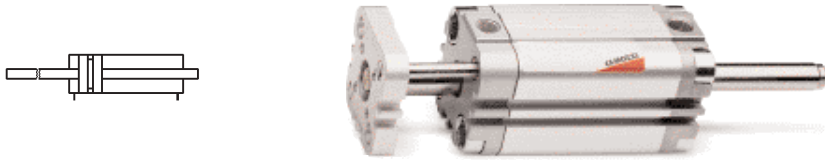
(+ add the stroke)
 (1) Groove for sensor CST-...
 (2) Keep to the minimum screwing depth

DIMENSIONS																							
ø cyl.	ø D	ø D1	D2	ø D4(H9)	D5	D8(H9)	ø D9	D10	E1	F	F1	H	H1	H2	H3	L	L1	L2	L3	L4	T	T2	SW
12	6	3,5	M4	3	M3	6	4	6	M5	8	30	38	42,5	18,5	48,5	29	18	30	16	9,9	6	4	5
16	8	3,5	M4	3	M3	6	4	8	M5	8	30	38	42,5	18,5	48,5	29	18	30	16	9,9	8	4	7
20	10	4,5	M5	4	M4	6	6	10	M5	8	30	38	42,5	18,5	50,5	36	22	37,5	18	12	10	4	8
25	10	4,5	M5	5	M5	6	6	14	M5	8	31,5	39,5	45	18,5	53	40	26	41,5	18	15,6	10	4	8
32	12	5,5	M6	5	M5	6	6	17	G1/8	8	36,5	44,5	50,5	21,5	60,5	50	32	52	20	19,8	12	4	10
40	12	5,5	M6	5	M5	6	6	17	G1/8	8	37,5	45,5	52	21,5	62	60	42	62,5	20	23,3	12	4	10
50	16	6,5	M8	6	M6	6	10	22	G1/8	8	37,5	45,5	53	22,5	65	68	50	71	20	29,7	12	4	13
63	16	8,5	M10	6	M6	8	10	22	G1/8	8	42	50	57,5	24,5	69,5	87	62	91	25	35,4	12	4	13
80	20	8,5	M10	8	M8	8	12	28	G1/8	8,5	47,5	56	64	24,5	78	107	82	111	25	46	16	4	17
100	25	8,5	M10	10	M10	8	12	30	G1/4	10,5	56	66,5	76,5	31,5	90,5	128	103	133	25	56,6	20	4	22

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Compact magnetic cylinders Mod. 31R...

With through rod anti-rotation.

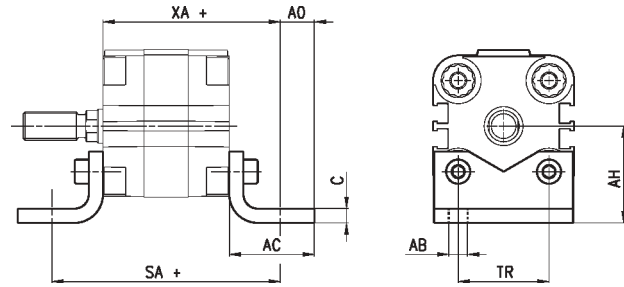
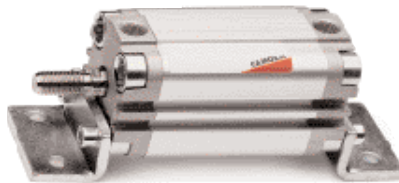


(+ add the stroke)
 (1) Groove for sensor CST...
 (2) Keep to the minimum screwing depth

DIMENSIONS																							
ø cyl.	øD	øD1	D2	D3	øD4 (H9)	D5	øD9	D10	E1	F	F1	H	H1	H2	H3	H4	L	L1	L2	L3	L4	T	SW
12	6	3,5	M4	M3	3	M3	4	6	M5	8	30	38	42,5	18,5	48,5	47	29	18	30	16	9,9	6	5
16	8	3,5	M4	M4	3	M3	4	8	M5	8	30	38	42,5	18,5	48,5	47	29	18	30	16	9,9	8	7
20	10	4,5	M5	M5	4	M4	6	10	M5	8	30	38	42,5	18,5	50,5	47	36	22	37,5	18	12	10	8
25	10	4,5	M5	M5	5	M5	6	14	M5	8	31,5	39,5	45	18,5	53	50,5	40	26	41,5	18	15,6	10	8
32	12	5,5	M6	M6	5	M5	6	17	G1/8	8	36,5	44,5	50,5	21,5	60,5	56,5	50	32	52	20	19,8	12	10
40	12	5,5	M6	M6	5	M5	6	17	G1/8	8	37,5	45,5	52	21,5	62	58,5	60	42	62,5	20	23,3	12	10
50	16	6,5	M8	M8	6	M6	10	22	G1/8	8	37,5	45,5	53	22,5	65	60,5	68	50	71	20	29,7	12	13
63	16	8,5	M10	M8	6	M6	10	22	G1/8	8	42	50	57,5	24,5	69	65	87	62	91	25	35,4	12	13
80	20	8,5	M10	M10	8	M8	12	28	G1/8	8,5	47,5	56	64	24,5	78	72	107	82	111	25	46	16	17
100	25	8,5	M10	M12	10	M10	12	30	G1/4	10,5	56	66,5	76,5	31,5	90,5	86,5	128	103	133	25	56,6	20	22

Foot mount Mod. B...

Material: zinc-plated steel.



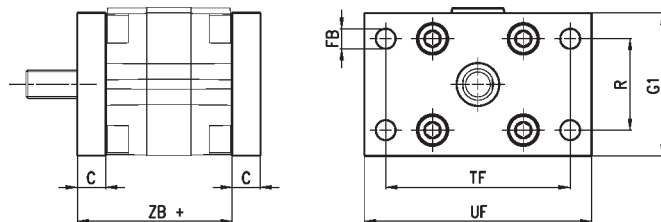
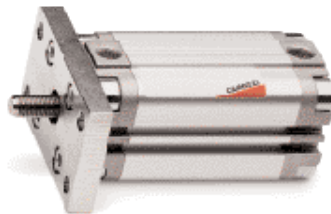
(+ add the stroke)

DIMENSIONS

Mod.	∅	C	SA	XA	TR	∅AB	AH	AO	AC
B-31-12-16	12	3	64	51	18	5,5	22	4,75	17,75
B-31-20	20	4	70	54	22	6,6	27	6,25	22,25
B-31-25	25	4	71,5	55,5	26	6,6	29	6,25	22,25
B-31-32	32	5	80,5	62,5	32	6,6	34	8,25	26,25
B-31-40	40	5	85,5	65,5	42	9	40,5	8,25	28,25
B-31-50	50	5,5	93,5	69,5	50	9	47	8,25	32,25
B-31-63	63	5,5	104	77	62	11	56,5	11,75	38,75
B-31-80	80	7,5	116	86	82	11	68,5	11,75	41,75
B-31-100	100	7,5	132,5	99,5	103	13,5	81	11,75	44,75

Rear and front flange Mod. D...

Material: zinc-plated steel.



(+ add the stroke)

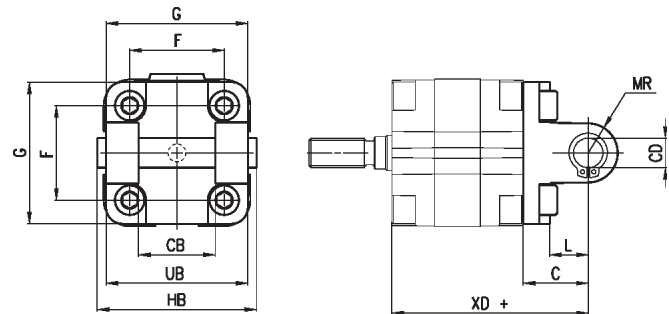
DIMENSIONS

Mod.	∅	C	ZB	TF	R	UF	G1	∅FB
D-E-31-12-16	12	10	48	43	-	55	29	5,5
D-E-31-20	20	10	48	55	-	70	36	6,6
D-E-31-25	25	10	49,5	60	-	76	40	6,6
D-E-31-32	32	10	54,5	65	32	80	50	7
D-E-31-40	40	10	55,5	82	36	102	60	9
D-E-31-50	50	12	57,5	90	45	110	68	9
D-E-31-63	63	15	65	110	50	130	87	9
D-E-31-80	80	15	71	135	63	160	107	12
D-E-31-100	100	15	81,5	163	75	190	128	14

The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public

Rear trunnion Mod. C...

Female, complete with clip ring and pin.
Material: aluminium.



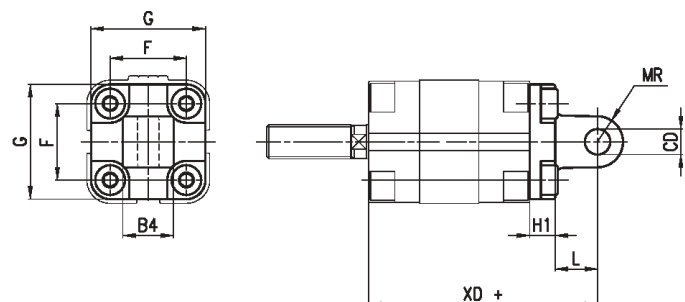
(+ add the stroke)

DIMENSIONS

Mod.	∅	∅CD	L	C	XD	MR	F	G	CB	UB	HB
C-31-32	32	10	13	21	66,5	11	32	50	26	45	54
C-31-40	40	12	16	25	70,5	13	42	60	28	52	62
C-31-50	50	12	16	27	72,5	13	50	68	32	60	70
C-31-63	63	16	21	32	82	17	62	87	40	70	82
C-31-80	80	16	23	36	92	17	82	107	50	70	102
C-31-100	100	20	26	41	107,5	21	103	128	60	110	126

Rear trunnion Mod. L...

Male.
Material: aluminium.



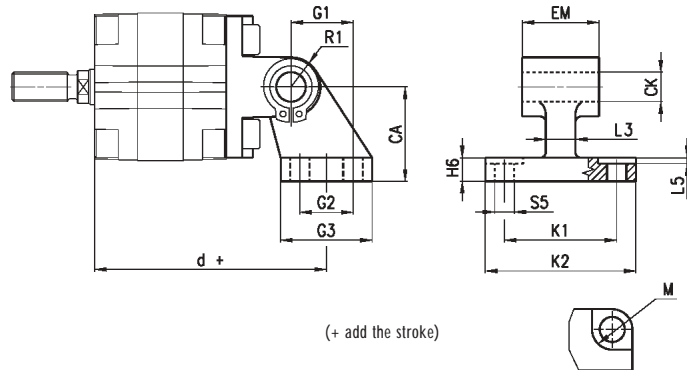
(+ add the stroke)

DIMENSIONS

Mod.	∅	∅CD	L	C	XD	MR	F	G	B4	UB
L-31-12	12	6	10	16	54	6	18	30	12	-
L-31-16	16	6	10	16	54	6	18	30	12	-
L-31-20	20	8	14	20	58	8	22	37,5	16	-
L-31-25	25	8	14	20	59,5	8	26	41,5	16	-

90° swivel combination Mod. Z...

Consists in C-31-Ø + ZC-Ø.
Material: aluminium.



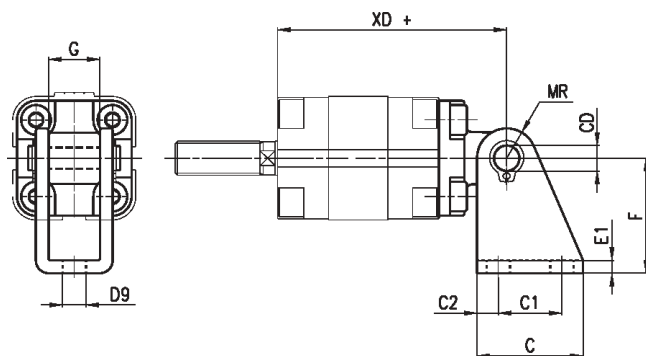
(+ add the stroke)

DIMENSIONS

Mod.	ø	M	øCK	øS5	d	K1	K2	L3	G1	L5	G2	EM	G3	CA	H6	R1
		H13	H9	H13		JS14	MAX	MAX	JS14	MAX	JS14		SJ14	JS15		MAX
Z-31-32	32	11	10	5,5	78,5	38	51	10	21	1,6	18	26	31	32	8	10
Z-31-40	40	11	12	5,5	83,5	41	54	15	24	1,6	22	28	35	36	10	11
Z-31-50	50	15	12	6,6	90,5	50	65	16	33	1,6	30	32	45	45	12	13
Z-31-63	63	15	16	6,6	101,5	52	67	16	37	1,6	35	40	50	50	12	15
Z-31-80	80	18	16	9	119	66	86	20	47	2,5	40	50	60	63	14	15
Z-31-100	100	18	20	9	137,5	76	96	20	55	2,5	50	60	70	71	15	19

Swivel combination Mod. I...

Consists in L-31-Ø + I-Ø.
Material: aluminium and zinc-plated steel



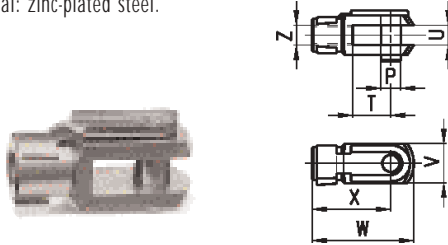
(+ add the stroke)

DIMENSIONS

Mod.	ø	øCD	C	C1	øC2	XD	MR	øD9	E1	F	G
I-31-12	12	6	16	15	5	54	7	5,5	3	27	12,1
I-31-16	16	6	16	15	5	54	7	5,5	3	27	12,1
I-31-20	20	8	20	20	6	58	10	6	4	30	16,1
I-31-25	25	8	20	20	6	59,5	10	6	4	30	16,1

Rod Fork End Mod. G...

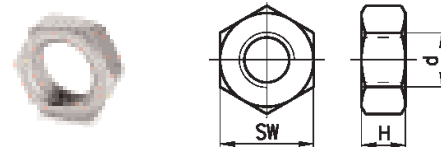
ISO 8140.
Material: zinc-plated steel.

**DIMENSIONS**

Mod.	ø cyl.	P	T	U	V	W	X	Z
G-12-16	12	6	12	6	12	31	24	M6x1
G-20	16	10	16	8	16	42	32	M8x1,25
G-25-32	20÷40	10	20	10	20	52	40	M10x1,25
G-40	50-63	12	24	12	24	62	48	M12x1,25
G-50-63	80	16	32	16	32	83	64	M16x1,5
G-80-100	100	20	40	20	40	105	80	M20x1,5

Piston Rod Lock Unit Mod. U...

ISO 5589.
Material: zinc-plated steel.

**DIMENSIONS**

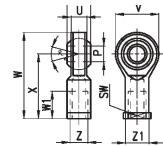
Mod.	ø cyl.	d	H	SW
U-12-16	12	M6x1	4	10
U-20	16	M8x1,25	5	13
U-25-32	20÷40	M10x1,25	6	17
U-40	50-63	M12x1,25	7	19
U-50-63	80	M16x1,5	8	24
U-80-100	100	M20x1,5	9	30

Swivel Ball Joint Mod. GA...

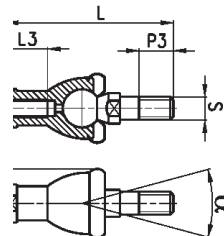
ISO 8139.
Material: zinc-plated steel.

DIMENSIONS

Mod.	ø cyl.	øP (H7)	U	U1	V	W	W1	X	Z	Z1	α°	SW
GA-12-16	12	6	6.5	9	20	40	12	30	M6x1	10	13	11
GA-20	16	8	9	12	20	48	16	36	M8x1.25	10	13	11
GA-32	20÷40	10	10.5	14	28	56	20	43	M10x1.25	15	8	17
GA-40	50-63	12	12	16	32	65	22	50	M12x1.25	17.5	8	19
GA-50-63	80	16	15	21	42	83	28	64	M16x1.5	22	8.5	22
GA-80-100	100	20	18	25	50	10	33	77	M20x1,5	27,5	9	30

**Piston Rod Socket Joint Mod. GY...**

Material: aluminium and zinc-plated steel.

**DIMENSIONS**

Mod.	ø cyl.	S	L	L1	L2	L3	W	w	l1	l2	l3	D	D1	d	d1	d2	α°
GY-12-16	12-16	M6x1	55,2	28	5	15	11	8	27,2	12,2	11	10	13	6	10	22	30°
GY-20	20	M8x1,25	65	32	5	16	14	10	33	16	12	12,5	16	8	12	28	30°
GY-25-32	25-32	M10x1,25	74,5	35	6,5	18	17	11	39,5	19,5	15	15	19	10	14	32	30°
GY-40	40	M12x1,25	84	40	6,5	20	19	17	45	22	17	17,5	22	12	19	36	30°
GY-50-63	50-63	M16x1,5	112	50	8	27	22	19	64	27,5	23	22	27	16	22	47	22°
GY-80-100	80-100	M20x1,5	133	63	10	38	30	24	72,5	31,5	25	27,5	34	20	29	58	15°