

COMPACT CYLINDERS, TANDEM AND MULTI-POSITION VERSIONS

SERIES 31

Double-acting, magnetic
 Ø 12, 16, 20, 25, 32, 40, 50, 63, 80, 100 mm



- Compact design
- Available in different diameters and strokes
- Standard magnetic

The compact dimensions allow Series 31 cylinders to be installed within very small spaces. These cylinders are suitable for use with feet, flange and trunnion mountings.

In order to complete the compact cylinder series, two new versions have been introduced: tandem and multi-position. The new Tandem version with 2, 3 or 4 stages generates a thrust force which is 2, 3 or 4 times that of the normal cylinder (standard traction force).

The Multi-position version allows a maximum of 3 different positions which are determined by the stroke of the individual actuators.

General Data

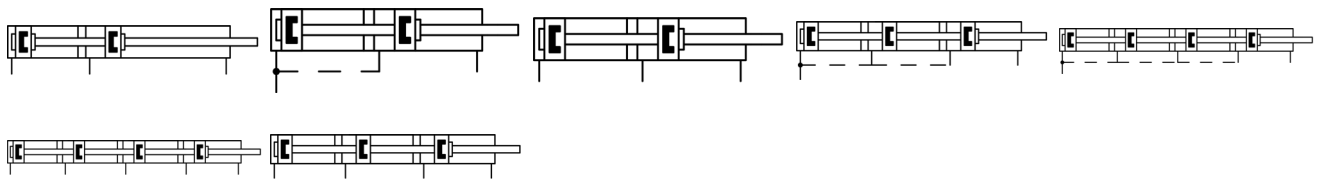
Type of construction	Compact profile
Operation	Double-acting
Materials	Body and end-blocks = anodized AL Rod = rolled stainless steel AISI 303 Piston = anodized AL Rod seal, OR end-block and piston seal = PU
Mounting	Flange - feet - trunnion
Min. and Max. strokes (for tandem)	Ø12÷25 = 1÷80 mm Ø32÷100 = 1÷100 mm
Min. and Max. strokes (for multi-position)	Ø12÷25 = max. 200 mm (dimension for X2) Ø32÷63 = max. 300 mm (dimension for X2) Ø80÷100 = max. 400 mm (dimension for X2)
Operating temperature	0°C ÷ 80°C (with dry air -20°C)
Operating pressure	1 ÷ 10 bar
Medium	Filtered air, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil. Once applied the lubrication should never be interrupted.
Speed	10 ÷ 1000 mm/sec (without load)

Coding Examples

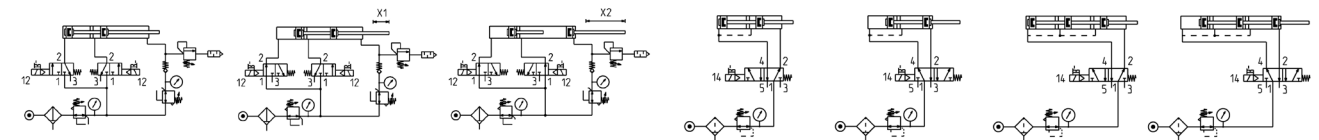
31	M	2	A	032	A	050	N	2
31	SERIES							
M	VERSION M = male rod thread, mounted with rod nut Mod. U F = female rod thread							
2	OPERATION 2 = double-acting						PNEUMATIC SYMBOLS CDPP	
A	MATERIALS A = rolled stainless steel rod AISI 303 - AL tube profile							
032	BORE 012 = 12 mm - 016 = 16 mm - 020 = 20 mm - 025 = 25 mm 032 = 32 mm - 040 = 40 mm - 050 = 50 mm - 063 = 63 mm 080 = 80 mm - 100 = 100 mm						CD5T, CD6T, CD7T CD2T, CD3T, CD4T CD2T, CD3T, CD4T	
A	CONSTRUCTION TYPE A = standard							
050	STROKE tandem stroke (mm) multi-position X1mm/X2mm. Insert stroke without the initial 0 (see application scheme).							
N	TANDEM AND MULTI-POSITION							
2	STAGES (only for tandem) 2 = 2 stages 3 = 3 stages 4 = 4 stages							
	CERTIFICATIONS = Standard EX = ATEX							

Pneumatic symbols

The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.



Application schemes

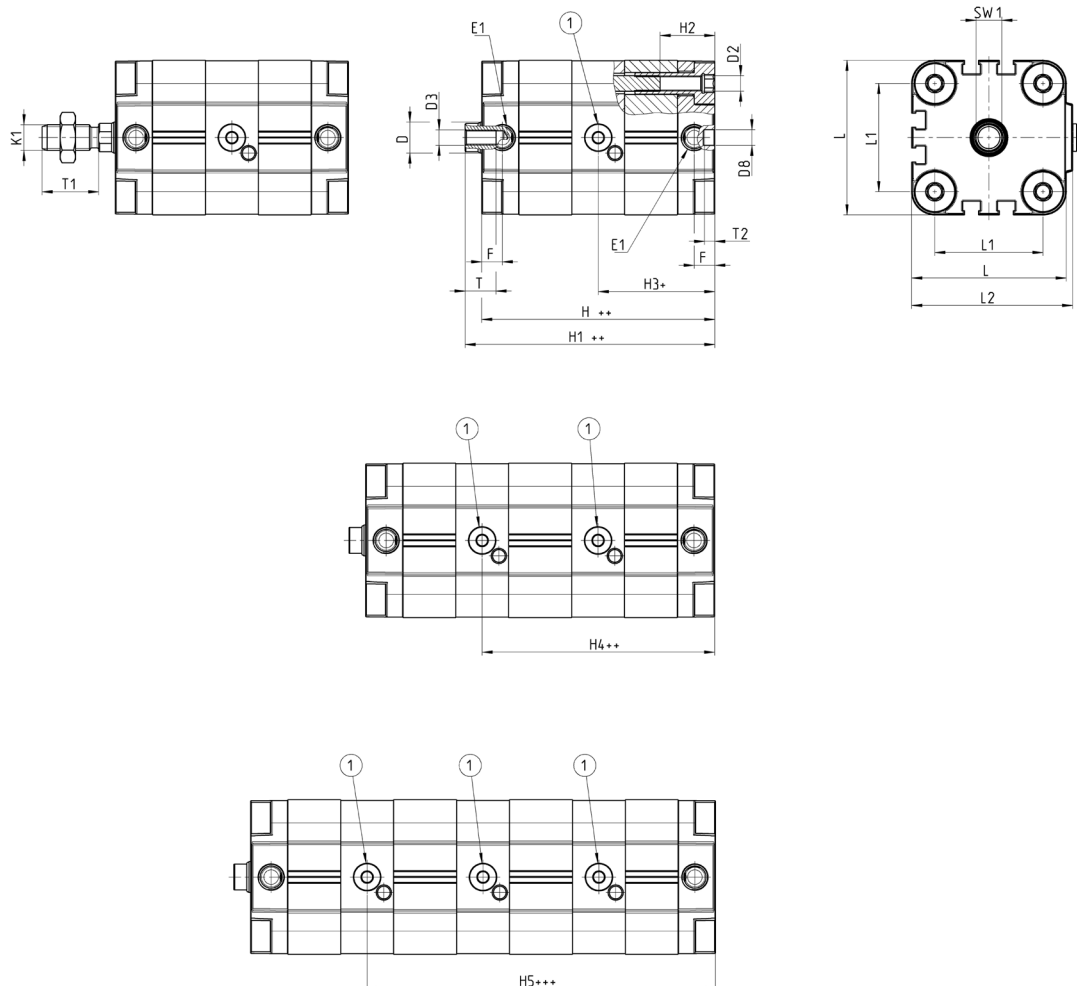


Example for ordering:
X1 = 25 mm and X2 = 100 mm
31M2A032A25/100N

Example for ordering:
stroke 25 mm
31M2A032A025N2 (2 stages)

Cylinders Series 31 - Tandem version

Mod. 31F2A...N...
Mod. 31M2A...N...



PNEUMATIC ACTUATION

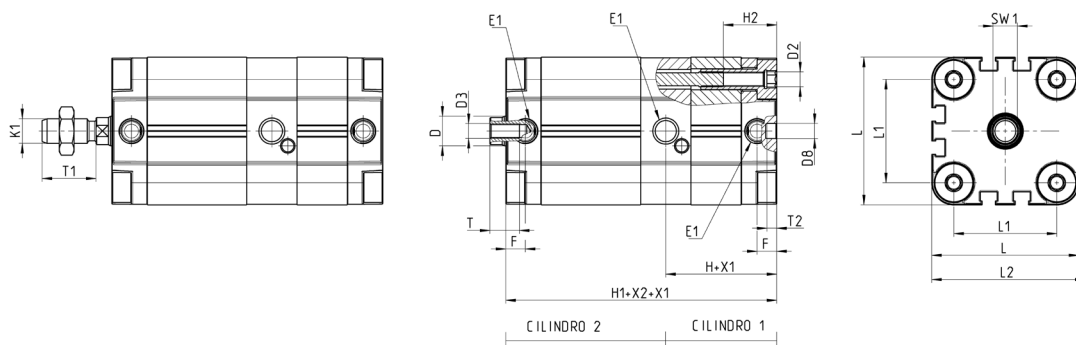
1

+ = add the stroke once
++ = add the stroke twice
+++ = add the stroke three times
++++ = add the stroke four times
(1) = air inlet cylinders Ø 12, 16, 20, 25

Ø	ØD	D2	D3	ØD8	E1	F	H ++	H1 ++	H2	H3 +	H4 ++	H5 +++	K1	L	L1	L2	T	T1	T2	SW1	3ST _{H1+++}	3ST _{H1++++}	4ST _{H1++++}	4ST _{H1++++}
12	6	M4	M3	6	M5	8	63,5	68	12,5	34,5	60	85,5	M6	29	18	30	6	16	4	5	89	93,5	114,5	119
16	8	M4	M4	6	M5	8	63,5	68	12,5	34,5	60,5	86,5	M8	29	18	30	8	20	4	7	89,5	94	115,5	120
20	10	M5	M5	6	M5	8	78	82,5	17	43,5	83,5	123,5	M10x1,25	36	22	37,5	10	22	4	8	118	122,5	158	162,5
25	10	M5	M5	6	M5	8	78	83,5	17	39,1	78,1	117,1	M10x1,25	40	26	41,5	10	22	4	8	117	122,5	156	161,5
32	12	M6	M6	6	G1/8	8	90,5	96,5	21,5	46,5	92,6	138,7	M10x1,25	50	32	52	12	22	4	10	136,5	142,5	182,5	188,5
40	12	M6	M6	6	G1/8	8	90,5	97	21,5	46,5	90,2	135,2	M10x1,25	60	42	62,5	12	22	4	10	135,5	142	180,5	187
50	16	M8	M8	6	G1/8	8	90,5	98	18	47,5	92,5	137,5	M12x1,25	68	50	71	12	24	4	13	135,5	143	180	188
63	16	M10	M8	8	G1/8	8	100,5	108	26	50,2	100,7	151,2	M12x1,25	87	62	91	12	24	4	13	151	158,5	201,5	209
80	20	M10	M10	8	G1/8	8,5	112	120	26,5	59	115	171	M16x1,5	107	82	111	16	32	4	17	168	176	224	232
100	25	M10	M12	8	G1/4	10,5	135,5	145,5	26,5	71,3	140,4	209,5	M20x1,5	128	103	133	20	40	4	22	204,5	214,5	237,5	283,5

Cylinders Series 31 - multi-position version

Mod. 31F2A...X1-X2N
Mod. 31M2A...X1-X2N



X1 = stroke of stage 1
X2 = total stroke of application scheme
+ = add the stroke

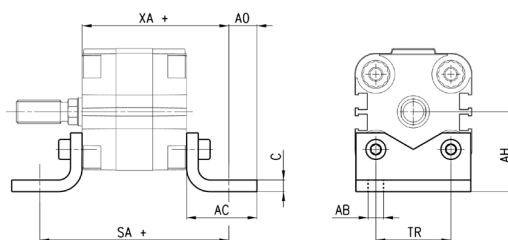
Ø	ØD	D2	D3	ØD8	E1	F	H+x1	H1+x2+x1	H2	K1	L	L1	L2	T	T1	T2	SW1
12	6	M4	M3	6	M5	8	34,5	63,5	12,5	M6	29	18	30	6	16	4	5
16	8	M4	M4	6	M5	8	34,5	63,5	12,5	M8	29	18	30	8	20	4	7
20	10	M5	M5	6	M5	8	43,5	78	17	M10x1,25	36	22	37,5	10	22	4	8
25	10	M5	M5	6	M5	8	39,1	78	17	M10x1,25	40	26	41,5	10	22	4	8
32	12	M6	M6	6	G1/8	8	46,5	90,5	21,5	M10x1,25	50	32	52	12	22	4	10
40	12	M6	M6	6	G1/8	8	45	90,5	21,5	M10x1,25	60	42	62,5	12	22	4	10
50	16	M8	M8	6	G1/8	8	47	90,5	18	M12x1,25	68	50	71	12	24	4	13
63	16	M10	M8	8	G1/8	8	50	100,5	26	M12x1,25	87	62	91	12	24	4	13
80	20	M10	M10	8	G1/8	8,5	59	112	26,5	M16x1,5	107	82	111	16	32	4	17
100	25	M10	M12	8	G1/4	10,5	71	135,5	26,5	M20x1,5	128	103	133	20	40	4	22

Foot mount Mod. B



Material:
zinc-plated steel

Supplied with:
2x feet
4x screws



+ = add the stroke

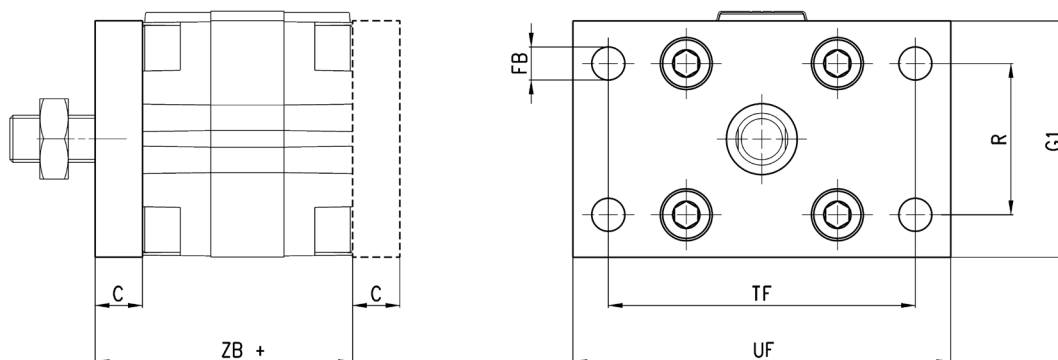
Mod.	Ø	C	SA +	XA +	TR	AB	AH	AO	AC
B-31-12-16	12 - 16	3	64	51	18	5,5	22	7	20
B-32-20	20	4	70	54	22	6,6	27	9	25
B-31-25	25	4	71,5	55,5	26	6,6	29	9	25
B-31-32	32	5	80,5	62,5	32	6,6	34	12	30
B-31-40	40	5	85,5	65,5	42	9	40,5	10	30
B-31-50	50	5,5	93,5	69,5	50	9	47	11	35
B-31-63	63	5,5	104	77	62	11	56,6	13	40
B-31-80	80	7,5	116	86	82	11	68,5	15	45
B-31-100	100	7,5	132,5	99,5	103	13,5	81	12	45

Front flange Mod. D-E



Front and rear
Material:
zinc-plated steel

Supplied with:
1x flange
4x screws



+ = add the stroke

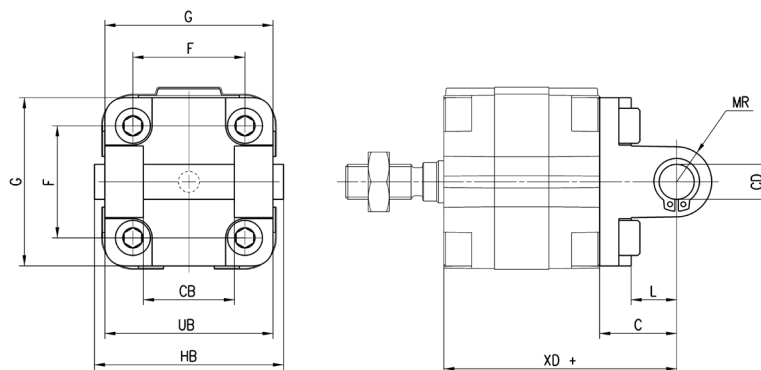
Mod.	Ø	C	ZB +	TF	R	UF	G1	FB
D-E-31-12-16	12 - 16	10	48	43	-	55	29	5,5
D-E-32-20	20	10	48	55	-	70	36	6,6
D-E-32-25	25	10	49,5	60	-	76	40	6,6
D-E-31-32	32	10	54,5	65	32	80	50	7
D-E-31-40	40	10	55,5	82	36	102	60	9
D-E-31-50	50	12	57,5	90	45	110	68	9
D-E-31-63	63	15	65	110	50	130	87	9
D-E-31-80	80	15	71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

Rear female trunnion Mod. C



Material:
aluminium

Supplied with:
4x screws
1x clevis pin
1x centering pin
1x trunnion



+ = add the stroke

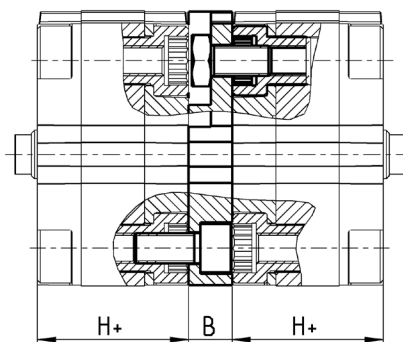
Mod.	Ø	BCD	L	C	XD +	MR	F	G	CB	UB	HB
C-31-32	32	10	13	21	66,5	11	32	50	26	45	54
C-31-40	40	12	16	25	70,5	13	42	60	28	52	62
C-31-50	50	12	16	27	72,5	13	50	68	32	60	70
C-31-63	63	16	21	32	82	17	62	87	40	70	82
C-31-80	80	16	23	36	92	17	82	102	50	90	102
C-31-100	100	20	26	41	107,5	21	103	128	60	110	126

Intermediate bracket Mod. DC



Material:
aluminium

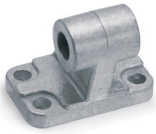
Supplied with:
1x flange
1x centering pin
4x screws



+ = add the stroke

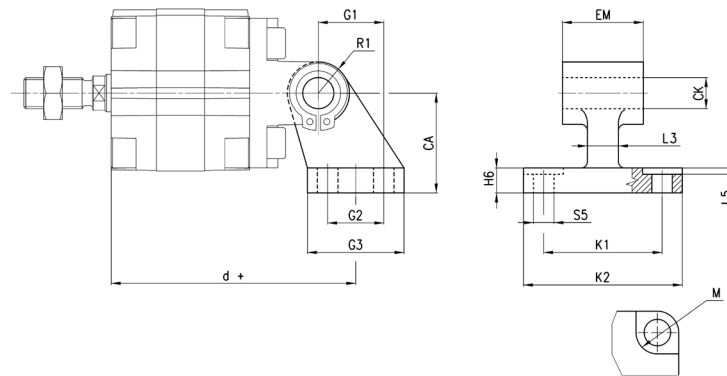
Mod.	Ø	B	H	Max stroke (mm)
DC-31-12-16	12-16	12,5	38	400
DC-31-20	20	12,5	38	400
DC-31-25	25	13	39,5	400
DC-31-32	32	14,5	44,5	600
DC-31-40	40	14,5	45,5	600
DC-31-50	50	14,5	45,5	600
DC-31-63	63	14,5	50	600
DC-31-80	80	16,5	56	800
DC-31-100	100	19,5	66,5	800

90° Swivel combination for female trunnion Mod. ZC


Male rear

Material:
aluminium

Supplied with:
1x male support



+ = add the stroke

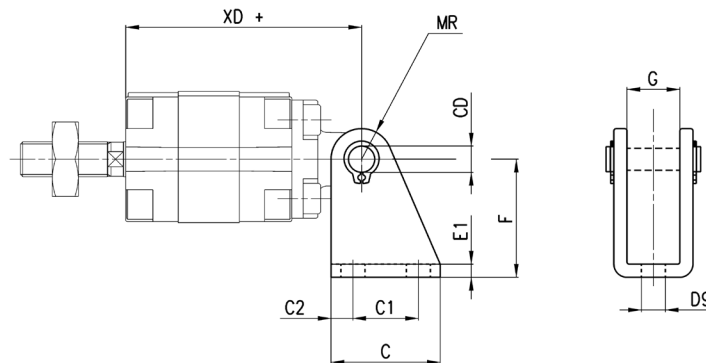
Mod.	Ø	M	CK	S5	d +	K1	K2	L3	G1	L5	G2	EM	G3*	CA	H6	R1
ZC-32	32	11	10	6,6	78,5	38	51	10	21	1,6	18	26	31	32	8	10
ZC-40	40	11	12	6,6	83,5	41	54	15	24	1,6	22	28	35	36	10	11
ZC-50	50	15	12	9	90,5	50	65	16	33	1,6	30	32	45	45	12	13
ZC-63	63	15	16	9	101,5	52	67	16	37	1,6	35	40	50	50	14	15
ZC-80	80	18	16	11	119	66	86	20	47	2,5	40	50	60	63	14	15
ZC-100	100	18	20	11	137,5	76	96	20	55	3,2	50	60	70	71	17	19

90° swivel combination for trunnion Mod. I


Material:

zinc-plated steel

Supplied with:
2x Seeger
1x female support
1x piston pin



+ = add the stroke

Mod.	Ø	CD	C	C1	C2	XD +	MR	D9	E1	F	G
I-12-16	12	6	25	15	5	54	7	5,5	3	27	12,1
I-12-16	16	6	25	15	5	54	7	5,5	3	27	12,1
I-20-25	20	8	32	20	6	58	10	6	4	30	16,1
I-20-25	25	8	32	20	6	59,5	10	6	4	30	16,1

Rear male trunnion Mod. L

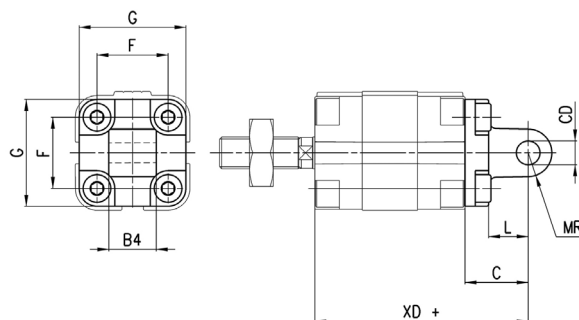


Material:
aluminium

Supplied with:
4x screws
1x male trunnion
1x centering pin

Mod.	Ø	CD	L	C	XD +	MR	F	G	B4
L-31-12-16	12	6	10	16	54	6	18	30	12
L-31-12-16	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

+ = add the stroke



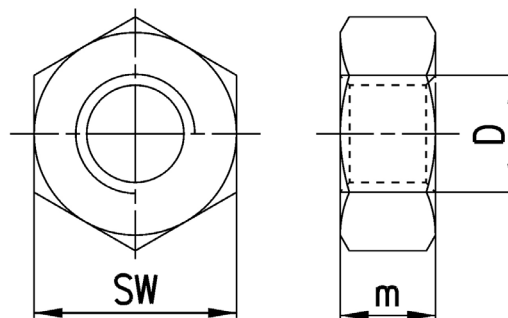
Piston rod nut Mod. U



ISO 4035

Material:
zinc-plated steel

Mod.	Ø	D	m	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



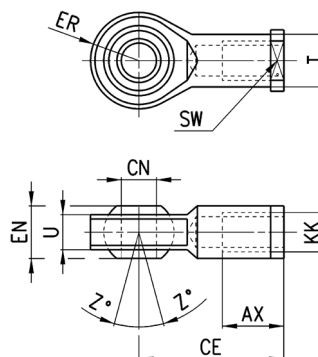
Swivel ball joint Mod. GA



ISO 8139

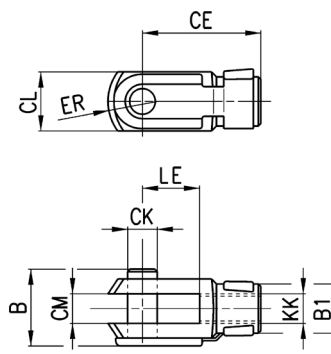
Material:
zinc-plated steel

Mod.	Ø	CN	U	EN	ER	AX	CE	KK	T	Z	SW
GA-12-16	12	6	7	9	10	12	30	M6x1	10	6,5	11
GA-20	16	8	9	12	12	16	36	M8x1,25	12,5	6,5	14
GA-32	20÷40	10	10,5	14	14	20	43	M10x1,25	15	6,5	17
GA-40	50÷63	12	12	16	16	22	50	M12x1,25	17,5	6,5	19
GA-50-63	80	16	15	21	21	28	64	M16x1,5	22	7,5	22
GA-80-100	100	20	18	25	25	33	77	M20x1,5	27,5	7	30



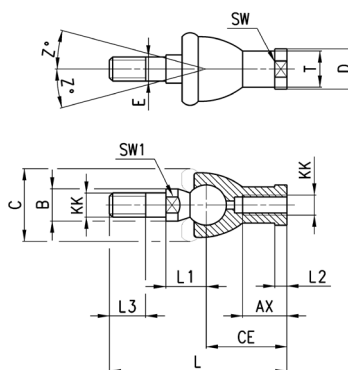
Rod fork end Mod. G


ISO 8140

 Material:
zinc-plated steel


Mod.	Ø	B	B1	CK	LE	CM	CL	ER	CE	KK
G-12-16	12	16	10	6	12	6	12	7	24	M6x1
G-20	16	22	14	8	16	8	16	42	32	M8x1,25
G-25-32	20 ÷ 40	26	18	10	20	10	20	12	40	M10x1,25
G-40	50 ÷ 63	32	20	12	24	12	24	14	48	M12x1,25
G-50-63	80	40	26	16	32	16	32	19	64	M16x1,5
G-80-100	100	48	34	20	40	20	40	25	80	M20x1,5

Piston rod socket joint Mod. GY


 Material:
zama and zinc-plated steel


Mod.	Ø	KK	L	CE	L2	AX	E	B	C	T	D	L1	L3	SW1	SW	Z
GY-12-16	12	M6x1	55	28	5	15	6	10	20	10	13	12,2	11	8	11	15
GY-20	16	M8x1,25	65	32	5	16	8	12	24	12,5	16	16	12	10	14	15
GY-32	20÷40	M10x1,25	74	35	6,5	18	10	14	28	15	19	19,5	15	11	17	15
GY-40	50÷63	M12x1,25	84	40	6,5	20	12	19	32	17,5	22	21	17	17	19	15
GY-50-63	80	M16x1,5	112	50	8	27	16	22	40	22	27	27,5	23	19	22	11
GY-80-100	100	M20x1,5	133	63	10	38	20	27	45	27,5	34	31,5	25	24	30	7,5

Self aligning rod Mod. GK

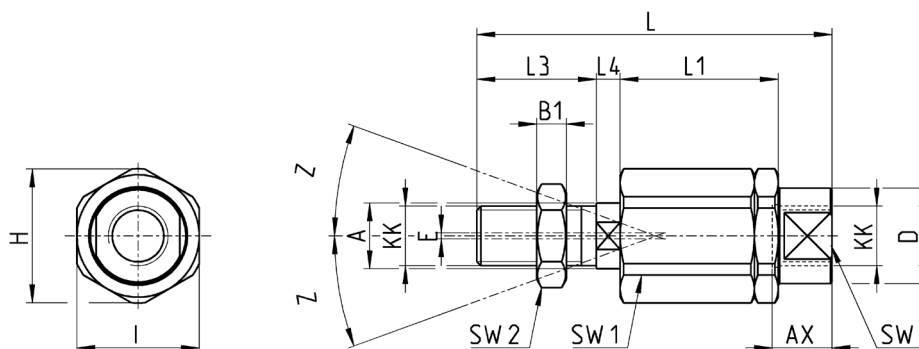
PNEUMATIC ACTUATION

1



For cylinders with male rod only.

Material:
zinc-plated steel

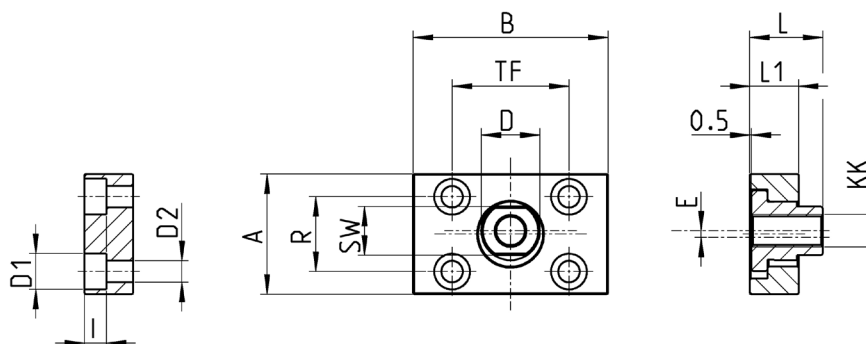


Mod.	Ø	KK	L	L1	L3	L4	ØA	ØD	H	I	SW	SW1	SW2	B1	AX	Z	E
GK-20	16	M8x1,25	57	26	21	5	8	12,5	19	17	11	7	13	4	16	4	2
GK-25-32	20-25-32-40	M10x1,25	71,5	35	20	7,5	14	22	32	30	19	12	17	5	22	4	2
GK-40	50-63	M12x1,25	75,5	35	24	7,5	14	22	32	30	19	12	19	6	22	4	2
GK-50-63	80	M16x1,5	104	53	32	10	22	32	45	41	27	20	24	8	30	3	2
GK-80-100	100	M20x1,5	119	53	40	10	22	32	45	41	27	20	30	10	37	3	2

Coupling piece Mod. GKF

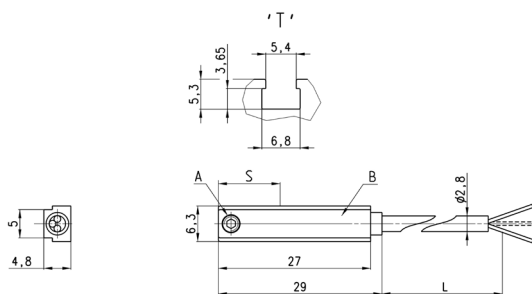


Material:
zinc-plated steel



Mod.	Ø	KK	A	B	R	TF	L	L1	I	ØD	ØD2	SW	E
GKF-20	16	M8x1,25	30	35	20	25	22,5	10	-	14	5,5	13	1,5
GKF-25-32	20-25-32-40	M10x1,25	37	60	23	36	22,5	15	6,8	18	11	6,6	2
GKF-40	50-63	M12x1,25	56	60	38	42	22,5	15	9	20	15	9	2,5
GKF-50-63	80	M16x1,5	80	80	58	58	26,5	15	10,5	25	18	22	2,5
GKF-80-100	100	M20x1,5	90	90	65	65	32,5	20	13	30,5	20	14	2,5

Magnetic proximity switches with 2 or 3 wire cable for T-slot

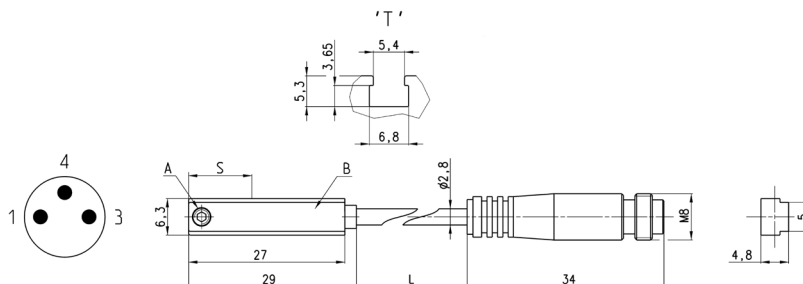


A = Fixing screw
B = Led indicator
S = Sensing point
L = Length cable

Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CST-220*	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	2 m	14,5 mm	Yellow
CST-220-5*	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	5 m	14,5 mm	Yellow
CST-220EX	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	2 m	14,5 mm	Yellow
CST-220-5EX	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	5 m	14,5 mm	Yellow
CST-220-12EX	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	12 m	14,5 mm	Yellow
CST-232	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-232-5	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	5 m	14,5 mm	Yellow
CST-232EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-232-5EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing and overvoltage	5 m	14,5 mm	Yellow
CST-332	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	7,5 mm	Yellow
CST-332-5	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	7,5 mm	Yellow
CST-332EX	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	7,5 mm	Yellow
CST-332-5EX	Magnetoresistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	7,5 mm	Yellow
CST-432	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-432-5	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	5 m	14,5 mm	Yellow
CST-432EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CST-432-5EX	Reed	3 wires	5 ÷ 30 V AC/DC	PNP-NC	250 mA	10 VA / 8 W	Against polarity reversing	5 m	14,5 mm	Yellow
CST-532	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	8,5 mm	Yellow
CST-532-5	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	8,5 mm	Yellow
CST-532EX	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	8,5 mm	Yellow
CST-532-5EX	Hall effect	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	8,5 mm	Yellow

*Mod. CST-220, CST-220-5:
in case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

Magnetic proximity switches with M8 3-pin connector for T-slot



A = Fixing screw
B = Led indicator
S = Sensing point
L = Length cable

Mod.	Operation	Connection	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CST-250N*	Reed	2 wires M8 male 3 pin	10 ÷ 110 V AC/DC	-	250 mA	10 VA / 8 W	None	0,3 m	14,5 mm	Yellow
CST-250NEX	Reed	2 wires M8 male 3 pin	10 ÷ 110 V AC/DC	-	250 mA	10 VA / 8 W	None	0,3 m	14,5 mm	Yellow
CST-262	Reed	3 wires M8 male 3 pin	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	0,3 m	14,5 mm	Yellow
CST-262EX	Reed	3 wires M8 male 3 pin	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	0,3 m	14,5 mm	Yellow
CST-362	Magnetoresistive	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	7,5 mm	Yellow
CST-362EX	Magnetoresistive	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	7,5 mm	Yellow
CST-562	Hall effect	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	8,5 mm	Yellow
CST-562EX	Hall effect	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	8,5 mm	Yellow

*Mod. CST-250N:
in case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.