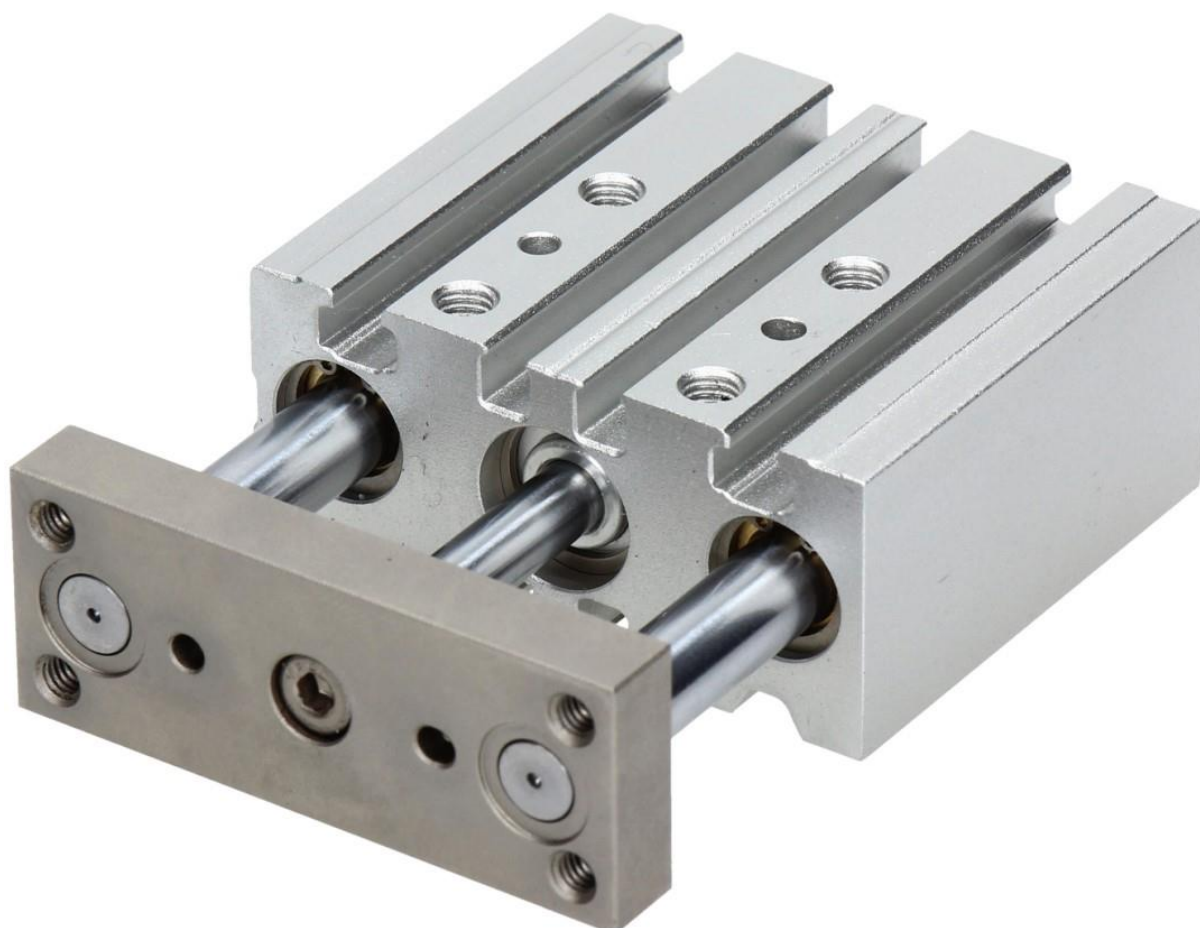




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TCM	with slide bearings
TCL	with ball bearings
TCMJ	with slide bearings and extension stroke adjustment
TCLJ	with ball bearings and extension stroke adjustment

TCM Ø6



TCL Ø63



Specification

Bore size [mm]	6	10	12	16	20	25	32	40	50	63	80	100
Acting type	double acting											
Fluid	compressed air filtered 40µm											
Operating pressure	0.2÷0.7MPa		0.15÷1.0MPa									
Proof pressure	1.2MPa		1.5MPa									
Ambient temperature	-20÷70°C											
Piston speed [mm/s]	50÷500		30÷500						50÷400			
Stroke tolerance	≤100 ^{+1.0} / ₀ >100 ^{+1.5} / ₀											
Plate rotation toler.* TCM	±0.1°	±0.1°	±0.09°	±0.08°	±0.06°	±0.05°						
Plate rotation toler.* TCL	-	±0.08°	±0.07°	±0.06°	±0.05°	±0.04°						
Cushion type	bumpers											
Port size	M3x0.5		M5x0.8		1/8			1/4		3/8		

* counted on retracted piston rod

Stroke

Bore size		Standard stroke [mm]											Max.
TCM	6	5 10 15 20											20
	10	5 10 15 20 25 30											30
TCM	12	10 20 25 30 40 50 60 70 75 80 90 100 125 150											150
TCL	16	10 20 25 30 40 50 60 70 75 80 90 100 125 150 175 200											200
TCMJ	20 25	20 25 30 40 50 60 70 75 80 90 100 125 150 175 200 225 250											250
TCLJ	32 40 50 63	25 30 40 50 60 70 75 80 90 100 125 150 175 200 225 250											250
TCM, TCL	80 100	25 30 40 50 60 70 75 80 90 100 125 150 175 200 225 250											250

Note: Contact us for custom stroke

Pneumatic symbols



Actuator catalogue number

TCM 50 X 50	S G
TCL 50 X 50	S G
TCLJ 50 X 50 - 10	S G
① ② ③ ④ ⑤ ⑥	

① Type	② Bore size	③ Stroke	④ Stroke adjustment	⑤ Magnet	⑥ Port thread type
TCM: with slide bearings	6 10	See the table above	Not applicable	S: with magnet	Blank: M5 or Rc* *internal taper thread G: G* *parallel thread T: NPT* *American pipe thread
TCM: with slide bearings TCL: with ball bearings	12 16 20 25 32 40 50 63 80 100				
TCMJ: with slide bearings and stroke adjustment TCLJ: with ball bearings and stroke adjustment	12 16 20 25 32 40 50 63				
			10 20 30 40 50 75 100mm		

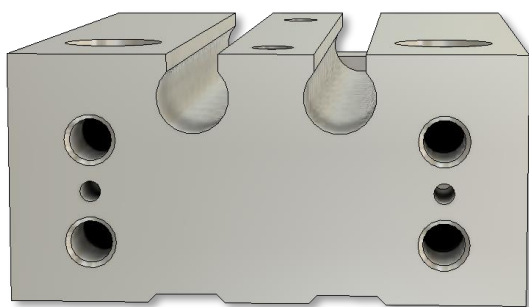
Piston position auto switch catalogue number

Solid state switch

DMS H - □ 020 - □				
①	②	③	④	⑤
Type	Groove	Output	Cable	Option
DMS: solid state switch	H: to round groove G: to square groove	Blank: 2-wire N: NPN P: PNP	020: 2m 030: 3m 050: 5m M08: 0.5m socket M8 M12: 0.5m socket M12	Blank: standard W: IP67

Reed switch

CMS H - 020 - □			
①	②	③	④
Type	Groove	Cable	Option
CMS: reed switch	H: to round groove G: to square groove	020: 2m 030: 3m 050: 5m M08: 0.5m socket M8 M12: 0.5m socket M12	Blank: standard H: temp. up to 125°C



Profile TC Ø6 i 10



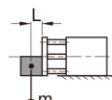
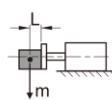
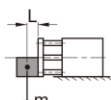
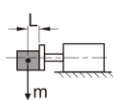
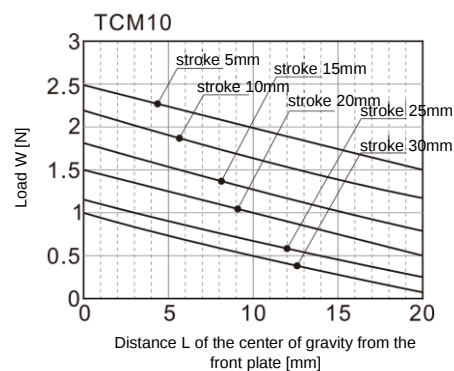
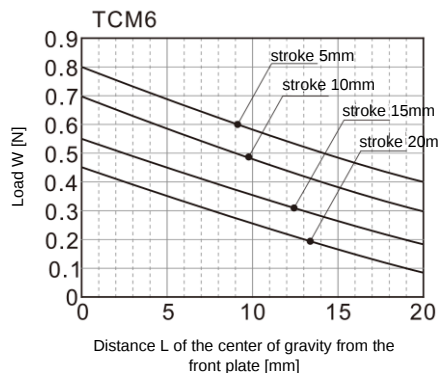
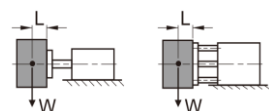
Profile TC Ø12 do 100

Types of sensors that can be applied

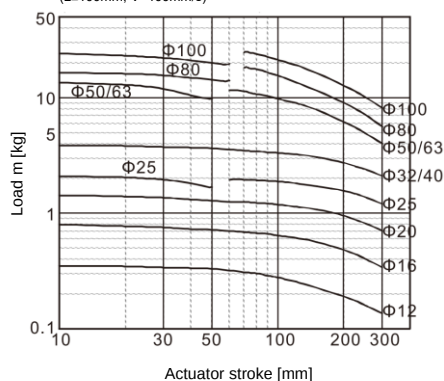
DMSH, CMSH

DMSG, CMSG

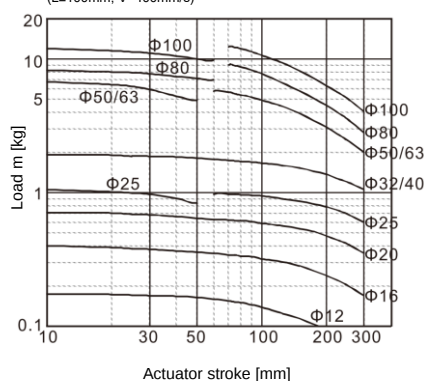
Permissible loads and moments on the front plate



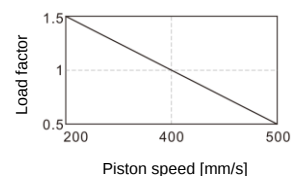
TCM (sliding guides), horizontal operation
(L≤100mm, V=400mm/s)

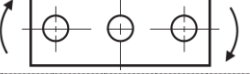


TCL (ball guides), horizontal operation
(L≤100mm, V=400mm/s)

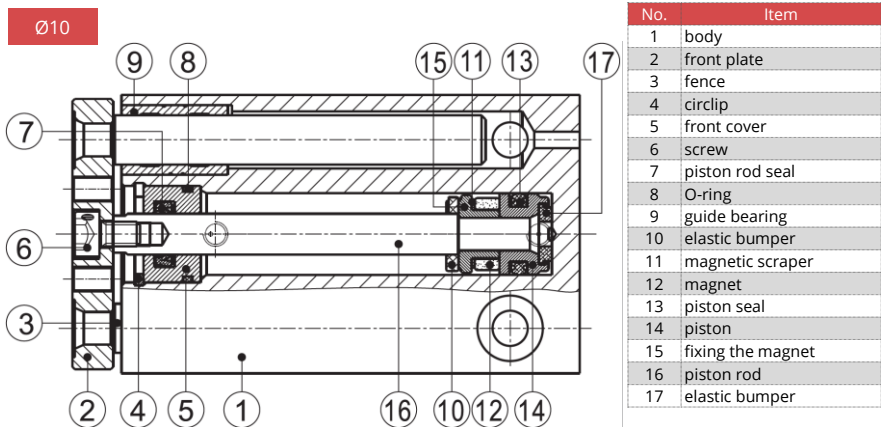
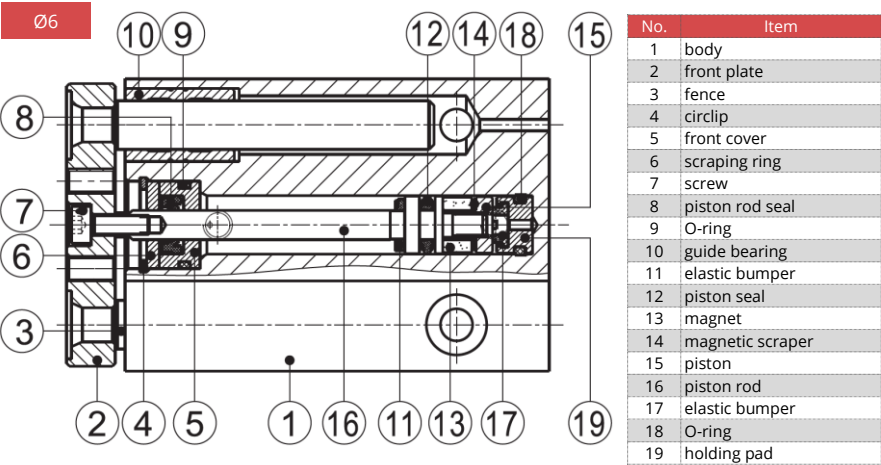


The graphs opposite show the permissible loads for a piston speed of 400mm/s. If the actual speed is different, use the coefficient in the chart below.

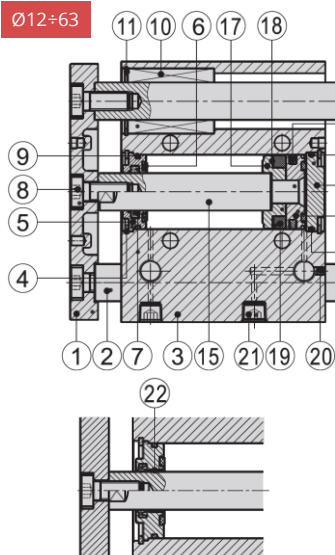


ØBore	typ	Stroke [mm]																			
		5	10	15	20	25	30	40	50	60	70	75	80	90	100	125	150	175	200	225	250
																					
6	TCM	0.008	0.007	0.006	0.005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	TCM	0.045	0.039	0.033	0.028	0.024	0.021	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	TCM	-	0.390	-	0.320	0.290	0.270	0.24	0.21	0.49	0.46	0.43	0.42	0.39	0.36	0.31	0.27	-	-	-	-
	TCL	-	0.350	-	0.290	0.260	0.240	0.22	0.19	0.44	0.39	0.37	0.35	0.32	0.29	0.24	0.20	-	-	-	-
16	TCM	-	0.690	-	0.580	0.540	0.490	0.43	0.38	0.75	0.72	0.69	0.65	0.61	0.58	0.50	0.44	0.40	0.36	-	-
	TCL	-	0.620	-	0.520	0.490	0.440	0.39	0.34	0.68	0.65	0.62	0.59	0.55	0.52	0.43	0.37	0.32	0.28	-	-
20	TCM	-	-	-	1.050	0.990	0.930	0.83	0.75	1.97	1.90	1.88	1.86	1.72	1.63	1.44	1.28	1.16	1.06	1.01	0.90
	TCL	-	-	-	0.950	0.890	0.840	0.75	0.68	1.77	1.59	1.52	1.46	1.33	1.25	1.30	1.15	1.03	0.93	0.88	0.76
25	TCM	-	-	-	1.760	1.650	1.550	1.38	1.25	3.17	3.06	2.96	2.91	2.77	2.57	2.26	2.02	1.83	1.67	1.57	1.42
	TCL	-	-	-	1.580	1.490	1.400	1.24	1.13	2.71	2.42	2.38	2.33	2.19	1.97	2.03	1.78	1.58	1.41	1.22	1.16
32	TCM	-	-	-	-	6.350	6.000	5.73	5.13	5.98	5.74	5.69	5.62	5.11	4.97	4.42	3.98	3.61	3.31	2.97	2.84
	TCL	-	-	-	-	5.720	5.400	5.16	4.62	5.38	5.15	5.11	5.02	4.60	4.47	3.98	3.58	3.25	2.98	2.67	2.56
40	TCM	-	-	-	-	7.000	6.600	6.11	5.66	6.66	6.31	6.27	6.23	5.86	5.48	4.78	4.38	3.98	3.65	3.34	3.13
	TCL	-	-	-	-	6.300	5.940	5.50	5.09	5.99	5.67	5.62	5.58	5.27	4.93	4.30	3.94	3.58	3.29	3.01	2.82
50	TCM	-	-	-	-	13.00	12.60	11.00	10.80	13.70	12.70	12.00	11.80	11.10	10.60	9.50	8.60	7.86	7.24	6.80	6.24
	TCL	-	-	-	-	9.17	8.75	8.30	7.62	10.30	9.94	9.83	9.77	8.82	8.74	8.55	7.74	7.07	6.52	6.12	5.62
63	TCM	-	-	-	-	14.70	13.60	12.90	12.10	19.40	16.20	13.50	12.70	12.10	11.90	10.70	9.69	8.86	8.16	7.52	7.04
	TCL	-	-	-	-	10.20	9.74	9.20	8.48	17.46	14.00	11.00	10.60	10.20	9.74	9.63	8.72	7.97	7.34	6.77	6.34
80	TCM	-	-	-	-	21.90	20.80	19.70	18.60	15.80	24.00	22.90	21.70	21.00	20.50	18.60	17.00	15.60	14.50	13.50	12.60
	TCL	-	-	-	-	15.10	14.30	13.60	12.90	12.20	21.60	20.61	19.53	18.90	18.45	16.74	15.30	14.04	13.05	12.15	11.34
100	TCM	-	-	-	-	38.80	36.80	35.00	33.50	28.50	39.40	37.50	35.60	34.50	33.80	30.90	28.40	26.20	24.40	22.50	21.40
	TCL	-	-	-	-	27.10	25.70	24.40	23.05	25.65	35.46	33.75	32.04	31.05	30.42	27.81	25.56	23.58	21.96	20.25	19.26

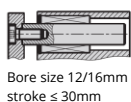
Inner structure



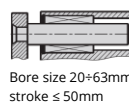
Ø12÷63



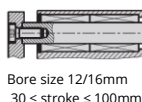
TCL



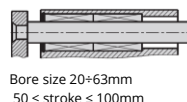
Bore size 12/16mm
stroke ≤ 30mm



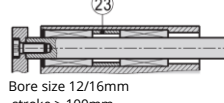
Bore size 20÷63mm
stroke ≤ 50mm



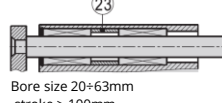
Bore size 12/16mm
30 < stroke ≤ 100mm



Bore size 20÷63mm
50 < stroke ≤ 100mm

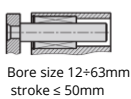


Bore size 12/16mm
stroke > 100mm

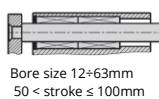


Bore size 20÷63mm
stroke > 100mm

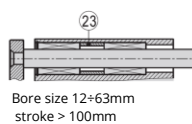
TCM



Bore size 12÷63mm
stroke ≤ 50mm



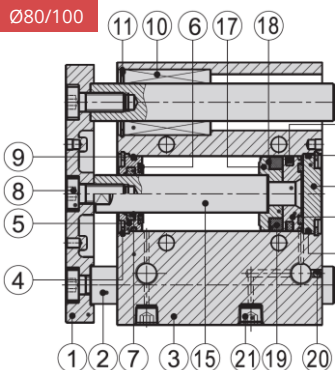
Bore size 12÷63mm
50 < stroke ≤ 100mm



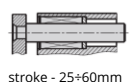
Bore size 12÷63mm
stroke > 100mm

No.	Item
1	front plate
2	fence
3	body
4	circlip
5	front cover
6	elastic bumper
7	piston rod seal
8	screw
9	O-ring
10	guide bearing
11	circlip
12	piston seal
13	O-ring
14	rear cover
15	piston rod
16	piston
17	fixing the magnet
18	magnetic scraper
19	magnet
20	screw
21	screw
22	guide sleeve
23	distance sleeve

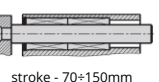
Ø80/100



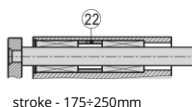
TCL



stroke - 25÷60mm

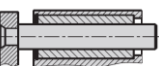


stroke - 70÷150mm



stroke - 175÷250mm

TCM

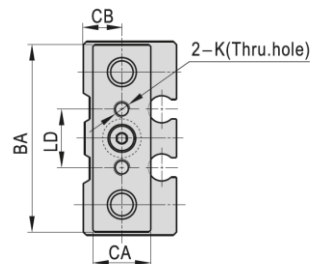
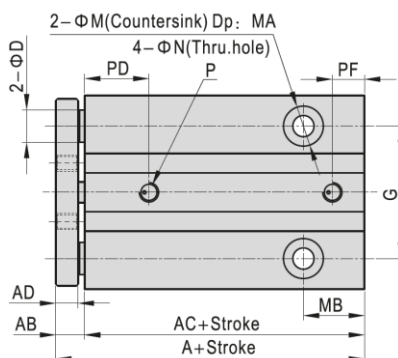
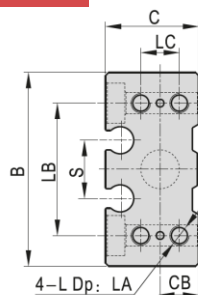


stroke - 25÷250mm

No.	Item
1	front plate
2	fence
3	body
4	circlip
5	front cover
6	elastic bumper
7	piston rod seal
8	screw
9	O-ring
10	guide bearing
11	circlip
12	piston seal
13	O-ring
14	rear cover
15	piston rod
16	piston
17	fixing the magnet
18	magnetic scraper
19	magnet
20	screw
21	screw
22	distance sleeve

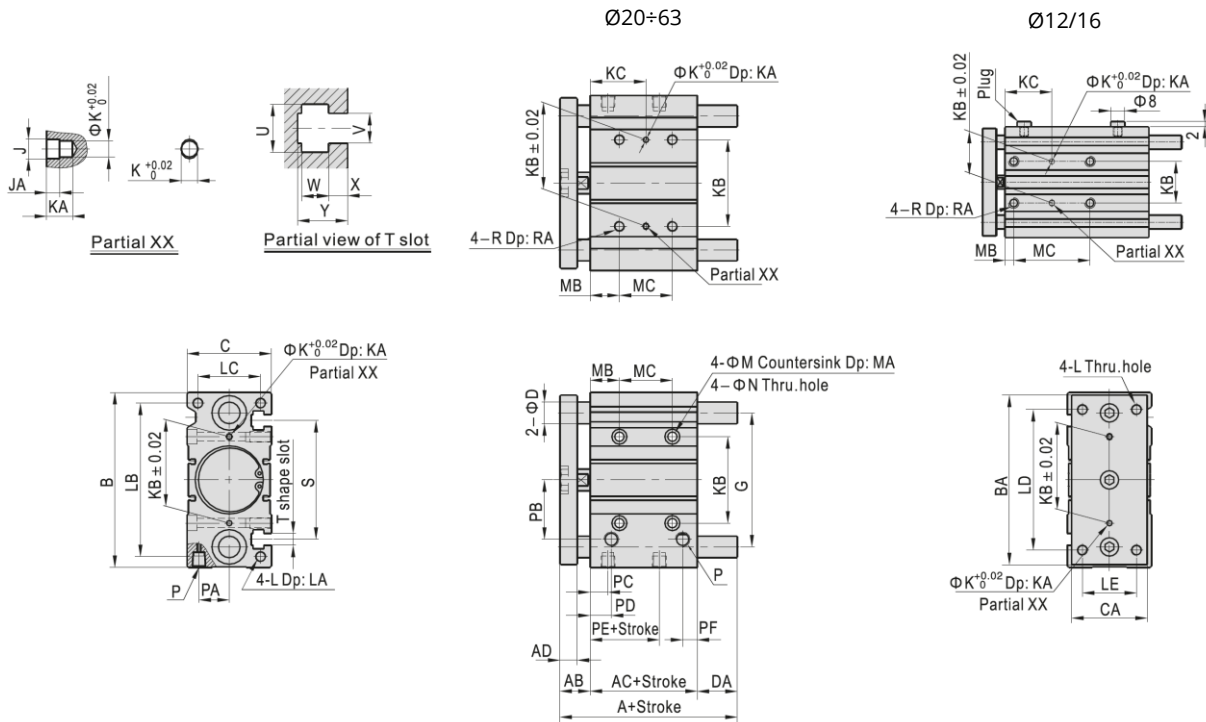
Dimensional drawings of actuators

TCM6/TCM10



Bore size/ dimens.	A	AB	AC	AD	B	BA	C	CA	CB	D	G	K	L	LA	LB	LC	LD	M	MA	MB	N	P	PD	PF
6	29.5	6	23.5	5	30	29	14.5	9	6.0	5	20.5	M2.5x0.5	M3x0.5	5	20.5	6	9	6	3	9.5	3.5	M3x0.5	9.5	5.5
10	32.0	6	26.0	5	34	33	18.0	10	7.5	6	23.0	M3x0.5	M4x0.7	5	23.0	8	11	8	4	8.5	4.5	M3x0.5	11.5	5.0

TCL/TCM12÷63



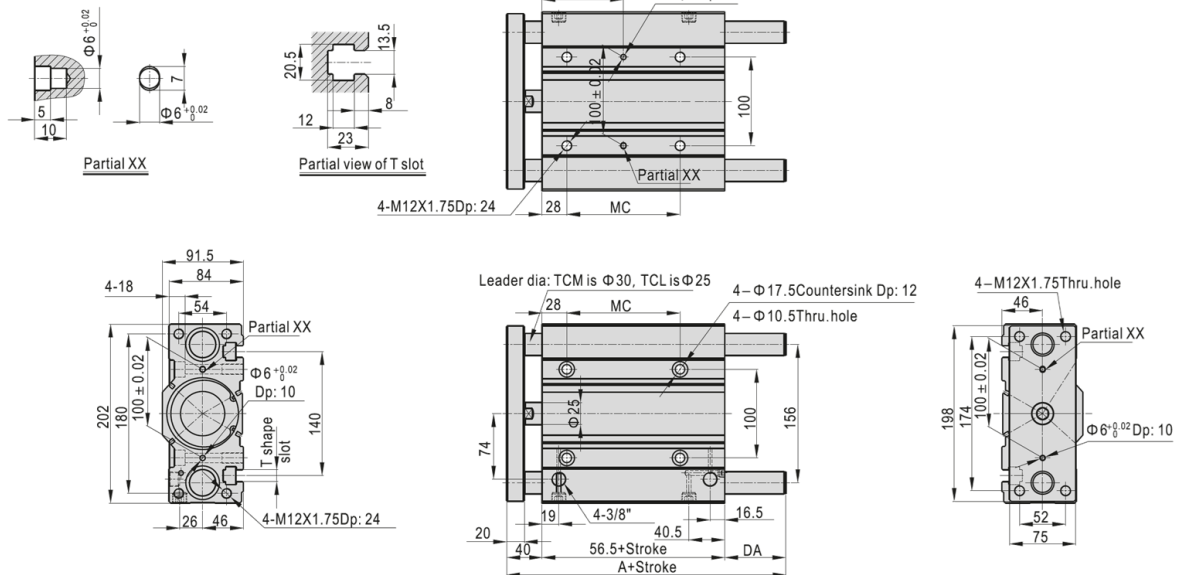
Bore size/ dimens.	A					DA										MC				KC			
	TCL	TCM	TCL/TCM			TCL					TCM												
	stroke	≤30	≤50	31+100	101+200	>200	≤30	31+100	101+200	>200	≤50	51+100	101+200	>200	≤30	31+100	101+200	>200	≤30	31+100	101+200	>200	
12	42		55	85.0	-	0	13	43	-	0	13.0	43	-	20	40	110	-	15	25	60	-		
16	46		65	95.0	-	0	19	49	-	0	19.0	49	-	24	44	110	-	17	27	60	-		
20	53		80	104.0	122	0	27	51	69.0	0	27.0	51	69.0	24	44	120	200	29	39	77	117		
25	53.5		82	104.5	122	0	28.5	51	68.5	0	28.5	51	68.5	24	44	120	200	29	39	77	117		

stroke	≤50	≤50	51÷100	101÷200	≥200	≤50	51÷100	101÷200	≥200	≤50	51÷100	101÷200	≥200	≤40	41÷100	101÷200	≥200	≤40	41÷100	101÷200	≥200
32	65	78	102	118	140	5.5	42.5	58.5	80.5	18.5	42.5	58.5	80.5	24	48	124	200	33	45	83	121
40	66	78	102	118	140	0.0	36.0	52.0	74.0	12.0	36.0	52.0	74.0	24	48	124	200	34	46	84	122
50	76	89	118	134	161	4.0	46.0	62.0	89.0	17.0	46.0	62.0	89.0	24	48	124	200	36	48	86	124
63	77	89	118	134	161	0.0	41.0	57.0	84.0	12.0	41.0	57.0	84.0	28	52	128	200	38	50	88	124

Bore size/ dimens.	AB	AC	AD	B	BA	C	CA	D(TCL)	D(TCM)	G	J	JA	K	KA	KB	L	LA	LB	LC	LO
12	13	29.0	8	58	56	26	22	6	8	41	3.5	3	3	6	23	M4x0.7	10	50	18	48
16	13	33.0	8	64	62	30	25	8	10	46	3.5	3	3	6	24	M5x0.8	12	56	22	54
20	16	37.0	10	83	81	36	30	10	12	54	3.5	3	3	6	28	M5x0.8	13	72	24	70
25	16	37.5	10	93	91	42	38	12	16	64	4.5	3	4	6	34	M6x1.0	15	82	30	78
32	22	37.5	12	112	110	48	44	16	20	78	4.5	3	4	6	42	M8x1.25	20	98	34	96
40	22	44.0	12	120	118	54	44	16	20	86	4.5	3	4	6	50	M8x1.25	20	106	40	104
50	28	44.0	16	148	146	64	60	20	20	110	6.0	4	5	8	66	M10x1.5	22	130	46	130
63	28	49.0	16	162	158	78	70	20	20	124	6.0	4	5	8	80	M10x1.5	22	142	58	130

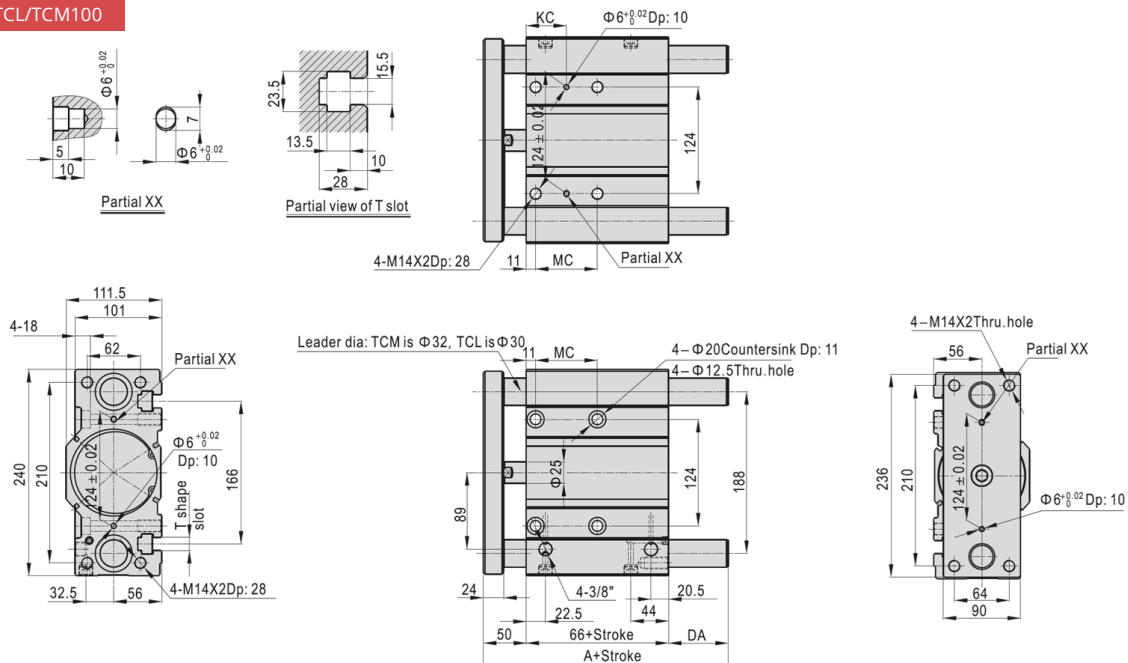
Bore size/ dimens.	LE	M	MA	MB	N	P	PA	PB	PC	PD	PE	PF	R	RA	S	U	V	W	X	Y
12	14	8.0	4.5	5	4.5	M5x0.8	8.0	18.0	11.0	11.0	13.0	7.5	M5x0.8	10	37	7.5	4.5	4.0	2.0	6.5
16	16	8.0	4.5	5	4.5	M5x0.8	10.0	19.0	11.0	11.0	15.0	8.0	M5x0.8	10	38	7.5	4.5	4.0	2.5	7.0
20	18	9.5	5.5	17	5.5	1/8	10.5	25.0	10.5	10.5	12.5	9.0	M6x1.0	12	44	8.5	5.5	4.5	3.0	8.0
25	26	9.5	5.5	17	5.5	1/8	13.5	28.5	11.5	11.5	12.5	9.0	M6x1.0	12	50	8.5	5.5	4.5	3.0	8.5
32	30	11.0	7.5	21	6.5	1/8	15.0	34.0	12.5	12.5	7.0	9.0	M8x1.25	16	63	10.5	6.5	5.5	3.5	9.5
40	30	11.0	7.5	22	6.5	1/8	18.0	38.0	14.0	14.0	13.0	10.0	M8x1.25	16	72	10.5	6.5	5.5	4.0	11.0
50	40	14.0	9.0	24	8.5	1/4	21.5	47.0	12.0	14.0	9.0	11.0	M10x1.5	20	92	13.5	8.5	7.5	4.5	13.5
63	50	14.0	9.0	24	8.5	1/4	28.0	55.0	16.5	16.5	14.0	13.5	M10x1.5	20	110	18.0	11.0	10.0	7.0	18.5

TCL/TCM80



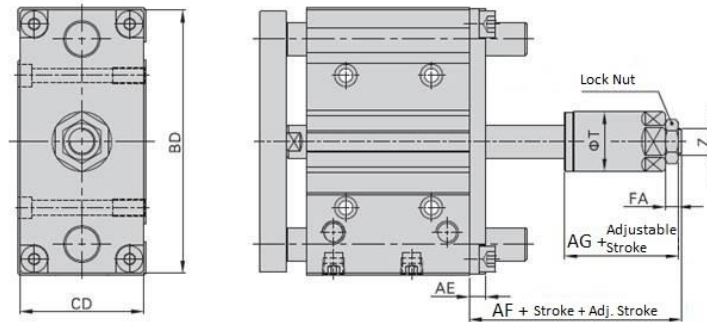
Dimension/ stroke	25	30	40	50	60	70	75	80	100	125	150	175	200	225	250
A	TCM=112.5/TCL=106.5					165.5							187.5		
DA	TCM=16/TCL=10					69.0							91.0		
KC	42			54			92			128			128		
MC	28			52			128			200			200		

TCL/TCM100



Dimension/ /stroke	25	30	40	50	60	70	75	80	100	125	150	175	200	225	250
A	TCM=128/TCL=122					186					208				
DA	TCM=12/TCL=6					70					92				
KC	35					47						85		121	
MC	48					72						148		220	

TCLJ/TCMJ12÷63



Bore size\ dimension	AE	AF	AG	BD	CD	FA	H	T	Z
12	5	22	17	57.5	25.5	4	8	12	M5x0.8
16	5	26	21	63.5	29.5	5	10	15	M6x1.0
20	6	31	25	82.0	34.0	6	12	20	M8x1.25
25	6	33	27	92.5	40.5	6	17	24	M10x1.25
32	8	36	28	111.5	47.5	7	17	32	M12x1.25
40	8	36	28	119.5	53.5	7	17	32	M12x1.25
50	10	39	29	147.0	63.0	8	23	36	M16x1.5
63	10	39	29	159.0	75.0	8	23	36	M16x1.5

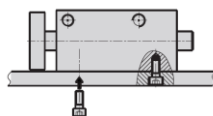
Note: other dimensions as in TCM/TCL actuators

Assembly

Fastening with screws to plate (Ø6÷100)



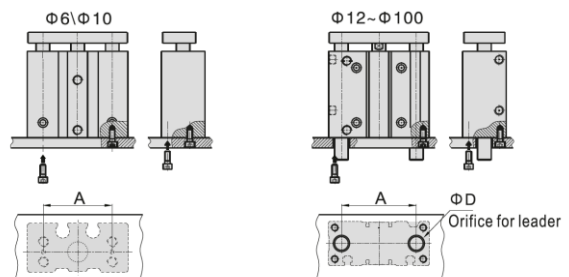
Fastening with screws through the plate (Ø6÷100)



Fastening with screws on T grooves (Ø6÷100)



Fastening with screws through plate to actuator back (Ø6÷100)



Bore size/ /dimension		6	10	12	16	20	25	32	40	50	63	80	100
A		20.5	23	41	46	54	64	78	86	110	124	156	188
D (min)	TCM	X	X	8	10	12	14	18	18	22	22	30	32
	TCL	-	-									25	30