



COMPACT GUIDE CYLINDER

User Manual

According to the operating load, select the suitable cylinder bore size.

Before fitting correct fittings in, make sure the thread ports and fittings are clean. Be aware of dust or fitting tap falling into the cylinder.

It is suggested to use the media filtrated by 40 μ filter element.

Under the high-temperature environment, use the high-temperature type cylinder. Under the low-temperature environment, take measures to avoid frozen fluid inside system.

If the fittings were removed from the cylinder for a period of time, be sure to block the thread port with protecting cap to keep the dust away.

High side-loaded resistance; high twisting resistance; high anti-rotate accuracy.

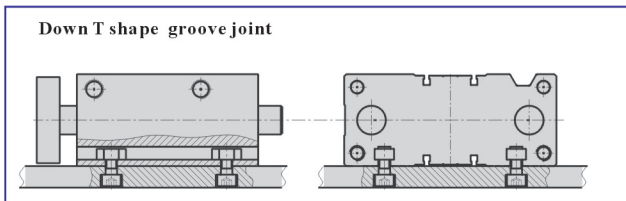
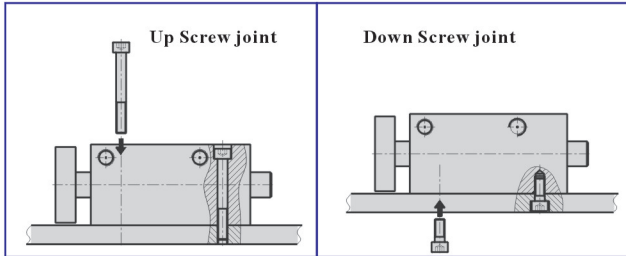


Products

 TC Series _____ VI-26

 Sensor _____ VI-29

Mounting type



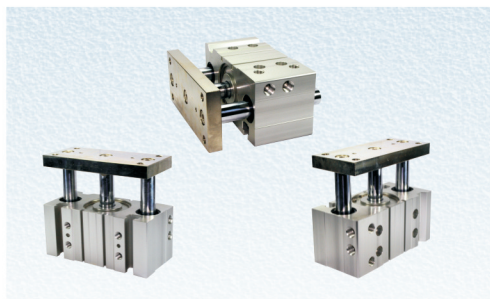
Back Screw joint

Bore size\Item	A	D(min)
12	41	8
16	46	10
20	54	12
25	64	14
32	78	18
40	86	18
50	110	22
63	124	22

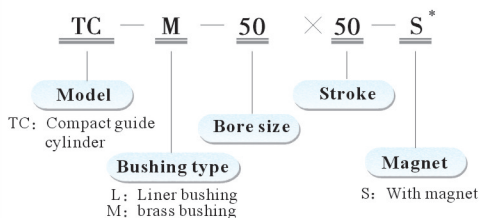


COMPACT GUIDE CYLINDER

TC SERIES



Ordering code



*Note: TC Series are all with magnet.

Specification

Bore size	mm	12	16	20	25	32	40	50	63	
Action		Double acting type								
Fluid		Air (to be filtered by 40μ filter element)								
Temperature range	°C	-5~70								
Pressure range		1.0~9.0bar(0.1~0.9MPa)(14~138Psi)								
Proof pressure		15.0bar(1.5MPa)(213Psi)								
User Speed	mm/s	50~500								
Cushion type		Bumper								
Lubrication		Not required								
Non-rotate tolerance	Liner bushing	± 0.08°			± 0.07°			± 0.06°		± 0.05°
	brass bushing	± 0.10°			± 0.09°			± 0.08°		± 0.06°
Port size		M5 × 0.8			1/8"			1/4"		

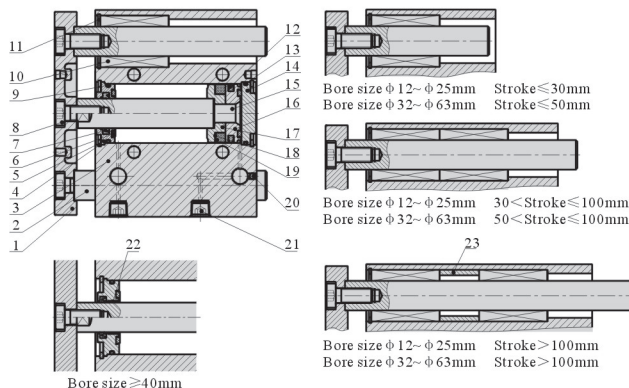
*Refer to PVI-29~VI-30 for detail information of sensor switch.

Stroke list

Bore size	Standard stroke															Max stroke			
12	10	20	25	30	40	50	60	70	75	80	90	100	125	150	150				
16	10	20	25	30	40	50	60	70	75	80	90	100	125	150	175	200	200		
20, 25	20	25	30	40	50	60	70	75	80	90	100	125	150	175	200	225	250	250	
32~63	25	30	40	50	60	70	75	80	90	100	125	150	175	200	225	250	275	300	300

*Note: If you demand Non-standard Stroke cylinder, The filling piece will be added in the standard Stroke cylinder. The stroke space is 1mm (φ 12~φ 32) or 5mm(φ 40~φ 63).

Inner structure



NO.	Item	NO.	Item
1	Lock block	13	O-ring
2	Guide rod	14	Back cover
3	Body	15	Piston rod
4	Clip	16	Piston
5	Front cover	17	Magnet holler
6	Bumper	18	Magnet wash
7	O-ring	19	Magnet
8	Countersink screw	20	Steel globe
9	O-ring	21	Plug
10	Bushing	22	Bushing
11	Clip	23	Bushing
12	O-ring		

TCL/TCM

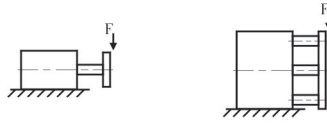


COMPACT GUIDE CYLINDER

TC SERIES



■ Allowance loading and torsion



Bore size	Type	Allowance of side loading F (N)																											
		Stroke (mm)																											
		10	20	25	30	40	50	60	70	75	80	90	100	125	150	175	200	225	250	275	300								
12	TCM	44	33	29	26	41	36	30	28	26	25	24	22	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TCL	37	27	25	22	35	30	27	24	23	21	19	18	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	TCM	67	51	42	37	63	58	49	41	37	35	33	32	27	24	22	20	-	-	-	-	-	-	-	-	-	-	-	-
	TCL	54	40	37	32	54	47	42	38	35	32	30	28	23	20	17	15	-	-	-	-	-	-	-	-	-	-	-	-
20	TCM	-	78	61	57	123	112	99	91	87	84	79	75	66	59	54	49	45	42	-	-	-	-	-	-	-	-	-	-
	TCL	-	58	52	48	101	90	83	74	70	69	63	58	62	54	48	43	39	35	-	-	-	-	-	-	-	-	-	-
25	TCM	-	93	89	76	142	131	119	107	101	97	90	85	88	79	71	65	61	55	-	-	-	-	-	-	-	-	-	-
	TCL	-	82	79	68	132	118	109	99	93	88	81	77	80	70	62	55	50	45	-	-	-	-	-	-	-	-	-	-
32	TCM	-	-	203	190	179	164	221	197	182	172	163	157	142	127	116	106	98	91	84	80	-	-	-	-	-	-	-	-
	TCL	-	-	191	182	166	157	207	178	164	156	150	144	203	186	171	158	146	137	129	121	-	-	-	-	-	-	-	-
40	TCM	-	-	203	190	179	164	221	197	182	172	163	159	142	127	116	106	97	91	84	80	-	-	-	-	-	-	-	-
	TCL	-	-	190	182	166	157	210	179	163	156	150	144	203	185	171	158	146	137	129	121	-	-	-	-	-	-	-	-
50	TCM	-	-	296	283	268	245	303	288	273	266	253	241	216	195	179	164	155	142	133	125	-	-	-	-	-	-	-	-
	TCL	-	-	208	196	185	173	259	232	223	212	207	199	264	242	224	207	195	181	166	159	-	-	-	-	-	-	-	-
63	TCM	-	-	296	283	268	245	303	288	273	266	253	241	216	195	179	164	153	142	134	125	-	-	-	-	-	-	-	-
	TCL	-	-	206	196	180	171	259	232	221	212	205	196	262	240	221	205	191	178	162	157	-	-	-	-	-	-	-	-

Torsion: T(N.m)



Bore size	Type	Allowance of torsion T (N.m)																											
		Stroke (mm)																											
		10	20	25	30	40	50	60	70	75	80	90	100	125	150	175	200	225	250	275	300								
12	TCM	0.90	0.79	0.71	0.65	0.77	0.72	0.65	0.53	0.50	0.47	0.41	0.36	0.31	0.27	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	TCL	0.61	0.45	0.40	0.35	0.58	0.50	0.44	0.39	0.37	0.35	0.32	0.29	0.24	0.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	TCM	1.21	1.04	0.94	0.88	1.23	1.11	0.99	0.72	0.69	0.65	0.61	0.58	0.50	0.44	0.40	0.36	-	-	-	-	-	-	-	-	-	-	-	-
	TCL	0.99	0.74	0.66	0.59	0.99	0.86	0.77	0.69	0.65	0.61	0.57	0.52	0.43	0.37	0.32	0.28	-	-	-	-	-	-	-	-	-	-	-	-
20	TCM	-	1.57	1.42	1.31	2.39	2.15	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	-	1.26	1.14	1.03	2.17	1.94	1.79	1.59	1.52	1.46	1.33	1.25	1.34	1.17	1.03	0.93	0.88	0.76	-	-	-	-	-	-	-	-	-	-
25	TCM	-	2.40	2.22	2.01	3.66	3.35	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	-	2.11	1.96	1.75	3.37	3.02	2.71	2.42	2.38	2.33	2.19	1.97	2.05	1.78	1.58	1.41	1.22	1.16	-	-	-	-	-	-	-	-	-	-
32	TCM	-	-	6.35	6.00	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	2.70	2.48	-	-	-	-	-	-	-	-
	TCL	-	-	5.95	5.73	5.44	4.89	5.34	5.15	5.11	5.02	4.70	4.51	6.34	5.79	5.33	4.93	4.33	4.29	4.06	3.78	-	-	-	-	-	-	-	-
40	TCM	-	-	7.00	6.60	6.11	5.66	6.66	6.31	6.27	6.23	5.86	5.48	4.87	4.38	3.98	3.65	3.34	3.13	2.87	2.74	-	-	-	-	-	-	-	-
	TCL	-	-	6.55	6.21	5.77	5.39	6.17	5.67	5.62	5.58	5.33	4.96	6.98	6.38	5.87	5.43	5.00	4.72	4.42	4.16	-	-	-	-	-	-	-	-
50	TCM	-	-	13.00	12.60	11.00	10.80	13.70	12.70	12.00	11.60	11.10	10.60	9.50	8.60	7.86	7.24	6.80	6.24	5.78	5.49	-	-	-	-	-	-	-	-
	TCL	-	-	9.17	8.75	8.33	7.62	10.30	9.94	9.83	9.77	8.82	8.74	11.60	10.70	9.83	9.12	8.95	7.95	7.49	7.02	-	-	-	-	-	-	-	-
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	6.63	6.19	-	-	-	-	-	-	-	-
	TCL	-	-	10.20	9.74	9.20	8.48	17.50	14.00	11.00	10.60	10.20	9.74	13.00	11.90	11.00	10.20	9.63	8.84	8.11	7.80	-	-	-	-	-	-	-	-

TCL/TCM

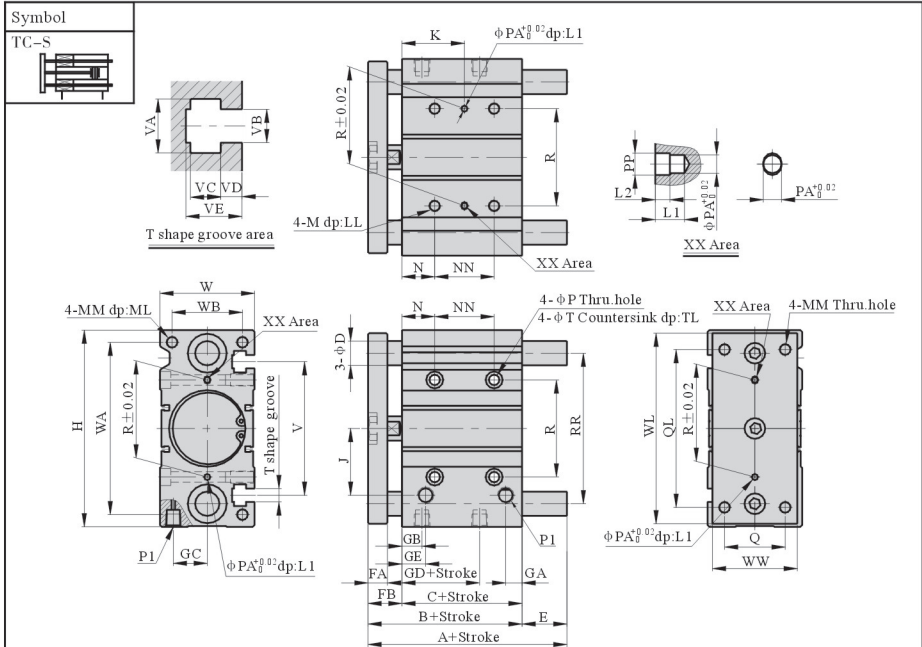


COMPACT GUIDE CYLINDER



TC SERIES

Dimensions



Item	A				E				NN				K			
	Bore size	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	
12	≤30	31~100	101~200	>200	≤30	31~100	101~200	>200	≤30	31~100	101~200	>200	≤30	31~100	101~200	>200
16	42	55	85	-	-4	13	43	-	20	40	110	-	15	25	60	-
20	46	65	95	-	-3	19	49	-	24	44	110	-	17	27	60	-
25	53	80	104	122	-2	27	51	69	24	44	120	200	29	39	77	117
32	53.5	83.5	104.5	122.5	-1.5	28.5	51	68.5	24	44	120	200	29	39	77	117
40	66	101	118	140	-1	36	52	74	24	48	124	200	33	45	83	121
50	76	118	134	161	4	46	62	89	24	48	124	200	36	48	86	124
63	77	118	134	161	-1	41	57	84	28	52	128	200	38	50	88	124

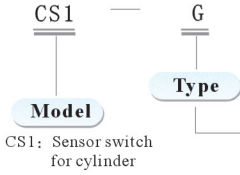
Item	B		FA	FB	PI	GA	GB	GE	GC	GD	R	RR	N	P	T	TL	M	LL	D	J
	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size
12	42	29	8	13	M5 × 0.8	7.5	11	11	8	13	23	41	5	4.3	8	4.5	M5 × 0.8	10	6	18
16	46	33	8	13	M5 × 0.8	8	11	11	10	15	24	46	5	4.3	8	4.5	M5 × 0.8	10	8	19
20	53	37	10	16	1/8"	9	10.5	10.5	10.5	12.5	28	54	17	5.6	9.5	5.5	M6 × 1.0	12	10	25
25	53.5	37.5	10	16	1/8"	9	11.5	11.5	13.5	12.5	34	64	17	5.6	9.5	5.5	M6 × 1.0	12	12	28.5
32	59.5	37.5	12	22	1/8"	9	12.5	12.5	15	7	42	78	21	6.6	11	7.5	M8 × 1.25	16	16	34
40	66	44	12	22	1/8"	10	14	14	18	13	50	86	22	6.6	11	7.5	M8 × 1.25	16	16	38
50	72	44	16	28	1/4"	11	12	14	21.5	9	66	110	24	8.6	14	9	M10 × 1.5	20	20	47
63	77	49	16	28	1/4"	13.5	16.5	16.5	28	14	80	124	24	8.6	14	9	M10 × 1.5	20	20	55

Item	WA	WB	W	H	QL	Q	WL	WW	MM	ML	PP	PA	L1	L2	V	VA	VB	VC	VD	VE
	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size	Bore size
12	50	18	26	58	48	14	56	22	M4 × 0.7	10	3.5	3	6	3	37	7.4	4.4	3.7	2	6.2
16	56	22	30	64	54	16	62	25	M5 × 0.8	12	3.5	3	6	3	38	7.4	4.4	3.7	2.5	6.7
20	72	24	36	83	70	18	81	30	M5 × 0.8	13	3.5	3	6	3	44	8.4	5.4	4.5	2.8	7.8
25	82	30	42	93	78	26	91	38	M6 × 1.0	15	4.5	4	6	3	50	8.4	5.4	4.5	3	8.2
32	98	34	48	112	96	30	110	44	M8 × 1.25	20	4.5	4	6	3	63	10.5	6.5	5.5	3.5	9.5
40	106	40	54	120	104	30	118	44	M8 × 1.25	20	4.5	4	6	3	72	10.5	6.5	5.5	4	11
50	130	46	64	148	130	40	146	60	M10 × 1.5	22	6	5	8	4	92	13.5	8.5	7.5	4.5	13.5
63	142	58	78	162	130	50	158	70	M10 × 1.5	22	6	5	8	4	110	17.8	11	10	7	18.5

TCL/TCM

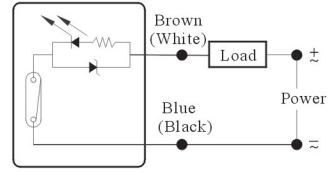


Ordering code



Code	Type
F	Lamp in the front position
U	Lamp in the up position
S	Super mini type
J	Basic type
G	Bury type
M	Mini type

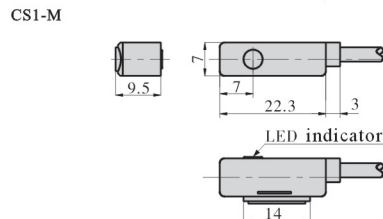
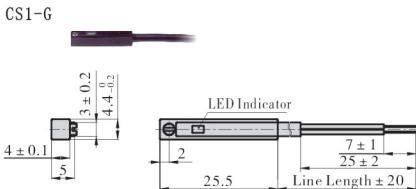
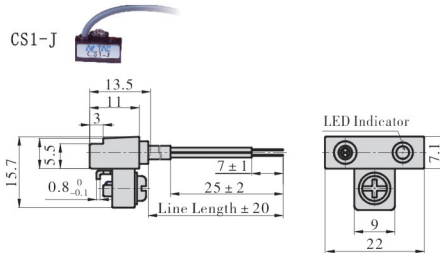
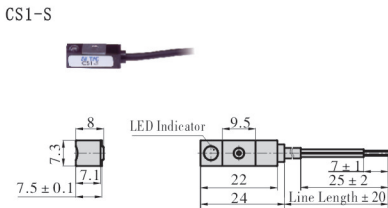
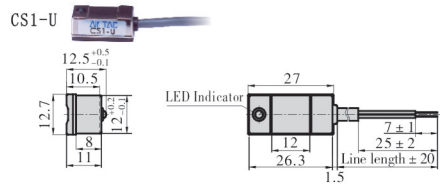
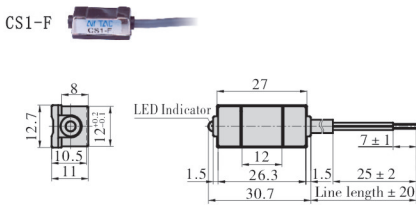
Hook up



Specification

Sensor type	Operating Voltage(V)	Operating Current(mA)	Response time (ms)	Shock resistance(m/s ²)	Sensor intensity	Vibration resistance	Temp	Protection	Indicator lamp	Lead wire	Life time cycles
CS1-F	DC:5~240	DC:5~60	1(Max)	300(30G)	65~80GS	10~50 Hz	0~60°C	IP-67	LED	2 m	≥ 5 × 10 ⁶ (times)
CS1-U	AC:5~380	AC:5~50	1(Max)	300(30G)	50~65GS	10~50 Hz	0~60°C	IP-67	LED	2 m	≥ 5 × 10 ⁶ (times)
CS1-S	DC:5~240 AC:5~240	DC:5~50 AC:5~40	1(Max)	300(30G)	60~75GS	10~50 Hz	0~60°C	IP-67	LED	2 m	≥ 5 × 10 ⁶ (times)
CS1-J	DC:5~240 AC:5~240	DC:5~50 AC:5~40	0.3(Max)	300(30G)	60~75GS	10~50 Hz	0~60°C	IP-67	LED	2 m	≥ 5 × 10 ⁶ (times)
CS1-G	DC:5~240 AC:5~240	DC:5~50 AC:5~40	0.3(Max)	300(30G)	60~75GS	10~50 Hz	0~60°C	IP-67	LED	2 m	≥ 5 × 10 ⁶ (times)
CS1-M	DC:5~240 AC:5~240	DC:5~50 AC:5~40	0.3(Max)	300(30G)	50~70GS	10~50 Hz	0~60°C	IP-67	LED	2 m	≥ 5 × 10 ⁶ (times)

Dimensions



SENSOR



■ How to select type

Cylinder series	Sensor switch type		Mounting Accessories	
			Accessories name	How to order Accessories
SI Series	CS1-F		Sensor switch mounting seat	$\frac{\text{UH}}{\text{UH}} - \frac{63}{63}$ <p>Bore size Accessories type UH: SU Series cylinder sensor switch mounting seat SH: SC Series cylinder sensor switch mounting seat IH: SI, JSI Series cylinder sensor switch mounting seat</p>
	CS1-U			
SIL Series	CS1-F			
	CS1-U			
MI Series	Bore size	Sensor switch type		
	8, 10, 12, 16	CS1-M	Sensor switch mounting blank	GXPBF-01
	20, 25, 32, 40	CS1-S	Sensor switch mounting blank	GXPBO-01
PB Series	CS1-M		Sensor switch mounting blank	GXPBF-01
MF Series	CS1-S		Sensor switch mounting blank	GXPBO-01
MAL Series	CS1-S		Sensor switch mounting blank	GXPBO-01
ACP Series	CS1-G		Not required accessories	Not required accessories
ACQ12~100 Series	CS1-G		Not required accessories	Not required accessories
ACQ32~100 Series	CS1-J		Not required accessories	Not required accessories
TR Series	CS1-G		Not required accessories	Not required accessories
MD Series	CS1-G		Not required accessories	Not required accessories
TW Series	CS1-G		Not required accessories	Not required accessories
TC Series	CS1-G		Not required accessories	Not required accessories

SENSOR

