

Compact cylinder

ACQ Series—With guider type



Specification

Bore size(mm)	12	16	20	25	32	40	50	63	80	100	
Acting type	Double acting										
Fluid	Air(to be filtered by 40 μm filter element)										
Operating pressure	0.15~1.0MPa(22~145psi)										
Proof pressure	1.5MPa(215psi)										
Temperature °C	-20~70										
Speed range mm/s	30~500										
Stroke tolerance	+1.0 0										
Cushion type	Bumper										
Port size [Note1]	M5×0.8					1/8"		1/4"		3/8"	
Non-rotating tolerance [Note2]	±0.2°					±0.1°					

[Note1] G thread is available.

[Note2] Retract position.

Add) Refer to P427 for detail of sensor switch.

Symbol



Product feature

1. JIS standard is implemented and with guider.
2. C clip is adopted to connect the cylinder body and back cover or front cover to make it compact and reliable.
3. The internal diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
4. The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of greasel reservation.
5. Compact structure can effectively save installation space.
6. There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.
7. Double rod non-rotating structure enables to bear large working load and lateral load.

Stroke

Bore size(mm)	Standard stroke (mm)											Max.std stroke	Middle stroke range(mm)	
	5	10	15	20	25	30	35	40	45	50	75			100
12 16	●	●	●	●	●	●	×	×	×	×	×	×	30	1~29
20 25	●	●	●	●	●	●	●	●	●	×	×	×	50	1~49
32 40	●	●	●	●	●	●	●	●	●	●	●	●	100	1~99
50 63 80 100	×	●	●	●	●	●	●	●	●	●	●	●	100	5~99

[Note] The dimensions of non-std stroke cylinder has the same dimensions as the next longer stroke std. stroke cylinder. e.g. 23mm stroke cylinder has the same dimensions of 25 std. stroke cylinder.

Please contact the company for other special strokes.

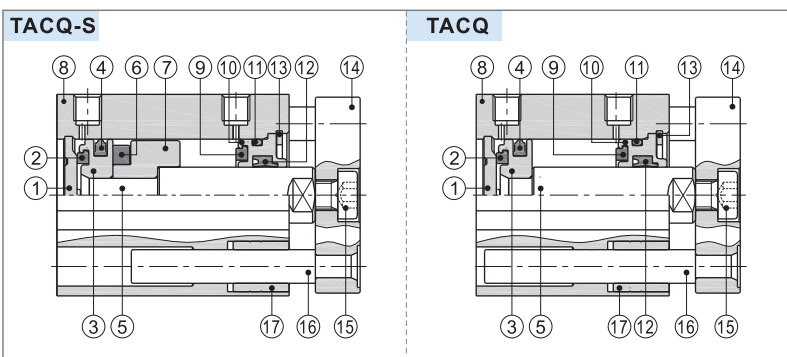
Ordering code

TACQ 50 × 100 S G



① Model	② Bore size	③ Stroke	④ Magnet	⑤ Thread type
TACQ: Compact cylinder (Double acting with guider)	12 16 20 25 32 40 50 63 80 100	Refer to stroke table for details	Blank: Without magnet S: With magnet	G: G

Inner structure and material of major parts



NO.	Item	Material	NO.	Item	Material
1	Back cover	Aluminum alloy	10	Front cover	Aluminum alloy
2	Bumper	NBR	11	O-ring	NBR
3	Piston	Aluminum alloy	12	Front cover packing	NBR
4	Piston seal	NBR			
5	Piston rod	Carbon steel with 20 μm chrome plated	13	C clip	Spring steel
			14	Fixing plate	Aluminum alloy
6	Magnet	Sintered metal (Neodymium-iron-boron)	15	Screw	Carbon steel
			16	Leader	Stainless steel
7	Magnet holder	Aluminum alloy	17	Bushing	Brass
8	Body	Aluminum alloy			
9	Wear ring	NBR			

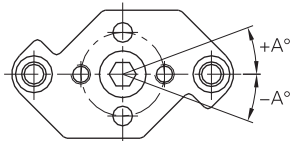


Compact cylinder

ACQ Series—With guider type

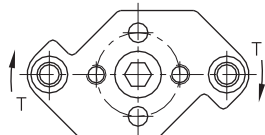
Installation and application

1. TACQ series cylinder is designed with double guide rod which is non-rotating. Make sure the non-rotating accuracy of the fixing plate is in the allowable range.



Bore size	12,16	20,25,32,40,50,63,80,100
Non-rotating tolerance	±0.2°	±0.1°

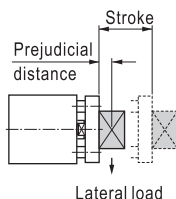
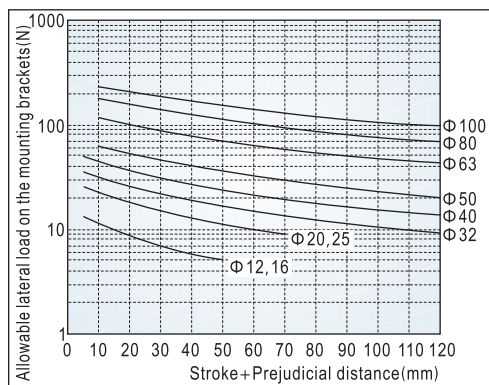
2. Do not apply reverse torque to the piston rods. The torque beyond the limits may cause malfunction or reduction of the service life.



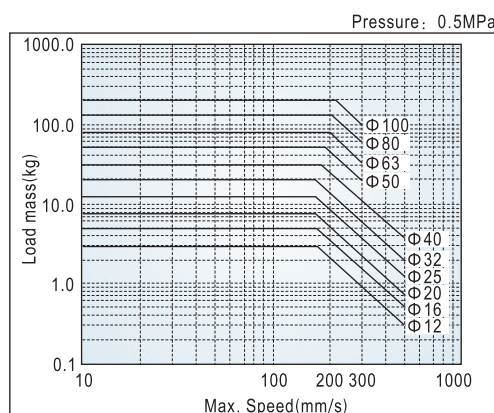
Unit: N·m

Bore size/Stroke	5	10	15	20	25	30	35	40	45	50	75	100
12	0.11	0.10	0.08	0.07	0.07	0.06	-	-	-	-	-	-
16	0.15	0.12	0.11	0.10	0.09	0.08	-	-	-	-	-	-
20	0.37	0.32	0.28	0.25	0.23	0.21	0.19	0.18	0.17	0.16	-	-
25	0.40	0.35	0.31	0.28	0.25	0.23	0.21	0.20	0.18	0.17	-	-
32	0.66	0.59	0.53	0.49	0.45	0.42	0.39	0.36	0.34	0.32	0.25	0.20
40	1.06	0.96	0.88	0.81	0.75	0.70	0.65	0.61	0.58	0.55	0.43	0.36
50	-	1.70	1.56	1.45	1.35	1.26	1.19	1.12	1.06	1.01	0.80	0.67
63	-	3.90	3.62	3.37	3.15	2.96	2.80	2.65	2.51	2.39	1.92	1.61
80	-	7.44	6.98	6.56	6.20	5.87	5.57	5.31	5.07	4.84	3.98	3.37
100	-	11.85	11.19	10.6	10.0	9.60	9.17	8.77	8.41	8.07	6.73	5.77

3. Make sure the lateral load on the mounting bracket is within the limits. Any exceeding may cause malfunction or reduction of the service life.

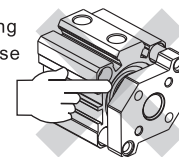


4. Make sure the load quality and the maximum speed are within the limits. Any exceeding may cause malfunction or reduction of the service life.

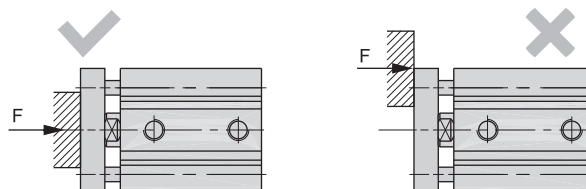


5. Caution before mounting:

- 5.1) Do not put hands between the mounting bracket and cylinder, which may cause damage to a human body when the piston rod retracts.



- 5.2) Make sure the external force against the mounting bracket is concentric with the piston rod. Any extra torque may cause damage to the cylinder.



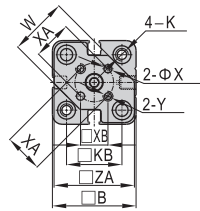
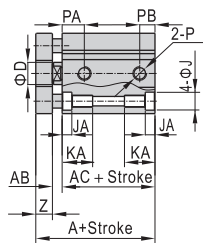
- 5.3) Install the fixture onto the mounting bracket only when the piston rod is in the retraction state. Do not apply the installation torque on the guide rod.
- 5.4) Avoid any damage on piston rod and guide rod, which may cause damage on seals and air leakage or malfunction.

Compact cylinder

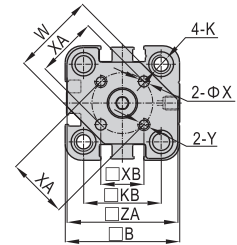
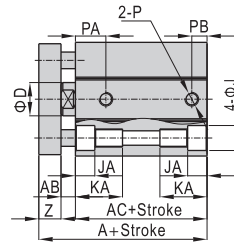
ACQ Series—With guider type

Dimensions

Φ12/Φ16



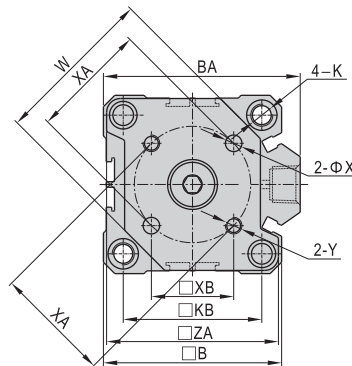
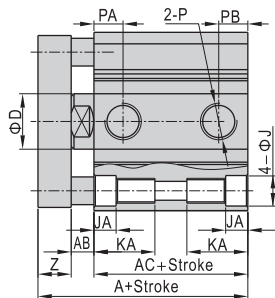
Φ20/Φ25



Bore size\Item	A		AC		AB	B	D	J	JA	K			
	Without magnet	With magnet	Without magnet	With magnet						M4 × 0.7 Thru.hole: Φ3.4	M4 × 0.7 Thru.hole: Φ3.4	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2
12	26.5	37.5	17.3	28.3	3	26	6	6	3.5	M4 × 0.7 Thru.hole: Φ3.4	M4 × 0.7 Thru.hole: Φ3.4	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2
16	28	40	19	31	3	30	8	6	3.5	M4 × 0.7 Thru.hole: Φ3.4	M4 × 0.7 Thru.hole: Φ3.4	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2
20	32	44	20.5	32.5	3.5	36	10	9	5.5	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2
25	35.5	45.5	23	33	4.5	41	12	9	5.5	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2

Bore size\Item	KA	KB	P	PA		PB		W	X	XA	XB	Y	Z	ZA
				Without magnet	With magnet	Without magnet	With magnet							
12	11.5	15.5	M5 × 0.8	7.5	9	5	7	15	3	10	7.1	M3 × 0.5	6	25
16	11.5	20	M5 × 0.8	8	9.5	5.5	5.5	21	3	14	9.9	M3 × 0.5	6	29
20	18	25.5	M5 × 0.8	9	9.5	5.5	5.5	26	4	17	12	M4 × 0.7	8	35
25	17.5	28	M5 × 0.8	11	11	5.5	5.5	30	5	22	15.6	M5 × 0.8	8	40

Φ32~Φ100



Bore size\Item	A(Without magnet)		A (With magnet)	AB	AC(Without magnet)		AC (With magnet)		B	BA	D	J	JA	K				
	St ≤ 50	St ≥ 75			St ≤ 50	St ≥ 75	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2						M8 × 1.25 Thru.hole: Φ6.8	M10 × 1.5 Thru.hole: Φ8.5	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	
32	40		50	6.5	23.5		33.5	45	49.5	16	9	5.5	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2	M8 × 1.25 Thru.hole: Φ6.8	M10 × 1.5 Thru.hole: Φ8.5	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3
40		46.5	56.5	6.6		29.9	39.9	53	57	16	9	5.5	M6 × 1.0 Thru.hole: Φ5.2	M6 × 1.0 Thru.hole: Φ5.2	M8 × 1.25 Thru.hole: Φ6.8	M10 × 1.5 Thru.hole: Φ8.5	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3
50	50.5	60.5	60.5	7.5	31	41	41	64	71	20	10.5	6.5	M8 × 1.25 Thru.hole: Φ6.8	M8 × 1.25 Thru.hole: Φ6.8	M10 × 1.5 Thru.hole: Φ8.5	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	
63	56	66	66	8	36	46	46	77	84	20	14	9	M10 × 1.5 Thru.hole: Φ8.5	M10 × 1.5 Thru.hole: Φ8.5	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	
80	67.5	77.5	77.5	10	43.5	53.5	53.5	98	104	25	17	11	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	
100	81	91	91	12	53	63	63	117	123.5	32	17	11	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	M12 × 1.75 Thru.hole: Φ10.3	

Bore size\Item	KA	KB	P	PA	PA	PB	PB	W	X	XA	XB	Y	Z	ZA
				(Without magnet)	(With magnet)	(Without magnet)	(With magnet)							
32	17.5	34	1/8"	7.5	10.5	6.5	7.5	37	5	28	19.8	M5 × 0.8	10	43
				10.5		7.5								
40	17.5	40	1/8"	11	11	8	8	46	5	33	23.3	M5 × 0.8	10	51
50	22.5	50	1/4"	10.5	10.5	10.5	10.5	58	6	42	29.7	M6 × 1.0	12	62
63	28.5	60	1/4"	15	15	10.5	10.5	69	6	50	35.4	M6 × 1.0	12	75
80	35.5	77	3/8"	16	16	14	14	90	8	65	46	M8 × 1.25	14	95
100	35.5	94	3/8"	20	20	17.5	17.5	113.5	10	80	56.6	M10 × 1.5	16	114.5



List for ordering code of accessories

Accessories Bore size	Mounting accessories			Knuckle				Sensor switch
	LB	FA/FB	CB	I	Y	F	U	
12	F-ACQ12LB	F-ACQ12FA	F-ACQ12CB	F-ACQ12I	F-ACQ12Y	-	F-M5X080U	CS1-G DS1-G
16	F-ACQ16LB	F-ACQ16FA	F-ACQ16CB	F-ACQ16I	F-ACQ16Y	-	F-M6X100U	
20	F-ACQ20LB	F-ACQ20FA	F-ACQ20CB	F-ACQ20I	F-ACQ20Y	F-M8X125F	F-M8X125U	
25	F-ACQ25LB	F-ACQ25FA	F-ACQ25CB	F-ACQ25I	F-ACQ25Y	F-M10X125F	F-M10X125U	CS1-J DS1-J CS1-G DS1-G
32	F-ACQ32LB	F-ACQ32FA	F-ACQ32CB	F-ACQ32I	F-ACQ32Y	F-M14X150F	F-M14X150U	
40	F-ACQ40LB	F-ACQ40FA	F-ACQ40CB	F-ACQ40I	F-ACQ40Y	F-M18X150F	F-M18X150U	
50	F-ACQ50LB	F-ACQ50FA	F-ACQ50CB	F-ACQ50I	F-ACQ50Y	-	-	DS1-H CS1-G DS1-G
63	F-ACQ63LB	F-ACQ63FA	F-ACQ63CB	F-ACQ63I	F-ACQ63Y	-	-	
80	F-ACQ80LB	F-ACQ80FA	F-ACQ80CB	F-ACQ80I	F-ACQ80Y	-	-	
100	F-ACQ100LB	F-ACQ100FA	F-ACQ100CB	F-ACQ100I	F-ACQ100Y	-	-	
125	-	-	-	-	-	-	-	
140	-	-	-	-	-	-	-	
160	-	-	-	-	-	-	-	

Accessory selection

Cylinder model	Accessories	Mounting accessories				Knuckle[Note2]				Sensor switch[Note3]		
		LB	FA	FB	CB [1]	I	Y	U	F	C(D)S1-J	C(D)S1-G	DS1-H
ACQ	Female thread	Without magnet				×	×	×	×	×	×	×
		With magnet	●	●	●	●	●	●	●	●	●	●
	Male thread	Without magnet				●	●	●	●	×	×	×
		With magnet	●	●	●	●	●	●	●	●	●	●
ASQ ATQ	Female thread	Without magnet				×	×	×	×	×	×	×
		With magnet	●	●	●	●	●	●	●	●	●	●
	Male thread	Without magnet				●	●	●	●	×	×	×
		With magnet	●	●	●	●	●	●	●	●	●	●
ACQD ACQJ	Female thread	Without magnet	●	●	×	×	×	×	×	×	×	×
		With magnet	●	●	×	×	×	×	●	●	●	●
	Male thread	Without magnet	●	●	×	×	×	×	×	×	×	×
		With magnet	●	●	×	×	×	×	●	●	●	●

Material of accessories

Accessories Bore size	Mounting accessories				Knuckle			
	LB	FA	FB	CB	I	Y	F	U
12, 15	△	●	●	●	▲	▲	▲	▲
20, 25	△	●	●	●	▲	▲	▲	▲
32-100	△	●	●	■	▲	■	▲	▲

●—Aluminum alloy; ■—Carbon Steel; ▲—S45C; △—SPCC

[Note1] CB is attached with relevant PIN.
Mounting accessories and Knuckle unavailable for bore size 125, 140, 160 cylinder.

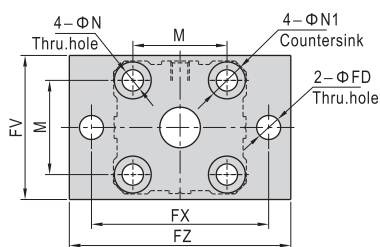
[Note2] Please refer to P415~418 for knuckle detail.

[Note3] DS1-H sensor switch only available for bore size 125, 140, 160 cylinder.

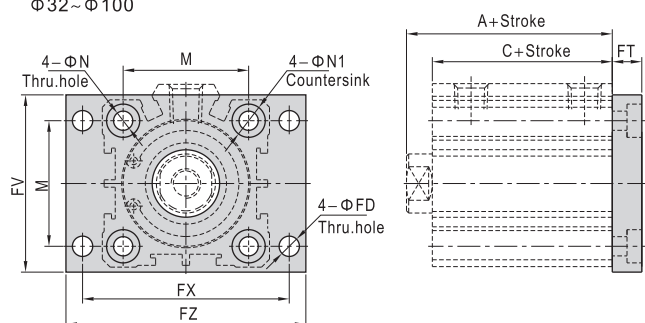
Dimensions

FA/FB

Φ12~Φ25



Φ32~Φ100



Bore size/Item	A [Note1]				C				M	N	N1	FD	FT	FV	FX	FZ
	Without magnet		With magnet		Without magnet		With magnet									
	Stroke	≤50	55	≥60	Stroke	≤50	55	≥60								
12	20.5	-	-	31.5	17	-	-	28	15.5	4.5	7.5	4.5	5.5	25	45	55
16	22	22	-	34	18.5	18.5	-	30.5	20	4.5	7.5	4.5	5.5	30	45	55
20	24	-	34	36	19.5	-	29.5	31.5	25.5	6.5	10.5	6.5	8	39.5	48	60
25	27.5	-	37.5	37.5	22.5	-	32.5	32.5	28	6.5	10.5	6.5	8	42	52	64
32	30	-	40	40	23	-	33	33	34	6.5	10.5	5.5	8	48	56	65
40	36.5	-	46.5	46.5	29.5	-	39.5	39.5	40	6.5	10.5	5.5	8	54	62	72
50	38.5	-	48.5	48.5	30.5	-	40.5	40.5	50	8.5	13.5	6.5	9	67	76	89
63	44	-	54	54	36	-	46	46	60	10.5	16.5	9	10	80	92	108
80	53.5	-	63.5	63.5	43.5	-	53.5	53.5	77	12.5	18.5	11	12	99	116	134
100	65	-	75	75	53	-	63	63	94	12.5	18.5	11	12	117	136	154

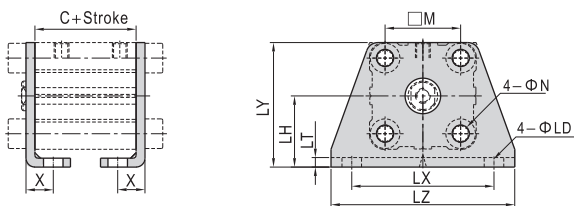
[Note] Valve A and C in the above table are only for ACQ series.
Please refer to relevant content for valve A and C of other series.

Compact cylinder

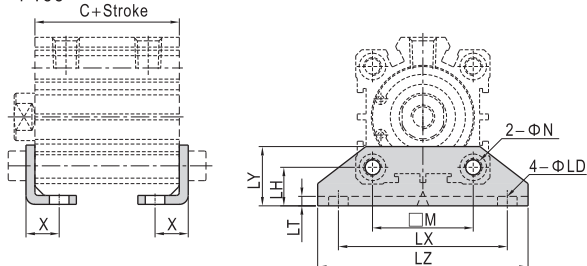
ACQ Series—Accessories

LB

Φ12~Φ25



Φ32~Φ100

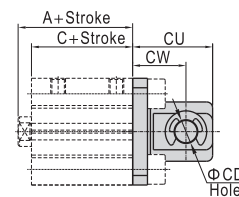
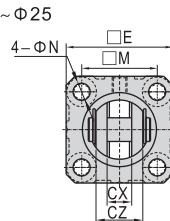


Bore size/Item	C [Note]				M	N	X	LD	LH	LT	LX	LY	LZ
	Without magnet		With magnet										
	Stroke	Stroke	Stroke	Stroke									
12	17	-	-	28	15.5	4.5	8	4.5	17	2	34	29.5	44
16	18.5	18.5	-	30.5	20	4.5	8	4.5	19	2	38	33.5	48
20	19.5	-	29.5	31.5	25.5	6.5	9.2	6.5	24	3	48	42	62
25	22.5	-	32.5	32.5	28	6.5	10.7	6.5	26	3	52	46	66
32	23	-	33	33	34	6.5	11.2	6.5	13	3	57	20	71
40	29.5	-	39.5	39.5	40	6.5	11.2	6.5	13	3	64	20	78
50	30.5	-	40.5	40.5	50	8.5	12.2	8.5	14	3	79	22	95
63	36	-	46	46	60	10.5	13.7	10.5	16	3	95	26	113
80	43.5	-	53.5	53.5	77	13	16.5	13	20.5	4.5	118	32	140
100	53	-	63	63	94	13	23	13	24	6	137	36	162

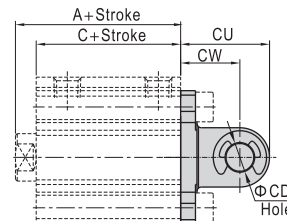
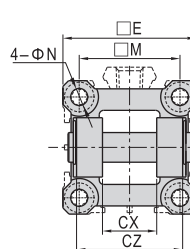
[Note] Valve C in the above table is only for ACQ series.
Please refer to relevant content for valve C of other series.

CB

Φ12~Φ25



Φ32~Φ100



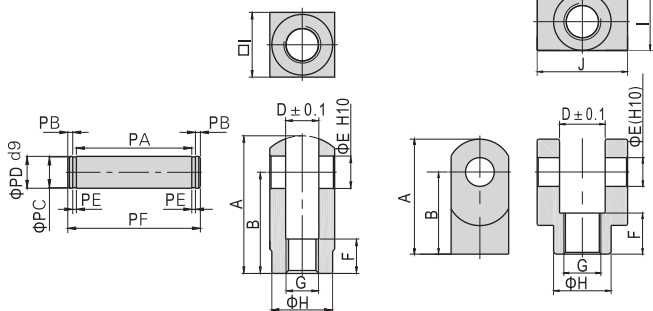
Item	A [Note]				C				E	M	N	CD	CU	CW	CX	CZ
	Without magnet		With magnet		Without magnet		With magnet									
	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke	Stroke								
12	20.5	-	-	31.5	17	-	-	28	25	15.5	4.5	5	20	14	5.3	9.8
16	22	22	-	34	18.5	18.5	-	30.5	29	20	4.5	5	21	15	6.8	11.8
20	24	-	34	36	19.5	-	29.5	31.5	36	25.5	6.5	8	27	18	8.3	15.8
25	27.5	-	37.5	37.5	22.5	-	32.5	32.5	40	28	6.5	10	30	20	10.3	19.8
32	30	-	40	40	23	-	33	33	45.5	34	6.5	10	30	20	18.3	35.8
40	36.5	-	46.5	46.5	29.5	-	39.5	39.5	53.5	40	6.5	10	32	22	18.3	35.8
50	38.5	-	48.5	48.5	30.5	-	40.5	40.5	64.5	50	8.5	14	42	28	22.3	43.8
63	44	-	54	54	36	-	46	46	77.5	60	10.5	14	44	30	22.3	43.8
80	53.5	-	63.5	63.5	43.5	-	53.5	53.5	98.5	77	12.5	18	56	38	28.3	55.8
100	65	-	75	75	53	-	63	63	117	94	12.5	22	67	45	32.3	63.8

[Note] Valve A and C in the above table are only for ACQ series.
Please refer to relevant content for valve A and C of other series.

Y Knuckle

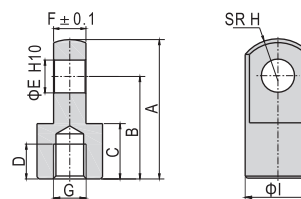
F-ACQ12Y
F-ACQ16Y
F-ACQ20Y
F-ACQ25Y

F-ACQ32Y
F-ACQ50Y
F-ACQ80Y
F-ACQ100Y



Type/Item	A	B	D	E	F	G	H	I	J	PA	PB	PC	PD	PE	PF
F-ACQ12Y	22	16	5.3	5	6	M5×0.8	9	10	-	10.2	1.5	4	5	0.7	14.6
F-ACQ16Y	28	21	6.6	5	11	M6×1.0	11	12	-	12.4	1.5	4	5	0.7	16.8
F-ACQ20Y	34	25	8.3	8	8.5	M8×1.25	15	16	-	16.2	1.5	7	8	0.9	21
F-ACQ25Y	41	30	10.3	10	10	M10×1.25	19	20	-	20.2	2	8	10	1.1	26.4
F-ACQ32Y	42	30	18.4	10	16	M14×1.5	22	22	36	36.2	2	8	10	1.1	42.4
F-ACQ50Y	56	40	22.4	14	20	M18×1.5	28	28	44	44.2	2	12	14	1.1	50.4
F-ACQ80Y	71	50	28.4	18	23	M22×1.5	38	38	56	56.2	2	15	18	1.7	63.6
F-ACQ100Y	79	55	32.4	22	24	M26×1.5	44	44	64	64.2	2.5	19	22	1.7	72.6

I Knuckle



Type/Item	A	B	C	D	E	F	G	H	I
F-ACQ12I	21.5	16	9	6	5	4.7	M5×0.8	6.3	10
F-ACQ16I	32	25	11	8	5	6.2	M6×1.0	8.1	12
F-ACQ20I	34	25	13.5	8.5	8	7.7	M8×1.25	10.3	16
F-ACQ25I	41	30	16	11	10	9.7	M10×1.25	12.8	20
F-ACQ32I	42	30	16	14	10	17.6	M14×1.5	12	22
F-ACQ50I	56	40	20	18	14	21.6	M18×1.5	16	28
F-ACQ80I	71	50	23	21	18	27.6	M22×1.5	21	38
F-ACQ100I	79	55	24	22	22	31.6	M26×1.5	24	44

