

Compact cylinder

TACQ 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 μ m filter element)									
Operating pressure	0.1~1.0MPa(14~145psi)									
Proof pressure	1.5MPa(215psi)									
Temperature °C	-20~80									
Speed range mm/s	30~500									
Stroke tolerance	+1.0 0									
Cushion type	Bumper									
Port size ①	M5 × 0.8					1/8"		1/4"		3/8"
Non-rotating tolerance ②	± 0.2°					± 0.1°				

① PT thread, G thread and NPT thread are available. ② Retract position.
Add) Refer to P457~480 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)											Max. std stroke(mm)	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) 1. Please contact the company for other special strokes.
2. 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.

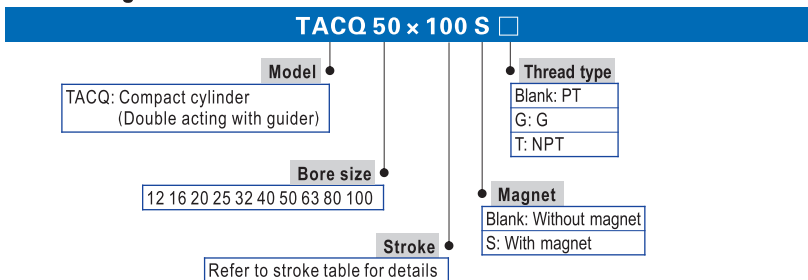
Symbol



Product feature

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

Ordering code



Inner structure and material of major parts

TACQS

TACQ

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	13	C clip	Spring steel
5	Piston rod	Carbon steel with 20 μ m chrome plated	14	Fixing plate	Aluminum alloy
6	Magnet	Sintered metal(Neodymium-iron-boron)	15	Screw	Carbon steel
7	Magnet holder	Aluminum alloy	16	Leader	Stainless steel
8	Body ring	Aluminum alloy	17	Bushing	Brass
9	Wear ring	NBR			



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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.

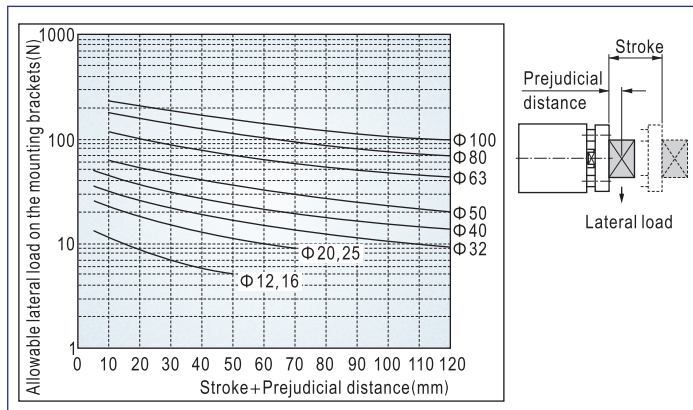
Bore size	12,16	20,25,32,40,50,63,80,100
Non-rotating tolerance	± 0.2°	± 0.1°

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

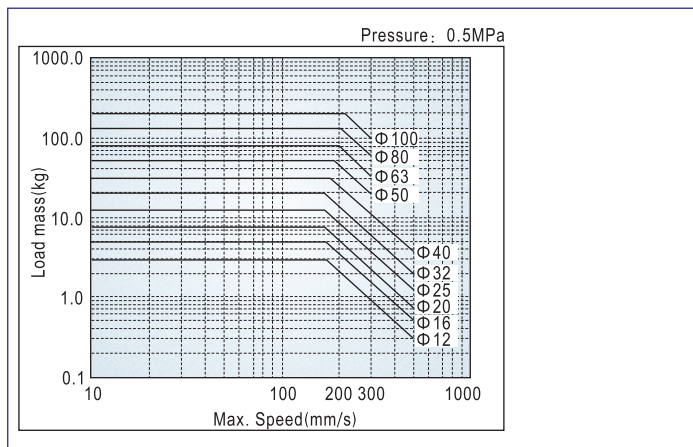
Unit: N·m

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	10.61	10.08	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.

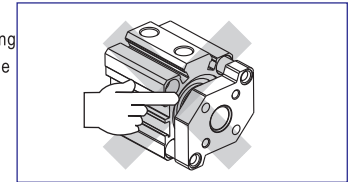


4. Make sure the load quality and the maximum speed are within the limits. Any exceeding may cause malfunction or reduction of the service life.

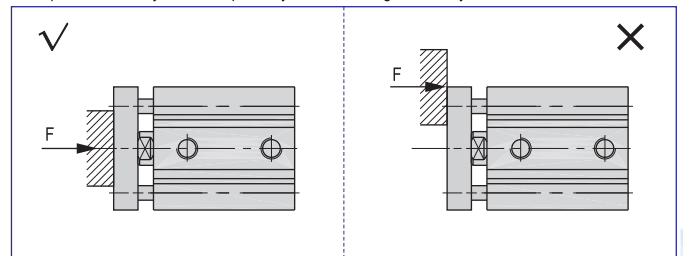


5. Caution before mounting:

- 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.



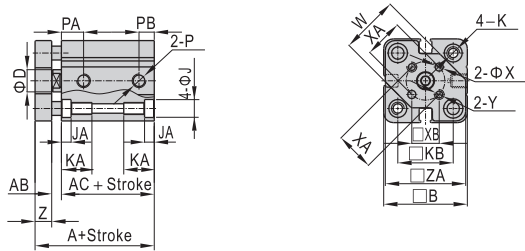
TACQ

Compact cylinder

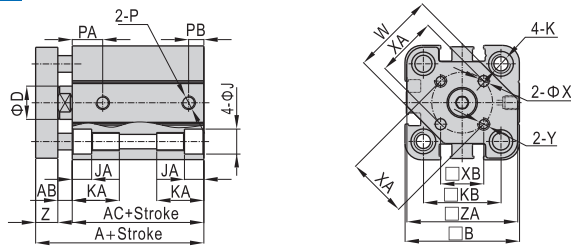
TACQ Series (With guider type)

■ Dimensions

Bore size: 12,16



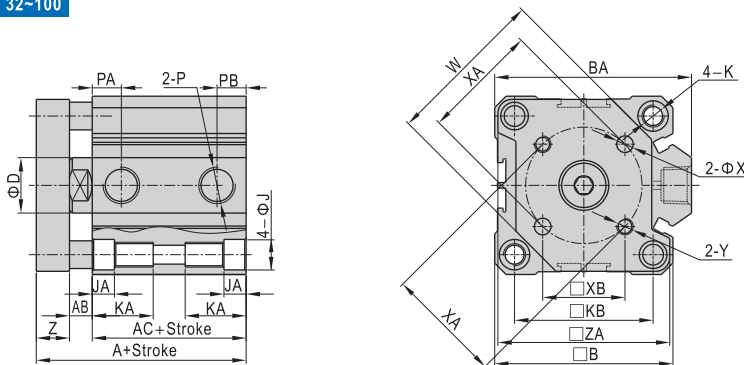
Bore size: 20,25



Bore size\Item	A		AC		PA		PB		A	AC		PA		PB		AB	P	B	D	J	JA
	Without magnet	With magnet	Without magnet	With magnet	Without magnet	With magnet	Without magnet	With magnet		Without magnet	With magnet	Without magnet	With magnet	Without magnet	With magnet						
12	26.5	17.3	7.5	5	37.5	28.3	9	7	3	M5 × 0.8	26	6	6.5	3.5							
16	28	19	8	5.5	40	31	9.5	5.5	3	M5 × 0.8	30	8	6.5	3.5							
20	32	20.5	9	5.5	44	32.5	9.5	5.5	3.5	M5 × 0.8	36	10	9	7							
25	35.5	23	11	5.5	45.5	33	11	5.5	4.5	M5 × 0.8	41	12	9	7							

Bore size\Item	K	KA		KB	W	X	XA	XB	Y	Z	ZA
		Thru.hole: Φ3.4	Thru.hole: Φ3.4								
12	M4 × 0.7	11.5	15.5	15	3	10	7.1	M3 × 0.5	6	25	
16	M4 × 0.7	11.5	20	21	3	14	9.9	M3 × 0.5	6	29	
20	M6 × 1.0	18	25.5	26	4	17	12	M4 × 0.7	8	35	
25	M6 × 1.0	17.5	28	30	5	22	15.6	M5 × 0.8	8	40	

Bore size: 32~100



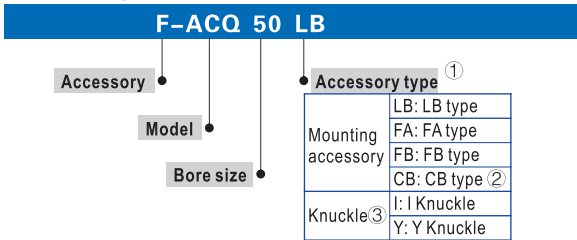
Bore size\Item	A		AC		A	AC		AB	B	BA	D	J	JA	K
	Without magnet	With magnet	Without magnet	With magnet										
Stroke	St ≤ 50	St ≥ 75	St ≤ 50	St ≥ 75	-	-	-	-	-	-	-	-	-	-
32	40	23.5	50	33.5	6.5	45	49.5	16	9	7	M6 × 1.0	Thru.hole: Φ5.2		
40	46.5	29.9	56.5	39.9	6.6	53	57	16	9	7	M6 × 1.0	Thru.hole: Φ5.2		
50	50.5	60.5	31	41	60.5	41	7.5	64	71	20	11	8	M8 × 1.25	Thru.hole: Φ6.8
63	56	66	36	46	66	46	8	77	84	20	14	10.5	M10 × 1.5	Thru.hole: Φ8.5
80	67.5	77.5	43.5	53.5	77.5	53.5	10	98	104	25	17.5	13.5	M12 × 1.75	Thru.hole: Φ10.3
100	81	91	53	63	91	63	12	117	123.5	32	17.5	13.5	M12 × 1.75	Thru.hole: Φ10.3

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



Accessories

Ordering code



- ① Please refer to accessory list for selection and ordering information.
 ② CB is attached with relevant PIN.
 ③ Please refer to page 455, 456 for others knuckle.

Accessory selection

Cylinder model	Accessories	Mounting accessory				Knuckle ①		Sensor switch ②		
		LB	FA	FB	CB	I	Y	DS1-J	DS1-G	DS1-H
ACQ	Female thread	Standard	●	●	●	●	×			×
	With magnet	●	●	●	●	●	×			●
ASQ	Male thread	Standard	●	●	●	●	●			×
	With magnet	●	●	●	●	●	×			●
ATQ	Female thread	Standard	●	●	●	●	×			×
	With magnet	●	●	●	●	●	×			●
ACQD	Male thread	Standard	●	●	●	●	×			×
	With magnet	●	●	●	●	●	×			●
ACQJ	Female thread	Standard	●	●	●	●	×			×
	With magnet	●	●	●	●	●	×			●

- ① Please refer to P453-456 for knuckle detail,
 ② Please refer to P457-480 for detail of sensor switch.
 ③ Mounting accessories and Knuckle unavailable for bore size 125, 140, 160 cylinder.
 DS1-H sensor switch only available for bore size 125, 140, 160 cylinder.

Material of accessories

Bore size	Accessories				Mounting accessories				Knuckle			
	LB	FA	FB	CB	I	Y	F	U	I	Y	F	U
12、16	△	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲
20、25	△	●	●	●	▲	▲	▲	▲	▲	▲	▲	▲
32-100	△	●	●	■	▲	■	▲	▲	▲	▲	▲	▲

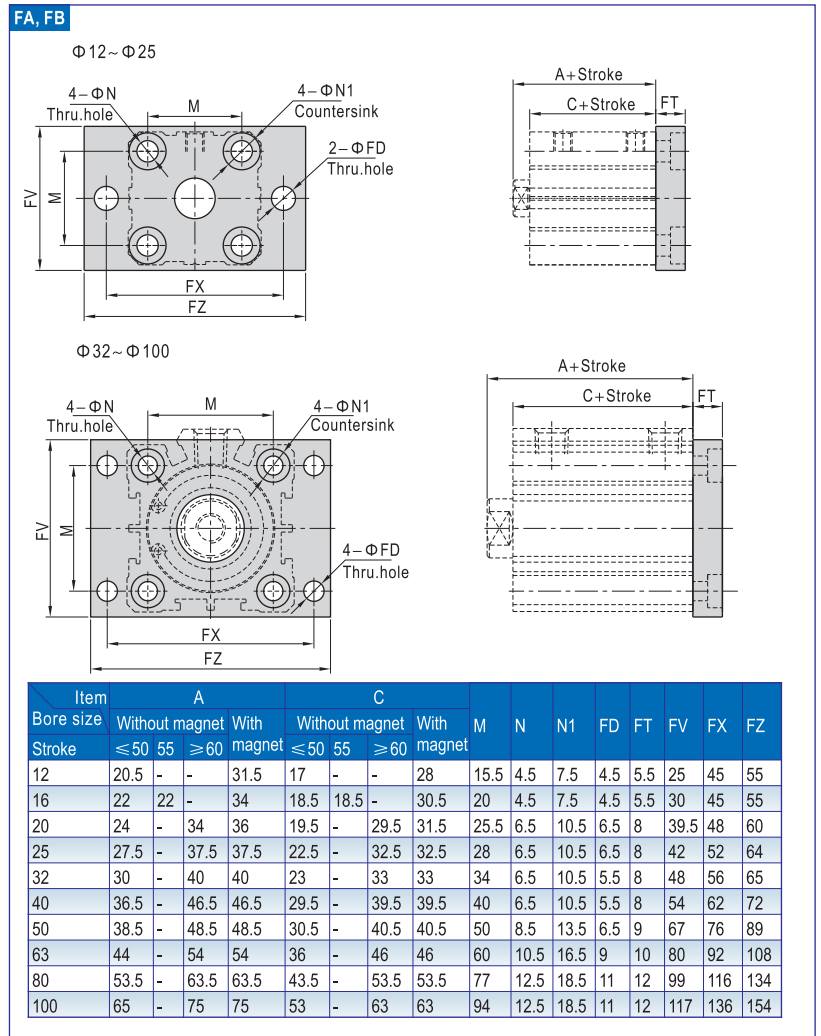
●—Aluminum alloy; ▲—S45C; ■—Cast iron, △—SPCC;

List for ordering code of accessories

Bore size	Accessories			Mounting accessory			Sensor switch
	LB	FA	FB	CB	I	Y	
12	F-ACQ12LB	F-ACQ12FA	F-ACQ12FB	F-ACQ12CB			
16	F-ACQ16LB	F-ACQ16FA	F-ACQ16FB	F-ACQ16CB			CS1-G
20	F-ACQ20LB	F-ACQ20FA	F-ACQ20FB	F-ACQ20CB			DS1-G
25	F-ACQ25LB	F-ACQ25FA	F-ACQ25FB	F-ACQ25CB			
32	F-ACQ32LB	F-ACQ32FA	F-ACQ32FB	F-ACQ32CB			
40	F-ACQ40LB	F-ACQ40FA	F-ACQ40FB	F-ACQ40CB			CS1-J
50	F-ACQ50LB	F-ACQ50FA	F-ACQ50FB	F-ACQ50CB			DS1-J
63	F-ACQ63LB	F-ACQ63FA	F-ACQ63FB	F-ACQ63CB			CS1-G
80	F-ACQ80LB	F-ACQ80FA	F-ACQ80FB	F-ACQ80CB			DS1-G
100	F-ACQ100LB	F-ACQ100FA	F-ACQ100FB	F-ACQ100CB			
125	-	-	-	-			DS1-H
140	-	-	-	-			CS1-G
160	-	-	-	-			DS1-G

Bore size	Accessories		Knuckle			
	I: I Knuckle	Y: Y Knuckle	F: F Knuckle	U: U Knuckle		
12	F-ACQ12I	F-ACQ12Y	-	-	-	F-M5X080U
16	F-ACQ16I	F-ACQ16Y	-	-	-	F-M6X100U
20	F-ACQ20I	F-ACQ20Y	F-M8X125F	F-M8X125U		
25	F-ACQ25I	F-ACQ25Y	F-M10X125F	F-M10X125U		
32						
40	F-ACQ32I	F-ACQ32Y	F-M14X150F	F-M14X150U		
50						
63	F-ACQ50I	F-ACQ50Y	F-M18X150F	F-M18X150U		
80	F-ACQ80I	F-ACQ80Y	-	-		
100	F-ACQ100I	F-ACQ100Y	-	-		

Dimensions

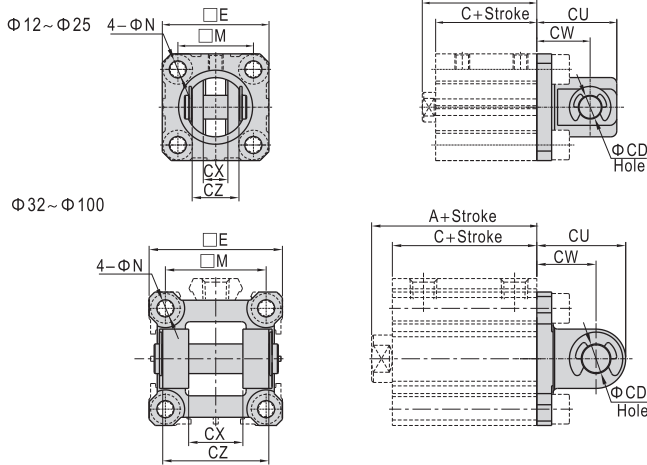


ACQ

Compact cylinder

Accessories

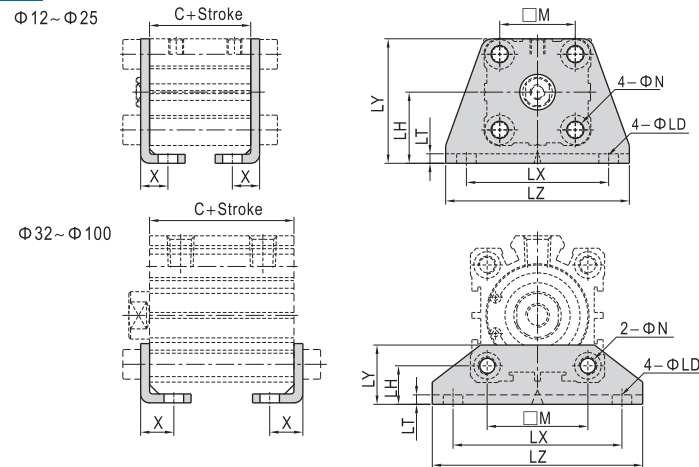
CB



Item	A ①		C		E	M	N	CD	CU	CW	CX	CZ			
	Without magnet	With magnet	Without magnet	With magnet											
Bore size	≤50	≥60	≤50	≥60											
Stroke	55	≥60	55	≥60											
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	19.5	-	29.5	31.5	25.5	6.5	8	27	18	8.3	15.8	
25	27.5	-	37.5	22.5	-	32.5	32.5	40	28	6.5	10	30	20	10.3	19.8
32	30	-	40	23	-	33	33	45.5	34	6.5	10	30	20	18.3	35.8
40	36.5	-	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	30.5	-	40.5	40.5	64.5	50	8.5	14	42	28	22.3	43.8
63	44	-	54	36	-	46	46	77.5	60	10.5	14	44	30	22.3	43.8
80	53.5	-	63.5	43.5	-	53.5	53.5	98.5	77	12.5	18	56	38	28.3	55.8
100	65	-	75	53	-	63	63	117.5	94	12.5	22	67	45	32.3	63.8

① Value A and value C in the above table is only for ACQ series.
Please refer to relevant content for value C of other series.

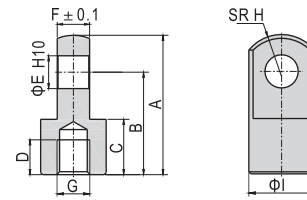
LB



Item	C ①		M	N	X	LD	LH	LT	LX	LY	LZ	
	Without magnet	With magnet										
Bore size	≤50	≥60										
Stroke	55	≥60										
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	25.5	6.5	9.2	6.5	24	3	48	42	62
25	22.5	-	32.5	28	6.5	10.7	6.5	26	3	52	46	66
32	23	-	33	34	6.5	11.2	6.5	13	3	57	20	71
40	29.5	-	39.5	40	6.5	11.2	6.5	13	3	64	20	78
50	30.5	-	40.5	50	8.5	12.2	8.5	14	3	79	22	95
63	36	-	46	60	10.5	13.7	10.5	16	3	95	26	113
80	43.5	-	53.5	77	13	16.5	13	20.5	4.5	118	32	140
100	53	-	63	94	13	23	13	24	6	137	36	162

① Value C in the above table is only for ACQ series.
Please refer to relevant content for value C of other series.

I Knuckle

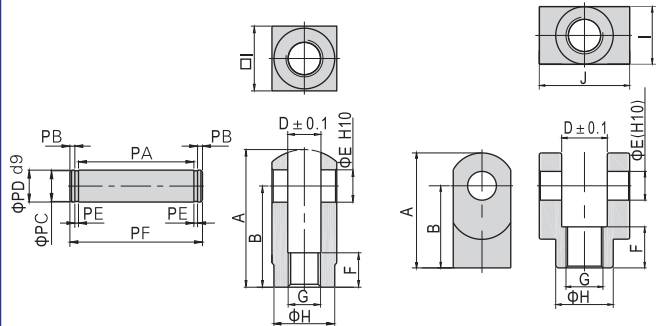


Type\Item	A	B	C	D	E	F	G	H	I
F-ACQ12I	21.5	16	9	6	5	4.7	M5×0.8	6.3	10
F-ACQ16I	32	25	11	8	5	6.2	M6×1.0	8.1	12
F-ACQ20I	34	25	13.5	8.5	8	7.7	M8×1.25	10.3	16
F-ACQ25I	41	30	16	11	10	9.7	M10×1.25	12.8	20
F-ACQ32I	42	30	16	14	10	17.6	M14×1.5	12	22
F-ACQ50I	56	40	20	18	14	21.6	M18×1.5	16	28
F-ACQ80I	71	50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

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	10.5	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

