



Installation and application





- 1、When load changes in the work, the cylinder with abundant output capacity shall be selected;
- 2、Relative cylinder with high temperature resistance or corrosion resistance shall be chosen under the condition of high temperature or corrosion;
- 3、Necessary protection measure shall be taken in the environment with larger humidity, much dust or water drops, oil dust and welding dregs;
- 4、Dirty substances in the pipe must be cleared away before cylinder is connected with pipeline to prevent the entrance of sundries into the cylinder;
- 5、The medium used by cylinder shall be filtered by the filter core of above 40um;
- 6、As both of the front cover and piston of the cylinder are short, typically too large stroke can not be selected;
- 7、Anti-freezing measure shall be adopted under low temperature environment to prevent moisture freezing;
- 8、The cylinder shall avoid the influence of side load in operation to maintain the normal work of cylinder and extend the service life;
- 9、If the cylinder is dismantled and stored for a long time, please conduct anti-rust treatment to the surface. Anti-dust jam cap shall be added in air intake and outlet orifices. The front and back cover can not be dismantled, which shall be especially noticed.

Criteria for selection: Cylinder thrust

Unit: Newton (N)

Bore size(mm)	Rod size (mm)	Acting type	Pressure area(mm ²)	Operating pressure MPa							
				0.1	0.2	0.3	0.4	0.5	0.6	0.7	
12	6	Single acting-Push type	113.1	-	6.1	17.4	28.7	40.0	51.4	62.7	
		Single acting-Pull type	84.8	-	0.5	8.9	17.4	25.9	34.4	42.9	
		Double acting	Push side	113.1	11.3	22.6	33.9	45.2	56.5	67.9	79.2
			Pull side	84.8	8.5	17.0	25.4	33.9	42.4	50.9	59.4
16	8	Single acting-Push type	201.1	-	18.1	38.2	58.3	78.4	98.5	118.6	
		Single acting-Pull type	150.8	-	8.1	23.1	38.2	53.3	68.4	83.5	
		Double acting	Push side	201.1	20.1	40.2	60.3	80.4	100.5	120.6	140.7
			Pull side	150.8	15.1	30.2	45.2	60.3	75.4	90.5	105.6
20	10	Single acting-Push type	314.2	-	33.1	64.5	96.0	127.4	158.8	190.2	
		Single acting-Pull type	235.6	-	17.4	41.0	64.5	88.1	111.7	135.2	
		Double acting	Push side	314.2	31.4	62.8	94.2	125.7	157.1	188.5	219.9
			Pull side	235.6	23.6	47.1	70.7	94.2	117.8	141.4	164.9
25	10	Single acting-Push type	490.9	13.8	62.9	112.0	161.0	210.1	259.2	308.3	
		Single acting-Pull type	412.3	5.9	47.2	88.4	129.6	170.9	212.1	253.3	
		Double acting	Push side	490.9	49.1	98.2	147.3	196.3	245.4	294.5	343.6
			Pull side	412.3	41.2	82.5	123.7	164.9	206.2	247.4	288.6
32	12	Single acting-Push type	804.2	30.8	111.2	191.7	272.1	352.5	432.9	513.4	
		Single acting-Pull type	691.2	19.5	88.6	157.7	226.9	296.0	365.1	434.2	
		Double acting	Push side	804.2	80.4	160.8	241.3	321.7	402.1	482.5	563.0
			Pull side	691.2	69.1	138.2	207.3	276.5	345.6	414.7	483.8
40	12	Single acting-Push type	1256.6	54.2	179.8	305.5	431.2	556.8	682.5	808.1	
		Single acting-Pull type	1143.5	42.9	157.2	271.6	385.9	500.3	614.6	729.0	
		Double acting	Push side	1256.6	125.7	251.3	377.0	502.7	628.3	754.0	879.6
			Pull side	1143.5	114.4	228.7	343.1	457.4	571.8	686.1	800.5
50	16	Single acting-Push type	1963.5	90.1	286.5	482.8	679.2	875.5	1071.9	1268.2	
		Single acting-Pull type	1762.4	70.0	246.3	422.5	598.8	775.0	951.3	1127.5	
		Double acting	Push side	1963.5	196.3	392.7	589.0	785.4	981.7	1178.1	1374.4
			Pull side	1762.4	176.2	352.5	528.7	705.0	881.2	1057.5	1233.7
63	16	Single acting-Push type	3117.2	173.6	485.3	797.1	1108.8	1420.5	1732.2	2044.0	
		Single acting-Pull type	2916.2	153.5	445.1	736.8	1028.4	1320.0	1611.6	1903.2	
		Double acting	Push side	3117.2	311.7	623.4	935.2	1246.9	1558.6	1870.3	2182.1
			Pull side	2916.2	291.6	583.2	874.9	1166.5	1458.1	1749.7	2041.3
80	20	Single acting-Push type	5026.5	305.6	808.2	1310.9	1813.5	2316.2	2818.8	3321.5	
		Single acting-Pull type	4712.4	274.1	745.4	1216.6	1687.9	2159.1	2630.3	3101.6	
		Double acting	Push side	5026.5	502.7	1005.3	1508.0	2010.6	2513.3	3015.9	3518.6
			Pull side	4712.4	471.2	942.5	1413.7	1885.0	2356.2	2827.4	3298.7
100	25	Single acting-Push type	7854.0	499.1	1284.5	2069.9	2855.3	3640.7	4426.1	5211.5	
		Single acting-Pull type	7363.1	450.0	1186.3	1922.6	2658.9	3395.3	4131.6	4867.9	
		Double acting	Push side	7854.0	785.4	1570.8	2356.2	3141.6	3927.0	4712.4	5497.8
			Pull side	7363.1	736.3	1472.6	2208.9	2945.2	3681.6	4417.9	5154.2

Product series

Page	Series name		Mounting type						Acting type	Bore size	Collocation of sensor switch								
	Double acting type: ACP	Single acting type: ASP, ATP	Basic	FA	FB	CA	CB	LB			CS1-G	CS1-GX	CS1-GN	CS1-GP					
	 Double rod type: ACPD 	 Adjustable stroke type: ACPJ 	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
V-02	V-05						VI-39												

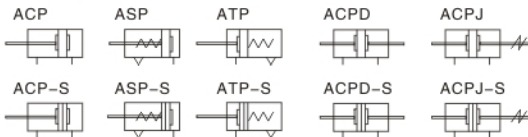


Tight cylinder

ACP Series



Symbol



Product feature

- 1、DIN standard cylinder;
- 2、The cylinder body connects with the threads of the front and back cover, forming high strength and convenient maintenance;
- 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 oil 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、Installing accessories with various specifications are optional.

Specification

Bore size (mm)	12	16	20	25	32	40	50	63	80	100
Acting type	Double acting type、Single acting-Push type、Single acting-Pull type									
Fluid	Air(to be filtered by 40um filter element)									
Operating pressure	Double acting	0.1~1.0MPa(14~145Psi)								
	Single acting	0.2~1.0MPa(28~145Psi)								
Proof pressure	1.5MPa(215Psi)									
Temperature ℃	-20~80									
Speed range mm/s	Double acting type: 30~500					Single acting type: 50~500				
Stroke tolerance	0~150 ^{+1.0} ₀					> 150 ^{+1.4} ₀				
Cushion type	Bumper									
Port size ①	M5 x 0.8					1/8"			1/4"	

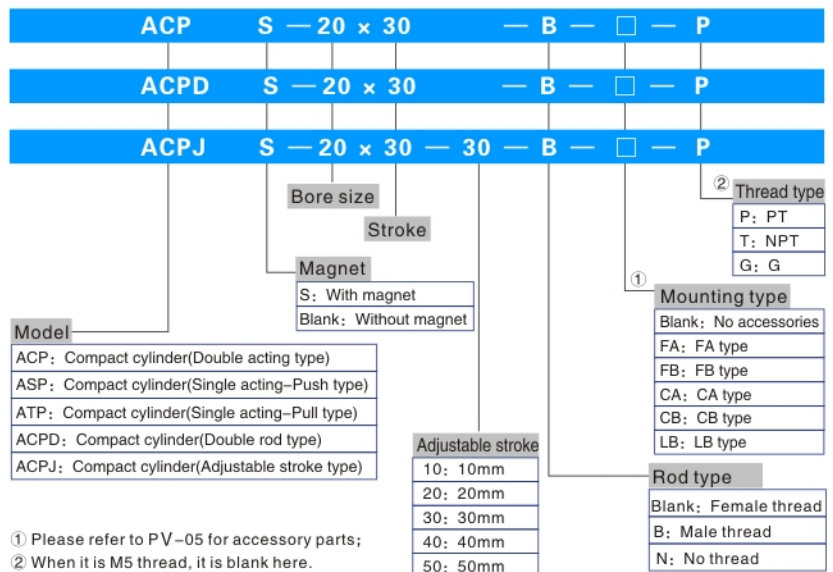
①PT thread、NPT thread and G thread are available;
Add: Refer to PVI-39-VI-50 for detail of sensor switch.

Stroke

Bore size (mm)	Standard stroke (mm)										Max. stroke	Available stroke													
12	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	200	200
	Single acting	5 10										10	-												
16	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	200	200
	Single acting	5 10 15 20 25										25	-												
20	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	300	300
	Single acting	5 10 15 20 25										25	-												
25	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	300	300
	Single acting	5 10 15 20 25										25	-												
32	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	400	400
	Single acting	5 10 15 20 25										25	-												
40	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	400	400
	Single acting	5 10 15 20 25										25	-												
50	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	400	400
	Single acting	5 10 15 20 25										25	-												
63	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	400	400
	Single acting	5 10 15 20 25										25	-												
80	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	400	400
	Single acting	5 10 15 20 25										25	-												
100	Double acting	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	400	400
	Single acting	5 10 15 20 25										25	-												

Note: 1、Please contact the company for other special strokes;
2、The non-standard stroke within 100mm is transformed from the standard stroke of the upper grade. furthermore its outline dimension is equal to that of standard stroke cylinder of the next longer stroke. the non-standard stroke cylinder whose stroke is 23 is transformed from the standard cylinder whose standard stroke is 25, and their shape and dimension are the same.

Ordering code



① Please refer to PV-05 for accessory parts;
② When it is M5 thread, it is blank here.

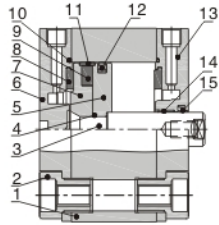


Tight cylinder

ACP Series

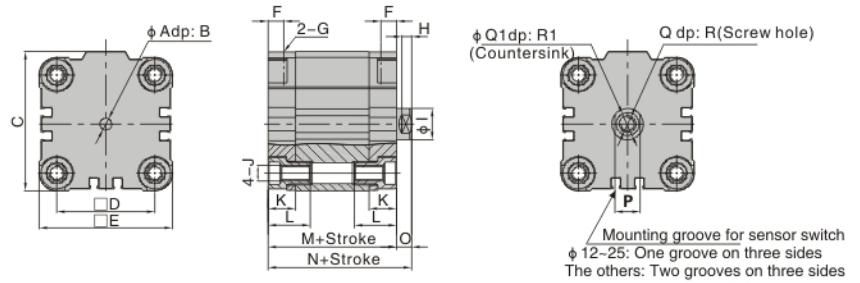
Inner structure and material of major parts

Dimensions

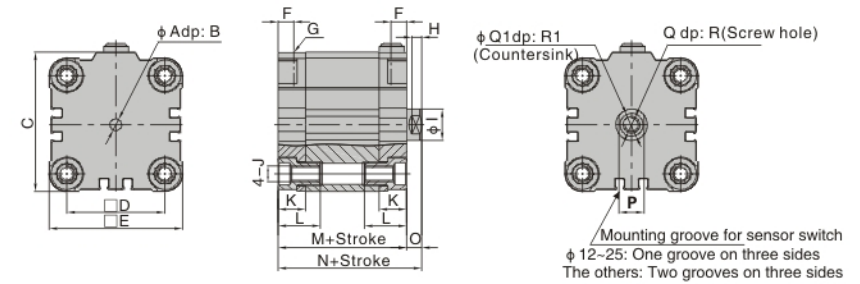


NO.	Item	Bore size				Material
		12	25	16-32	40-100	
1	Body	Aluminum alloy				
2	Screw	Carbon steel				
3	Piston rod	Stainless steel		S45C		
4	O-ring	NBR				
5	Piston	Aluminum alloy				
6	Back cover	Aluminum alloy				
7	Magnet holder	Aluminum alloy				
8	Bumper	TPU				
9	Magnet	Sintered metal (Neodymium-iron-boron)		Plastic		
10	O-ring	NBR				
11	Wear ring	-		Wear resistant material		
12	Piston O-ring	NBR				
13	Front cover	Aluminum alloy				
14	Bushing	12-20 :NO ;		25-100: Wear resistant material		
15	Front cover packing	NBR				

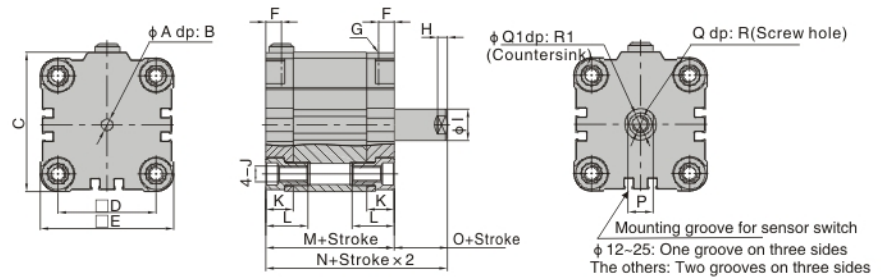
ACP



ASP



ATP



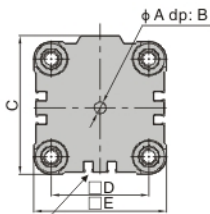
Item Bore size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	Q1	R	R1
12	6	4	30	18	29	7	M5 × 0.8	3	6	M4 × 0.7	11.5	18	38	42.5	4.5	5	M3 × 0.5	3.3	8	1.5
16	6	4	30	18	29	7	M5 × 0.8	3	8	M4 × 0.7	11.5	18	38	42.5	4.5	6	M4 × 0.7	4.5	10	1.5
20	6	4	37.5	22	36	7	M5 × 0.8	3	10	M5 × 0.8	11.5	18	38	42.5	4.5	8	M5 × 0.8	5.5	12	2
25	6.1	4	41.5	26	40	7	M5 × 0.8	4	10	M5 × 0.8	11.5	18	39.5	45	5.5	8	M5 × 0.8	5.5	12	2
32	6.1	4	52	32	50	8	1/8"	4.5	12	M6 × 1.0	14	21	44.5	50.5	6	10	M6 × 1.0	6.5	14	2.6
40	6.1	4	62.5	42	60	8	1/8"	4.5	12	M6 × 1.0	14	21	45.5	52	6.5	10	M6 × 1.0	6.5	14	2.6
50	6.1	4	71	50	68	8	1/8"	5	16	M8 × 1.25	14	21.5	45.5	53	7.5	13	M8 × 1.25	8.5	16	3.3
63	8.1	4	91	62	87	8	1/8"	5	16	M10 × 1.5	15	24	50	57.5	7.5	13	M8 × 1.25	8.5	16	3.3
80	8.1	4	111	82	107	8.5	1/8"	5.5	20	M10 × 1.5	16	27	56	64	8	17	M10 × 1.5	10.5	20	4.7
100	8.1	4	133	103	128	10.5	1/4"	7.5	25	M10 × 1.5	19	32	66.5	76.5	10	22	M12 × 1.75	12.5	24	6.1

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

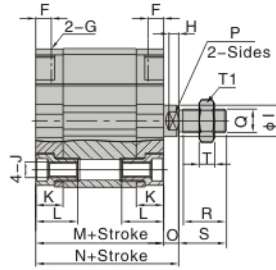
Tight cylinder

ACP Series

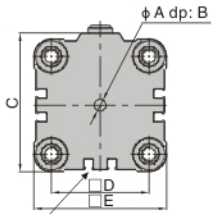
ACP-B



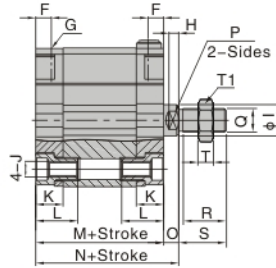
Mounting groove for sensor switch
 ϕ 12-25: One groove on three sides
 The others: Two grooves on three sides



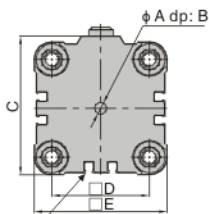
ASP-B



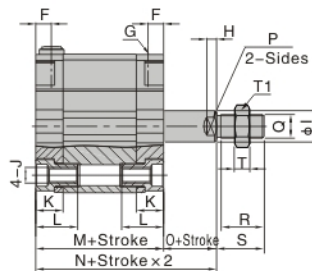
Mounting groove for sensor switch
 ϕ 12-25: One groove on three sides
 The others: Two grooves on three sides



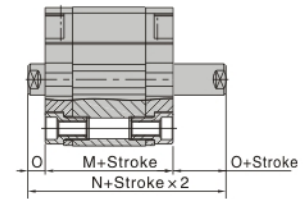
ATP-B



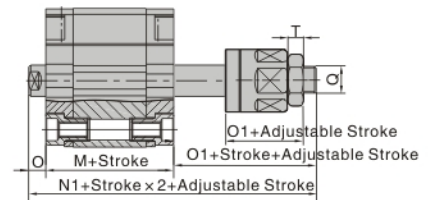
Mounting groove for sensor switch
 ϕ 12-25: One groove on three sides
 The others: Two grooves on three sides



ACPD



ACPJ



Item	Bore size	M	N	N1	O	O1	T	Q
12	38	47	63.5	4.5	21	5	6	M6X1.0
16	38	47	67.5	4.5	25	6	5	M8X1.25
20	38	47	69.5	4.5	27	6	6	M10X1.25
25	39.5	50.5	72	5.5	27	6	6	M10X1.25
32	44.5	56.5	77.5	6	27	6	6	M10X1.25
40	45.5	58.5	79	6.5	27	6	6	M10X1.25
50	45.5	60.5	81	7.5	28	7	7	M12X1.25
63	50	65	85.5	7.5	28	7	7	M12X1.25
80	56	72	93	8	29	8	8	M16X1.5
100	66.5	86.5	112	10	35.5	10	10	M20X1.5

Remark: 1, The dimensions of magnet type cylinder are the same as non-magnet type cylinder;
 2, Please refer to this page above for male thread dimensions;
 3, The unmarked dimension is the same as ACP standard type.

Item	Bore size	A	B	C	D	E	F	G	H	I	J	K
12	6	4	30	18	29	7	M5 × 0.8	3	6	M4 × 0.7	11.5	
16	6	4	30	18	29	7	M5 × 0.8	3	8	M4 × 0.7	11.5	
20	6	4	37.5	22	36	7	M5 × 0.8	3	10	M5 × 0.8	11.5	
25	6.1	4	41.5	26	40	7	M5 × 0.8	4	10	M5 × 0.8	11.5	
32	6.1	4	52	32	50	8	1/8"	4.5	12	M6 × 1.0	14	
40	6.1	4	62.5	42	60	8	1/8"	4.5	12	M6 × 1.0	14	
50	6.1	4	71	50	68	8	1/8"	5	16	M8 × 1.25	14	
63	8.1	4	91	62	87	8	1/8"	5	16	M10 × 1.5	15	
80	8.1	4	111	82	107	8.5	1/8"	5.5	20	M10 × 1.5	16	
100	8.1	4	133	103	128	10.5	1/4"	7.5	25	M10 × 1.5	19	

Item	Bore size	L	M	N	O	P	Q	R	S	T	T1
12	18	38	42.5	4.5	5	M6 × 1.0	15	16	5	10	
16	18	38	42.5	4.5	6	M8 × 1.25	19	20	6	12	
20	18	38	42.5	4.5	8	M10 × 1.25	20	22	6	17	
25	18	39.5	45	5.5	8	M10 × 1.25	20	22	6	17	
32	21	44.5	50.5	6	10	M10 × 1.25	20	22	6	17	
40	21	45.5	52	6.5	10	M10 × 1.25	20	22	6	17	
50	21.5	45.5	53	7.5	13	M12 × 1.25	22	24	7	17	
63	24	50	57.5	7.5	13	M12 × 1.25	22	24	7	17	
80	27	56	64	8	17	M16 × 1.5	30	32	8	23	
100	32	66.5	76.5	10	22	M20 × 1.5	38	40	10	26	

Remark: The dimensions of magnet type cylinder are the same as non-magnet type cylinder.

Tight cylinder

Accessories

Ordering code

F — ACP 50 LB

Accessory — Cylinder model — Bore size — Accessories type

① Pleas refer to the accessory list on PV-06 for detailed information of accessories.
② CB is attached with relevant PIN.

Mounting accessories	Accessories type	
	LB	LB Type
	FA	FA Type
	FB	FB Type
	CA	CA Type
	CB ②	CB Type

Dimensions

FA\FB

φ 12-φ 25

φ 32-φ 100

Bore size\Item	A	B	C	D	E	F	G	H	N
12	10	-	30	5.5	18	43	55	14	42.5
16	10	-	30	5.5	18	43	55	14	42.5
20	10	-	36	6.5	22	55	68	16	42.5
25	10	-	40	6.5	26	60	78	16	45
32	10	32	50	7	32	65	78	18	50.5
40	10	36	60	9	42	82	102	18	52
50	12	45	68	9	50	90	110	22	53
63	15	50	87	9	62	110	128	22	57.5
80	15	63	107	12	82	135	160	28	64
100	15	75	128	14	103	163	190	34	76.5

Accessories for choosing list

Cylinder model	Accessories	Mounting accessory				Knuckle ①		Sensor switch ②	
		LB	FA\FB	CA	CB	F	U	CS1-G	
ACP	Female thread	Standard	●	●	●	●	×	×	×
	With magnet		●	●	●	●	×	×	●
ASP	Male thread	Standard	●	●	●	●	●	×	×
	With magnet		●	●	●	●	●	×	●
ACPD	Female thread	Standard	●	●	×	×	×	×	×
	With magnet		●	●	×	×	×	×	●
ACPJ	Male thread	Standard	●	●	×	×	×	×	×
	With magnet		●	●	×	×	×	×	●

①: Please refer to PVI-33-VI-38 for knuckle detail;
②: Please refer to PVI-39-VI-50 for detail of sensor switch.

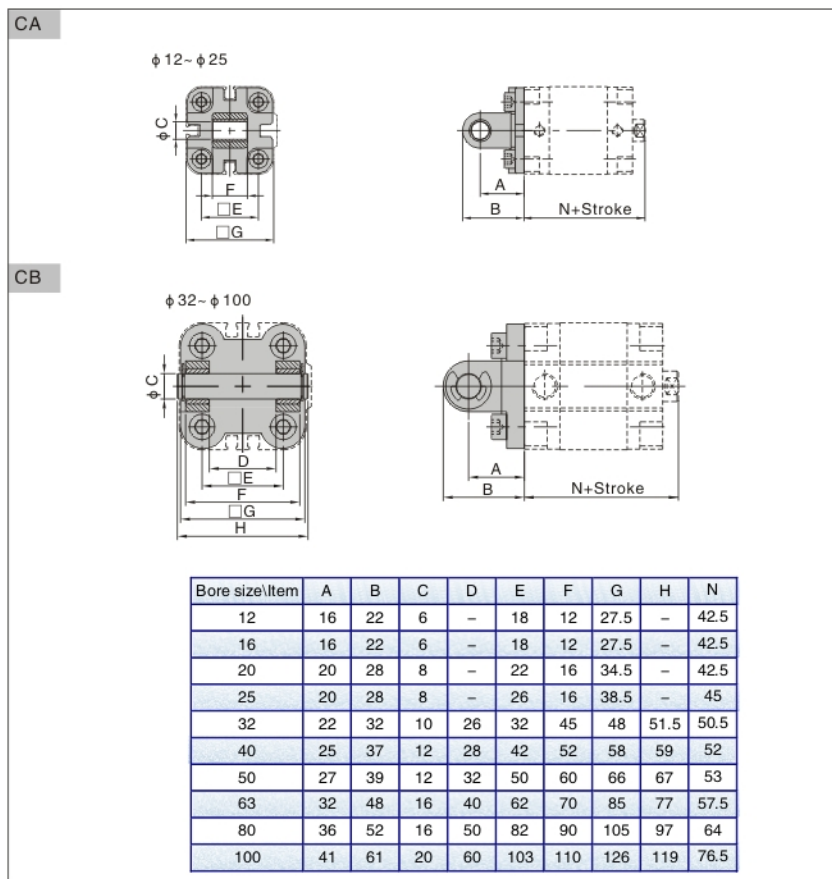
Material of accessories

Accessories	Mounting accessories				Joint accessories	
	FA\FB	CA	CB	LB	F	U
12-25	Aluminum alloy	Aluminum alloy	×	Low carbon steel	Carbon steel	
32-100	Aluminum alloy	×	Aluminum alloy	Low carbon steel	Carbon steel	

LB

Bore size\Item	A	B	C	D	E	F	G	H
12	22	3	38	64	73.6	5.5	18	27
16	22	3	38	64	73.6	5.5	18	27
20	27	3.8	38	70	82.6	6.5	22	34
25	29	3.8	39.5	71.5	84	6.5	26	38
32	34	4.8	44.5	80.5	97.1	6.5	32	48
40	40.5	4.8	45.5	85.5	102.1	9	42	58
50	47	5.8	45.5	93.5	110.1	9	50	66
63	56.5	5.8	50	104	127.6	11	62	85
80	68.5	7.5	56	116	139.6	11	82	105
100	81	7.5	66.5	132.5	156.1	13.5	103	126

■ Dimensions



■ List for ordering code of accessories

Accessories Bore size	Mounting accessory				Knuckle		Sensor switch
	LB	FA	CA	CB	F:F Knuckle	U:U Knuckle	
12	F-ACP12LB	F-ACP12FA	F-ACP12CA	-	-	F-M06100U	CS1-G
16	-	-	-	-	F-M08125F	F-M08125U	
20	F-ACP20LB	F-ACP20FA	F-ACP20CA	-	F-M10125F	F-M10125U	
25	F-ACP25LB	F-ACP25FA	F-ACP25CA	-			
32	F-ACP32LB	F-ACP32FA	-	F-ACP32CB	F-M12125F	F-M12125U	
40	F-ACP40LB	F-ACP40FA	-	F-ACP40CB			
50	F-ACP50LB	F-ACP50FA	-	F-ACP50CB			
63	F-ACP63LB	F-ACP63FA	-	F-ACP63CB	F-M16150F	F-M16150U	
80	F-ACP80LB	F-ACP80FA	-	F-ACP80CB	F-M20150F	F-M20150U	
100	F-ACP100LB	F-ACP100FA	-	F-ACP100CB			