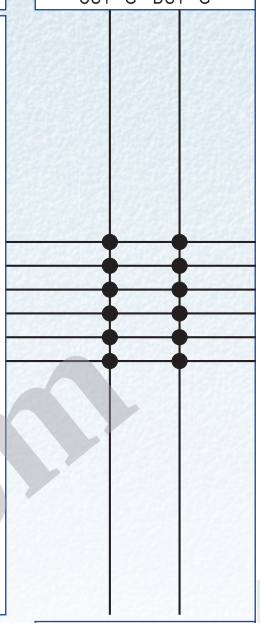
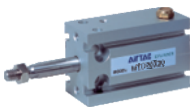
Product series

Series name			Acting type	Bore size	Collocation of sensor switch CS1–G DS1–G
Double acting type: MD 	Double acting no–rotating type: MK 		Double acting	6 10 16 20 25 32	
Double rod type: MDD 	Double rod no–rotating type: MKD 				
Adjustable stroke type: MDJ 	Adjustable stroke no–rotating type: MKJ 				
Single acting type: MSD 	Single acting no–rotating type: MSK 		Single acting		
Single acting type: MTD 	Single acting no–rotating type: MTK 				
Page	270	273			397

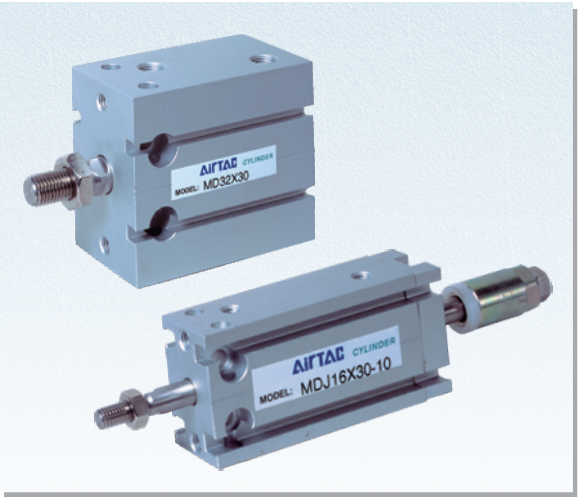
Installation and application

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 higher 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 particles into the cylinder.
5. The medium used by cylinder shall be filtered to 40 μ m or below.
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 maintain the normal work of cylinder and extend the service life.
9. If the cylinder is dismantled and stored for a long time, pay attention to conduct anti-rust treatment to the surface. Anti-dust caps shall be added in air inlet and outlet ports.

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
6	3	Single acting	Push side	28.3	-	1.5	2.9	4.3	5.7	7.2	8.6
			Pull side	21.2	-	-	0.8	1.5	2.2	2.9	3.6
		Double acting	Push side	28.3	2.8	5.7	8.5	11.3	14.1	17.0	19.8
			Pull side	21.2	2.1	4.2	6.4	8.5	10.6	12.7	14.8
10	4	Single acting	Push side	78.5	-	3.9	7.9	11.8	15.8	19.7	23.7
			Pull side	66.0	-	1.4	4.1	6.8	9.5	12.2	14.9
		Double acting	Push side	78.5	7.9	15.7	23.6	31.4	39.3	47.1	55.0
			Pull side	66.0	6.6	13.2	19.8	26.4	33.0	39.6	46.2
16	6	Single acting	Push side	201.1	-	10.1	30.2	50.3	70.4	90.5	110.6
			Pull side	172.8	-	8.7	25.9	43.2	60.5	77.8	95.1
		Double acting	Push side	201.1	20.1	40.2	60.3	80.4	100.5	120.6	140.7
			Pull side	172.8	17.3	34.6	51.8	69.1	86.4	103.7	121.0
20	8	Single acting	Push side	314.2	-	15.7	47.1	78.6	110.0	141.4	172.8
			Pull side	263.9	-	13.2	39.6	66.0	92.3	118.7	145.1
		Double acting	Push side	314.2	31.4	62.8	94.2	125.7	157.1	188.5	219.9
			Pull side	263.9	26.4	52.8	79.2	105.6	131.9	158.3	184.7
25	10	Single acting	Push side	490.9	-	24.7	73.8	122.8	179.1	221.0	270.1
			Pull side	412.3	-	20.7	61.9	103.1	144.4	185.6	226.8
		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 side	804.2	-	40.2	120.7	201.1	281.5	361.9	442.4
			Pull side	691.2	-	34.7	103.8	173.0	242.1	311.2	380.3
		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	270.3	276.5	345.6	414.7	483.8



Specification

Bore size(mm)		6	10	16	20	25	32
Acting type	MD, MDD, MDJ	Double acting					
	MSD, MTD	Single acting-Push type, Single acting-Pull type					
Fluid		Air(to be filtered by 40 μ m 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: 30~500 Single acting: 50~500					
Stroke tolerance		$^{+1.0}_{0}$					
Cushion type		Bumper					
Port size ①		M5×0.8					1/8"

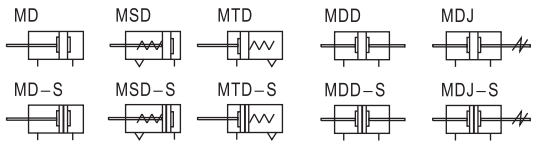
① PT thread, NPT thread and G thread are available. Add) Refer to P397~420 for detail of sensor switch.

Stroke

Bore size (mm)		Standard stroke (mm)	Max. std stroke	Max. stroke
6	Double acting	5 10 15 20 25 30 35	35	40
	Single acting	5 10 15 20	20	-
10	Double acting	5 10 15 20 25 30 35	35	40
	Single acting	5 10 15 20	20	-
16	Double acting	5 10 15 20 25 30 40 50	50	70
	Single acting	5 10 15 20	20	-
20	Double acting	5 10 15 20 25 30 40 50 60	60	80
	Single acting	5 10 15 20	20	-
25	Double acting	5 10 15 20 25 30 40 50 60	60	80
	Single acting	5 10 15 20	20	-
32	Double acting	5 10 15 20 25 30 40 50 60	60	80
	Single acting	5 10 15 20	20	-

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

1. Manufactured by our enterprise.
2. There are several ways to fix the cylinder and it is convenient to install and use.
3. Several cylinders can be assembled together to effectively save the installation space.
4. The guide precision of piston rod is high and no additional lubricant is needed.
5. Cylinders of various specifications are optional.
6. The seal material with high temperature resistance is adopted to guarantee the normal operation of cylinder at 150℃(Option).

Ordering code

MD 32×30 S □
MDD32×30 S □
MDJ 32×30-30 S □

Model

MD: Multi-mount cylinder(Double acting type)
MSD: Multi-mount cylinder(Single acting-push type)
MTD: Multi-mount cylinder(Single acting-pull type)
MDD: Multi-mount cylinder(Double rod type)
MDJ: Multi-mount cylinder(Adjustable stroke type)

Bore size

6 10 16 20 25 32

Stroke

Refer to stroke table for details

Thread type ①

Blank: PT
T: NPT
G: G

Magnet

Blank: Without magnet
S: With magnet

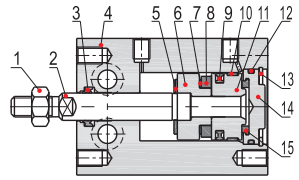
Adjustable stroke

Model	Adjustable stroke
MDJ	10: 10mm
	20: 20mm
	30: 30mm
Others	No this code

① When the thread is standard, the code is blank.

Inner structure and material of major parts

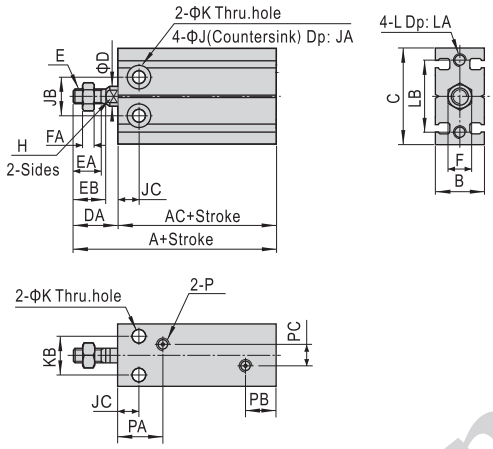
MD-S



NO.	Item	Material
1	Rod nut	Carbon steel
2	Piston rod	Stainless steel
3	Rod packing	NBR
4	Body	Aluminum alloy
5	Bumper	TPU
6	Magnet holder	Aluminum alloy
7	Magnet washer	NBR
8	Magnet	Sintered metal(Neodymium-iron-boron)
9	Piston seal	NBR
10	Wear ring	Wear resistant material
11	Piston	Aluminum alloy
12	O-ring	NBR
13	C-clip	Spring steel
14	Back cover	Aluminum alloy
15	Bumper	TPU

Dimensions

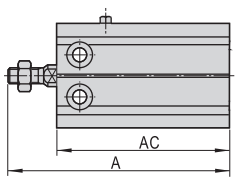
MD



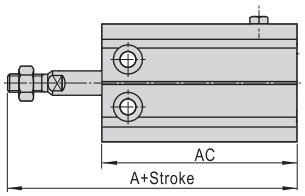
Bore size\Item	A (Without magnet)	AC (Without magnet)	A (With magnet)	AC (With magnet)	B	C	D	DA	E	EA	EB	F
6	46	33	46	33	16.5	22	3	13	M3 × 0.5	7	8	5.5
10	52	36	52	36	16.5	24	4	16	M4 × 0.7	10	11	7
16	46	30	56	40	20	32	6	16	M5 × 0.8	11	12.5	8
20	55	36	65	46	26	40	8	19	M6 × 1.0	12	14	10
25	63	40	73	50	32	50	10	23	M8 × 1.25	15.5	18	12
32	69	42	79	52	40	62	12	27	M10 × 1.25	19.5	22	17

Bore size\Item	FA	H	J	JA	JB	JC	K	KB	L	LA	LB	P	PA	PB	PC
6	2.5	-	6	5	10	7	3.3	7	M3 × 0.5	5	17	M5 × 0.8	14	10	–
10	2	-	6	5.5	11	7	3.3	9	M3 × 0.5	5	18	M5 × 0.8	15.5	10	–
16	4	5	7.5	6.5	14	7	4.5	12	M4 × 0.7	5	25	M5 × 0.8	14.5	10	3
20	5	6	9.5	8	16	9	5.5	16	M5 × 0.8	7.5	30	M5 × 0.8	19	11	9
25	6	8	9.5	9	20	10	5.5	20	M5 × 0.8	8	38	M5 × 0.8	21.5	8.5	12
32	6	10	11	11.5	24	11	6.5	24	M6 × 1.0	9	48	1/8"	23	12.5	13

MSD



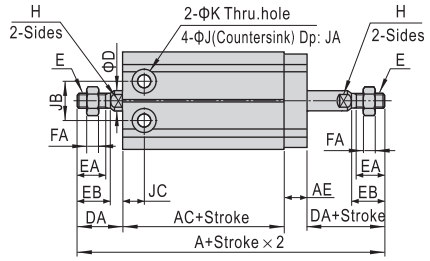
MTD

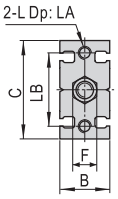


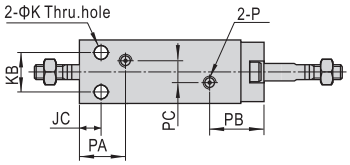
Item	A(Without magnet)				A(With magnet)				AC(Without magnet)				AC(With magnet)			
Bore size\Stroke	5St	10St	15St	20St	5St	10St	15St	20St	5St	10St	15St	20St	5St	10St	15St	20St
6	56	61	71	76	56	61	71	76	43	48	58	63	43	48	58	63
10	62	67	77	82	62	67	77	82	46	51	61	66	46	51	61	66
16	61	66	81	86	71	76	91	96	45	50	65	70	55	60	75	80
20	70	75	90	95	80	85	100	105	51	56	71	76	61	66	81	86
25	78	83	98	103	88	93	108	113	55	60	75	80	65	70	85	90
32	84	89	104	109	94	99	114	119	57	62	77	82	67	72	87	92

Remark) The unmarked dimension is the same as MD standard type.

MDD



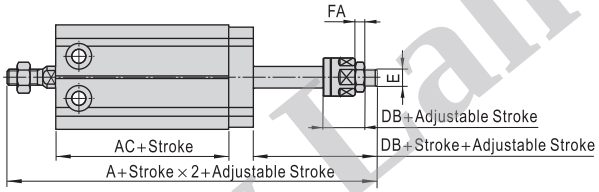




Bore size\Item	A Without magnet	AC Without magnet	A With magnet	AC With magnet	AE	B	C	D	DA	E	EA	EB	F
6	70	38	70	38	6	16.5	22	3	13	M3 × 0.5	7	8	5.5
10	74	36	74	36	6	16.5	24	4	16	M4 × 0.7	10	11	7
16	69.5	30	79.5	40	7.5	20	32	6	16	M5 × 0.8	11	12.5	8
20	83	36	93	46	9	26	40	8	19	M6 × 1.0	12	14	10
25	95	40	105	50	9	32	50	10	23	M8 × 1.25	15.5	18	12
32	106	42	116	52	10	40	62	12	27	M10 × 1.25	19.5	22	17

Bore size\Item	FA	H	J	JA	JB	JC	K	KB	L	LA	LB	P	PA	PB	PC
6	2.5	-	6	5	10	7	3.3	7	M3 × 0.5	5	17	M5 × 0.8	14	16	–
10	2	-	6	5.5	11	7	3.3	9	M3 × 0.5	5	18	M5 × 0.8	15.5	16	–
16	4	5	7.5	6.5	14	7	4.5	12	M4 × 0.7	5	25	M5 × 0.8	14.5	17.5	3
20	5	6	9.5	8	16	9	5.5	16	M5 × 0.8	7.5	30	M5 × 0.8	19	20	9
25	6	8	9.5	9	20	10	5.5	20	M5 × 0.8	8	38	M5 × 0.8	21.5	17.5	12
32	6	10	11	11.5	24	11	6.5	24	M6 × 1.0	9	48	1/8"	23	22.5	13

MDJ



Bore size\Item	A(Without magnet)	A(With magnet)	AC(Without magnet)	AC(With magnet)	DB	E	FA
6	70	70	38	38	13	M3 × 0.5	2.5
10	73	73	36	36	15	M4 × 0.7	2
16	70.5	80.5	30	40	17	M5 × 0.8	4
20	85	95	36	46	21	M6 × 1.0	5
25	97	107	40	50	25	M8 × 1.25	6
32	106	116	42	52	27	M10 × 1.25	6

Remark) The unmarked dimension is the same as MD standard type.