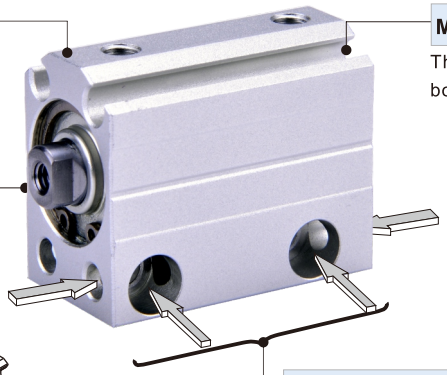
Compendium of MU Series

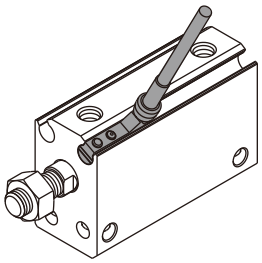
Seven bore size are available

Bore size: 4, 6, 8, 10, 12, 16, 20

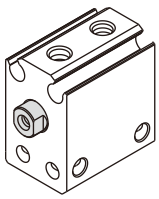


Magnetic switch slots around the cylinder body

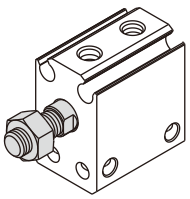
There are magnetic switch slots around the cylinder body convenient to install inducting switch.



Two kinds of rod type



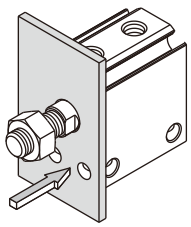
Female thread



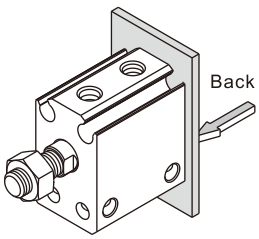
Male thread

Mounted from 4 directions

Cylinder can be mounted from 4 directions, and convenient to install and use.



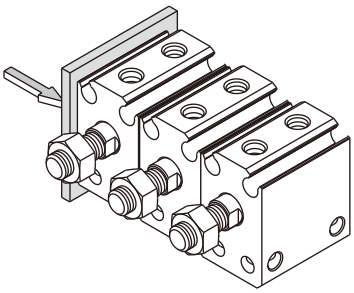
Front mounting



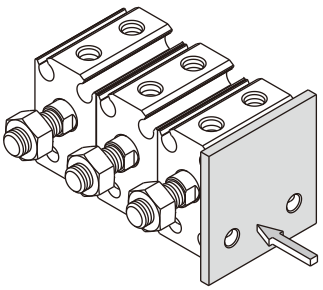
Back mounting

Mounted side by side

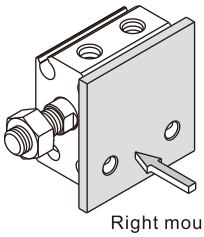
Multitudinous cylinder can be mounted side by side to save space.



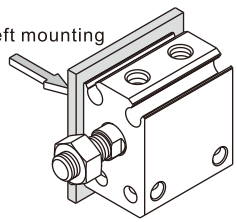
Mounted side by side from left



Mounted side by side from right



Right mounting



Left mounting

Criteria for selection: Cylinder thrust

Unit : Newton(N)

Bore size	Rod size	Acting type		Pressure area(mm^2)	Operating pressure(MPa)						
					0.1	0.2	0.3	0.4	0.5	0.6	0.7
4	2	Single acting_push		12.6	-	0.3	1.6	2.8	4.1	5.3	6.6
		Double acting	Push side	12.6	1.3	2.5	3.8	5.0	6.3	7.6	8.8
			Pull side	9.4	0.9	1.9	2.8	3.8	4.7	5.6	6.6
6	4	Single acting_push		28.3	-	-	5.1	7.9	10.7	13.5	16.4
		Double acting	Push side	28.3	-	5.7	8.5	11.3	14.2	17.0	19.8
			Pull side	15.7	-	3.1	4.7	6.3	7.9	9.4	11.0
8	5	Single acting_push		50.3	-	-	8.3	13.4	18.4	23.4	28.5
		Double acting	Push side	50.3	-	10.1	15.1	20.1	25.2	30.2	35.2
			Pull side	30.6	-	6.1	9.2	12.2	15.3	18.4	21.4
10	6	Single acting_push		78.5	-	8.7	16.5	24.4	32.2	40.1	47.9
		Double acting	Push side	78.5	1.3	15.7	23.6	31.4	39.3	47.1	55.0
			Pull side	50.3	0.9	10.1	15.1	20.1	25.2	30.2	35.2
12	6	Single acting_push		113.1	-	13.6	24.9	36.2	47.5	58.9	70.2
		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		201.1	-	27.0	47.1	67.2	87.3	107.4	127.5
		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		314.2	-	36.8	68.2	99.7	131.1	162.5	193.9
		Double acting	Push side	314.2	31.4	62.8	94.2	125.7	157.1	188.5	219.9
			Pull side	236.5	23.7	47.1	70.7	94.2	117.8	141.4	164.9

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 eliminated 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 40μm 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 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 caps shall be added in air inlet and outlet ports. The front and back cover can not be dismantled, which shall be especially noticed.

Mini free mount cylinder

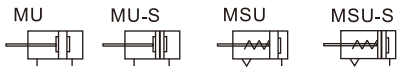
MU Series

Specification

Bore size(mm)		4	6	8	10	12	16	20
Acting type		MU：Double acting MSU：Single acting_Pull type						
Fluid		Air(to be filtered by 40μm filter element)						
Operating pressure	Double acting	0.2~0.7MPa(29~100psi)	0.15~0.7MPa(22~100psi)					
	Single acting	0.3~0.7MPa(44~100psi)		0.2~0.7MPa(29~100psi)				
Proof pressure		1.2MPa(175psi)						
Temperature ℃		-20~70						
Speed range mm/s		Double acting：30~500 Single acting：50~500						
Stroke tolerance		$^{+1.0}_{0}$						
Cushion type		No					Bumper	
Port size		M3×0.5					M5×0.8	

Add) Refer to P353 for detail of sensor switch.

Symbol



Stroke

Bore size (mm)		Standard stroke (mm)	Max.std stroke
4	Double acting	4 6 8 10 15 20	20
	Single acting	4 6	6
6	Double acting	4 6 8 10 15 20 25 30	30
	Single acting	4 6 8	8
8	Double acting	4 6 8 10 15 20 25 30	30
	Single acting	4 6 8 10	10
10	Double acting	4 6 8 10 15 20 25 30	30
	Single acting	4 6 8 10	10
12	Double acting	5 10 15 20 25 30 35 40 45 50	50
	Single acting	5 10	10
16	Double acting	5 10 15 20 25 30 35 40 45 50	50
	Single acting	5 10	10
20	Double acting	5 10 15 20 25 30 35 40 45 50	50
	Single acting	5 10	10

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.

Product feature

1. JIS standard is implemented.
2. Cylinder can be mounted from 4 directions, and convenient to install and use.
3. Multitudinous cylinder can be mounted side by side to save space.
4. The front end of the cylinder is designed with boss. Centering can be done easily.
5. The internal diameter of the body is treated with rolling followed by the treatment of hard anodizing, forming an excellent abrasion resistance and durability.
6. With magnet type is of the feature of position sensing.
7. There are magnetic switch slots around the cylinder body, which is convenient to install inducting switch.
8. The seal of piston adopts heterogeneous two-way seal structure. It has compact dimension and the function of grease reservation.

Ordering code

MU □ 12 × 10 S □

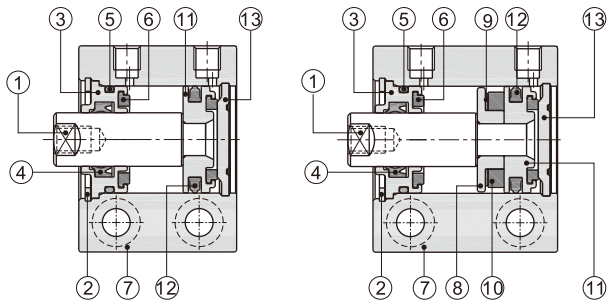
MSU □ 12 × 10 S □

① ② ③ ④ ⑤ ⑥

①Model	②Body mounted type	③Bore size	④Stroke	⑤Magnet	⑥Rod type
MU: Mini free mount cylinder (double acting)	No this code	4	Refer to stroke table for details	No this code(Without magnet)	Blank: No thread; B: Male thread
		6		Blank: Without magnet S: With magnet	Blank: Female thread B: Male thread
MSU: Mini free mount cylinder (single acting-push)		8			
		10			
	Blank: Transverse mounting R: Axial mounting	12			
		16			
		20			

Inner structure and material of major parts

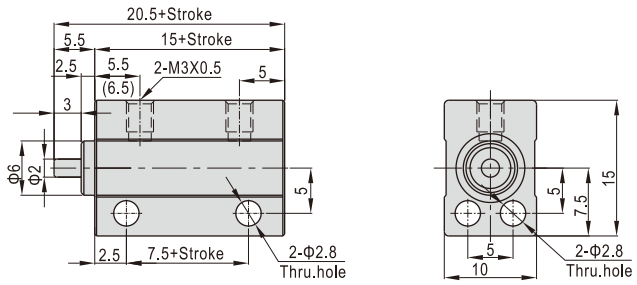
MU20 MU20-S



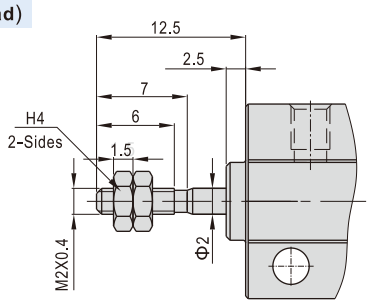
NO.	Item	Material
1	Piston rod	Stainless steel or Carbon steel with 20μm chrome plated
2	C clip	Spring steel
3	Front cover	Aluminum alloy
4	Front cover packing	NBR
5	O-ring	NBR
6	Bumper	TPU
7	Body	Aluminum alloy
8	Magnet holder	Brass(Φ12)/Aluminum alloy(Others)
9	Magnet washer	NBR
10	Magnet	Sintered metal (Neodymium-iron-boron)
11	Piston	Brass(Φ12,16)/Aluminum alloy(Others)
12	Piston seal	NBR
13	Back cover	No(Φ12,16)/Aluminum alloy

Dimensions

Φ4

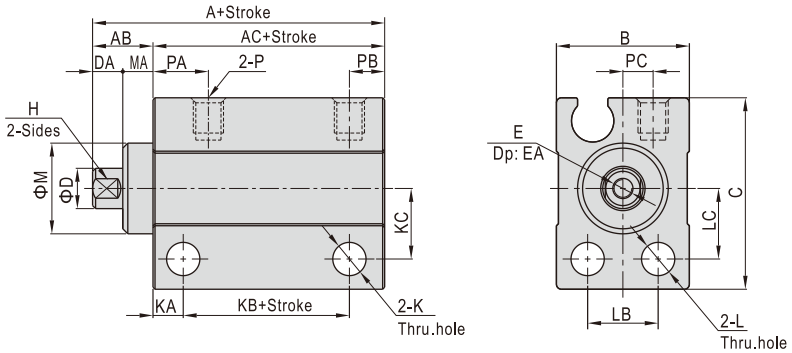


Φ4(Male thread)



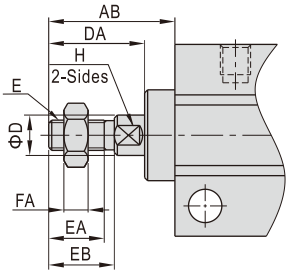
[Note] The value in the "( )" is single-acting type's value.

Φ6~Φ10



Bore size\Item	A	AC	KB	A	AC	KB	AB	B	C	D		DA	E	EA	H		K	KA	KC	L	LB	LC	M	MA	P	PA	PB	PC
	With magnet			Without magnet						MU	MSU				MU	MSU												
6	24	18	11.5	19	13	6.5	6	13	19	4	3.5	3	M2.5×0.45	5	3.5	3	3.3	3	7	3.3	7	7	9	3	M3×0.5	5.5	3.5	3
8	24	18	11.5	19	13	6.5	6	13	21	5		3	M3×0.5	6	4		3.3	3	8	3.3	7	8	11	3	M3×0.5	5.5	3.5	3
10	24	18	11.5	19	13	6.5	6	13.5	22	6		3	M3×0.5	6	5		3.3	3	8.5	3.3	7	8.5	12	3	M3×0.5	5.5	3.5	3.5

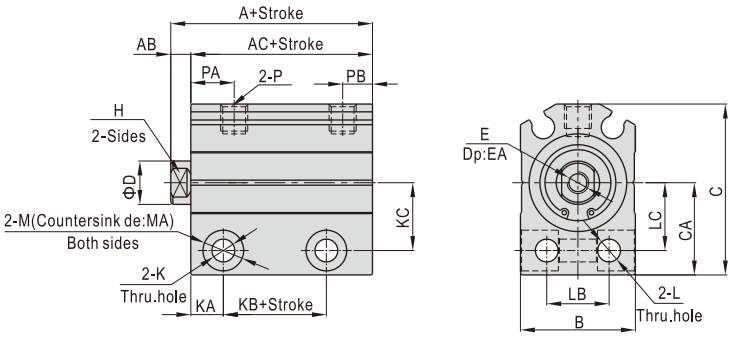
Φ6~Φ10(Male thread)



Bore size\Item	AB	D(MU)	D(MSU)	DA	E	EA	EB	FA	H
6	12.5	4	3.5	9.5	M3×0.5	5.5	6.5	2.4	3.5
8	14.5	5	5	11.5	M4×0.7	7	8.5	3	4
10	16.5	6	6	13.5	M5×0.8	9	10.5	4	5

[Note] The unmarked dimensions are the same as Female type.

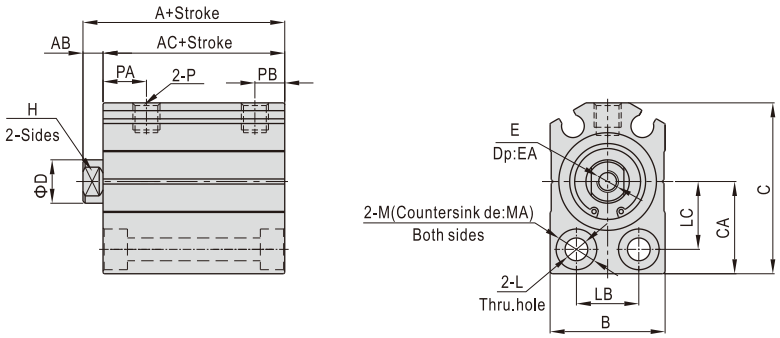
Φ12~Φ20(Transverse mounted)



Bore size\Item	A	AC	KB	A	AC	KB	AB	B	C	CA	D	E	EA	H	K	KA	KC	L	LB	LC	M	MA	P	PA	PB
	With magnet			Without magnet																					
12	25.5(30.5)	22(27)	8.5(13.5)	20.5(25.5)	17(22)	3.5(8.5)	3.5	17	28.5	15.5	6	M3×0.5	6	5	4.3	6	11	4.3	8	11	7.5	7	M5×0.8	7.5	5
16	27(32)	23.5(28.5)	9(14)	22(27)	18.5(23.5)	4(9)	3.5	21	31.5	17	8	M4×0.7	8	6	4.3	6	12.5	4.3	11.5	12.5	7.5	7	M5×0.8	8	5.5
20	29(34)	24.5(29.5)	10.5(15.5)	24(29)	19.5(24.5)	5.5(10.5)	4.5	25	38.5	21	10	M5×0.8	7	8	5.5	7	15.5	5.5	13.5	15.5	9	9	M5×0.8	9	5.5

[Note] The value in the "( )" are single-acting type's value.

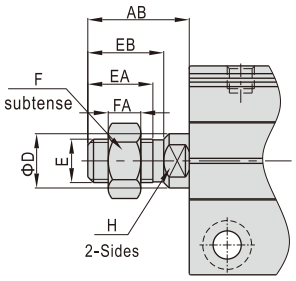
Φ12~Φ20(Axial mounted)



Bore size\Item	A	AC	A	AC	AB	B	C	D	CA	E	EA	H	L	LB	LC	M	MA	P	PA	PB
	With magnet		Without magnet																	
12	25.5(30.5)	22(27)	20.5(25.5)	17(22)	3.5	17	28.5	6	15.5	M3×0.5	6	5	4.3	8	11	7.5	4.5	M5×0.8	7.5	5
16	27(32)	23.5(28.5)	22(27)	18.5(23.5)	3.5	21	31.5	8	17	M4×0.7	8	6	4.3	11.5	12.5	7.5	4.5	M5×0.8	8	5.5
20	29(34)	24.5(29.5)	24(29)	19.5(24.5)	4.5	25	38.5	10	21	M5×0.8	7	8	5.5	13.5	15.5	9	5.5	M5×0.8	9	5.5

[Note] The value in the "( )" are single-acting type's value.

Φ12~Φ20(Male thread)



Bore size\Item	AB	D	E	EA	EB	F	FA	H
12	14	6	M5×0.8	9	10.5	8	4	5
16	15.5	8	M6×1.0	10	12	10	5	6
20	18.5	10	M8×1.25	12	14	12	6	8

[Note] The unmarked dimensions are the same as Female type.