

# Free Mount Cylinder: Long Stroke Type Double Acting, Single Rod

## Series CU

ø6, ø10, ø16, ø20, ø25, ø32



### How to Order

**Without auto switch** CU 6 [ ] 60 D

**With auto switch** CDU 6 [ ] 60 D - M9B [ ]

**Built-in magnet**

**Bore size**

6	6 mm
10	10 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm

**Port thread type**

Symbol	Type	Bore size
Nil	M5 x 0.8	ø6, ø10, ø16, ø20, ø25
	Rc1/8	ø32
TN	NPT1/8	ø32
TF	G1/8	ø32

**Long stroke (mm)**

ø6, ø10, ø16	40, 50, 60
ø20, ø25, ø32	60, 70, 80, 90, 100

**Number of auto switches**

Nil	2 pcs.
S	1 pc.

**Auto switch**

Nil	Without auto switch
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\* Refer to the table below for applicable auto switches.  
\* Auto switches are shipped together but not assembled.

**Action**

D	Double acting
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### Applicable Auto Switches/Refer to page 68 to 72 for further information on auto switches.

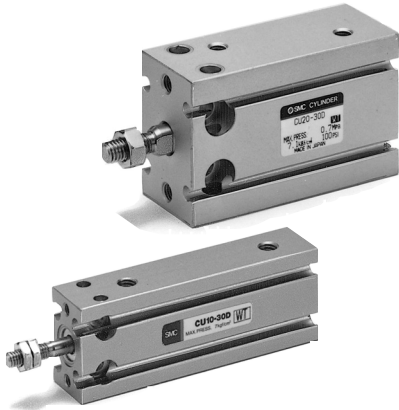
Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length (m)*			Pre-wired connector	Applicable load		
					DC	AC	Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)		IC circuit	Relay, PLC	
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	A93V	A93	●	●	—	—	—	Relay, PLC
Solid state switch	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	100 V or less	M9NV	M9N	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				M9PV	M9P	●	●	○	○	—	
				2-wire	M9BV	M9B	●	●	○	○	—				
				3-wire (NPN)	F9NWV	F9NW	●	●	○	○	IC circuit				
				3-wire (PNP)	F9PWV	F9PW	●	●	○	○	—				
				2-wire	F9BWV	F9BW	●	●	○	○	—				

\* Lead wire length symbols: 0.5 m.....Nil (Example) M9N  
3 m.....L (Example) M9NL  
5 m.....Z (Example) M9NZ

\* Solid state switches marked with "○" are produced upon receipt of order.

\* Normally closed (NC=b contact), solid states switches (Model D-F9G, F9H) are also available. For detail, refer to page 7-9-23 in Best Pneumatics 2004 Vol. 7 catalog.

\* For detail about auto switches with pre-wired connector, refer to page 7-9-36 in the Best Pneumatics 2004 Vol. 7 catalog.



### Specifications

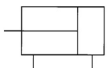
Bore size (mm)	6	10	16	20	25	32
Fluid	Air					
Proof pressure	1.05 MPa					
Maximum operating pressure	0.7 MPa					
Minimum operating pressure	0.12 MPa	0.06 MPa	0.05 MPa			
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)					
Lubrication	Non-lube					
Piston speed	50 to 500 mm/s					
Cushion	Rubber bumper					
Rod end thread	Male thread					
Thread tolerance	JIS Class 2					
Stroke length tolerance	+1.0 0 mm					

### Standard Stroke

Bore size (mm)	Standard stroke (mm)
6, 10, 16	40, 50, 60
20, 25, 32	60, 70, 80, 90, 100

#### JIS Symbol

Double acting,  
Spring rod



### Made to Order Specifications (For details, refer to P.43.)

Symbol	Specifications
-XB6	Heat resistant (150°C)
-XB7	Cold resistant (-40°C)
-XB9	Low speed (10 to 50 mm/s)
-XB13	Low speed (5 to 50 mm/s)
-XC19	Intermediate stroke (with a spacer built-in)
-XC22	Seals made of fluorine rubber

**Weight**/( ): Denotes the values with D-A93.

(g)

Model	Stroke (mm)						
	40	50	60	70	80	90	100
C(D)U6-□D	43 (53)	49 (59)	50 (65)	—	—	—	—
C(D)U10-□D	64 (74)	72 (82)	80 (90)	—	—	—	—
C(D)U16-□D	92 (122)	104 (134)	116 (146)	—	—	—	—
C(D)U20-□D	—	—	216 (253)	238 (275)	260 (297)	282 (319)	304 (341)
C(D)U25-□D	—	—	363 (422)	397 (456)	431 (490)	465 (524)	499 (558)
C(D)U32-□D	—	—	526 (604)	574 (652)	622 (700)	670 (748)	718 (796)

\* For the auto switch weight, refer to page 68 to 72.

### Auto Switch Mounting Position

For the auto switch mounting position of CDU long stroke series, refer to page 6, since specifications are the same as standard type, double acting, single rod type.

### Tightening Torque

Refer to page 3 for mounting a long stroke type.

### Theoretical Output

Specifications are the same as CU series double acting, single rod. Refer to page 3.

# Series CU

## Copper-free

### 20-CU Bore size — Stroke D

#### •Copper-free

The type which prevents copper based ions from generating by changing the copper based materials into electroless nickel plated treatment or non-copper materials in order to eliminate the effects by copper based ions or fluororesins over the color cathode ray tube.

#### Minimum Operating Pressure (MPa)

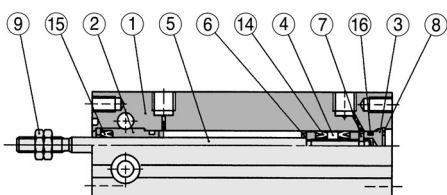
Bore size (mm)	6	10, 16	20, 25, 32
Minimum operating pressure	0.12	0.12	0.05

## Construction

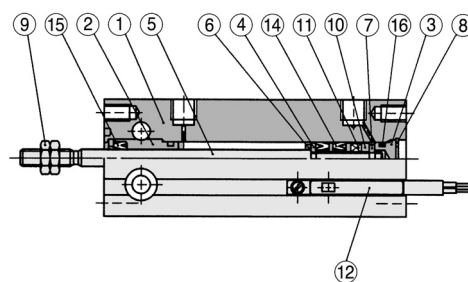
## Specifications

Action	Double acting, Single rod
Bore size (mm)	6, 10, 16, 20, 25, 32
Maximum operating pressure	1.05 MPa
Cushion	Rubber bumper
Stroke	Same as standard type (Refer to page 3.)
Auto switch	Mountable

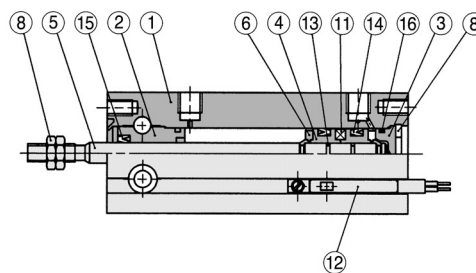
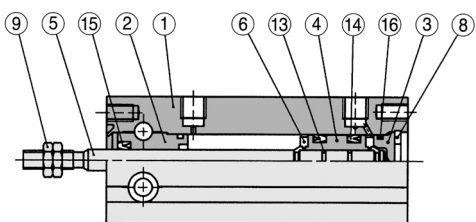
ø6



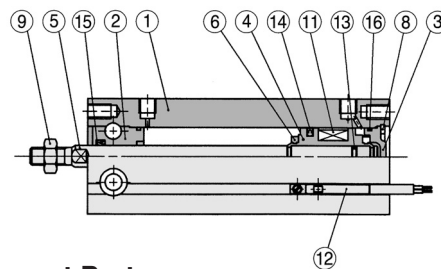
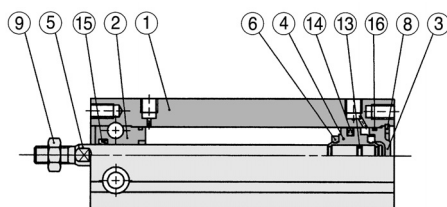
With auto switch



ø10



ø16 to ø32



## Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Rod cover	Aluminum bearing alloy	Hard anodized
3	Head cover	Brass	ø6 to ø10, Electroless nickel plated
		Aluminum alloy	ø16 to ø32, Clear chromated
4	Piston	Brass	ø6 to ø10
		Aluminum alloy	ø16 to ø32, Chromated
5	Piston rod	Stainless steel	
6	Bumper A	Urethane	
7	Bumper B	Urethane	

## Component Parts

No.	Description	Material	Note
8	Snap ring	Carbon tool steel	Phosphate coated
9	Rod end nut	Carbon steel	Nickel plated
10	Magnet holder	Brass	ø6
11	Magnet	Magnetic material	
12	Auto switch	—	
13	Piston gasket	NBR	
14	Piston seal		
15	Rod seal		
16	Gasket		

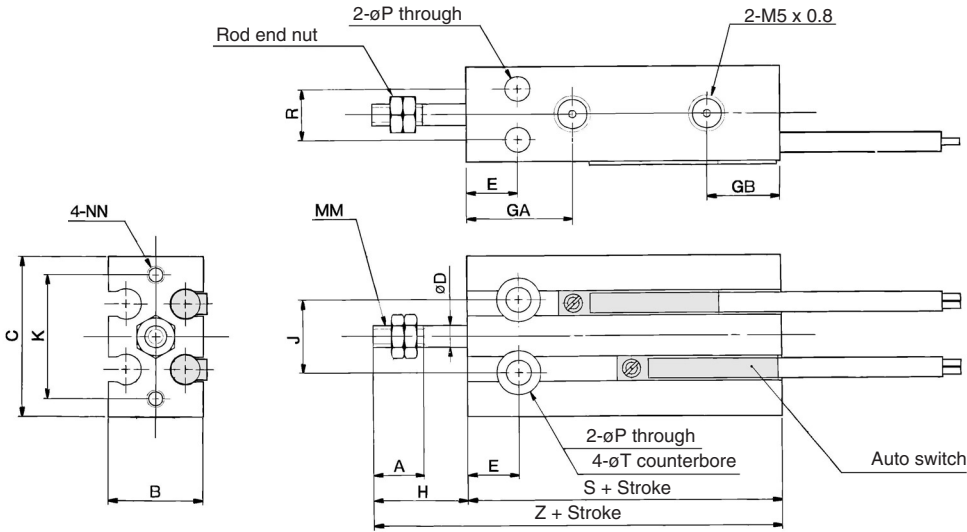
## Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
10	CU10D-PS	Set of nos. above 14, 15, 16.
16	CU16D-PS	
20	CU20D-PS	
25	CU25D-PS	
32	CU32D-PS	

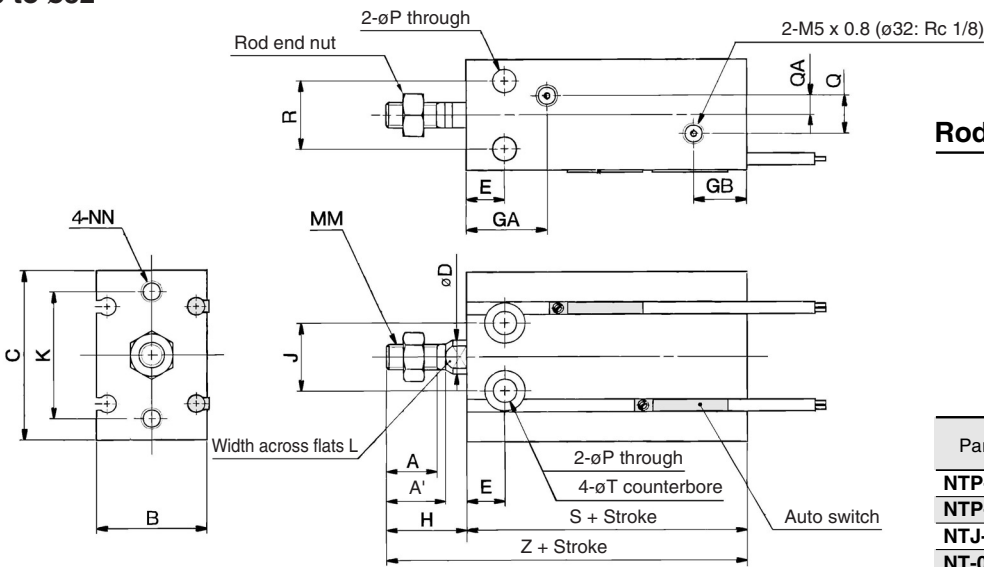
\* Seal kit includes 14, 15, 16. Order the seal kit, based on each bore size.

**Dimensions: Double Acting, Single Rod**

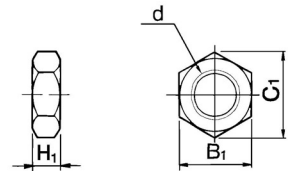
ø6, ø10



ø16 to ø32



**Rod End Nut/Accessory**



Material: Carbon steel

Part no.	Applicable bore (mm)	d	H <sub>1</sub>	B <sub>1</sub>	C <sub>1</sub>
NTP-006	6	M3 x 0.5	1.8	5.5	6.4
NTP-010	10	M4 x 0.7	2.4	7	8.1
NTJ-015A	16	M5 x 0.8	4	8	9.2
NT-015A	20	M6 x 1.0	5	10	11.5
NT-02	25	M8 x 1.25	5	13	15.0
NT-03	32	M10 x 1.25	6	17	19.6

Bore size (mm)	A	A'	B	C	D	E	GA	GB	H	J	K	L	MM	NN	P	Q	QA
6	7	—	13	22	3	7	15	10	13	10	17	—	M3 x 0.5	M3 x 0.5 depth 5	3.2	—	—
10	10	—	15	24	4	7	16.5	10	16	11	18	—	M4 x 0.7	M3 x 0.5 depth 5	3.2	—	—
16	11	12.5	20	32	6	7	16.5	11.5	16	14	25	5	M5 x 0.8	M4 x 0.7 depth 6	4.5	4	2
20	12	14	26	40	8	9	19	12.5	19	16	30	6	M6 x 1.0	M5 x 0.8 depth 8	5.5	9	4.5
25	15.5	18	32	50	10	10	21.5	13	23	20	38	8	M8 x 1.25	M5 x 0.8 depth 8	5.5	9	4.5
32	19.5	22	40	62	12	11	23	12.5	27	24	48	10	M10 x 1.25	M6 x 1.0 depth 9	6.6	13.5	4.5

Bore size (mm)	R	T	Without auto switch		With auto switch	
			S	Z	S	Z
6	7	6 depth 4.8	33	46	33	46
10	9	6 depth 5	36	52	36	52
16	12	7.6 depth 6.5	30	46	40	56
20	16	9.3 depth 8	36	55	46	65
25	20	9.3 depth 9	40	63	50	73
32	24	11 depth 11.5	42	69	52	79