

Free Mount Cylinder Double Acting, Double Rod Series *CUW*

ø6, ø10, ø16, ø20, ø25, ø32



How to Order

Without auto switch

CUW 6 [] 30 D

With auto switch

CDUW 6 [] 30 D M9B []

Built-in magnet

Double rod

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

Number of auto switches

Nil	2 pcs.
S	1 pc.

Auto switch

Nil Without auto switch

- * Refer to the table below for applicable auto switches.
- * Auto switches are shipped together but not assembled.

Action

D Double acting

Standard stroke (mm)

ø6, ø10, ø16	5, 10, 15, 20, 25, 30, 40, 50, 60
ø20, ø25, ø32	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100

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)		Applicable load		
													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	●	●	○	○	IC circuit	
				2-wire				M9BV	M9B	●	●	○	○	—	
				3-wire (NPN)				F9N WV	F9N W	●	●	○	○	IC circuit	
				3-wire (PNP)				F9P WV	F9P W	●	●	○	○	IC circuit	
				2-wire				F9B WV	F9B W	●	●	○	○	—	

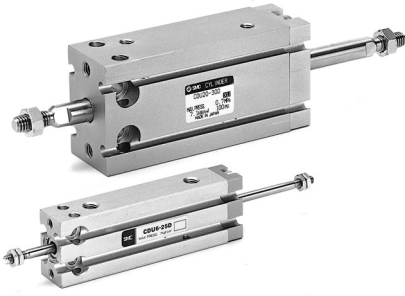
* Lead wire length symbols: 0.5 m.....Nil (Example) M9N
3 m.....L (Example) M9NL
5 m.....Z (Example) M9NZ

* 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.

Series CUW



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	0.15 MPa	0.10 MPa	0.08 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	5, 10, 15, 20, 25, 30, 40, 50, 60
20, 25, 32	5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100

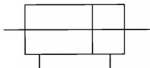
Minimum Stroke for Auto Switch Mounting

(mm)

No. of auto switches mounted	Applicable auto switch		
	D-A9□, D-A9□V	D-M9□, D-M9□V	D-F9□W, D-F9□WV
1 pc.	5	5	5
2 pcs.	10	5	10

JIS Symbol

Double acting,
Double rod



Theoretical Output

(N)

Bore size (mm)	Rod size (mm)	Piston area (mm ²)	Operating pressure (MPa)		
			0.3	0.5	0.7
6	3	21.2	6.36	10.6	14.8
10	4	66.0	19.8	33.0	46.2
16	6	172	51.6	86.0	121
20	8	264	79.2	132	185
25	10	412	124	206	288
32	12	691	207	346	484

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

(g)

Model	Stroke (mm)												
	5	10	15	20	25	30	40	50	60	70	80	90	100
C(D)UW6-□D	27 (32)	30 (40)	34 (44)	37 (47)	40 (50)	44 (54)	51 (61)	58 (68)	65 (75)	—	—	—	—
C(D)UW10-□D	44 (49)	49 (59)	53 (63)	58 (68)	62 (72)	67 (77)	76 (86)	85 (95)	94 (104)	—	—	—	—
C(D)UW16-□D	74 (99)	81 (111)	88 (118)	95 (125)	102 (132)	109 (139)	123 (153)	137 (167)	151 (181)	—	—	—	—
C(D)UW20-□D	132 (165)	145 (182)	158 (195)	171 (208)	184 (221)	197 (234)	223 (260)	250 (287)	275 (312)	301 (338)	327 (364)	353 (390)	379 (416)
C(D)UW25-□D	240 (294)	260 (319)	280 (339)	300 (359)	321 (380)	341 (400)	381 (440)	421 (480)	461 (520)	501 (560)	541 (600)	581 (640)	621 (680)
C(D)UW32-□D	365 (438)	394 (472)	422 (500)	451 (529)	479 (557)	508 (586)	586 (664)	622 (700)	679 (757)	736 (814)	793 (871)	850 (928)	907 (985)

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

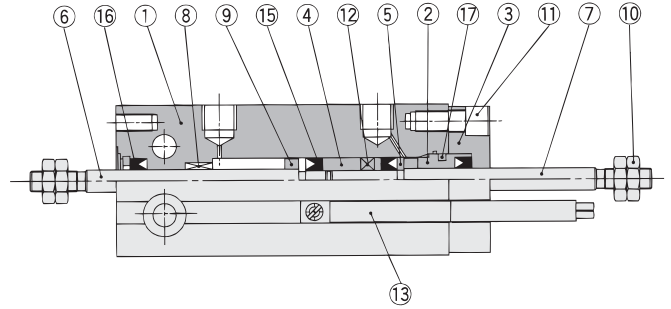
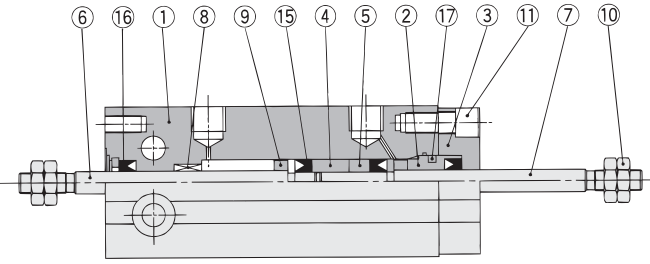
Tightening Torque

When mounting Series CUW, refer to page 3.

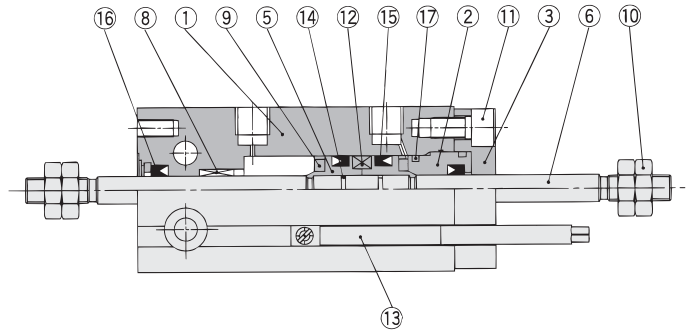
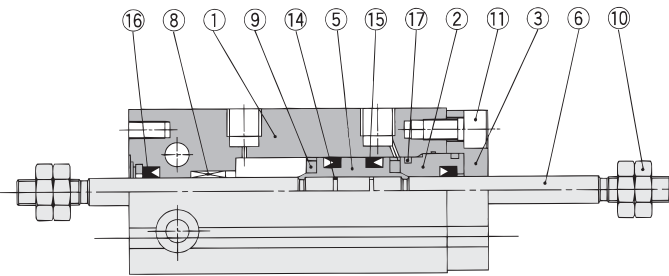
Construction

ø6

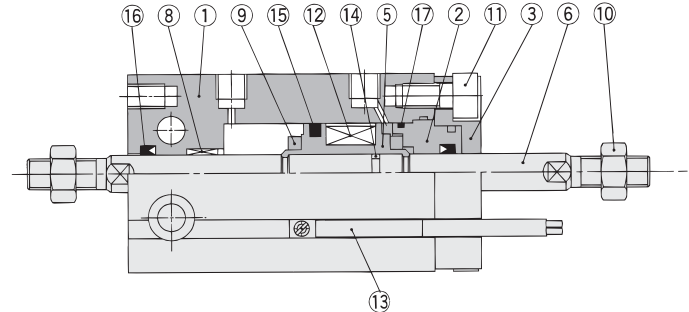
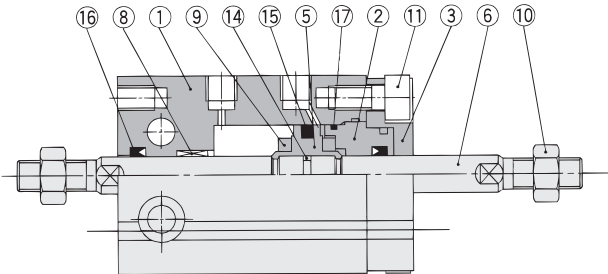
With auto switch



ø10



ø16 to 32



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Rod cover	Aluminum bearing alloy	Chromated
3	Rod cover retainer	Aluminum alloy	Hard anodized
4	Piston	Brass	ø6
5	Piston	Brass	ø6, ø10
		Aluminum alloy	ø16 to ø32, Chromated
6	Piston rod	Stainless steel	
7	Piston rod	Stainless steel	ø6
8	Bushing	Oil-impregnated sintered alloy	

Component Parts

No.	Description	Material	Note
9	Bumper	Urethane	
10	Rod end nut	Carbon steel	Nickel plated
11	Hexagon socket head cap screw	Carbon steel	Nickel plated
12	Magnet	Magnetic material	
13	Auto switch	—	
14	Piston gasket	NBR	
15*	Piston seal		
16*	Rod seal		
17*	Gasket		

Replacement Parts: Seal Kit

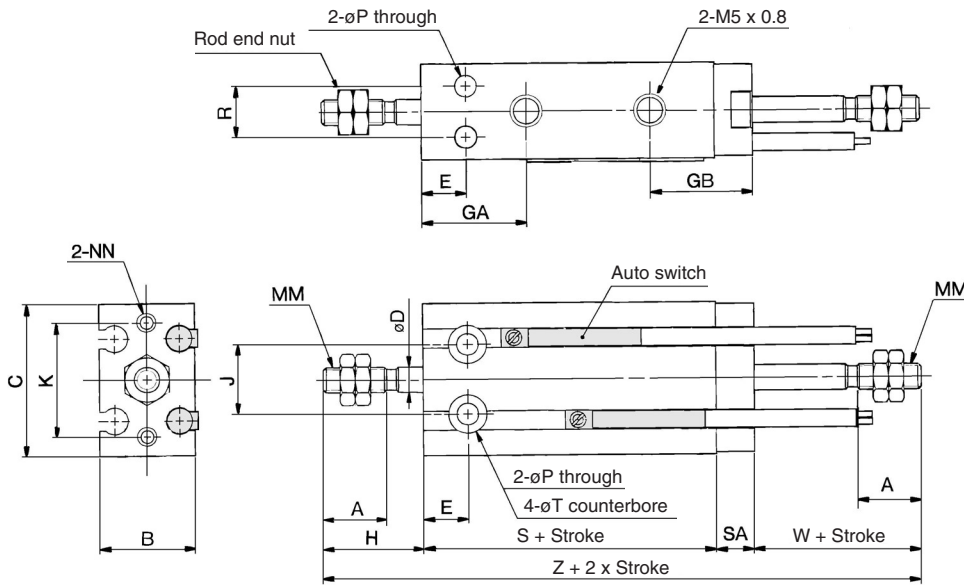
Kit no.	Bore size (mm) / Part no.				
	10	16	20	25	32
	CUW10D-PS	CUW16D-PS	CUW20D-PS	CUW25D-PS	CUW32D-PS

* Seal kit includes 15, 16, 17. Order the seal kit, based on each bore size.

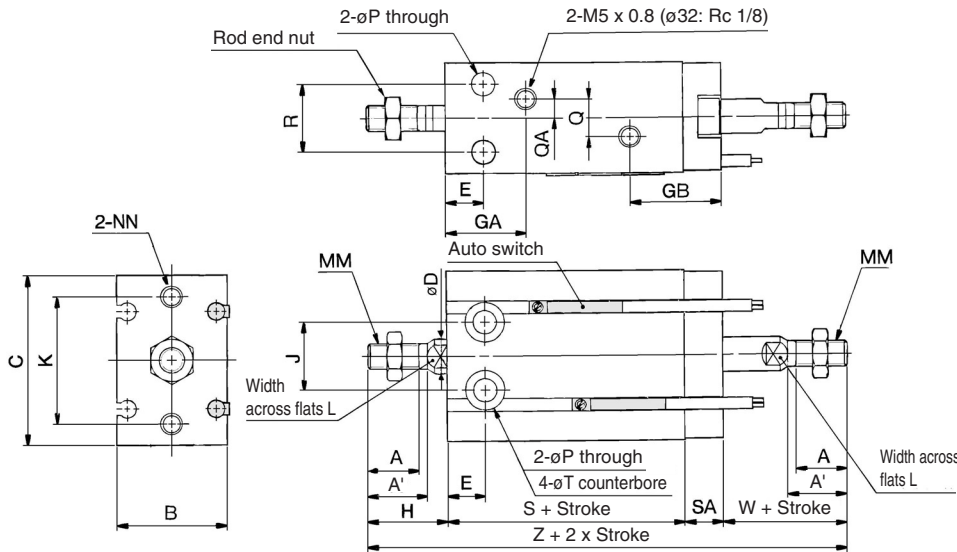
Series CU

Dimensions: Double Acting, Double Rod

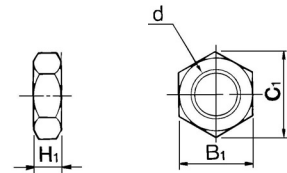
ø6, ø10



ø16 to ø32



Rod End Nut/Accessory



Material: Carbon steel

Part no.	Applicable bore size (mm)	d	H ₁	B ₁	C ₁
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

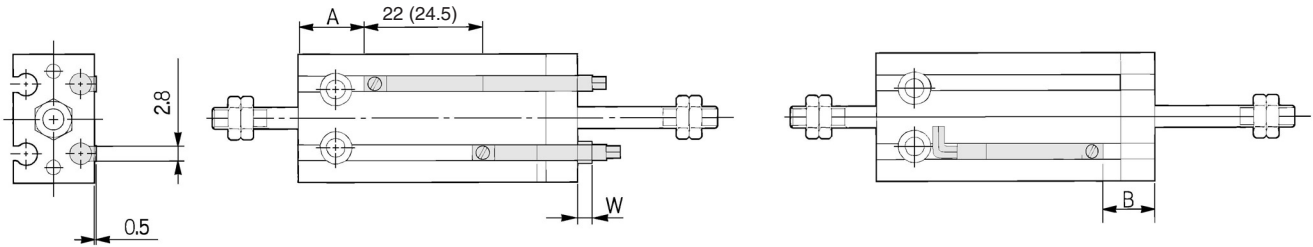
Bore size (mm)	A	A'	B	C	D	E	GA	GB	H	J	K	L	MM	NN	P	Q	QA
6	7	—	13	22	3	7	15	16	13	10	17	—	M3 x 0.5	M3 x 0.5 depth 5	3.2	—	—
10	10	—	15	24	4	7	16.5	16	16	11	18	—	M4 x 0.7	M3 x 0.5 depth 5	3.2	—	—
16	11	12.5	20	32	6	7	16.5 ^{Note)}	19	16	14	25	5	M5 x 0.8	M4 x 0.7 depth 6	4.5	4	2
20	12	14	26	40	8	9	19	21.5	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	22	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	22.5	27	24	48	10	M10 x 1.25	M6 x 1.0 depth 9	6.6	13.5	4.5

Note) 5 stroke (CUW16-5D): GA = 14.5

Bore size (mm)	R	SA	T	W	Without auto switch		With auto switch	
					S	Z	S	Z
6	7	6	6 depth 4.8	13	38	70	38	70
10	9	6	6 depth 5	16	36	74	36	74
16	12	7.5	7.6 depth 6.5	16	30	69.5	40	79.5
20	16	9	9.3 depth 8	19	36	83	46	93
25	20	9	9.3 depth 9	23	40	95	50	105
32	24	10	11 depth 11.5	27	42	106	52	116

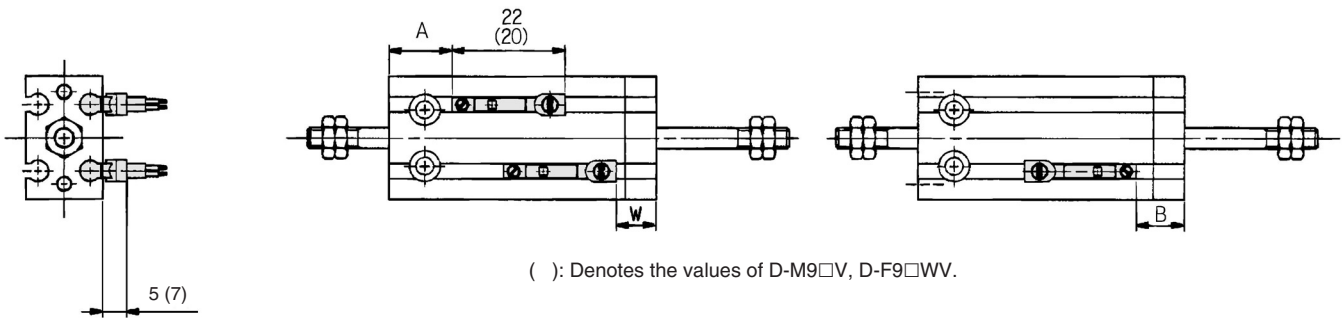
Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

D-A9□
D-M9□
D-F9□W



() : Denotes the values of D-A93.

D-A9□V
D-M9□V
D-F9□WV



() : Denotes the values of D-M9□V, D-F9□WV.

Bore size (mm)	D-A9□, D-A9□V			D-M9□, D-F9□W			D-M9□V, D-F9□WV		
	A	B	W	A	B	W	A	B	W
6	13.5	5.5	-3.5(-1)	17.5	9.5	0.5	17.5	9.5	-1.5
10	12.5	9.5	-7.5(-5)	16.5	13.5	-3.5	16.5	13.5	-5.5
16	16	11.5	-9.5(-7)	20	15.5	5.5	20	15.5	-7.5
20	20	15	-13(-10.5)	24	19	-9	24	19	-11
25	22.5	16	-14.5(-12)	26.5	20	-10.5	26.5	20	-12.5
32	23.5	18.5	-16.5(-14)	27.5	22.5	-12.5	27.5	22.5	-14.5

Note 1) Figures in the table above are used as a reference when mounting the auto switches for stroke end detection. In the case of actually setting the auto switches, adjust them after confirming their operation.

Note 2) Negative figures in the table W indicate an auto switch is mounted inward from the edge of the cylinder body.

Note 3) In the case of the 5 stroke or the 10 stroke, there are times in which the switch will not turn OFF or 2 switches will turn ON simultaneously due to their movement range. Therefore, set the position approximately 1 to 4 mm outward from the values given in the table above. Then, perform an operation inspection to make sure that the switches operate normally (if 1 switch is used, make sure that it turns ON and OFF properly; if 2 switches are used, make sure that both switches turn ON).

Note 4) () in column W is the dimensions of D-A93.