

Free Mount Cylinder: Non-rotating Rod Type Double Acting, Single Rod

Series *CUK*

ø6, ø10, ø16, ø20, ø25, ø32



How to Order

Without auto switch CUK 6 30 D

With auto switch CDUK 6 30 D M9B

Built-in magnet

Non-rotating rod type

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
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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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Standard stroke (mm)

ø6, ø10, ø16	5, 10, 15, 20, 25, 30
ø20, ø25, ø32	5, 10, 15, 20, 25, 30, 40, 50

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	●	●	—	—		
				2-wire	24 V	12 V	100 V	A93V	A93	●	●	—	—	—	IC circuit
Solid state switch	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	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	●	●	○	○	IC circuit	
				2-wire				F9BWV	F9BW	●	●	○	○	—	

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

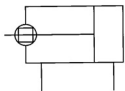
* Solid state switches marked with "○" are produced upon receipt of order.

* 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.



JIS Symbol
Double acting,
Single rod



Made to Order Specifications
(For details, refer to page 43, 44.)

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
-XC34	Threaded for mounting a work on non-rotating plate (No protrusion from the edge of rod)

⚠ Precautions

Be sure to read before handling.
Refer to back page 1 through to 6 for
Safety Instructions, Actuator Precautions
and Auto Switch Precautions.

Operating Precautions

⚠ Caution

1. Do not place your fingers in the clearance between the non-rotating plate and the cylinder tube.
Your fingers could get caught between the non-rotating plate and the cylinder tube when the piston rod retracts. Therefore, never place your finger in this area.
Because the cylinder outputs a great force, it could lead to injury if precautions are not taken to prevent your fingers from getting caught.
2. When using the non-rotating style, make sure that rotational torque is not applied to the piston rod. If rotational torque must be applied due to unavoidable circumstances, make sure to use it at the allowable rotational torque or less, which is shown in the table on the right.

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					
Rod non-rotating accuracy ^{Note)}	±0.8°			±0.5°		

Note) No load: Rod at retracted

Standard Stroke

Bore size (mm)	Standard stroke (mm)	For long stroke, refer to page 39.
6, 10, 16	5, 10, 15, 20, 25, 30	
20, 25, 32	5, 10, 15, 20, 25, 30, 40, 50	

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

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

(g)

Bore size (mm)	Stroke (mm)							
	5	10	15	20	25	30	40	50
C(D)UK6-□D	28 (33)	31 (41)	34 (44)	37 (47)	40 (50)	43 (53)	—	—
C(D)UK10-□D	43 (48)	47 (57)	51 (61)	55 (65)	59 (69)	63 (73)	—	—
C(D)UK16-□D	60 (85)	66 (96)	72 (102)	78 (108)	84 (114)	90 (120)	—	—
C(D)UK20-□D	113 (147)	124 (164)	136 (176)	148 (188)	160 (200)	172 (211)	195 (235)	219 (260)
C(D)UK25-□D	212 (266)	229 (288)	246 (305)	263 (322)	280 (339)	297 (356)	335 (390)	370 (424)
C(D)UK32-□D	331 (404)	357 (435)	383 (461)	409 (487)	435 (513)	461 (539)	513 (591)	565 (643)

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

Allowable Rotational Torque

Bore size (mm)	6	10	16	20	25	32
Allowable rotational torque (N·m)	0.0015	0.02	0.04	0.10	0.15	0.20

Tightening Torque

When mounting Series CUK, refer to page 3.

Auto Switch Mounting Position

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

Theoretical Output

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

Series CUK

Copper-free

20-CUK 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.

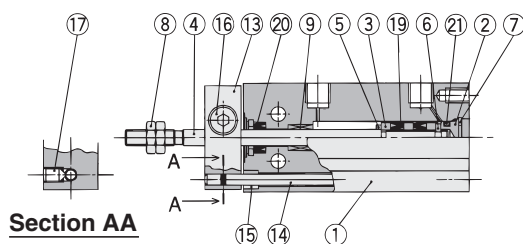
Minimum Operating Pressure

(MPa)

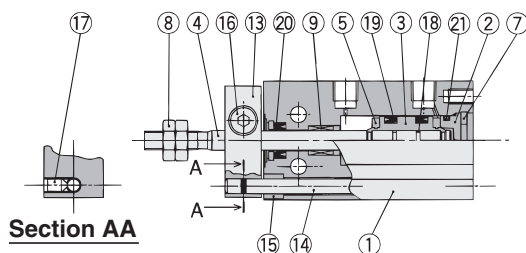
Bore size (mm)	6	10, 16	20, 25, 32
Minimum operating pressure	0.15	0.10	0.08

Construction

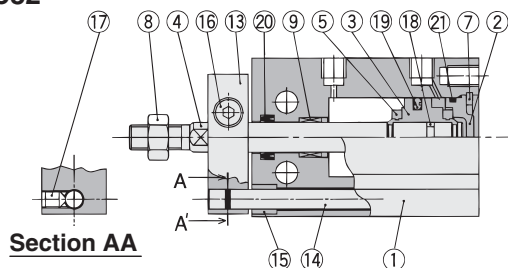
ø6



ø10



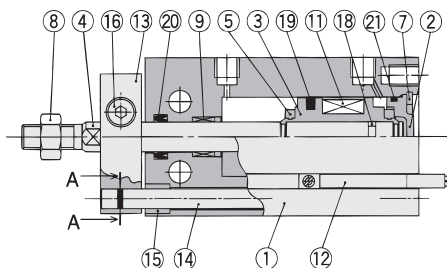
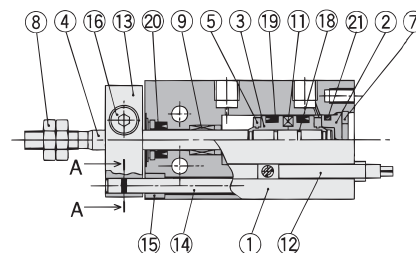
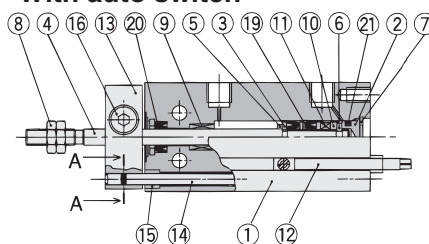
ø16 to ø32



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 2.)
Auto switch	Mountable

With auto switch



Component Parts

No.	Description	Material	Note
1	Cylinder tube	Aluminum alloy	Hard anodized
2	Head cover	Brass	ø6 to ø10, Electroless nickel plated
		Aluminum alloy	ø16 to ø32, Clear chromated
3	Piston	Brass	ø6 to ø10,
		Aluminum alloy	ø16 to ø32, Chromated
4	Piston rod	Stainless steel	
5	Bumper A	Urethane	
6	Bumper B	Urethane	
7	Snap ring	Carbon tool steel	Phosphate coated
8	Rod end nut	Carbon steel	Nickel plated
9	Bushing	Oil-impregnated sintered alloy	
10	Magnet holder	Brass	ø6

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
10	CU10D-PS	Set of nos. above (19), (20), (21).
16	CU16D-PS	
20	CU20D-PS	
25	CU25D-PS	
32	CU32D-PS	

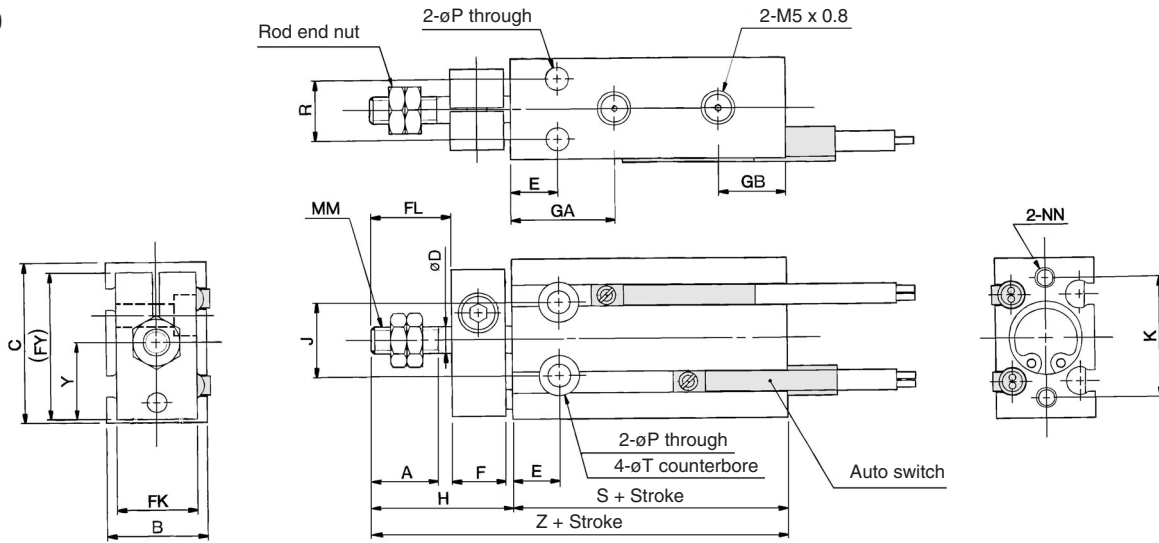
Component Parts

No.	Description	Material	Note
11	Magnet	Magnetic material	
12	Auto switch		
13	Non-rotating plate	Aluminum alloy	Nickel plated
14	Guide rod	Stainless steel	
15	Bushing	Oil-impregnated sintered alloy	
16	Hexagon socket head cap screw	Carbon steel	Black zinc chromated
17	Hexagon socket head set screw	Carbon steel	Black zinc chromated
18	Piston gasket	NBR	
19*	Piston seal		
20*	Rod seal		
21*	Gasket		

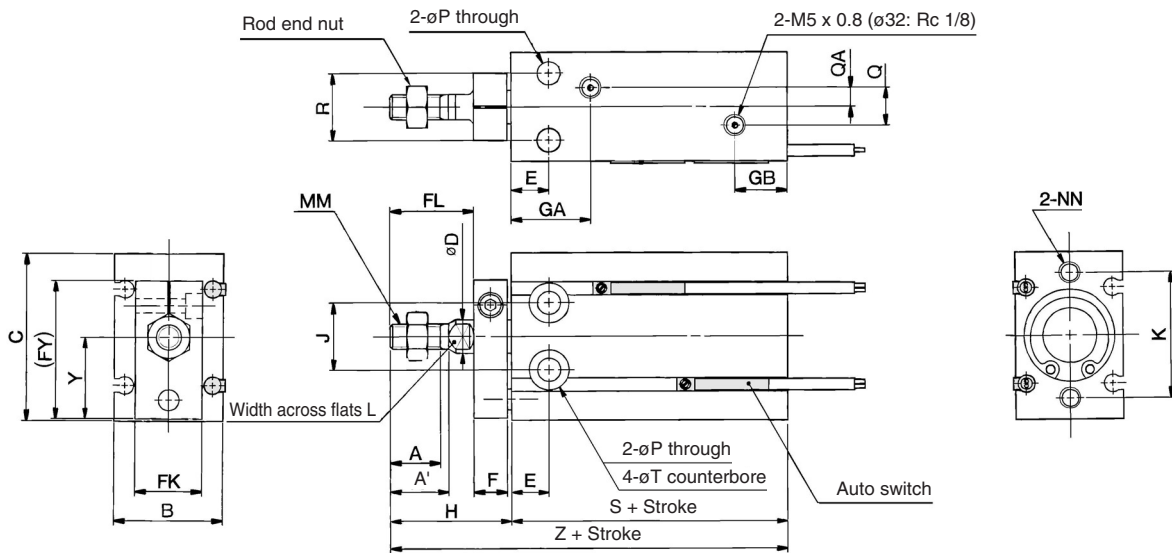
* Seal kit includes (19), (20), (21). Order the seal kit, based on each bore size.

Dimensions: Non-rotating Rod Type; Double Acting, Single Rod

ø6, ø10

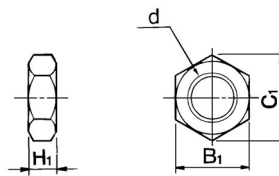


ø16 to ø32



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

(mm)

Bore size (mm)	A	A'	B	C	D	E	F	FL	FK	FY	GA	GB	H	J	K	L	MM
6	7	—	13	22	3	7	8	9	11	20.5	15	10	18	10	17	—	M3 x 0.5
10	10	—	15	24	4	7	8	12	12	22	16.5	10	21	11	18	—	M4 x 0.7
16	11	12.5	20	32	6	7	8	17	13	28	16.5 (Note)	11.5	26	14	25	5	M5 x 0.8
20	12	14	26	40	8	9	8	20	16	33	19	12.5	29	16	30	6	M6 x 1.0
25	15.5	18	32	50	10	10	10	22	20	43.5	21.5	13	33	20	38	8	M8 x 1.25
32	19.5	22	40	62	12	11	12	29	24	51.5	23	12.5	42	24	48	10	M10 x 1.25

Bore size (mm)	NN	P	Q	QA	R	T	Y	Without auto switch		With auto switch	
								S	Z	S	Z
6	M3 x 0.5 depth 5	3.2	—	—	7	6 depth 4.8	10.5	33	51	33	51
10	M3 x 0.5 depth 5	3.2	—	—	9	6 depth 5	11.5	36	57	36	57
16	M4 x 0.7 depth 6	4.5	4	2	12	7.6 depth 6.5	15.5	30	56	40	66
20	M5 x 0.8 depth 8	5.5	9	4.5	16	9.3 depth 8	19.5	36	65	46	75
25	M5 x 0.8 depth 8	5.5	9	4.5	20	9.3 depth 9	24.5	40	73	50	83
32	M6 x 1.0 depth 9	6.6	13.5	4.5	24	11 depth 11.5	30.5	42	84	52	94

Note) 5 stroke (CUK16-5D): GA = 14.5