

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

Series *CUK*

ø6, ø10, ø16, ø20, ø25, ø32

How to Order

CUK 6 [] - 30 D - []

With auto switch **CDUK 6 [] - 30 D - M9BW [] - []**

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
	Rc 1/8	ø32
TN	NPT 1/8	ø32
TF	G 1/8	ø32

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

Auto switch

Nil	Without auto switch
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* Refer to the table below for applicable auto switches.

Number of auto switches

Nil	2 pcs.
S	1 pc.

Made to order
* Refer to page 503 for the Made to Order specifications.

Built-in Magnet Cylinder Model
If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example): CDUK20-25D

Applicable Auto Switches/Refer to pages 1263 to 1371 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)	1 (M)	3 (L)	5 (Z)						
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	24 V	5 V, 12 V	—	M9BV	M9B	●	●	●	○	○	○		—	
				3-wire (NPN)				M9NVV	M9NV	●	●	●	○	○	○		○	IC circuit
				3-wire (PNP)				M9PVV	M9PV	●	●	●	○	○	○		○	IC circuit
2-wire	M9BWV	M9BW	●	●	●	○	○	○	○	—								
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		
			No			100 V or less		A90V	A90	●	—	●	—	—	IC circuit	PLC		

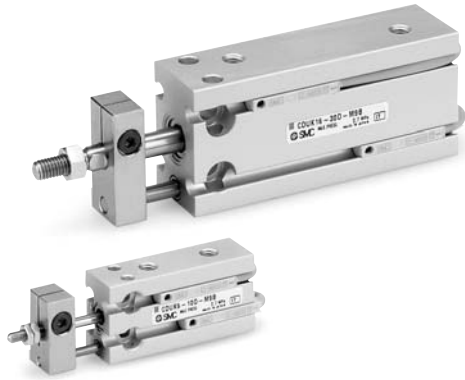
* Lead wire length symbols: 0.5 m Nil (Example) M9NW
 1 m M (Example) M9NWM
 3 m L (Example) M9NWL
 5 m Z (Example) M9NWZ

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

* Since there are applicable auto switches other than the above, refer to page 538 for details.
 * For detail about auto switches with pre-wired connector, refer to pages 1328 to 1329.
 * Auto switches are shipped together but not assembled.

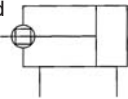
Free Mount Cylinder: Non-rotating Rod Type **Series CUK**

Double Acting, Single Rod



JIS Symbol

Double acting,
Single rod



Made to Order Specifications

(For details, refer to pages 1395 to 1498.)

Symbol	Specifications
-XB6	Heat resistant (-10 to 150°C)
-XB7	Cold resistant (-40 to 700°C)
-XB9	Low speed (10 to 50 mm/s)
-XB13	Low speed (5 to 50 mm/s)
-XC19	Intermediate stroke (5 mm spacer)
-XC22	Fluororubber seals
-XC34	Non-rotating plate with work piece mounting screw (No extended part on the rod end)

⚠ Precautions

Be sure to read before handling.
Refer to front matters 54 and 55 for Safety Instructions and pages 3 to 11 for Actuator 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					
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 520.
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

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

Mass(): Denotes the values with D-A93.

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 mass, refer to page 1263.

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 484.

Theoretical Output

Specifications are the same as CU series double acting, single rod. Refer to page 484.

Auto Switch Mounting Position

For the auto switch mounting position of Series CDUK, refer to page 488, since specifications are the same as standard type, double acting, single rod type.

CUJ

CU

CQS

CQ2

RQ

CQM

MU

D-□

-X□

Individual
-X□

Technical
data

Series CUK

Copper and Fluorine-free

20-CUK Bore size – Stroke D

•Copper and Fluorine-free

This cylinder eliminates any influences of copper ions or fluoro resins on color CRTs. Copper materials have been nickel plated or replaced with non-copper materials to prevent the generation of copper ions.

Minimum Operating Pressure (MPa)

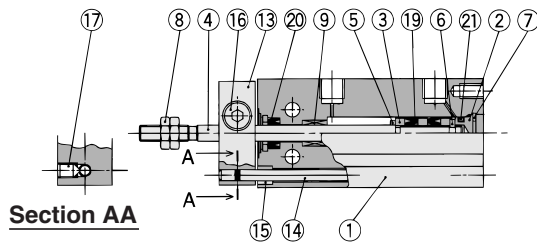
Bore size (mm)	6	10, 16	20, 25, 32
Minimum operating pressure	0.15	0.10	0.08

Specifications

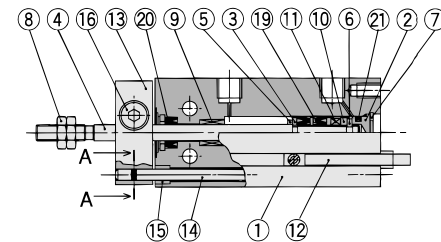
Action	Double acting, Single rod
Bore size (mm)	6, 10, 16, 20, 25, 32
Maximum operating pressure	1.05 MPa
Cushion	Rubber bumper
Stroke	Same as standard type (Refer to page 484.)
Auto switch	Mountable

Construction

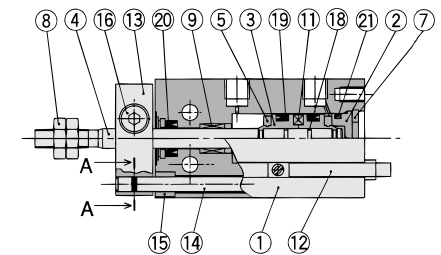
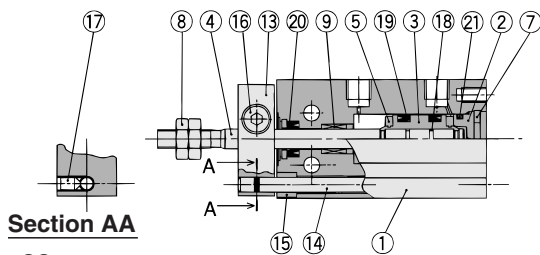
ø6



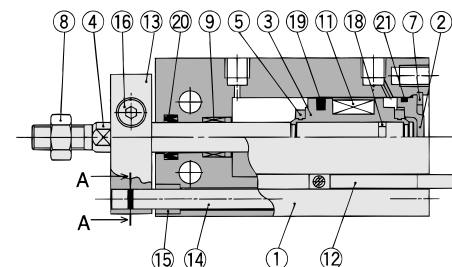
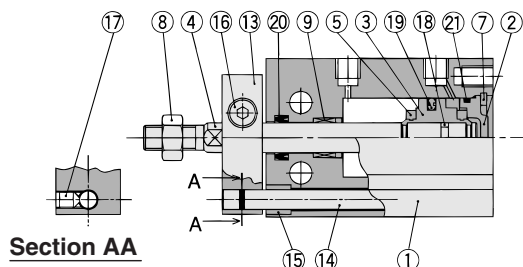
With auto switch



ø10



ø16 to ø32



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, 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	Retaining 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

Component Parts

No.	Description	Material	Note
11	Magnet	—	
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		

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	



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

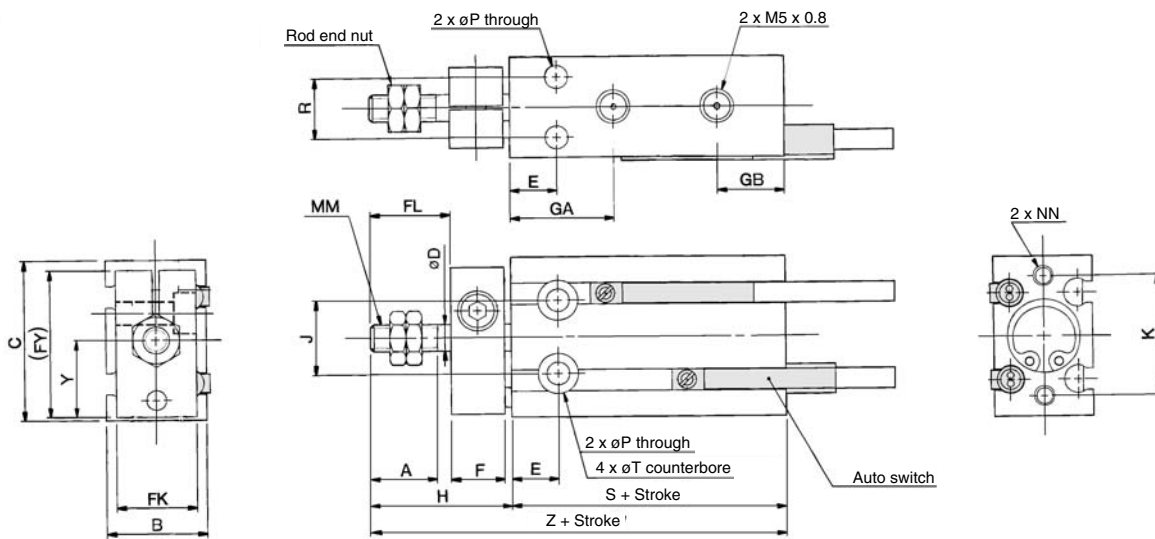
* Seal kit includes a grease pack (10 g).

Order with the following part number when only the grease pack is needed.

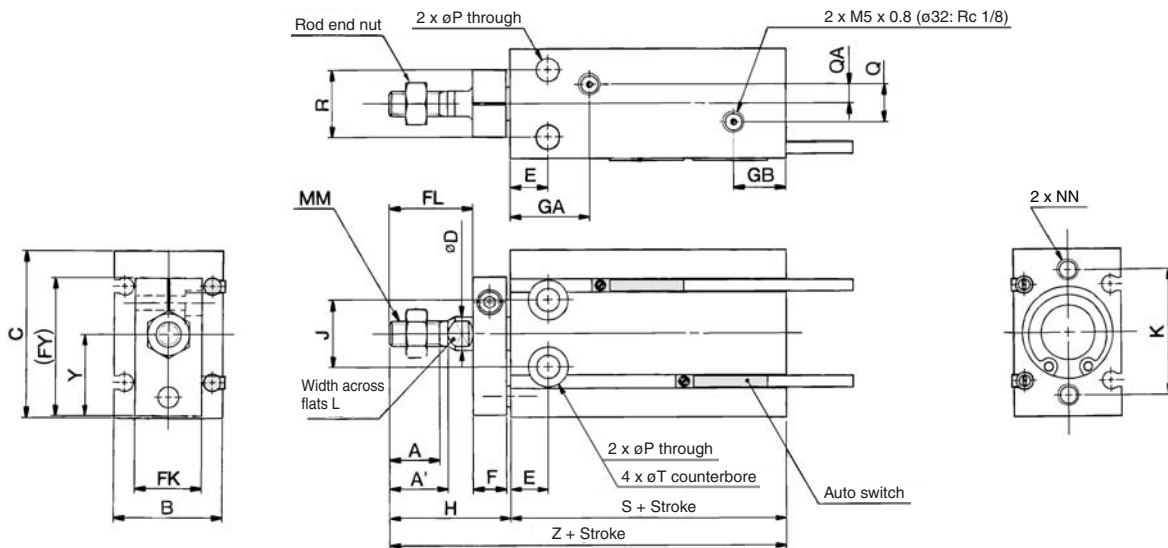
Grease pack part number: GR-S-010 (10 g)

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

ø6, ø10

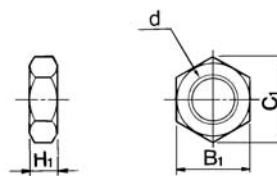


ø16 to ø32



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

CUJ
CU
CQS
CQ2
RQ
CQM
MU

D-□
-X□
Individual
-X□
Technical data