

Free Mount Cylinder

CU Series

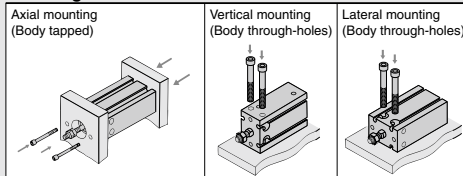
A space-saving air cylinder with multiple surfaces capable of mounting directly. Offered in rich variations.



Space-saving

The multiple surface direct mounting with a square body and no brackets allows the freedom of the mounting surface. This enables space-saving designs for equipment.

Mounting



Series Variations

Series	Action	Rod	Bore size (mm)	Page	
Standard CU Series	Double acting	Single rod	6, 10, 16, 20, 25, 32	623	
	Single acting	Double rod		630	
Non-rotating CUK Series	Double acting	Single rod		635	
	Single acting	Double rod		642	
Long stroke CU Series	Double acting	Single rod		646	
	Double acting	Single rod		650	
Long stroke, Non-rotating rod CUK Series	Double acting	Single rod		656	
	Double acting	Single rod		660	
With air cushion CU-A Series	Double acting	Single rod		20, 25, 32	664
For vacuum ZCUK Series	Double acting	Single rod		10, 16, 20, 25, 32	673

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data

Combinations of Standard Products and Made

CU Series

●: Standard
⊙: Made to Order specifications
○: Special product (Contact SMC for details.)
—: Not available

Series	CU (Standard)			CUK (Non-rotating)		
	Double acting		Single acting	Double acting		Single acting
	Single rod	Double rod	Single rod	Single rod	Double rod	Single rod

Symbol	Specification	Applicable bore size	ø6 to ø32						
Standard	Standard	ø6 to ø32	●	●	●	●	●	●	
D	Built-in magnet		●	●	●	●	●	●	
10-, 11-, 21-, 22-	Clean series	ø6 to ø25	●	—	—	—	—	—	
25A-	Copper (Cu) and zinc (Zn)-free ^{Note 3)}	ø10 to ø32	●	○	○	●	○	○	
20-	Copper ^{Note 2)} and Fluorine-free	ø6 to ø32	●	○	○	●	○	○	
XB6	Heat-resistant cylinder (–10 to 150 °C)	ø6 to ø32	⊙	○	—	⊙	○	—	
XB7	Cold-resistant cylinder (–40 to 70 °C)		⊙	○	—	⊙	○	—	
XB9	Low-speed cylinder (10 to 50 mm/s) ^{Note 1)}		⊙	○	—	⊙	○	—	
XB13	Low-speed cylinder (5 to 50 mm/s) ^{Note 1)}		⊙	○	—	⊙	○	—	
XC19	Intermediate stroke (5 mm spacer)		⊙	○	—	⊙	○	—	
XC22	Fluororubber seals		⊙	○	⊙	⊙	○	⊙	
XC34	Rod not extending beyond non-rotating plate		—	—	—	⊙	○	⊙	

Note 1) Refer to Best Pneumatics No. 2-3 for low-speed cylinders.

Note 2) Copper-free for the externally exposed part. For details, refer to the **Web Catalog**.

Note 3) For details, refer to the SMC website.

to Order Specifications

CU Series

CU (Long stroke)		CUK (Long stroke, Non-rotating)		CU-A (Air cushion)	ZCUK (For vacuum)	CUX (Low-speed cylinder) <small>(Note)</small>	
Double acting		Double acting		Double acting	Double acting	Double acting	
Single rod	Double rod	Single rod	Double rod	Single rod	Single rod	Single rod	
ø6 to ø32				ø20 to ø32	ø10 to ø32		
●	●	●	●	●	●	●	
●	●	●	●	●	●	●	
—	—	—	—	—	—	○ (ø16 or more)	
○	○	○	○	○	○	—	
●	○	○	●	○	○	—	
◎	○	◎	○	—	○	—	
◎	○	◎	○	—	○	—	
◎	○	◎	○	—	○	—	
◎	○	◎	○	—	○	○	
◎	○	◎	○	—	○	—	
—	—	◎	○	—	○	—	

- CUJ
- CU
- CQS
- JCQ
- CQ2
- RQ
- CQM
- CQU
- MU

- D-□
- X□
- Technical Data

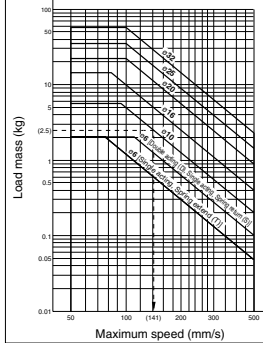
Precautions on Free Mount

1. Operating speed

Make sure to connect a speed controller to the cylinder and adjust its speed to 500 mm/s or less.

If a load is to be attached to the end of the rod, adjust the speed to the maximum speed shown in Graph (1) or less, in accordance with the added mass.

Graph (1) Load Mass and Maximum Speed



How to read the graph

- Using the CU10 to drive a load weighing 2.5 kg: From the vertical axis in the graph on the left, extend the horizontally from 2.5 kg., and drop down from the point at which it intersects with the tube bore φ10. The maximum speed will be 141 mm/s.

2. Rod end allowable lateral load

Make sure that the lateral load that is applied to the rod end will be no more than the values shown in the tables.

The tables show the value for a single rod. For double rods, please contact SMC.

Standard Double Acting, Single Rod

Without auto switch: CU□-□D

Model	Stroke (mm)												
	5	10	15	20	25	30	40	50	60	70	80	90	100
CU6	0.085	0.075	0.068	0.061	0.056	0.052	0.045	0.039	0.035	—	—	—	—
CU10	0.34	0.30	0.27	0.25	0.23	0.21	0.18	0.16	0.15	—	—	—	—
CU16	0.69	0.61	0.55	0.50	0.46	0.43	0.37	0.33	0.29	—	—	—	—
CU20	2.2	2.0	1.8	1.6	1.5	1.4	1.2	1.1	1.0	0.92	0.85	0.78	0.73
CU25	3.5	3.2	3.0	2.7	2.6	2.4	2.1	1.9	1.7	1.6	1.4	1.3	1.2
CU32	5.4	4.9	4.6	4.3	4.0	3.8	3.3	3.0	2.8	2.5	2.3	2.2	2.0

With auto switch: CDU□-□D

Model	Stroke (mm)												
	5	10	15	20	25	30	40	50	60	70	80	90	100
CDU6	0.085	0.075	0.068	0.061	0.056	0.052	0.045	0.039	0.035	—	—	—	—
CDU10	0.30	0.27	0.25	0.23	0.21	0.18	0.16	0.15	—	—	—	—	—
CDU16	0.99	0.89	0.81	0.74	0.69	0.64	0.56	0.50	0.45	—	—	—	—
CDU20	3.0	2.7	2.5	2.3	2.1	2.0	1.8	1.6	1.4	1.3	1.2	1.1	1.0
CDU25	4.7	4.3	4.0	3.7	3.5	3.2	2.9	2.6	2.4	2.2	2.0	1.9	1.7
CDU32	7.1	6.6	6.1	5.7	5.4	5.1	4.6	4.1	3.8	3.5	3.2	3.0	2.8

Non-rotating Rod Type

Without auto switch: CUK□-□D

Model	Stroke (mm)												
	5	10	15	20	25	30	40	50	60	70	80	90	100
CUK6	0.075	0.068	0.061	0.056	0.052	0.048	0.042	0.037	0.033	—	—	—	—
CUK10	0.30	0.27	0.25	0.23	0.21	0.20	0.17	0.15	0.14	—	—	—	—
CUK16	0.55	0.50	0.46	0.43	0.40	0.37	0.33	0.29	0.26	—	—	—	—
CUK20	1.8	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.92	0.85	0.78	0.73	0.68
CUK25	3.0	2.7	2.6	2.4	2.2	2.1	1.9	1.7	1.6	1.4	1.3	1.2	1.2
CUK32	4.3	4.0	3.8	3.5	3.3	3.2	2.9	2.6	2.4	2.2	2.1	2.0	1.8

With auto switch: CDUK□-□D

Model	Stroke (mm)												
	5	10	15	20	25	30	40	50	60	70	80	90	100
CDUK6	0.075	0.068	0.061	0.056	0.052	0.048	0.042	0.037	0.033	—	—	—	—
CDUK10	0.30	0.27	0.25	0.23	0.21	0.20	0.17	0.15	0.14	—	—	—	—
CDUK16	0.81	0.74	0.69	0.64	0.60	0.56	0.50	0.45	0.41	—	—	—	—
CDUK20	2.5	2.3	2.1	2.0	1.9	1.8	1.6	1.4	1.3	1.2	1.1	1.0	1.0
CDUK25	4.0	3.7	3.5	3.2	3.1	2.9	2.6	2.4	2.2	2.0	1.9	1.7	1.6
CDUK32	5.7	5.4	5.1	4.8	4.6	4.4	4.0	3.6	3.4	3.1	2.9	2.7	2.6

Single Acting, Spring Return (S)

Without auto switch: CU□-□S (N)

Model	Stroke (mm)		
	5	10	15
CU6	0.19	0.17	0.15
CU10	0.66	0.59	0.60
CU16	1.4	1.3	1.3
CU20	4.7	4.2	4.4
CU25	6.8	6.2	6.5
CU32	10	9.8	10

Single Acting, Spring Extend (T)

Without auto switch: CU□-□T (N)

Model	Stroke (mm)		
	5	10	15
CU6	0.067	0.059	0.052
CU10	0.29	0.26	0.24
CU16	0.99	0.89	0.81
CU20	2.2	2.0	1.8
CU25	3.5	3.2	3.0
CU32	5.4	4.9	4.6

With auto switch: CDU□-□S (N)

Model	Stroke (mm)		
	5	10	15
CDU6	0.17	0.15	0.13
CDU10	0.66	0.59	0.60
CDU16	1.6	1.5	1.5
CDU20	5.3	4.8	4.9
CDU25	7.6	7.0	7.2
CDU32	12	11	11

With auto switch: CDU□-□T (N)

Model	Stroke (mm)		
	5	10	15
CDU6	0.062	0.055	0.049
CDU10	0.29	0.26	0.24
CDU16	0.99	0.89	0.81
CDU20	3.0	2.7	2.5
CDU25	4.7	4.3	4.0
CDU32	7.1	6.6	6.1

Non-rotating Rod Type

Single Acting, Spring Return (S)

Without auto switch: CUK□-□S (N)

Model	Stroke (mm)		
	5	10	15
CUK6	0.17	0.15	0.14
CUK10	0.59	0.54	0.56
CUK16	1.1	1.0	1.1
CUK20	3.9	3.6	3.8
CUK25	5.7	5.3	5.7
CUK32	8.5	7.9	8.6

Non-rotating Rod Type

Single Acting, Spring Extend (T)

Without auto switch: CUK□-□T (N)

Model	Stroke (mm)		
	5	10	15
CUK6	0.059	0.052	0.047
CUK10	0.26	0.24	0.22
CUK16	0.81	0.74	0.69
CUK20	1.8	1.6	1.5
CUK25	3.0	2.7	2.6
CUK32	4.3	4.0	3.8

With auto switch: CDUK□-□S (N)

Model	Stroke (mm)		
	5	10	15
CDUK6	0.15	0.13	0.12
CDUK10	0.59	0.54	0.56
CDUK16	1.3	1.2	1.3
CDUK20	4.4	4.1	4.3
CDUK25	6.5	6.1	6.4
CDUK32	9.7	9.1	9.6

With auto switch: CDUK□-□T (N)

Model	Stroke (mm)		
	5	10	15
CDUK6	0.055	0.049	0.044
CDUK10	0.26	0.24	0.22
CDUK16	0.81	0.74	0.69
CDUK20	2.5	2.3	2.1
CDUK25	4.0	3.7	3.5
CDUK32	5.7	5.4	5.1

Free Mount Cylinder Double Acting, Single Rod

CU Series

ø6, ø10, ø16, ø20, ø25, ø32

How to Order

CU 6 [] - 30 D - []

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

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

Standard stroke (mm)

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

Action

D	Double acting
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Auto switch

Nil	Without auto switch
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Number of auto switches

Nil	2 pcs.
S	1 pc.

Made to Order
* Refer to page 624 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): CDU20-25D

Applicable Auto Switches/Refer to pages 1575 to 1701 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)		IC circuit	Relay, PLC		
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	Relay, PLC	—		
				3-wire (PNP)			M9PV	M9P	●	●	●	○	○				
				2-wire	M9BV		M9B	●	●	●	○	○					
	3-wire (NPN)			5 V, 12 V	M9NVW		M9NW	●	●	●	○	○	IC circuit				
	3-wire (PNP)			12 V	M9PWW		M9PW	●	●	●	○	○	IC circuit				
	2-wire			12 V	M9BWW		M9BW	●	●	●	○	○	—				
Reed auto switch	Water resistant (2-color indicator)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NAV ^{*1}	M9NA ^{*1}	○	○	●	○	○	IC circuit	—		
				3-wire (PNP)			M9PAV ^{*1}	M9PA ^{*1}	○	○	●	○	○	IC circuit			
				2-wire	M9BAV ^{*1}		M9BA ^{*1}	○	○	●	○	○	—				
	—			No	3-wire (NPN equivalent)		5 V	A96V	A96	●	—	●	—	—		IC circuit	Relay, PLC
					2-wire			24 V	12 V	A93V ^{*2}	A93	●	●	●		●	
					—		—	100 V or less	A90V	A90	●	—	●	—		—	

*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.

*2 1 m type lead wire is only applicable to D-A93.

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWX

* 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 678 for details.

* For detail about auto switches with pre-wired connector, refer to pages 1648 and 1649.

* Auto switches are shipped together but not assembled.

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

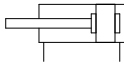
Technical Data

CU Series



Symbol

Double acting, Single rod, Rubber bumper



Made to Order Specifications

[Click here for details](#)

Symbol	Specifications
-XB6	Heat resistant (-10 to 150°C)
-XB7	Cold resistant (-40 to 70°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

For clean room specifications, refer to "Pneumatic Clean Series" catalog (CAT.E02-23).

Tightening Torque/

When mounting the CU series, refer to the below table.

Bore size (mm)	Hexagon socket head cap screw dia.	Proper tightening torque (N·m)
6, 10	M3	1.08 ±10%
16	M4	2.45 ±10%
20, 25	M5	5.10 ±10%
32	M6	8.04 ±10%

Moisture Control Tube IDK Series



When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to [the IDK series in the Best Pneumatics No. 6](#).

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					
Stroke length tolerance	+1.0 -0 mm					

Standard Stroke

Bore size (mm)	Standard stroke (mm)
6, 10, 16	5, 10, 15, 20, 25, 30
20, 25, 32	5, 10, 15, 20, 25, 30, 40, 50

For "Long Stroke", refer to page 656.

Theoretical Output

(N)

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)			
				0.3	0.5	0.7	0.9
6	3	OUT	28.3	8.49	14.2	19.8	
		IN	21.2	6.36	10.6	14.8	
10	4	OUT	78.5	23.6	39.3	55.0	
		IN	66.0	19.8	33.0	46.2	
16	6	OUT	201	60.3	101	141	
		IN	172	51.6	86.0	121	
20	8	OUT	314	94.2	157	220	
		IN	264	79.2	132	185	
25	10	OUT	491	147	246	344	
		IN	412	124	206	288	
32	12	OUT	804	241	402	563	
		IN	691	207	346	454	

Weight/()

Denotes the values with D-A93. (g)

Model	Cylinder stroke (mm)							
	5	10	15	20	25	30	40	50
C(D)U6-□D	22 (27)	25 (35)	28 (38)	31 (41)	34 (44)	37 (47)	—	—
C(D)U10-□D	36 (41)	40 (50)	44 (54)	48 (58)	52 (62)	56 (66)	—	—
C(D)U16-□D	50 (75)	56 (86)	62 (92)	68 (98)	74 (104)	80 (110)	—	—
C(D)U20-□D	95 (128)	106 (143)	117 (154)	128 (165)	139 (176)	150 (187)	172 (209)	194 (231)
C(D)U25-□D	176 (230)	193 (252)	210 (269)	227 (286)	244 (303)	261 (320)	295 (354)	329 (388)
C(D)U32-□D	262 (335)	286 (364)	310 (388)	334 (412)	358 (436)	382 (460)	430 (508)	478 (556)

* For the auto switch weight, refer to page 1575.

Low-speed Cylinder

CU X Mounting bracket Bore size — Stroke

• Low-speed Cylinder

Smooth operation with a little sticking and slipping at low speed.
Can start smoothly with a little ejection even after being rendered for hours.



Specifications

Bore size (mm)	10	16	20	25	32
Fluid	Air				
Proof pressure	1.05 MPa				
Max. operating pressure	0.7 MPa				
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)				
Lubricant	Not applicable (Non-lube)				
Piston speed	ø10, ø16: 1 to 300 mm/s ø20 to ø32: 0.5 to 300 mm/s				
Cushion	Rubber bumper on both ends				
Rod end thread	Male thread				
Stroke length tolerance	+10 0				

Minimum Operating Pressure

Bore size (mm)	10	16	20	25	32
Minimum Operating Pressure (MPa)	0.06	0.06	0.05	0.05	0.05

The dimensions are the same as the double acting, single rod type.
Refer to Best Pneumatics No. 2-3 for details.

CUJ

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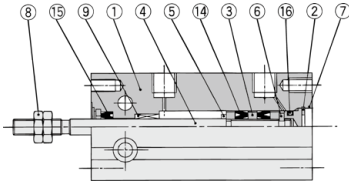
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-X□

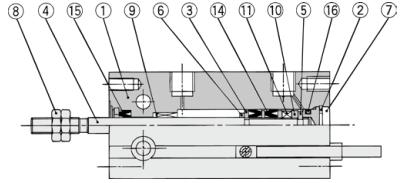
Technical
Data

Construction

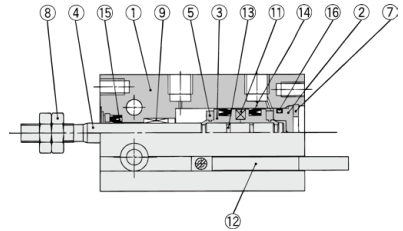
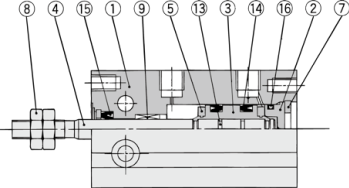
ø6



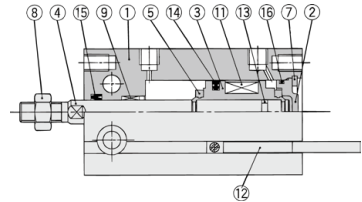
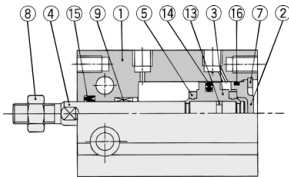
With auto switch



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
		Aluminum alloy	ø10 to ø32, Chromated
4	Piston rod	Stainless steel	
5	Bumper A	Urethane	
6	Bumper B	Urethane	
7	Retaining ring	Carbon tool steel	Phosphate coated

Component Parts

No.	Description	Material	Note
8	Rod end nut	Carbon steel	Chromated
9	Bushing	Bearing alloy	
10	Magnet holder	Brass	ø6
11	Magnet	—	
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 13, 15, 16
16	CU16D-PS	
20	CU20D-PS	
25	CU25D-PS	
32	CU32D-PS	

* Seal kit includes 13, 15, 16. Order the seal kit, based on each bore size.

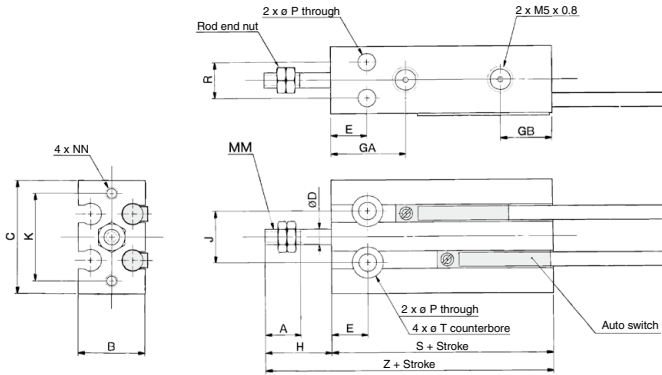
* Seal kit includes a grease pack (10 g).

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

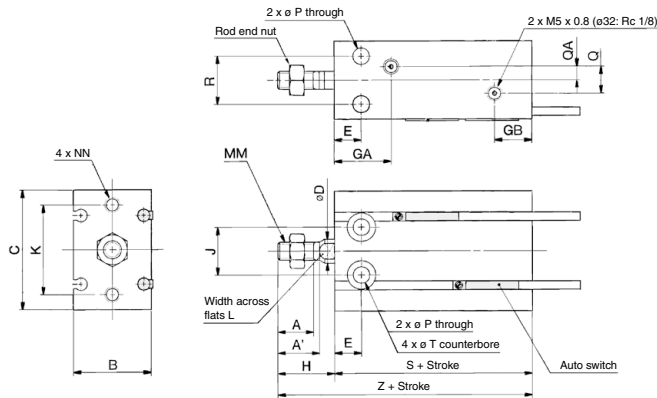
Grease pack part number: GR-S-010 (10 g)

Dimensions: Double Acting, Single Rod

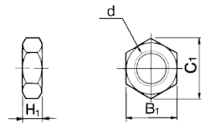
ø6, ø10



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

Bore size (mm)	(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 ^(max)	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

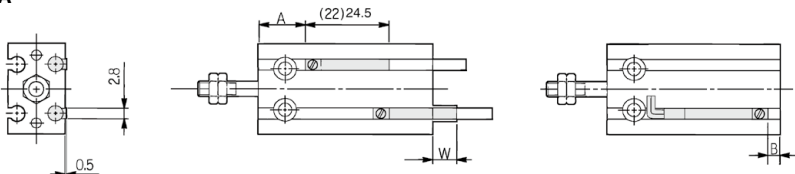
Note) 5 stroke (CU16-5D): 14.5 mm

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

Auto Switch Mounting

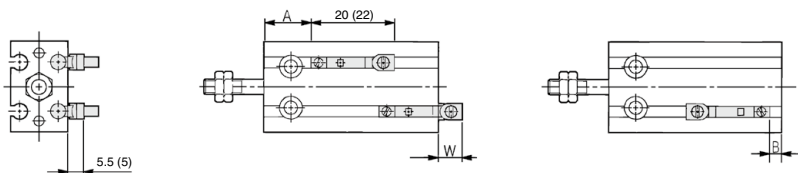
Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

D-A9□
 D-M9□
 D-M9□W
 D-M9□A



() : Denotes the values of D-A96.

D-A9□V
 D-M9□V
 D-M9□WV
 D-M9□AV



() : Denotes the values of D-A9□V.

Bore size (mm)	D-A9□, D-A9□V			D-M9□, D-M9□W			D-M9□V, D-M9□WV			D-M9□A			D-M9□AV		
	A	B	W	A	B	W	A	B	W	A	B	W	A	B	W
6	13.5	-0.5	2.5 (5)	17.5	3.5	6.5	17.5	3.5	4.5	17.5	3.5	8.5	17.5	3.5	6.5
10	12.5	3.5	-1.5 (1)	16.5	7.5	2.5	16.5	7.5	0.5	16.5	7.5	4.5	16.5	7.5	2.5
16	16	4	-2 (0.5)	20	8	1.5	20	8	-0.5	20	8	3.5	20	8	1.5
20	20	6	-4 (-1.5)	24	10	0	24	10	-2	24	10	2	24	10	0
25	22.5	7	-5.5 (-3)	26.5	11	-1.5	26.5	11	-3.5	26.5	11	0.5	26.5	11	-1.5
32	23.5	8.5	-6.5 (-4)	27.5	12.5	-2.5	27.5	12.5	-4.5	27.5	12.5	-0.5	27.5	12.5	-2.5

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 auto switch will not turn OFF or 2 auto 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 auto switches operate normally (if 1 switch is used, make sure that it turns ON and OFF properly; if 2 auto switches are used, make sure that both auto switches turn ON).

Note 4) () in column W is the dimensions of D-A90 and A93.

Operating Range

Auto switch model	Bore size (mm)					
	6	10	16	20	25	32
D-A9□, A9□V	5	6	9	11	12.5	14
D-M9□, M9□V						
D-M9□W, M9□WV	3	4	5.5	7	7	7.5
D-M9□A, M9□AV						

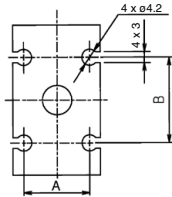
* Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately ±30% dispersion). It may vary substantially depending on an ambient environment.

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 D-M9□A, D-M9□AV
1 pc.	5	5	5
2 pcs.	10	5	10

(mm)

Auto Switch Groove Position

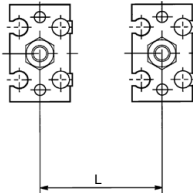


Bore size (mm)	A	B
6	8.2	9
10	10.3	13
16	15	18
20	21	23
25	27	25
32	35	27

(mm)

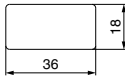
Caution on Proximity Installation

When free mounting cylinders equipped with auto switches are used, the auto switches could activate unintentionally if the installed distance is less than the dimensions shown in the table. Therefore, make sure to provide a greater clearance. Due to unavoidable circumstances, if they must be used with less distance than the dimensions given in the table, the cylinders must be shielded. Therefore, affix a steel plate or a magnetic shield plate (MU-S025) to the area on the cylinder that corresponds to the adjacent auto switch. (Please contact SMC for details.) Auto switches may malfunction if a shield plate is not used.



Bore size (mm)	Mounting pitch L (mm)
6	18
10	20
16	33
20	40
25	46
32	56

Dimensions of shield plate (MU-S025) that is sold separately are indicated as reference.



Material: Ferrite stainless steel, Thickness: 0.3 mm
The product can be attached to the cylinder since the bottom side is a seal type.

- CUJ
- CU
- CQS
- JCQ
- CQ2
- RQ
- CQM
- CQU
- MU

- D-□
- X□
- Technical Data