

Free Mount Cylinder

Series CU

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

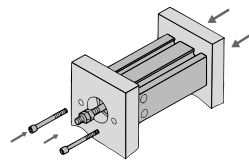


Space-saving

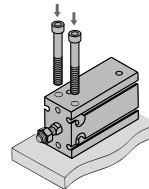
The multiple surface direct mounting with a square body and no brackets allows the freedom of the mounting surface. This enables space-saving designs for equipment.

Mounting

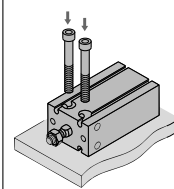
Axial mounting
(Body tapped)



Vertical mounting
(Body through-holes)



Lateral mounting
(Body through-holes)



Series Variations

Series	Action	Rod	Bore size (mm)	Page
Standard Series CU	Double acting	Single rod	6, 10, 16, 20, 25, 32	483
	Double acting	Double rod		490
Non-rotating Series CUK	Single acting	Single rod (Spring return/Extend)		495
	Double acting	Single rod		502
Long stroke Series CU	Double acting	Double rod		506
	Single acting	Single rod (Spring return/Extend)		510
Long stroke, Non-rotating rod Series CUK	Double acting	Single rod	516	
	Double acting	Single rod	520	
With air cushion Series CU-A	Double acting	Single rod	20, 25, 32	524
For vacuum Series ZCUK	Double acting	Single rod	10, 16, 20, 25, 32	533

CUJ

CU

CQS

CQ2

RQ

CQM

MU

D-□

-X□

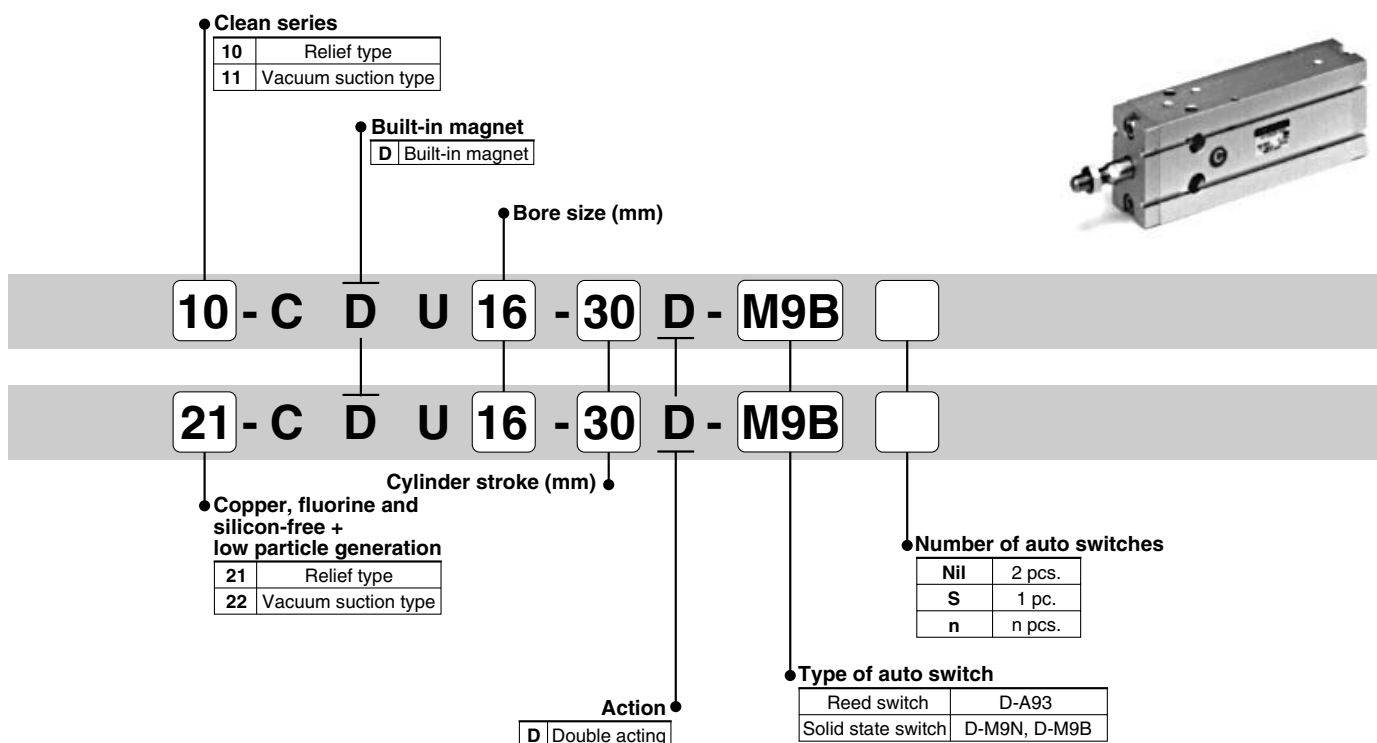
Individual
-X□

Technical
data

Series 10-/11- 21-/22-CDU

Free mount cylinder / $\phi 6$, $\phi 10$, $\phi 16$, $\phi 20$, $\phi 25$

How to Order



Clean series

10	Relief type
11	Vacuum suction type

Built-in magnet

D	Built-in magnet
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Bore size (mm)

Cylinder stroke (mm)

Copper, fluorine and silicon-free + low particle generation

21	Relief type
22	Vacuum suction type

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	n pcs.

Type of auto switch

Reed switch	D-A93
Solid state switch	D-M9N, D-M9B

Action

D	Double acting
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Model

Model	Cushion Bore size (mm)	Port size	Lubrication	Action	Standard stroke (mm)	Auto switch mounting	Cushion		
							Rubber	Air	
Relief type	10-/21-CDU6	6	M5 x 0.8	Non-lube	Double acting single rod	5, 10, 15, 20, 25, 30, 40, 50	○	○	—
	10-/21-CDU10	10							
	10-/21-CDU16	16							
	10-/21-CDU20	20							
	10-/21-CDU25	25							
Vacuum suction type	11-/22-CDU6	6	M5 x 0.8	Non-lube	5, 10, 15, 20, 25, 30, 40, 50	○	○	—	
	11-/22-CDU10	10							
	11-/22-CDU16	16							
	11-/22-CDU20	20							
	11-/22-CDU25	25							

Specifications

Item	Bore size (mm)		
	6	10/16	20/25
Proof pressure	1.05MPa		
Max. operating pressure	0.7MPa		
Min. operating pressure	0.12MPa	0.06MPa	0.05MPa
Ambient and fluid temperature	Without auto switch : -10°C to 70°C With auto switch : -10°C to 60°C (With no condensation)		
Piston speed	50 to 400mm/s		
Stroke length tolerance	$\begin{matrix} +1.0 \\ 0 \end{matrix}$		
Grease	10-/11-: Fluorine grease 21-/22-: Lithium soap base grease		
Particle generation grade (Refer to front matter pages 13 to 22 for details.)	10-: Grade 2, 21-: Grade 3 11-/22-: Grade 1		

Suction flow rate of vacuum suction type (Reference values)

Size	Suction flow rate ℓ /min (ANR)
6	6
10	10
16/20/25	12

Auto switch specifications (Refer to Best Pneumatics catalog for detailed specifications and auto switches not in the following table.)

Switch type	Auto switch part no.	Load voltage	Load current range	Indicator light	Application
Reed switch	D-A93	24 VDC	5 to 40mA (24 VDC)	○	Relay, PLC
Solid state switch	2-wire type D-M9B	28 VDC or less	40mA or less	○	IC circuit, Relay, PLC
	3-wire type D-M9N	24 VDC (10 to 28 VDC)	5 to 40mA	○	24 VDC Relay, PLC

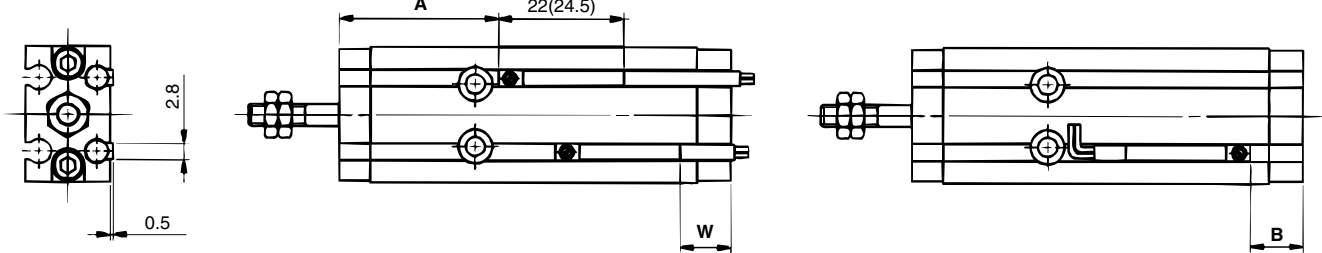
Refer to applicable auto switch list — Page 182.

PLC: Programmable Logic Controller

Auto switches / Proper mounting position at stroke end detection

D-A9□

D-M9□



(): Dimensions for D-A93

Bore size (mm)	D-A9□			D-M9□		
	A	B	W	A	B	W
6	29.5	5.5	-3.5(-1)	33.5	9.5	0.5
10	29.5	9.5	-7.5(-5)	33.5	13.5	-3.5
16	36	11.5	-9.5(-7)	40	15.5	-5.5
20	41	15	-13(-10.5)	45	19	-9
25	40.5	16.5	-14.5(-12)	45.5	20.5	-10.5

Note) The above mentioned values are indicated as a guide for auto switch mounting position for stroke end detection. When actually mounting an auto switch, adjust the position after confirming the operating state of the auto switch.

Note 2) The negative values in the table indicate that the auto switch is mounted inside the cylinder body in case of W and outside in case of B.

Note 3) In case of 5mm stroke (with 1 pc.) or 10mm stroke (2 pcs.), the switch(es) may not go off or more than one switch may turn on simultaneously. Set them at 1 to 4mm out of the values in the above table.

Note 4) (): Dimensions for D-A93.

Specific Product Precautions

Be sure to read before handling.

Mounting

Caution

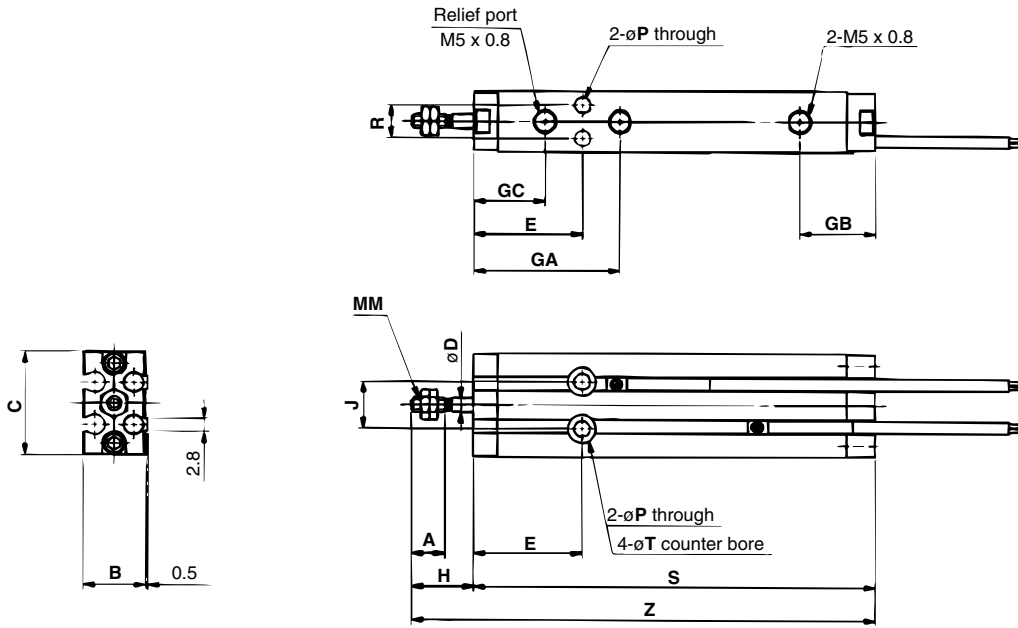
1. Observe the proper tightening torque in the right table in mounting.

Appropriate tightening torque

Bore size (mm)	Hexagon socket head cap bolt size(mm)	Appropriate tightening torque N·m
ø6, ø10	M3	1.08 ±10%
ø16	M4	2.45 ±10%
ø20, ø25	M5	5.10 ±10%

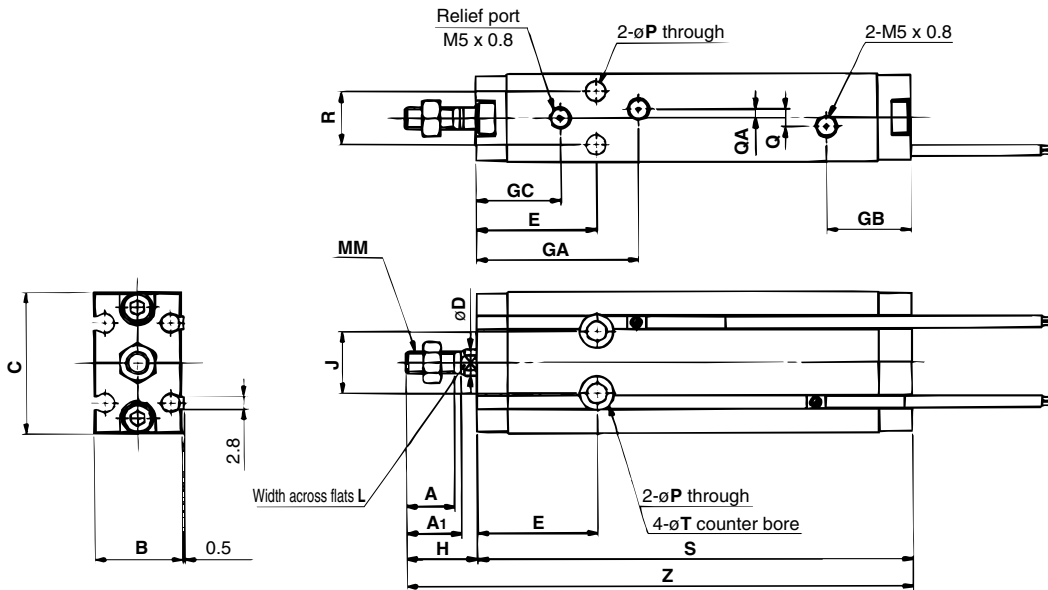
10-**CDU6 to 25**, 21-**CDU6 to 25**

ø6/ø10



Bore size	A	B	C	D	E	GA	GB	GC	H	J	MM	P	R	T	S						Z					
															5	10	15	20	25	30	5	10	15	20	25	30
6	7	13	22	3	23	31	16	15	13	10	M3 x 0.5	3.2	7	6 depth 4.8	60	65	70	75	80	85	73	78	83	88	93	98
10	10	15	24	4	24	33.5	16	15.5	16	11	M4 x 0.7	3.2	9	6 depth 5	64	69	74	79	84	89	80	85	90	95	100	105

ø16 to ø25



Bore size	A	A1	B	C	D	E	GA	GB	GC	H	J	L	MM	P	Q	QA	R	T	S										Z									
																			5	10	15	20	25	30	40	50	5	10	15	20	25	30	40	50				
16	11	12.5	20	32	6	27	36.5	19	19	16	14	5	M5 x 0.8	4.5	4	2	12	7.6 depth 6.5	72.5	77.5	82.5	87.5	92.5	97.5	—	—	88.5	93.5	98.5	103.5	108.5	113.5	—	—				
20	12	14	26	40	8	30	40	21.5	22	19	16	6	M6 x 1.0	5.5	9	4.5	16	9.5 depth 8	81	86	91	96	101	106	116	126	100	105	110	115	120	125	135	145				
25	15.5	18	32	50	10	29	40.5	22	22	23	20	8	M8 x 1.25	5.5	9	4.5	20	9.5 depth 9	83	88	93	98	103	108	118	128	106	111	116	121	126	131	141	151				