

Mini Free Mount Cylinder

Series CUJ

ø12, ø16, ø20

How to Order

CUJ B 12 - 30 D

With auto switch **CDUJ B 12 - 30 D - F8N**

With auto switch (Built-in magnet)

Mounting direction

B Lateral mounting

S Axial mounting

Counter-bore

Auto switch

Nil	2 pcs.
S	1 pc.

* M9□: with 1 pc.

Auto switch

Nil	Without auto switch
-----	---------------------

* Refer to the table below for applicable auto switches.

Rod end thread

Nil	Rod end female threaded
M	Rod end male threaded

Action

D	Double acting
S	Single acting, spring return

Bore size

12	12 mm
16	16 mm
20	20 mm

Cylinder stroke (mm)

* Refer to "Standard Stroke" on the following page.

Built-in Magnet Cylinder Model

In the case of built-in magnet without auto switch, the symbol for auto switch is "Nil".
(Example) CDUJB12-15DM

Applicable Auto Switches/Refer to pages 21 through to 23 for additional 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	Electrical entry		0.5 (Nil)	1 (M)	3 (L)	5 (Z)				
							Perpendicular	In-line								
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	—	M9N	●	—	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				—	F8N	●	—	●	○	○		
				2-wire				—	M9P	●	—	●	○	○		
								—	F8P	●	—	●	○	○		
	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	—	M9B	●	—	●	○	○	—	
				3-wire (PNP)				—	F8B	●	—	●	○	○		
				2-wire				—	M9NW	●	●	●	○	○	IC circuit	
								—	M9PW	●	●	●	○	○		
				—				M9BW	●	●	●	○	○	—		
				—				M9BW	●	●	●	○	○	—		

* 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

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

Note 1) For 2-color indication type, use caution on hysteresis. Refer to page 19, "Auto Switch Hysteresis" prior to use.

Note 2) Refer to pages 21 through to 23 for detailed auto switch specifications.

* Refer to "Best Pneumatics" catalog for further information on auto switches with pre-wired connector.

* Auto switches are included, (but not assembled).



JIS Symbol

Double acting, single rod



Single acting, spring return



Standard Stroke

Action	Bore size (mm)	Standard stroke (mm)
Double acting	12	5, 10, 15, 20
	16	25, 30
	20	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
Single acting, spring return	12	5, 10
	16	
	20	

Specifications

Bore size (mm)		12	16	20
Action		Double acting; Single acting, spring return		
Fluid		Air		
Proof pressure		1.05 MPa		
Minimum operating pressure	Double acting	0.07 MPa		0.05 MPa
	Single acting, spring return	0.25 MPa		0.18 MPa
Maximum 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)		
Cushion		Rubber bumper		
Lubrication		Non-lube		
Piston speed		50 to 500 mm/s*		
Stroke length tolerance		$+1.0$ 0		
Mounting		CUJB: Through-hole (lateral, axial direction: 2 locations each) CUJS: Through-hole (axial direction: 2 locations)		

* Depending on the circuit condition, the piston speed may not reach the maximum speed.

Theoretical Output: Double Acting

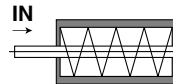


Unit: N

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)		
				0.3	0.5	0.7
12	6	OUT	113	34	57	79
		IN	84.8	25	42	59
16	8	OUT	201	60	101	141
		IN	151	45	75	106
20	10	OUT	314	94	157	220
		IN	236	71	118	165

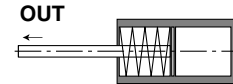
Spring Reaction Force: Single Acting, Spring Return

Spring in pre-loaded condition



When the spring is set in the cylinder.

Spring in loaded condition



When the spring is contracted by applying air. Unit: N

Bore size (mm)	Spring condition	Stroke (mm)	
		5	10
12	Pre-loaded	6	3.5
	Loaded	9.5	9.5
16	Pre-loaded	7.5	4.5
	Loaded	11	11
20	Pre-loaded	10.5	5.5
	Loaded	16.5	16.5

* Moving the load with the thrust (spring response) on the spring return side will cause poor stroke.

Mass: Double Acting

Unit: g

Bore size (mm)	Standard stroke (mm)										Additional mass	
	5	10	15	20	25	30	35	40	45	50	Built-in magnet	Rod end male threaded
CUJ□12	21	26	31	35	40	45	—	—	—	—	6	4
CUJ□16	32	39	46	53	60	67	—	—	—	—	9	8
CUJ□20	52	62	72	82	92	102	112	122	132	142	12	13

Mass: Single Acting, Spring Return

Unit: g

Bore size (mm)	Standard stroke (mm)		Additional mass	
	5	10	Built-in magnet	Rod end male threaded
CUJ□12	23	28	6	4
CUJ□16	34	41	9	8
CUJ□20	53	63	11	13