



Fine buffer FBU2 Series

O.D.: M8, M12, $\phi 7$, $\phi 12$
Load capacity: 30, 80g

P4 compliant as standard



Pneumatic, Vacuum and Auxiliary Components
Catalog No. CB-024SA

Uniform pressure

If the magnets in the movable shaft and fixed shaft are misaligned, a diagonal line of magnetic force appears and power is generated as the axial force tries to return. Pressure due to magnetic force is selected from the 3 ranges of 0.2 N, 0.5 N and 1.0 N depending on the model. All are nearly constant regardless of the stroke.

Magnetic return force constant in the axial direction

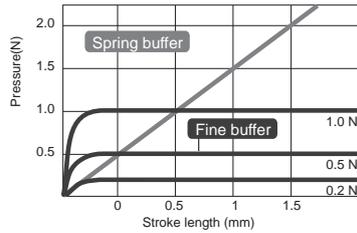


Clean & long life

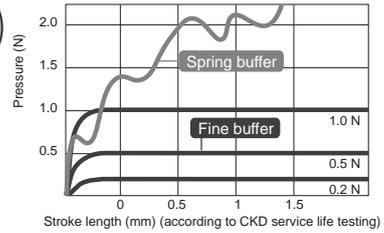
No metal contact compared with spring buffers, for an ultra-low dust generation rate. No spring fatigue for long service life and stable performance.

Pressure characteristics

At initial operation



After 1 million operation cycles



Stroke length (mm) (according to CKD service life testing)
Values at room temperature of 23°C.

Specifications

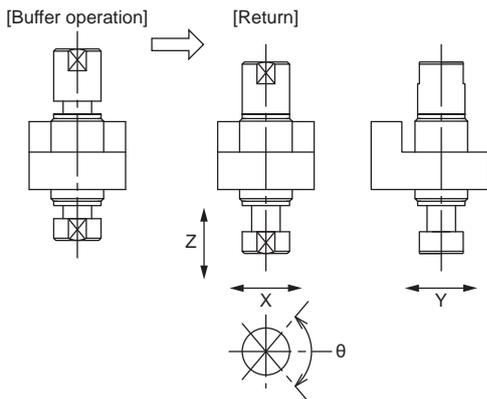
Descriptions	FBU2-7D		FBU2-8M	FBU2-12D		FBU2-12M
	S	H/HV	S	S	H/HV	S
O.D.	$\phi 7h7$		M8x0.75	$\phi 12h7$		M12x1
Appearance	S/H	HV		S/H	HV	
Buffer pressure	N		0.1 to 0.2	0.4 to 0.6, 0.9 to 1.1		0.4 to 0.6, 0.9 to 1.1
Pressure variation *1	±15% or less					
Buffer stroke length	2	6	2	2	6	2
Operating ambient temperature °C	5 to 50		5 to 50	5 to 50		5 to 50
Bearing clearance mm	0.2 or less		0.2 or less	0.2 or less		0.2 or less
Max. holding torque *2	N-cm			*3		*3
Return positioning accuracy	X-Y	mm	±0.1 or less	±0.05 or less	±0.1 or less	±0.05 or less
	*4 Z	mm	±0.1 or less			
	θ	°	3 or less			
Load capacity	g			30 or less		
				80 or less		

- *1: Indicates pressure fluctuations within the stroke. Pressure is not proportional to the stroke.
- *2: If a rotary torque exceeding the max. holding torque is applied on the moving axis, the moving axis will step out and rotate 180°.
- *3: Refer to the table at right for FBU2-12M/12D holding torque.
- *4: Refer to the figure below (Fig. 1) for return positioning accuracy. The figure shows buffer return accuracy.
- *5: Consult with CKD for requirements not complying with specifications.
- *6: Load capacity indicates the max. load (jig and suctioned workpiece) mounted on the head piece.

[FBU2-12M/12D max. holding torque (reference value)]

Pressure (N)	Stroke length (mm)	Holding torque (N-cm)
0.5	2	0.5 or more
	6	0.5 or more
	16	1.2 or more
1	2	1.2 or more
	6	1.2 or more
	16	2.5 or more

Indicates the holding torque at the outer end.



(Fig. 1) Return detailed drawing

How to order

FBU2 - **12D** - **S** - **10** - **6** - **T3** - **H3**

Model No.

A O.D.

B Bearing precision

C Pressure

D Buffer stroke length

E Tailpiece shape

F Head piece shape

		Model No.			
		FBU2-7D	FBU2-8M	FBU2-12D	FBU2-12M
Code	Content				
A O.D.					
7D	ø7h7 spigot	●			
8M	M8 x 0.75 full thread		●		
12D	ø12h7 spigot			●	
12M	M12 x 1 full thread				●
B Bearing precision					
S	Standard (bearing clearance 0.2 mm or less)	●	●	●	●
H	High precision (bearing clearance 0.05 mm or less)	●		●	
HV	Internal flow path high precision (bearing clearance 0.05 mm or less)	●		●	
C Pressure (N)					
02	0.2	●	●		
05	0.5			●	●
10	1.0			●	●
D Buffer stroke length (mm)					
2	2	●	●	●	●
6	6	●	●	●	●
16	16			●	●
E Tailpiece shape					
TB	Without hole	●	●	●	●
T3	M3 female thread depth 3	●	●	●	●
T5	M5 female thread depth 4			●	●
F Head piece shape					
HB	Without hole	●	●	●	●
H3	M3 female thread depth 3	●	●	●	●
H5	M5 female thread depth 4			●	●

Combination of bearing precision, buffer stroke, tailpiece shape, and head piece shape

		B Bearing precision		
		S	H	HV
D Buffer stroke length	2	●	●	●
	6	●	●	●
	16	●		
E Tailpiece shape	TB	●	●	●
	T3	●	●	●
	T5	●	●	
F Head piece shape	HB	●	●	
	H3	●	●	●
	H5	●	●	●

Model No. of single mounting bracket for spigot

A O.D.	Model No. of single bracket	
	L installation	Straight installation
7D	FBU2- 7D-B1	FBU2- 7D-B2
12D	FBU2- 12D-B1	FBU2- 12D-B2

P4
Series

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products
Cylinder Switch

Vacuum components
Pneumatic valves

Clean air components
Speed controller

Pneumatic auxiliary components
Fitting
Auxiliary valve

Stilencer
Tube

Gas generator

Fluid control components

Motor specification
Motorless specifications

Electric actuator



Fine buffer

FBU2-SU Series

Outer diameter: M12, full thread

Load capacity: 200 g

P4 compliant as standard



Pneumatic, Vacuum and Auxiliary Components
Catalog No. CB-024SA

Specifications

Item	FBU2-SU	
O.D.	M 12 x 1	
Buffer pressure	N	0.4 to 0.6, 0.9 to 1.1
Pressure variation *1)	±15% or less	
Buffer Stroke	mm	2, 6, 16
Operating ambient temperature °C	5 to 50	
Bearing clearance	mm	0.2 or less
Max. holding torque	N·cm	*2)
Return positioning accuracy *3)	X-Y	mm
	Z	mm
	θ	°
Load capacity	g	200 or less

*1: Indicates pressure fluctuations within the stroke. Pressure is not proportional to the stroke.

*2: If a rotary torque exceeding the max. holding torque is applied on the moving axis, the moving axis will step out and rotate 180°.

*Holding torque...Force is applied in the θ direction (Fig. 1) to enable the movable shaft to return to its original position even if the position of the movable shaft has deviated

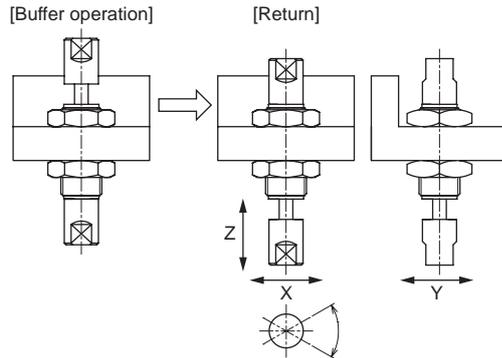
*3: Refer to the figure below for return positioning accuracy. The figure shows buffer return accuracy.

*4: Consult with CKD for requirements not complying with specifications.

[FBU2-SU max. holding torque (reference value)]

Pressure (N)	Stroke length (mm)	Holding torque (N·cm)
0.5	2	0.5 or more
	6	0.5 or more
	16	1.2 or more
1	2	1.2 or more
	6	1.2 or more
	16	2.5 or more

Indicates the holding torque at the outer end.



How to order

FBU2 - SU - 05 - 6 - T3 - H3

Model No.

A Pressure

B Buffer Stroke

C Tail shape

D Head shape

Code	Description
A Pressure (N)	
05	0.5
10	1.0
B Buffer Stroke (mm)	
2	2
6	6
16	16
C Tail shape	
TB	Without hole
T3	M3 female thread depth 3
T4	M4 female thread depth 4
T5	M5 female thread depth 4
T6	M6 female thread depth 5
D Head shape	
HB	Without hole
H3	M3 female thread depth 3
H4	M4 female thread depth 4
H5	M5 female thread depth 4
H6	M6 female thread depth 5