

# JSB3

## Brake Unit

ø16, ø20, ø25, ø30, ø35, ø40, ø45

### Lock Unit

#### Overview

Ten models of brake parts for Brake Cylinders with intermediate stop (ø40 to ø180) are sold individually. This is a compact function that can instantly stop and strongly lock the movable rod. Please use it widely for safety mechanisms and clamp mechanisms of various devices, etc.

#### Features

##### High Precision

Due to the adoption of a unique brake mechanism, the rod stopping accuracy is  $\pm 1.0$  mm or less (rod speed 300 mm/s, piping 1 m or less, no load). Increases the accuracy of the device.

##### Strong Holding Force

Possesses a strong holding force of 980 N to 20000 N according to rod diameters ø16 to ø45. Even if the air source is cut off due to an accident, etc., the rod is held and it is safe.

##### Increased design flexibility

Can be freely applied to various devices, etc. using air pressure, expanding design flexibility.



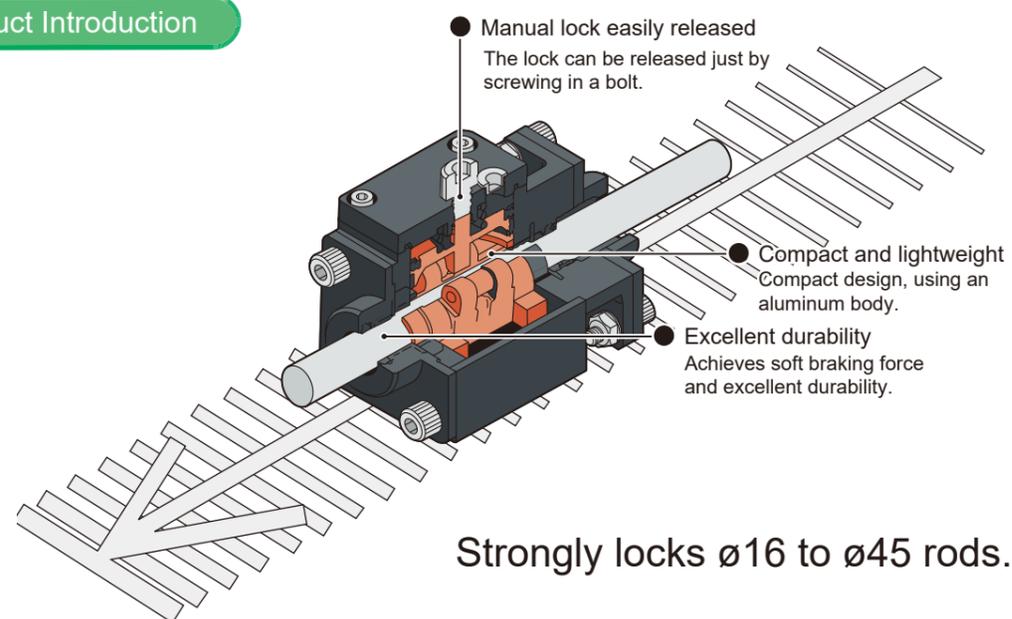
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●: Standard, ○: Option

Model No.	Rod Diameter (mm)	Rod Length (mm)										Mounting Style		Page
		200	300	400	500	600	700	800	900	1000	LB	FA		
	ø16, ø20, ø25	●	●	●	●	●	●	●	●	●	●	○	○	628
	ø30, ø35	-	●	●	●	●	●	●	●	●	●	○	○	
	ø40, ø45	-	-	●	●	●	●	●	●	●	●	○	○	

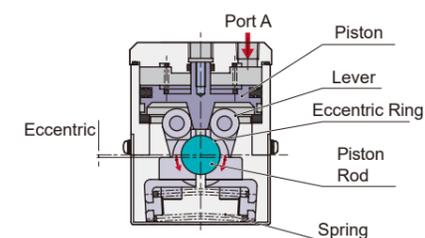
## Product Introduction



## Operational Principle

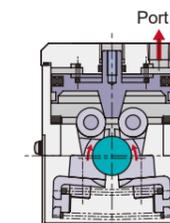
● Brake release operating principle

● Brake operating principle



### Ⓐ Brake Release Operating Principle

When air is supplied from port A, the lower piston is pushed, opening the lever, and the eccentric rings directly connected to the lever rotate in the direction of their respective arrows, freeing the Piston Rod.



### Ⓑ Brake Activation Operating Principle

When air is exhausted from port A, the eccentric rings rotate in the direction of their respective arrows due to spring force, generating an eccentric load on the Piston Rod and braking the Piston Rod.



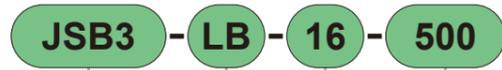
# Brake Unit JSB3 Series

**Do not disassemble**

● Rod diameter:  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$ ,  $\phi 30$ ,  $\phi 35$ ,  $\phi 40$ ,  $\phi 45$



## Model No. Notation



1 Mounting type      2 Rod Diameter      3 Rod Length

### 1 Mounting Type

Code	Content
LB	Axial foot type
FA	Flange Type

### 2 Rod Diameter (mm)

Code	Content
16	$\phi 16$
20	$\phi 20$
20 A	$\phi 20$
25	$\phi 25$
30	$\phi 30$
35	$\phi 35$
35A	$\phi 35$
40	$\phi 40$
45	$\phi 45$

### 3 Rod Length (mm)

Code	Content	Rod Diameter		
		$\phi 16, \phi 20, \phi 25$	$\phi 30, \phi 35$	$\phi 40, \phi 45$
Blank	Not attached	●	●	●
200	200	●		
300	300	●	●	
400	400	●	●	●
500	500	●	●	●
600	600	●	●	●
700	700	●	●	●
800	800	●	●	●
900	900	●	●	●
1000	1000	●	●	●

\*1: Available up to 3000 mm in 1 mm increments.  
\*2: Rod length represents the total length of the rod. Please note that it is not the stroke.

## Specifications

Item	JSB3									
Rod Diameter Code	16	20	20 A	25	30	35	35A	40	45	
Operating Fluid	Compressed Air									
Max Operating Pressure MPa	1.0									
Min Operating Pressure MPa	0.3									
Proof Pressure MPa	1.6									
Ambient Temperature °C	-10 to 60 (No freezing)									
Port Size	Rc1/8		Rc1/4		Rc3/8		Rc 1/2			
Operating Rod Speed mm/s	10 to 1000									
Lubrication	Not required (When lubricating, use turbine oil Class 1 ISO VG32)									
Holding Force N	980	1569	2451	3922	6178	9600	12000	15800	20000	
Rod Diameter and Dimensional Tolerance mm	$\phi 16f8$	$\phi 20f8$		$\phi 25f8$	$\phi 30f8$	$\phi 35f8$		$\phi 40f8$	$\phi 45f8$	
Rod Surface Roughness $\mu mRz$	1.2 to 1.6									
Weight kg	LB	1.8	2.5	3.7	6.7	11.6	18.5	20.3	33.0	44.0
	FA	1.8	2.5	4.1	7.3	12.1	20.3	26.4	36.8	51.5
Added Weight per 100 m of Rod	0.16	0.25 (36 psi)	0.25 (36 psi)	0.39	0.56	0.76	0.76	0.99	1.25	

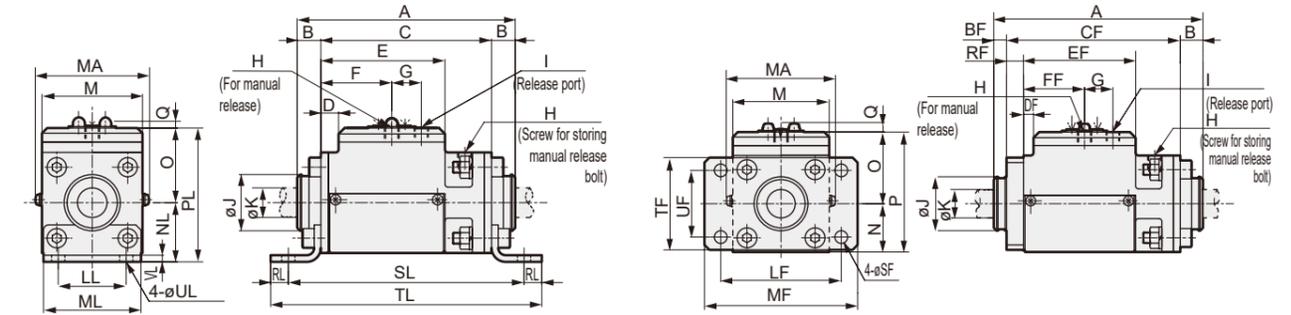
Note: The stopping accuracy diminishes if the brake valve is separated. The above values are for piping within 1 m.

# JSB3 Series Dimensional Drawings

## Dimensional Drawings

● Axial foot (LB)  $\phi 16$  to  $\phi 30$

● Rod side flange (FA)  $\phi 16$  to  $\phi 30$



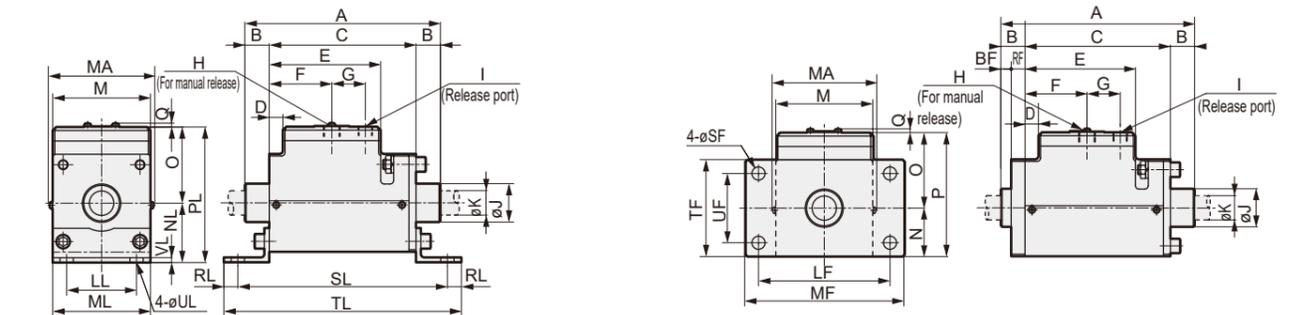
Code	A	B	BF	C	CF	D	DF	E	EF	F	FF	G	H	I	J	K	LL	LF
<b>Code</b>																		
<b>Rod Diameter Code</b>																		
$\phi 16$	129	15	7	99	107	9	5	70	66	40	36	20	M10	Rc1/8	31	16	40	80
$\phi 20$	147.5	16	9	115.5	122.5	12	7	84	79	48	43	20	M10	Rc1/8	38	20	46	85
$\phi 20A$	164	16	8	132	140	13	5	99	91	56	48	27	M12	Rc1/4	38	20	60	106
$\phi 25$	186.5	17.5	4.5	151.5	164.5	13	7	119	113	66	60	27	M14	Rc1/4	43	25	74	125
$\phi 30$	243	26	13.5	191	203.5	17.5	11	149.5	143	83.5	77	35	M16	Rc3/8	51	30	80	144

Code	ML	MF	NL	N	O	PL	P	Q	RL	RF	SL	SF	TL	TF	UL	UF	VL	M	MA
<b>Code</b>																			
<b>Rod Diameter Code</b>																			
$\phi 16$	57	100	40	28.5	46	86	74.5	5	10	12	138	9	158	57	9	40	3.2	57	66
$\phi 20$	66	108	40	34	50.5	90.5	84.5	5	12	12	159.5	9	183.5	65	9	47	4.5	68	77
$\phi 20A$	80	130	50	40	54	104	94	5	12	16	192	11	216	80	11	60	4.5	80	89
$\phi 25$	98	153	60	49	66	126	115	5	14	19	225.5	14	253.5	98	14	74	6.0	98	107
$\phi 30$	118	180	67	59	74	141	133	5	21	19	253	14	295	118	14	88	6.0	118	127

● Axial foot (LB)  $\phi 35$  to  $\phi 45$

● Rod side flange (FA)  $\phi 35$  to  $\phi 45$



Code	A	B	BF	C	D	E	F	G	H	I	J	K	LF	LL	M	MA	MF
<b>Code</b>																	
<b>Rod Diameter Code</b>																	
$\phi 35$	280	35	15	210	19.5	159.5	89.5	48	M24	Rc 1/2	55	35	190	100	140	150	230
$\phi 35A$	296	35	15	226	18.5	175.5	97	50	M24	Rc 1/2	55	35	212	112	157	167	250
$\phi 40$	356	48	26	260	23	200	111.5	58	M24	Rc 1/2	62.5	40	236	118	177	190	280
$\phi 45$	385	53	28	279	14	214	114	70	M24	Rc 1/2	68.5	45	265	132	200	213	310

Code	ML	NL	N	O	PL	P	Q	RF	RL	SL	SF	TL	TF	UL	UF	VL
<b>Code</b>																
<b>Rod Diameter Code</b>																
$\phi 35$	140	85	70	109	194	179	5	20	20	300	19	340	140	19	100	7
$\phi 35A$	157	100	78.5	116.5	216.5	195	5	20	20	326	19	366	157	19	112	8
$\phi 40$	177	106	88.5	128	234	216.5	5	22	20	366	19	406	177	19	118	10
$\phi 45$	200	125	100	146	271	246	5	25	27	399	24	453	200	24	132	10



# To Use This Product Safely

Be sure to read this before use. For general cylinder information, see Intro 41, and for cylinder switches, see P. 1512.

## Individual Precautions: Brake unit JSB3 Series

### Design / Selection

#### Warning

- Use a rod with a surface roughness between 1.2 to 1.6  $\mu\text{mRz}$ . Using a non-standard rod will cause abnormal wear of the brake metal or a decrease in holding force.
- Use a rod treated with industrial chromium plating (coating thickness of 15  $\mu\text{m}$  or more).
- Do not use multiple synchronized Brake Units. If synchronization is lost, the load will concentrate on the brake unit that braked first, which may lead to a decrease in service life or damage.
- Never disassemble the brake section, as this is dangerous.
- Note that stopping accuracy is adversely affected if the brake unit air supply pipe is too long.

#### CAUTION

- The stopping accuracy is susceptible to fluctuations in rod speed and load. The stopping position accuracy is  $\pm 1.0$  mm (reference value) at a rod speed of 300 mm/s, piping of 1 m or less, and no load.
- Connect with spherical bearings (floating fittings) to prevent damage to the screw at the Rod End, to prevent wear or seizure in the brake unit, and to prevent twisting of the rod and brake unit at any position during travel.
- Sliding resistance is generated in this product even with brake released. We recommend using it with a thrust greater than or equal to the following.

Rod Diameter Code	16	20	20 A	25	30	35	35A	40	45
Estimated Required Thrust [N]	53	82	140	227	357	565	722	942	1193

- As shown in Fig.1, the Brake Units is fixed to the table, so keep it parallel to the direction of table travel.

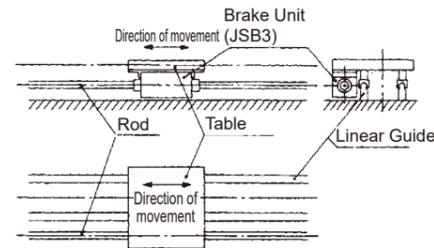


Fig. 1

- Do not use for rotating rod braking.
- Do not apply lateral load moment to brake units when using in a horizontal state.
- Check that load is applied axially on the rod.
- Make sure that water and oil do not contact the brake unit and rod section.  
If water splashes on it, there is a risk of malfunction due to corrosion. If oil splashes on it, it may affect holding force and stopping accuracy.

For maintenance parts, please visit the CKD Equipment Product Site (<https://www.ckd.co.jp/kiki/en/>) → "model No." → Maintenance Parts.

Lock Unit

UB

JSB3

LMB

LML

Lock Unit

UB

JSB3

LMB

LML

Cylinder Switch

Ending

Cylinder Switch

Ending