

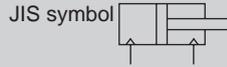


Pneumatic Cylinders II  
Catalog No. CB-030SA

Linear slide cylinder Double acting/ Single rod

# LCR Series

● Bore size:  $\phi 6/\phi 8/\phi 12/\phi 16/\phi 20/\phi 25$



## Specifications

Item		LCR					
Bore size mm		$\phi 6$	$\phi 8$	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure MPa		0.7					
Min. working pressure MPa		0.15 (*1)					
Proof pressure MPa		1.05					
Ambient temperature °C		-10 to 60 (no freezing)					
Port size	Main body side	M3	M5			Rc1/8	
	Main body back	-	M3			M5	Rc1/8
Stroke tolerance mm		+2.0 0 (*2)					
Working piston speed mm/s		50 to 500 (*3)					
Cushion		With rubber cushion					
Lubrication		Not available					
Allowable absorbed energy J		Refer to the following table.					

\*1: 0.2 MPa when using  $\phi 6$  shock absorber type stopper.

\*2: Note that there will be a slight gap between the end plate and floating bush if no stopper is attached.

\*3: Keep within 50 to 200 mm/s when using a stroke adjusting stopper.

\*4: The stroke adjusting stopper for 0.3 MPa and over working pressure is the metal sealing type.

## Stroke

Bore size (mm)	Standard Stroke (mm)
$\phi 6$	10, 20, 30, 40, 50
$\phi 8$	10, 20, 30, 40, 50, 75
$\phi 12$	10, 20, 30, 40, 50, 75, 100
$\phi 16$	10, 20, 30, 40, 50, 75, 100, 125
$\phi 20$	10, 20, 30, 40, 50, 75, 100, 125, 150
$\phi 25$	10, 20, 30, 40, 50, 75, 100, 125, 150

Note: Products with Strokes other than the above are not available.

## With buffer specifications

Specifications other than the below are same as the above common specifications.

Item		Description					
Bore size mm		$\phi 6$	$\phi 8$	$\phi 12$	$\phi 16$	$\phi 20$	$\phi 25$
Buffer Stroke mm		4		9		10	
Buffer part	When set N	3	5	10	13	17	21
	When operated N	7	8	14	20	25	29

\*1: In the type with buffer, adjusting the rod side Stroke will shorten the buffer Stroke and increase the spring load when set.

\*2: Keep the buffer Stroke less than the Stroke above. Otherwise, malfunctions or damage may result.

## LCR allowable absorbed energy (Eo)

Bore size	Standard (J)	With stroke adjusting stopper (J)	With shock absorber stopper (J)
$\phi 6$	0.025	0.0032	0.14
$\phi 8$	0.058	0.0032	0.25
$\phi 12$	0.112	0.014	0.25
$\phi 16$	0.176	0.043	0.65
$\phi 20$	0.314	0.055	1.3
$\phi 25$	0.314	0.14	1.3

## Related products

Speed controller												
Model No.	Appearance	Port size (Rc or R)					Compatible tube O.D.					Description page
		M3	M5	1/8	1/4	3/8	4( $\phi 4$ )	6( $\phi 6$ )	8( $\phi 8$ )	10 ( $\phi 10$ )	12( $\phi 12$ )	
SC3W-M3-*P4		●	●				●					530
SC3W-M5-*P4			●				●	●				
SC3W-6-*P4				●			●	●	●			

Specify the compatible tube O.D. code for \*.

## Compatibility table by variation

Applicable bore size		Double acting/ single rod	Double acting/ position locking	Double acting/ fine speed
			Q	F
ø6 to 25	P4	●	●	
	P40	●	●	
	P42	▲	▲	

●: Applicable models ○: Semi-applicable models ▲: Contact CKD for details. □: Not applicable

\*1: Even when P40 is selected for the external stopper option, electrolytic nickel plating is used for the stopper part.

## How to order

Without switch (built-in magnet for switch)



With switch (built-in magnet for switch)



Model No.

A Tube Bore size

B Stroke

D Switch quantity

F Option

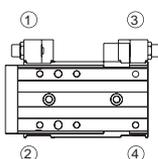
C Switch model No.

## ⚠ Precautions for model No. selection

- \*1: The port positions of the standard without stopper are ① and ③ in the figure below.
- \*2: Can be selected for the type with stopper only.
- \*3: Refer to the selection table on page 55 for combinations of options.
- \*4: A1\*\*, A2\*\*, A5\*\* and A6\*\* of ø6 to ø8 with 10 mm stroke length or less and ø12 to ø25 with 20 mm stroke length or less are made-to-order since they are not adjustable using the standard stopper, so they are made to order.
- \*5: Select the F □ H type switch when using the type with two switches with S\*\*\* or A\*\*\* for ø6 to ø8-30st or less.
- \*6: Select when using rear piping.
- \*7: Can be selected only when using stroke adjusting stopper (S) and one side mixed type (C).
- \*8: When selecting W3 to 6 (two-sided combined stopper) with ø6 (full st), ø 8-20st, 30st, ø12-30st to 50st, and ø 16-30st to 50st, use the axial lead wire type when using with two switches or the head side.
- \*9: Cannot be selected when choosing two-sided combined type (W).
- \*10: The adjustable stroke range when choosing both-sided combined use (W) is ø6: 9 mm, ø8: 13.5 mm, ø12: 14.5 mm, ø16: 15 mm, ø20: 13 mm, ø25: 10 mm.
- \*11: The stroke adjusting stopper for 0.3MPa and over working pressure is the metal sealing type.

E Stopper

● Stopper position



Code	Description	
<b>A Bore size</b>		
6	ø6	
8	ø8	
12	ø12	
16	ø16	
20	ø20	
25	ø25	
<b>B Stroke (mm)</b>		
		Bore size (ø)
		6 8 12 16 20 25
10	10	● ● ● ● ● ●
20	20	● ● ● ● ● ●
30	30	● ● ● ● ● ●
40	40	● ● ● ● ● ●
50	50	● ● ● ● ● ●
75	75	● ● ● ● ● ●
100	100	● ● ● ● ● ●
125	125	● ● ● ● ● ●
150	150	● ● ● ● ● ●
<b>C Switch model No.</b>		
Refer to the compatibility table on Intro Pages 23 to 26 for switch model No.		
<b>D Switch quantity</b>		
R	1 on rod side	
H	1 on head side	
D	2	
<b>E Stopper</b>		
Refer to "Stopper" on page 54.		
<b>F Option</b>		
Blank	Port on stopper: without port	
D	Port on stopper: side and bottom ports *2, *9	
Blank	Stopper block material: Steel	
T	Stopper block material: steel (nitriding) *2	
<b>B With buffer</b> *3		
B	Without switch groove	
BL	With switch groove	
<b>Plug included</b>		
Blank	No	
N	With side piping port plug (not available for ø6, ø25) *6	

P4 Series

Pneumatic cylinders  
Hand/related products  
Pneumatic actuator

Vacuum components  
Pneumatic valves

Clean air components  
Speed controller  
Pneumatic auxiliary components

Fitting  
Auxiliary valve  
Silencer  
Tube

Gas generator  
Fluid control components

Motor specification  
Electric actuator  
Motorless specifications

## ⓔ Stopper

Code	Description	Code	Description
<b>ⓔ Stopper</b>		<b>ⓔ Stopper</b>	
Blank	No option	<b>C One side hybrid stopper mix (shock absorber stopper, stroke adjusting stopper)</b>	
<b>S Stroke adjusting stopper</b>		C1**	A1 + S3
S1**	Stopper position ① (can be changed to ④)	C2**	A2+S4
S2**	Stopper position ② (can be changed to ③)	C3**	A3+S1
S3**	Stopper position ③ (can be changed to ②)	C4**	A4+S2
S4**	Stopper position ④ (can be changed to ①)	<b>** part Adjustable stroke range ●Compatible with all. ▲ Compatible with some. *7</b>	
S5**	Stopper position ①, ③		
S6**	Stopper position ②, ④		
<b>A Shock absorber stopper</b>			
A1**	Stopper position ① (can be changed to ④)		
A2**	Stopper position ② (can be changed to ③)		
A3**	Stopper position ③ (can be changed to ②)		
A4**	Stopper position ④ (can be changed to ①)		
A5**	Stopper position ①, ③		
A6**	Stopper position ②, ④		
<b>W Two-sided combined double stopper(Shock absorber stopper, metal stopper) *8 / *10</b>			
W1**	A1 + metal stopper		
W2**	A2 + metal stopper		
W3**	A3 + metal stopper		
W4**	A4 + metal stopper		
W5**	A5 + metal stopper		
W6**	A6 + metal stopper		

Note:When changing the stopper position from the head side to the rod side, the stopper must be purchased separately according to the stroke length and adjustable stroke length. Refer to "Precautions when purchasing the stopper separately" on the following page. A1, A2 and adjustable Stroke of 15 mm and 25 mm may not be available depending on the Stroke.

## Stopper model No. selection method

### 1 Stopper combination table

Model No.-[① Stopper type] [② Stopper position],[③ ] Example)LCR-8-40-[S] [5]06

Stopper position model No. [②]	Stopper model No. [①]			
	Stroke adjustable (one side)	Shock absorber (One side)	Two-sided combined double stopper	One side hybrid stopper mix
	[S]	[A]	[W]	[C]
[1]	[S1]	[A1]	[W1]	[C1]
[2]	[S2]	[A2]	[W2]	[C2]
[3]	[S3]	[A3]	[W3]	[C3]
[4]	[S4]	[A4]	[W4]	[C4]
[5]	[S5]	[A5]	[W5]	
[6]	[S6]	[A6]	[W6]	

▲shows the piping direction. When choosing two-sided combined type (W), the stopper bracket comes with piping on both sides. ▲The stopper bracket on the reverse side of (piping direction) is provided with a plug.

■ : Shock absorber stopper  
 ■ : Stroke adjusting stopper (adjusting range 5 mm)  
 ■ : Metal adjusting stopper (adjusting range 15 mm)

### LCR Double acting/ Single rod selection table

(Combination with stroke adjusting stopper, shock absorber stopper)

● : Available — : Not available

**P4**  
Series

Model No.	Stopper type		Stroke adjustable																																									
	Stopper code		S1							S2							S3							S4							S5							S6						
			Adjustment length code																																									
	Bore size	Stroke	Blank	02	03	Blank	02	03	Blank	02	03	Blank	02	03	Blank	02	03	Blank	02	03	04	05	06	07	Blank	02	03	04	05	06	07													
LCR	ø6, ø8	10	●	-	-	●	-	-	●	●	-	●	●	-	●	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-														
		20 or more	●	●	-	●	●	-	●	●	-	●	●	-	●	●	-	●	-	●	-	●	-	●	-	●	-	●	-	●	-													
	ø12 to ø25	10	●	-	-	●	-	-	●	●	-	●	●	-	●	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-														
		20	●	●	-	●	●	-	●	●	-	●	●	-	●	●	-	●	-	●	-	●	-	●	-	●	-	●	-	●	-													
LCR-B, BL	ø6, ø8	10	●	-	-	●	-	-	●	●	-	●	●	-	●	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-														
		20 or more	●	-	-	●	-	-	●	●	-	●	●	-	●	●	-	●	-	●	-	●	-	●	-	●	-	●	-	●	-													
	ø12 to ø25	10	●	-	-	●	-	-	●	●	-	●	●	-	●	-	-	-	-	-	●	-	●	-	-	-	-	-	-	-														
		20	●	●	-	●	●	-	●	●	-	●	●	-	●	●	-	●	-	●	-	●	-	●	-	●	-	●	-	●	-													
		30 or more	●	●	-	●	●	-	●	●	-	●	●	-	●	●	-	●	-	●	-	●	-	●	-	●	-	●	-	●	-													

Model No.	Stopper type		Shock absorber						Two-sided combined double stopper						One side hybrid stopper mix											
	Stopper code		A1	A2	A3	A4	A5	A6	W1	W2	W3	W4	W5	W6	C1				C2			C3			C4	
	Bore size	Stroke	Adjustment length code												Blank	02	03	Blank	02	03	Blank	02	03	Blank	02	03
LCR	ø6, ø8	10	-	-	●	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-
		20 or more	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	●	●	-	●	●	-	●	●	-
	ø12 to ø25	10	-	-	●	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-
		20	-	-	●	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-
LCR-B, BL	ø6, ø8	10	-	-	●	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-
		20 or more	●	●	●	●	●	●	●	●	●	●	●	●	●	●	-	●	●	-	●	-	-	●	-	-
	ø12 to ø25	10	-	-	●	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-
		20	-	-	●	●	-	-	-	-	●	●	-	-	-	-	-	-	-	-	●	-	-	●	-	-
		30 or more	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

The table above also applies to combinations with option code D (with port on stopper) or T (steel stopper block (nitriding)).

Pneumatic actuator  
Pneumatic cylinders  
Hand/Chuck  
Hand/Chuck  
Related products  
Cylinder  
Switch

Vacuum components  
Pneumatic valves

Clean air components  
Pneumatic auxiliary components  
Speed controller  
Fitting  
Auxiliary valve  
Silencer  
Tube

Gas generator  
Fluid control components

Electric actuator  
Motor specification  
Motorless specifications