

LCX

With Linear Guide

Low Profile Linear Slide Cylinder

ø25, ø32

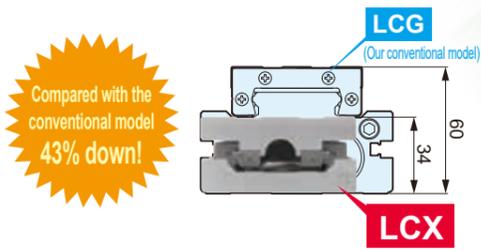


CONTENTS

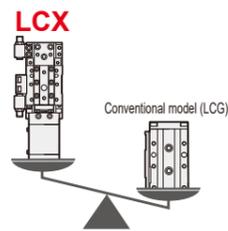
Product Introduction	256
Series variation	258
● Double acting, Single rod type (LCX)	260
● Double acting, Drop prevention type (LCX-Q)	270
● Double acting, Single rod type, Long stroke (LCX-□L)	278
● Double acting, Drop prevention type, Long stroke (LCX-Q-□L)	288
Outer Dimensions Diagram with Switch	296
Unit examples	298
Technical Data	299
Model selection guide	300
⚠ Precautions for Use	308

Linear slide cylinder with a low profile, lightness and rigidity

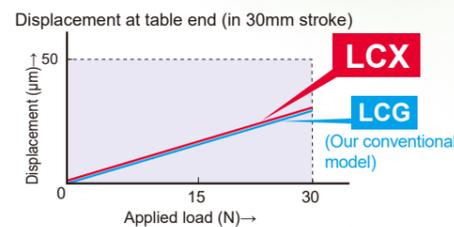
Low profile Made thin compared to the conventional model (LCG) **Height reduced almost by half from 60 mm to 34 mm!** Ideal for space-saving applications.



Lightweight **Product Weight halved** compared to conventional model (LCG)! Since the movable part can be lightened, it contributes to cycle time reduction and energy saving.



Rigid Separate type linear guide adopted. Achieved **rigidity equivalent to the conventional model (LCG)** while being thin and lightweight.



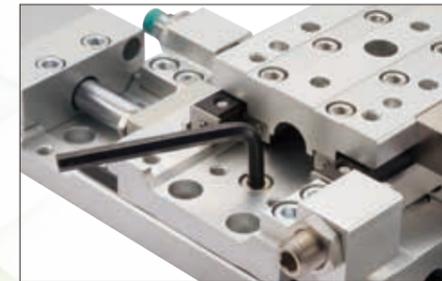
Various variations

- T-type switch adopted**
 Solid state 2-color indicator switch selectable
- Anti-rust treatment type**
 Anti-rust treatment applied as standard
- Symmetrical design**
 Piping and stopper can be mounted on both left and right sides
 ← indicates the piping direction.
- Various stopper options available**
 - Metal type stopper
 - Rubber cushion stopper
 - Shock absorber stopper

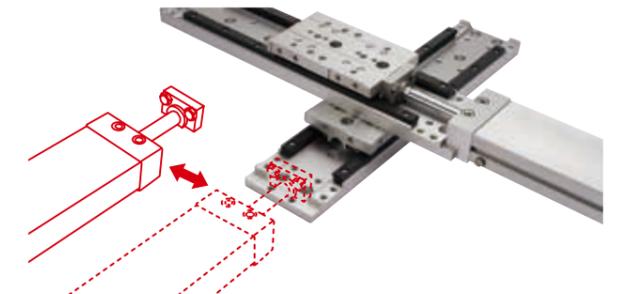
Unitization, even simpler, more reliable, and highly accurate

Attractive option variations such as free combination, fall prevention type, long stroke type (MAX 150 mm), and with locating holes have been greatly enhanced. Further expands applications such as conveyance and positioning, contributing to the efficiency of multi-product production.

● **Effortless installation**
 Unitized with a single hexagon wrench

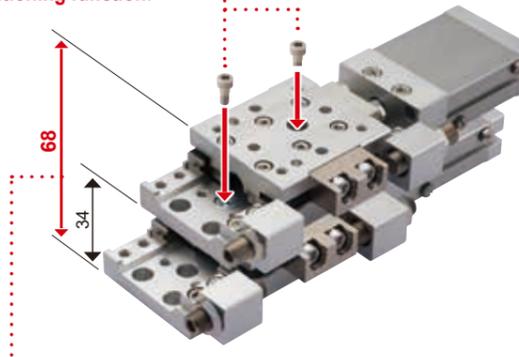


● **Significant reduction in maintenance time**
 Only the cylinder part can be replaced while the main body is assembled to the equipment.



2-stage unit

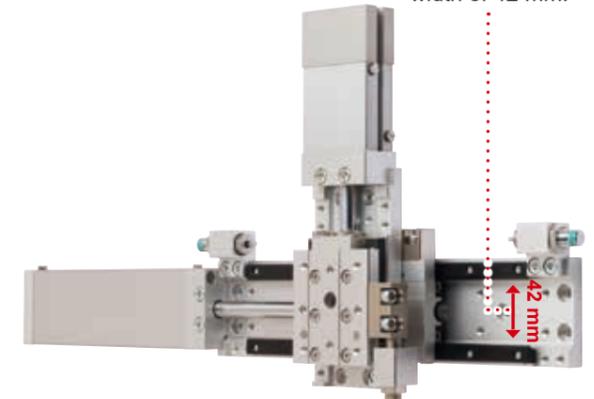
● **High-precision positioning mechanism**
 Realized direct mounting that does not require position adjustment with high-precision locating holes and dedicated bolts with **positioning function**.



● **Thin design of 68mm even when stacked**
Direct mounting without connecting plates achieves a low profile.

Cross unit

● **High-rigidity wide guide**
 Equivalent to a rail width of 42 mm.



LCX Series Product System

LCX
 Double Acting / Single Rod Type
 ø25, ø32
 Stroke: 10 to 50 mm

LCX-Q
 Double Acting / Drop Prevention Type
 ø25, ø32
 Stroke: 10 to 50 mm

LCX-□L
 Double Acting / Single Rod Type
 Long stroke
 ø25, ø32
 Stroke: 75 to 150 mm

LCX-Q-□L
 Double Acting / Drop Prevention Type
 Long stroke
 ø25, ø32
 Stroke: 75 to 150 mm

With Linear Guide
LCM
LCR
LCG
LCW
LCX
MSDG

With Linear Guide
LCM
LCR
LCG
LCW
LCX
MSDG

Cylinder Switch
Ending

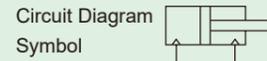
Cylinder Switch
Ending



Low profile linear slide cylinder Double acting, Single rod type

LCX Series

● Bore size : equivalent to $\phi 25$, $\phi 32$



LCX Series

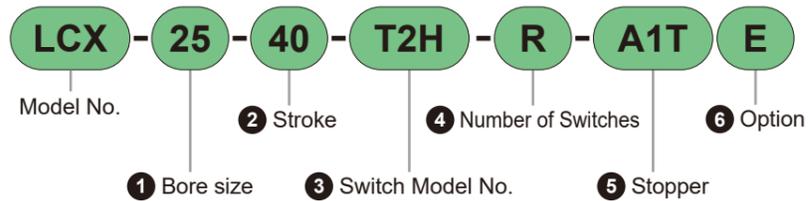
Model No. Notation Method

Model No. Notation Method

Without Switch
(Built-in magnet for switch)



With Switch
(Built-in magnet for switch)



1 Bore Size (mm)

Code	Content
25	Equivalent to $\phi 25$
32	Equivalent to $\phi 32$

2 Stroke (mm)

Code	Content
10	10
20	20
30	30
40	40
50	50

3 Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1		
			AC	DC	AC	DC	Straight	L-shape	
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20 *2	T2H□	T2V□	
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□	
		3-wire (PNP)	-	30 or less	-	100 or less	T3PH□	T3PV□	
Solid State	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□	
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□	
		2-Color Water Resistance Improved	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□	
Solid State	1-Color Flexible Lead Wire Type	2-wire	-	10 to 30	-	5 to 20 *2	T2HR3	T2VR3	
			Read	1-Color	2-wire	110	12/24	7 to 20	
Read	No Indicator LED	2-wire	110	5/12/24	20 or less	50 or less	T5H□	T5V□	

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: Switches other than the switch model Nos. are also available. (Custom order) For details, refer to P. 753.

* Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH
3 m TOH 3
5 m TOH 5

4 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

5 Stopper

Code	Content	
Blank	No stopper	
S Rubber cushion type stopper		*2
S1	Stopper position ① (④ Changeable to)	Stopper mounting position
S2	Stopper position ② (③ Changeable to)	
S3	Stopper position ③ (② Changeable to)	
S4	Stopper position ④ (① Changeable to)	
S5	Stopper position ①, ③	
S6	Stopper position ②, ④	
M Metal type stopper		*2, *4, *6
M1	Stopper position ① (④ Changeable to)	Stopper mounting position
M2	Stopper position ② (③ Changeable to)	
M3	Stopper position ③ (② Changeable to)	
M4	Stopper position ④ (① Changeable to)	
M5	Stopper position ①, ③	
M6	Stopper position ②, ④	
A Shock absorber type stopper		*3
A1	Stopper position ① (④ Changeable to)	Stopper mounting position
A2	Stopper position ② (③ Changeable to)	
A3	Stopper position ③ (② Changeable to)	
A4	Stopper position ④ (① Changeable to)	
A5	Stopper position ①, ③	
A6	Stopper position ②, ④	

*1: For stopper position ① to ④, refer to the diagram below.

*2: When changing the stroke adjustment range, use the rubber cushion type stopper / metal type stopper single item on P. 263.

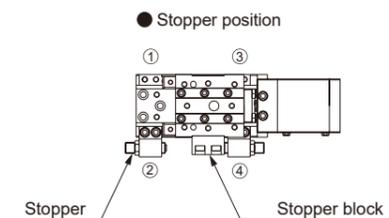
*3: For the stroke adjustment range when using a Shock absorber type stopper, refer to the dimension table in the stopper external view on P. 267.

*4: When using a metal type stopper, stopper block material steel (nitriding treatment) (code : T) is recommended.

*5: When using a combination of rubber cushion type stopper, metal type stopper, and Shock absorber type stopper, it will be a custom product.

*6: In the case of a metal type stopper, use at 20 to 200 mm/s.

*7: For stroke 10, A5□ and A6□ cannot be selected.



6 Option

Code	Content
Stopper block material	
Blank	Steel
T	Steel (nitriding treatment)
Locating hole	
Blank	Without locating hole
E	With locating hole

*1: These are locating holes for assembling cross units and 2-stage units without position adjustment. Use together with locating bolts (P. 264).

*2: Selectable only when using stopper type.

Rechargeable Battery Compatible Specification (Catalog No. CC-1226AA)

● Design compatible with rechargeable battery manufacturing process

LCX - - P4□

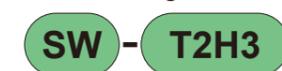
* Please contact us for details.

Clean Specification (Catalog No. CB-033SA)

● Dust prevention structure usable in cleanrooms

LCX - - P7□

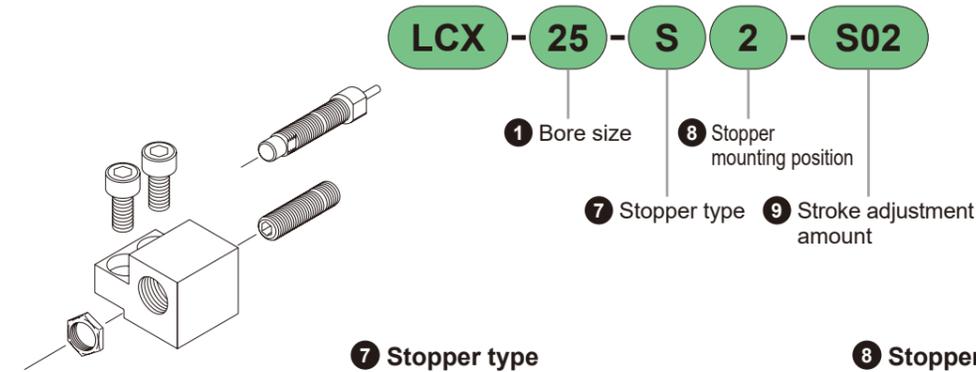
Switch Single Unit Model No. Notation Method



3 Switch Model No.

Stopper Set Model No. Notation Method

- Set of stopper part and rubber cushion type stopper, metal type stopper or Shock absorber type stopper
- Used when changing from standard to with rubber cushion type stopper, with metal type stopper, with Shock absorber type stopper



⑦ Stopper type

Code	Content
S	Rubber cushion type stopper
M	Metal type stopper
A	Shock absorber type stopper

⑧ Stopper mounting position

Code	Content
1	Stopper position for ① or ④
2	Stopper position for ② or ③

⑨ Stroke adjustment amount

Code	Content
Blank	Stroke adjustment range 10 mm
S02	Stroke adjustment range 20 mm

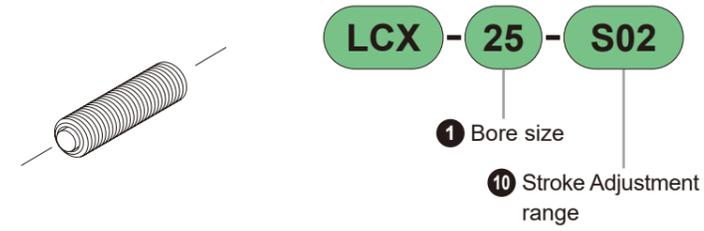
Note: ⑦ In the case of Shock absorber type stopper "A", it cannot be selected.

● Stopper set weight (Unit : g)

Stopper type	S1, S2, M1, M2	A1, A2	
Stroke adjustment amount	Blank	S02	-
Bore size			
Equivalent to ø25	70	80	70
Equivalent to ø32			

Rubber cushion type stopper single item model No. notation method

- Hexagon socket set screw with urethane
- Used when changing stroke adjustment range or setting intermediate stroke



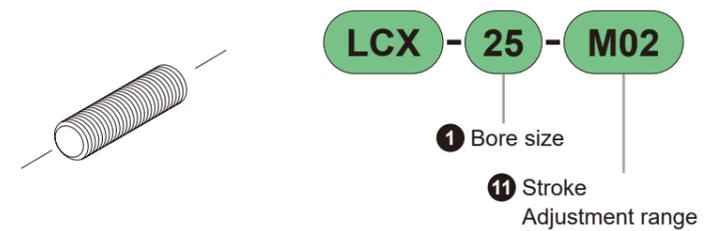
⑩ Stroke adjustment range

Code	Content
S01	One side 10 mm (Standard)
S02	One side 20 mm

- Rubber cushion type stopper weight
LCX-25, 32-S01 : 30 g
LCX-25, 32-S02 : 40 g

Metal type stopper single item model No. notation method

- Used when changing stroke adjustment range or setting intermediate stroke



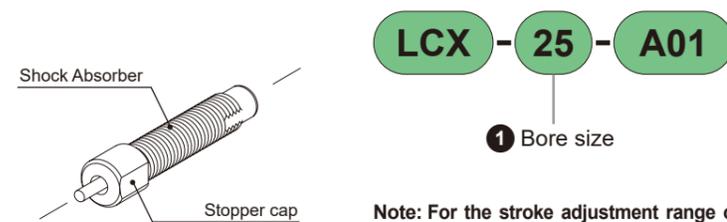
⑪ Stroke adjustment range

Code	Content
M01	One side 10 mm (Standard)
M02	One side 20 mm

- Metal type stopper weight
LCX-25, 32-M01 : 30 g
LCX-25, 32-M02 : 40 g

Shock absorber Type Stopper Single Item Model No. Notation Method

- Set of Shock absorber and stopper cap
- Used when changing from rubber cushion type, metal type stopper to Shock absorber type stopper



Note: For the stroke adjustment range of the Shock absorber type stopper, see P. 267.

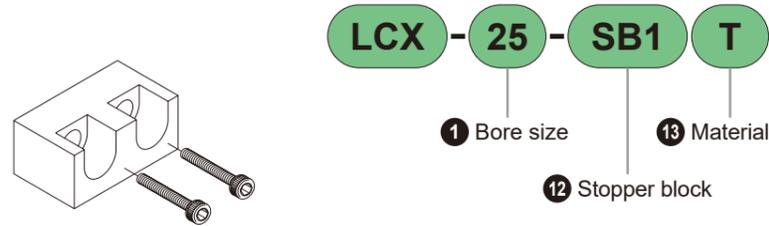
Shock absorber model No. used

Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

- Shock absorber type stopper weight
LCX-25, 32-A01 : 30 g

Stopper Block Single Item Model No. Notation

● Used when changing from standard to with rubber cushion type, with metal type stopper, with Shock absorber type stopper



12 Stopper block

Code	Content
SB1	For 30, 50 strokes
SB2	For 10, 20, 40 strokes

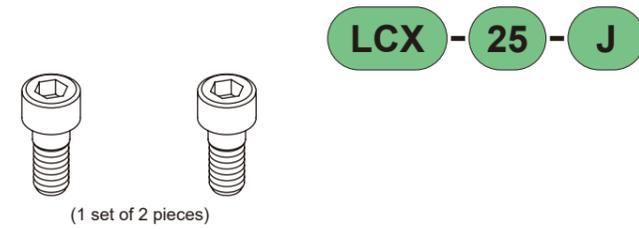
13 Material

Code	Content
Blank	Steel
T	Steel (nitriding treatment)

● Stopper block weight
LCX-25,32-SB1(T) : 80 g
LCX-25,32-SB1(T) : 100 g

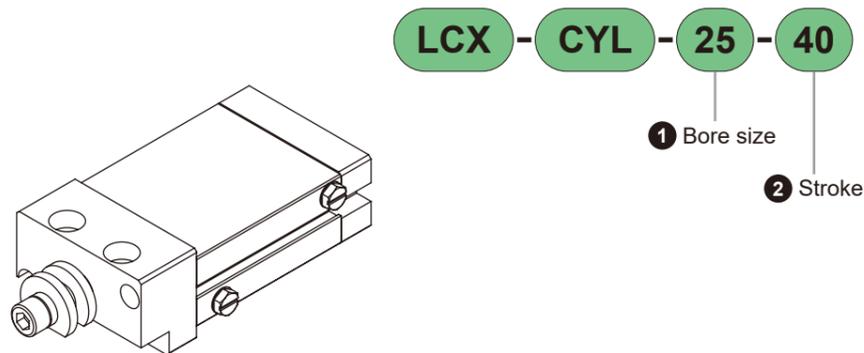
Locating bolt model No. notation

● Hexagon socket head cap screw with positioning mechanism
● Cross units and 2-stage units can be assembled without position adjustment.



● Locating bolt weight
* This is the weight of 1 set (2 pieces).
LCX-25-J : 10 g

Cylinder single item model No. notation



Specifications

Item	LCX	
	Equivalent to ø25	Equivalent to ø32
Bore size	mm	
Actuation method	Double Acting Type	
Operating Fluid	Compressed Air	
Max. Working Pressure	MPa	0.7
Min. Operating Pressure	MPa	0.15
Proof Pressure	MPa	1.05
Ambient Temperature	°C	-10 to 60 (However, no freezing) (*1)
Port Size		M5
Stroke tolerance	mm	+2.0 0 (*2)
Operating Piston Speed	mm/s	20 to 500 (*3)
Cushion		With Rubber Cushion
Lubrication		Not Available
Allowable Absorbed Energy	J	Refer to Table 3 on P. 301.

*1: Please consult us if using in a constantly low temperature (5°C or less) or high temperature (40°C or more) environment.
*2: When used without a stopper, please note that there is a slight gap between the plate and the floating bush.
*3: When using a metal type stopper, use at 20 to 200 mm/s.

Stroke

Bore Size (mm)	Standard Stroke (mm)
Equivalent to ø25	10, 20, 30, 40, 50
Equivalent to ø32	10, 20, 30, 40, 50

Note: Strokes other than the above cannot be manufactured.

Theoretical Thrust Table

Refer to P. 300.

Cylinder Weight

● Basic type (Unit : g)

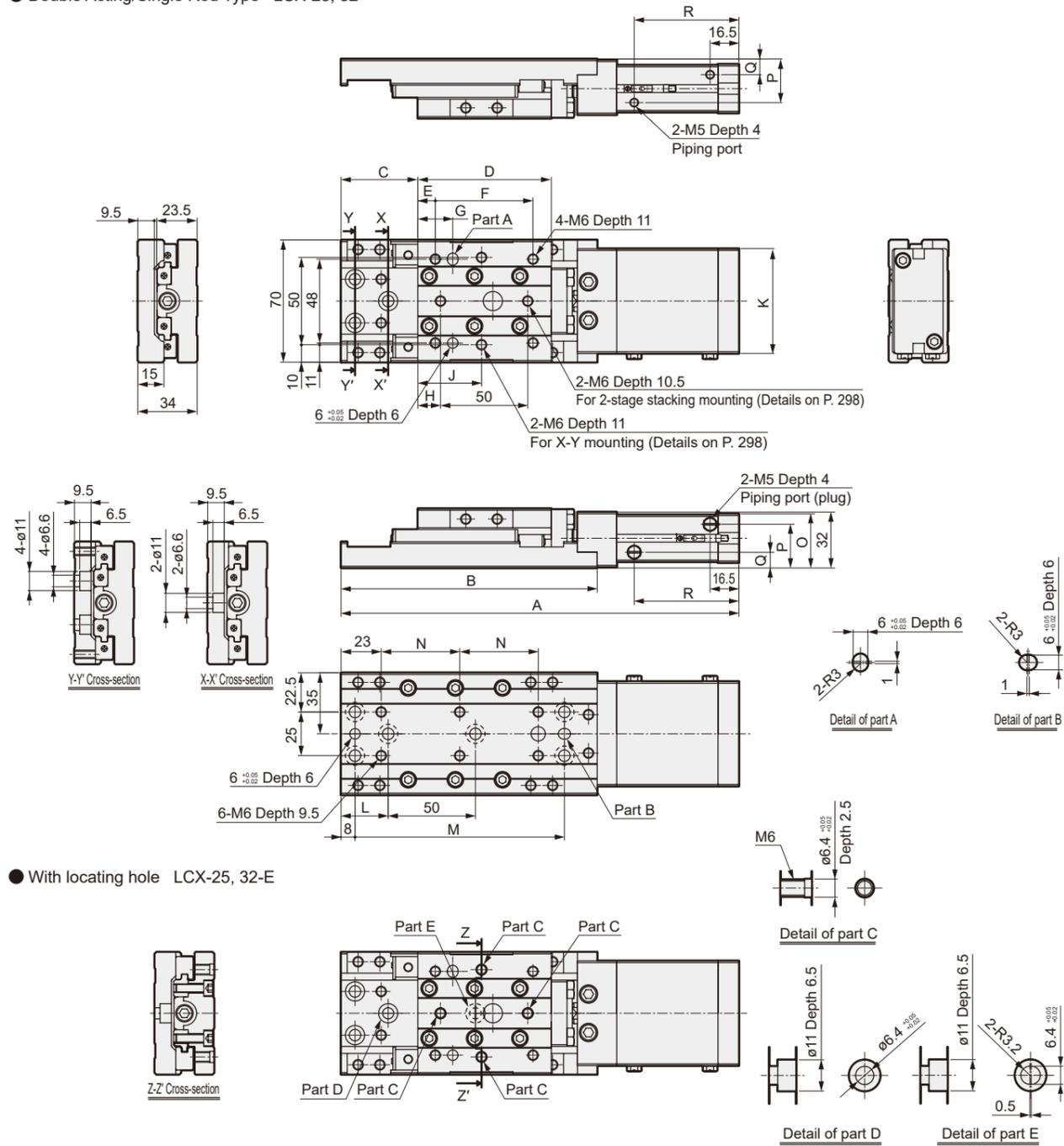
Bore size (mm)	Stroke (mm)				
	10	20	30	40	50
Equivalent to ø25	980	1,010	1,030	1,150	1,170
Equivalent to ø32	1,000	1,030	1,050	1,180	1,200

● Stopper part increase (Unit : g)

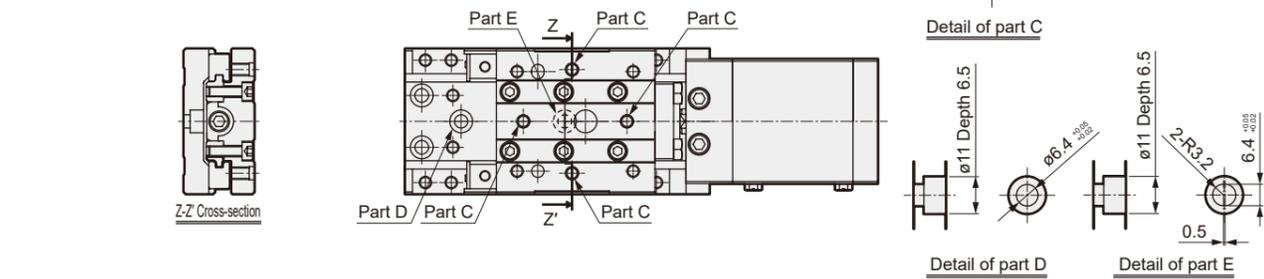
Bore size (mm)	Stopper code					
	S1 to S4	M1 to M4	A1 to A4	S5 / S6	M5 / M6	A5 / A6
Equivalent to ø25	170			240		
Equivalent to ø32	170			240		

Outline Dimension Drawing

● Double Acting/Single Rod Type LCX-25, 32



● With locating hole LCX-25, 32-E



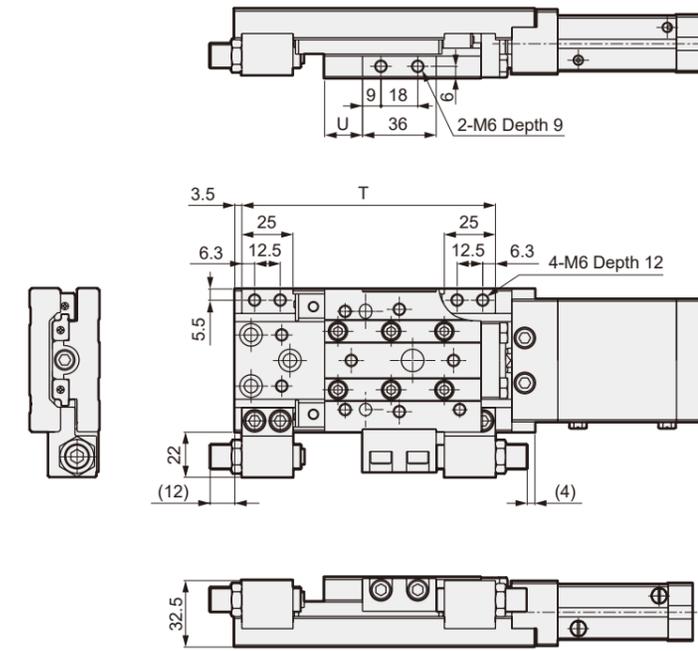
Code		A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R
Bore size	Stroke																	
Equivalent to ø25	10	208		34														40
	20	218	147	39	76.5	10	56	20	13	36.5		27	120	45				50
	30	228		44							50				29.5	24.5	9.5	60
	40	258	167	49	86.5	15	64	30	23	46.5		41	140	55				70
	50	268		54														80
Equivalent to ø32	10	208		34														40
	20	218	147	39	76.5	10	56	20	13	36.5		27	120	45				50
	30	228		44							60				31	25	9	60
	40	258	167	49	86.5	15	64	30	23	46.5		41	140	55				70
	50	268		54														80

Note: For dimensions with each switch, refer to P. 296.

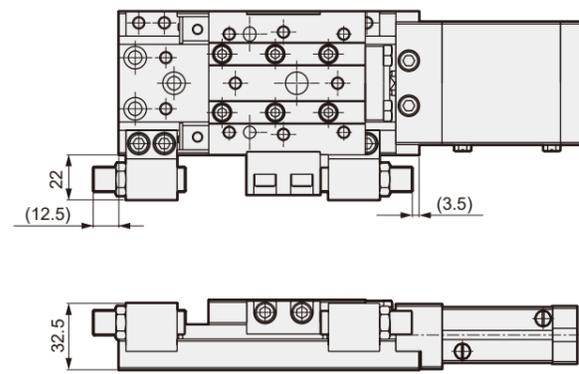
Outer Dimensions Diagram with Option

Outer Dimensions Diagram with Option

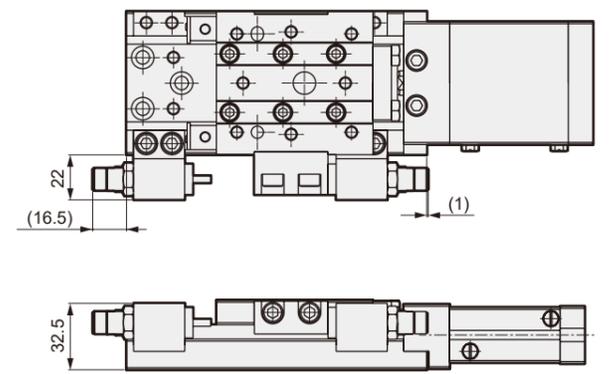
● Rubber cushion type stopper (S1 to S6)



● Metal type stopper (M1 to M6)

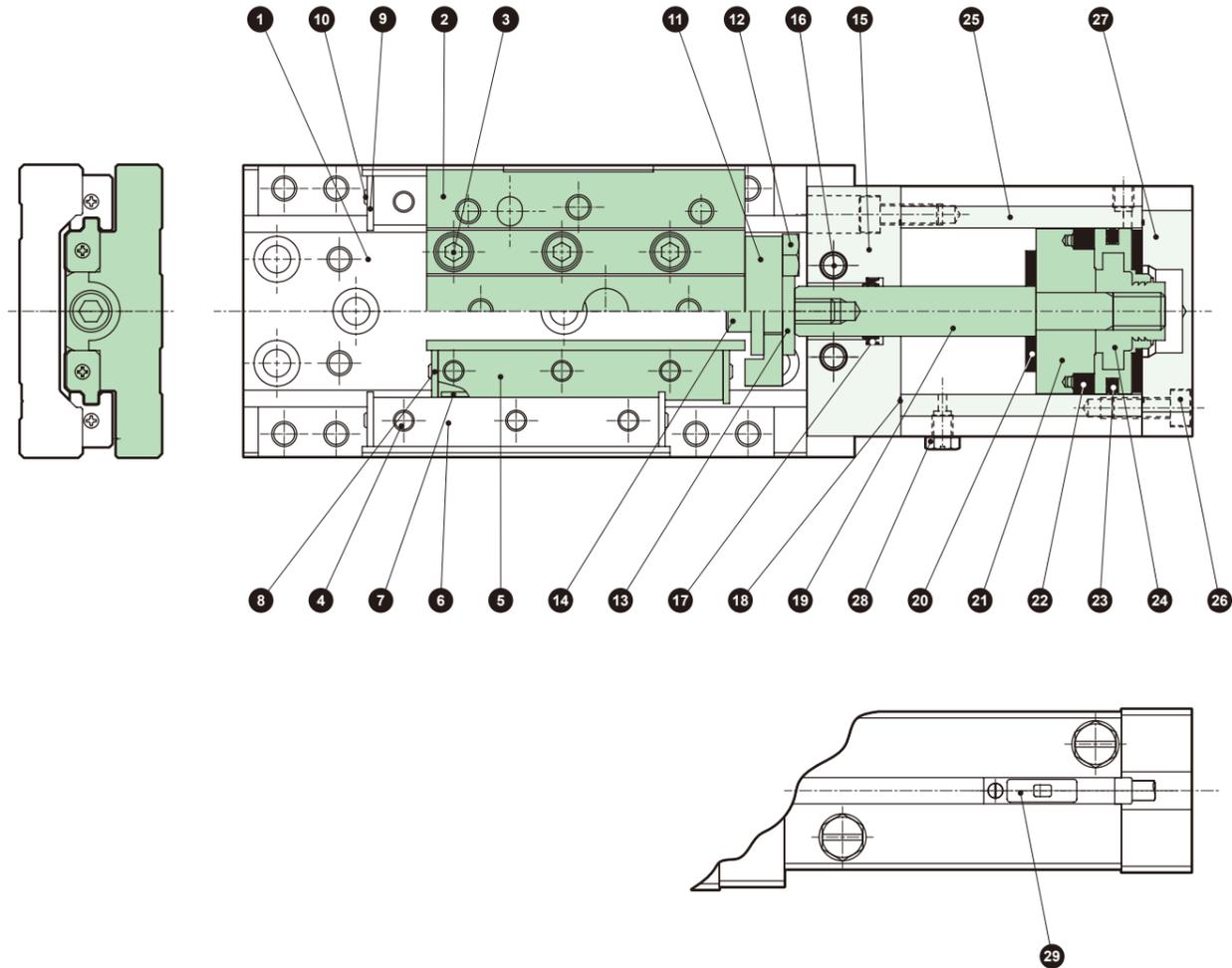


● Shock absorber type stopper (A1 to A6)



Note: If the stroke adjustment range is changed, the value of the dimension in () will change by the amount of change in the stroke adjustment range.

Code		T	U	Stroke adjustment range (one side)		
Bore size	Stroke			Rubber cushion type stopper	Metal type stopper	Shock absorber type stopper
Equivalent to ø25	10	124	18.5	5	5	1
	20					
	30	144	28.5	10	10	7
	40					
	50					
Equivalent to ø32	10	124	18.5	5	5	1
	20					
	30	144	28.5	10	10	7
	40					
	50					



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Base	Aluminum Alloy	Alumite	16	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
2	Table	Aluminum Alloy	Alumite	17	Rod Packing	Nitrile Rubber	
3	Hexagon Socket Head Cap Screw	Stainless Steel		18	Gasket	Nitrile rubber	
4	Hexagon Socket Head Cap Screw	Stainless Steel		19	Piston Rod	Alloy Steel	Industrial Hard Chrome Plating
5	Guide rail (1)	Alloy Steel	Black chromium coating	20	Cushion Rubber	Urethane Rubber	
6	Guide rail (2)	Alloy Steel	Black chromium coating	21	Spacer	Aluminum Alloy	
7	Cage	Resin		22	Magnet	Plastic	
8	Stopper (1)	Stainless Steel		23	Piston Packing	Nitrile Rubber	
9	Stopper (2)	Stainless Steel		24	Piston	Aluminum alloy, Polyacetal	
10	Phillips pan head screw	Stainless Steel		25	Cylinder Body	Aluminum Alloy	Hard Anodized
11	Plate	Aluminum Alloy	Alumite	26	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
12	Hexagon bolt	Stainless Steel		27	Head Cover	Aluminum Alloy	Alumite
13	Floating bush	Stainless Steel		28	Plug	Copper Alloy	Nickel Plating
14	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	With Switch			
15	Rod Cover	Aluminum Alloy	Alumite	29	Switch		

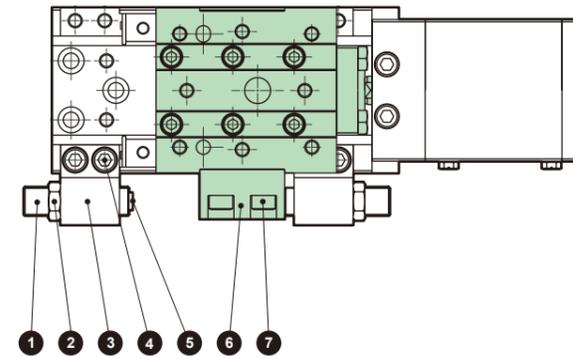
Consumable Parts List

Bore Size (mm)	Kit No.	Consumable Part No.
Equivalent to ø25	LCX-25K	17 18
Equivalent to ø32	LCX-32K	20 23

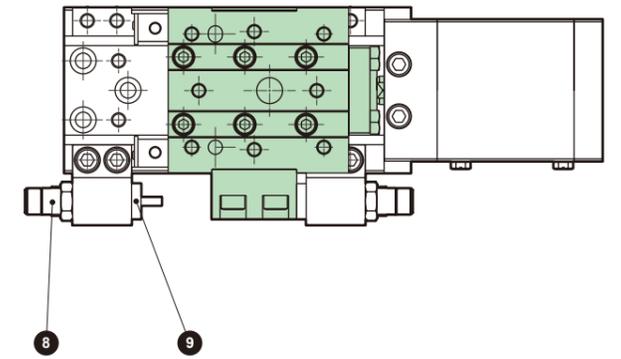
Internal structure diagram/materials (Option)

With stopper

● Rubber cushion type stopper, Metal type stopper



● Shock absorber type stopper



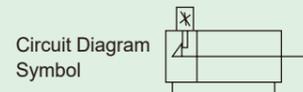
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Stopper bolt	Alloy Steel	Nickel Plating	6	Stopper block (Stopper block code : Blank)	Steel	Nickel Plating
2	Hexagon Nut	Alloy Steel	Zinc Chromate		Stopper block (Stopper block code : T)	Steel	Nitriding Treatment
3	Stopper	Aluminum alloy	Alumite	7	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
4	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	8	Shock Absorber		
5	Cushion Rubber	Urethane Rubber	Rubber cushion type stopper only	9	Stop cap	Stainless Steel	



Low profile linear slide cylinder Double acting, Single rod, Drop prevention type

LCX-Q Series

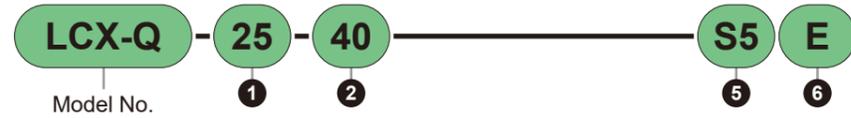
● Bore size : Equivalent to $\phi 25$, $\phi 32$



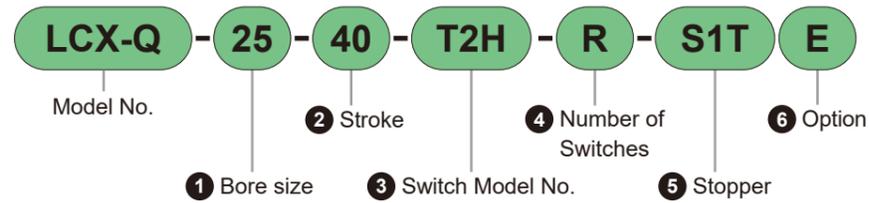
LCX-Q Series Model No. Notation Method

Model No. Notation Method

Without Switch
(Built-in magnet for switch)



With Switch
(Built-in magnet for switch)



1 Bore Size (mm)

Code	Content
25	Equivalent to $\phi 25$
32	Equivalent to $\phi 32$

2 Stroke (mm)

Code	Content
10	10
20	20
30	30
40	40
50	50

3 Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□
		3-wire (PNP)	-	-	-	-	T3PH□	T3PV□
Solid State	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□
Reed	1-Color Flexible Lead Wire Type	2-wire	-	10 to 30	-	5 to 20 *2	T2HR3	T2VR3
			110	12/24	7 to 20	5 to 50	T0H□	T0V□
Reed	No Indicator LED	2-wire	110	5/12/24	20 or less	50 or less	T5H□	T5V□

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the switch model Nos. are also available. (Custom order)
For details, refer to P. 753.

* Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m TOH
3 m TOH [3]
5 m TOH [5]

4 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

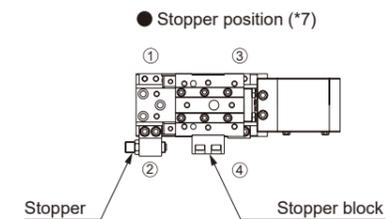
Code	Content
Stopper block material	
Blank	Steel
T	Steel (nitriding treatment)
Locating hole	
Blank	Without locating hole
E	With locating hole

*1: These are locating holes for assembling cross units and 2-stage units without position adjustment. Use together with locating bolts (P. 273).
*2: Selectable only when using stopper type.

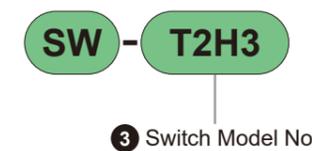
5 Stopper

Code	Content
Blank	No stopper
S Rubber cushion type stopper *2	
S1	Stopper position ①
S2	Stopper position ②
M Metal type stopper *2, *4, *6	
M1	Stopper position ①
M2	Stopper position ②
A Shock absorber type stopper *3	
A1	Stopper position ①
A2	Stopper position ②

*1: For stopper position ① to ②, refer to the diagram below.
*2: When changing the stroke adjustment range, use the rubber cushion type stopper / metal type stopper single item on P. 272.
*3: For the stroke adjustment range when using a Shock absorber type stopper, refer to the dimension table in the stopper external view on P. 267.
*4: When using a metal type stopper, stopper block material steel (nitriding treatment) (code : T) is recommended.
*5: When using a combination of rubber cushion type stopper, metal type stopper, and Shock absorber type stopper, it will be a custom product.
*6: In the case of a metal type stopper, use at 20 to 200 mm/s.
*7: Since the lock mechanism works at the stroke end, ③④ do not install it at the stopper position.



Switch Single Unit Model No. Notation Method



Stopper Set Model No. Notation Method

- Note: Since the lock mechanism works at the stroke end, do not install a stopper on the head side.
- Set of stopper part and rubber cushion type stopper, metal type stopper or Shock absorber type stopper
- Used when changing from standard to with rubber cushion type stopper, with metal type stopper, with Shock absorber type stopper

LCX - 25 - S 2 - S02

- 1 Bore size
- 7 Stopper type
- 8 Stopper mounting position
- 9 Stroke adjustment amount

7 Stopper type

Code	Content
S	Rubber cushion type stopper
M	Metal type stopper
A	Shock absorber type stopper

8 Stopper mounting position

Code	Content
1	Stopper position ①
2	Stopper position ②

9 Stroke adjustment amount

Code	Content
Blank	Stroke adjustment range 10 mm
S02	Stroke adjustment range 20 mm

Note: In the case of Shock absorber type stopper "A", it cannot be selected.

● Stopper set weight (Unit : g)

Stopper type	S1, S2, M1, M2	A1, A2
Stroke adjustment amount	Blank	S02
Bore size		
ø25	70	80
ø32		70

Rubber cushion type stopper single item model No. notation method

- Hexagon socket set screw with urethane
- Used when changing stroke adjustment range or setting intermediate stroke

LCX - 25 - S02

- 1 Bore size
- 10 Stroke Adjustment range

10 Stroke adjustment range

Code	Content
S01	One side 10 mm (Standard)
S02	One side 20 mm

● Rubber cushion type stopper weight
 LCX-25, 32-S01 : 30 g
 LCX-25, 32-S02 : 40 g

Metal type stopper single item model No. notation method

- Used when changing stroke adjustment range or setting intermediate stroke

LCX - 25 - M02

- 1 Bore size
- 11 Stroke Adjustment range

11 Stroke adjustment range

Code	Content
M01	One side 10 mm (Standard)
M02	One side 20 mm

● Metal type stopper weight
 LCX-25, 32-M01 : 30 g
 LCX-25, 32-M02 : 40 g

Shock absorber Type Stopper Single Item Model No. Notation Method

- Set of Shock absorber and stopper cap
- Used when changing from rubber cushion type, metal type stopper to Shock absorber type stopper

LCX - 25 - A01

- 1 Bore size

Shock absorber model No. used

Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

Note: For the stroke adjustment range of the Shock absorber type stopper, see P. 267.

● Shock absorber type stopper weight
 LCX-25, 32-A01 : 30 g

Stopper Block Single Item Model No. Notation

- Used when changing from standard to with rubber cushion type, with metal type stopper, with Shock absorber type stopper

LCX - 25 - SB1 T

- 1 Bore size
- 12 Stopper block
- 13 Material

12 Stopper block

Code	Content
SB1	For 30, 50 strokes
SB2	For 10, 20, 40 strokes

13 Material

Code	Content
Blank	Steel
T	Steel (nitriding treatment)

● Stopper block weight
 LCX-25,32-SB1(T) : 80 g
 LCX-25,32-SB1(T) : 100 g

Locating bolt model No. notation

- Hexagon socket head cap screw with positioning mechanism
- Cross units and 2-stage units can be assembled without position adjustment.

LCX - 25 - J

- 1 Bore size

● Locating bolt weight
 * This is the weight of 1 set (2 pieces).
 LCX-25-J : 10 g

Cylinder single item model No. notation

LCX-Q - CYL - 25 - 40

- 1 Bore size
- 2 Stroke

Specifications

Item		LCX-Q	
		Equivalent to ø25	Equivalent to ø32
Bore size	mm		
Actuation method		Double Acting Type	
Operating Fluid		Compressed Air	
Max. Working Pressure	MPa	0.7	
Min. Operating Pressure	MPa	0.15	
Proof Pressure	MPa	1.05	
Ambient Temperature	°C	-10 to 60 (However, no freezing) (*1)	
Port Size		M5	
Stroke tolerance	mm	+2.0 0 (*2)	
Operating Piston Speed	mm/s	20 to 500 (*3)	
Cushion		With Rubber Cushion	
Fall prevention mechanism		Head Side	
Holding Force	N	130	230
Lubrication		Not Available	
Allowable absorption energy	J	Refer to Table 3 on P. 301.	

*1: Please consult us if using in a constantly low temperature (5°C or less) or high temperature (40°C or more) environment.

*2: When used without a stopper, please note that there is a slight gap between the plate and the floating bush.

*3: When using a metal type stopper, use at 20 to 200 mm/s.

Stroke

Bore Size (mm)	Standard Stroke (mm)
Equivalent to ø25	10, 20, 30, 40, 50
Equivalent to ø32	10, 20, 30, 40, 50

Note: Strokes other than the above cannot be manufactured.

Cylinder Weight

● Drop prevention type

(Unit : g)

Bore size (mm)	Stroke type (mm)				
	10	20	30	40	50
Equivalent to ø25	1.060	1.090	1.110	1.230	1.250
Equivalent to ø32	1.130	1.160	1.180	1.310	1.330

● Stopper part increase

(Unit : g)

Bore size (mm)	Stopper code		
	S1 / S2	M1 / M2	A1 / A2
Equivalent to ø25	170		
Equivalent to ø32			

MEMO

With Linear Guide

LCM

LCR

LCG

LCW

LCX

MSDG

With Linear Guide

LCM

LCR

LCG

LCW

LCX

MSDG

Cylinder Switch

Ending

Cylinder Switch

Ending



Low profile linear slide cylinder Double acting, Single rod type, Long stroke

LCX-□L Series

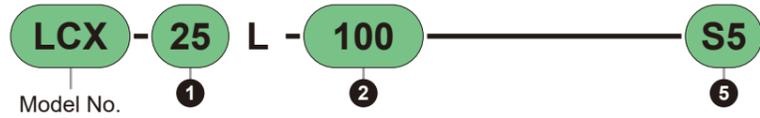
● Bore size : Equivalent to ø25, ø32



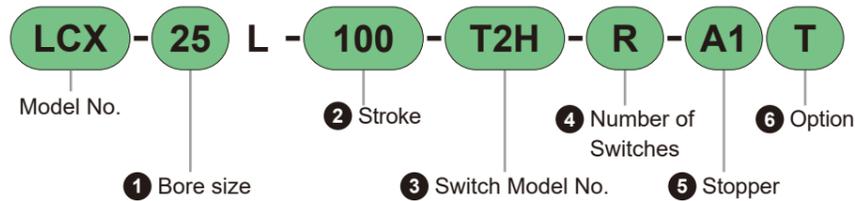
LCX-□L Series Model No. Notation Method

Model No. Notation Method

Without Switch
(Built-in magnet for switch)



With Switch
(Built-in magnet for switch)



1 Bore Size (mm)

Code	Content
25	Equivalent to ø25
32	Equivalent to ø32

2 Stroke (mm)

Code	Content
75	75
100	100
125	125
150	150

3 Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□
		3-wire (PNP)	-	-	-	-	T3PH□	T3PV□
	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□
		2-wire	-	24 ± 10%	-	5 to 20	T2WLH□	T2WLV□
Reed	1-Color	2-wire	110	12/24	7 to 20	5 to 50	T0H□	T0V□
	No Indicator LED	2-wire	110	5/12/24	20 or less	50 or less	T5H□	T5V□

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length, connector specification" table.

*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)

*3: This does not guarantee the water resistance of the cylinder.

*4: Switches other than the switch model Nos. are also available. (Custom order) For details, refer to P. 753.

* Lead wire length, connector specification

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)
W	M8 Connector, 1PIN (+), 4PIN (-) Lead Wire 0.3 m

*5: Only T2WLH and T2WLV can be selected.

Example) Lead wire length
1 m TOH []
3 m TOH [3]
5 m TOH [5]

4 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

5 Stopper

Code	Content	
Blank	No stopper	
S Rubber cushion type stopper		*2
S1	Stopper position ① (④ Changeable to)	Stopper mounting position
S2	Stopper position ② (③ Changeable to)	
S3	Stopper position ③ (② Changeable to)	
S4	Stopper position ④ (① Changeable to)	
S5	Stopper position ①, ③	
S6	Stopper position ②, ④	
M Metal type stopper		*2, *4, *6
M1	Stopper position ① (④ Changeable to)	Stopper mounting position
M2	Stopper position ② (③ Changeable to)	
M3	Stopper position ③ (② Changeable to)	
M4	Stopper position ④ (① Changeable to)	
M5	Stopper position ①, ③	
M6	Stopper position ②, ④	
A Shock absorber type stopper		*3
A1	Stopper position ① (④ Changeable to)	Stopper mounting position
A2	Stopper position ② (③ Changeable to)	
A3	Stopper position ③ (② Changeable to)	
A4	Stopper position ④ (① Changeable to)	
A5	Stopper position ①, ③	
A6	Stopper position ②, ④	

*1: For stopper position ① to ④, refer to the diagram below.

*2: When changing the stroke adjustment range, use the rubber cushion type stopper / metal type stopper single item on P. 281.

*3: For the stroke adjustment range when using a Shock absorber type stopper, refer to the dimension table in the stopper external view on P. 285.

*4: When using a metal type stopper, stopper block material steel (nitriding treatment) (code : T) is recommended.

*5: When using a combination of rubber cushion type stopper, metal type stopper, and Shock absorber type stopper, it will be a custom product.

*6: In the case of a metal type stopper, use at 20 to 200 mm/s.

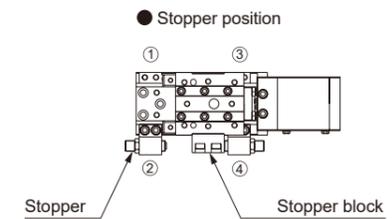
*7: For the Long Stroke (LCX-□L), the positioning hole option (symbol : E) is standardized.

6 Option

Code	Content
Stopper block material	
Blank	Steel
T	Steel (nitriding treatment)

*1

*1: Selectable only when using stopper type.



Clean Specification (Catalog No. CB-033SA)

● Dust prevention structure usable in cleanrooms

LCX-□L - P7□

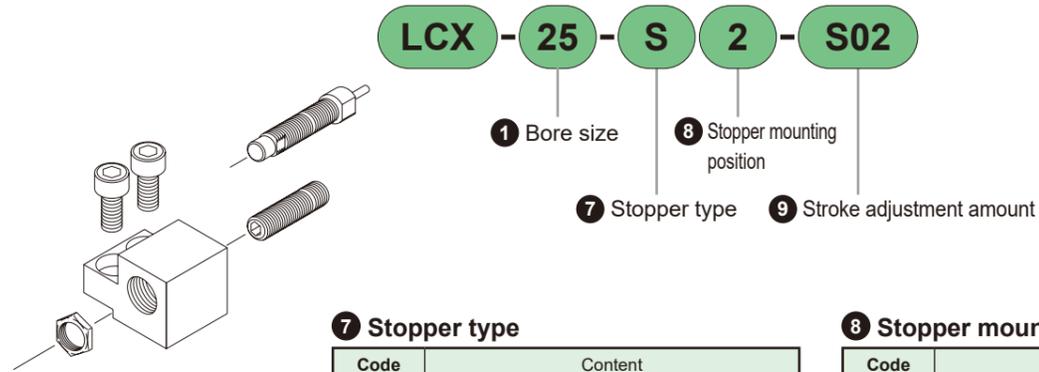
Switch Single Unit Model No. Notation Method



3 Switch Model No.

Stopper Set Model No. Notation Method

- Set of stopper part and rubber cushion type stopper, metal type stopper or Shock absorber type stopper
- Used when changing from standard to with rubber cushion type stopper, with metal type stopper, with Shock absorber type stopper



7 Stopper type

Code	Content
S	Rubber cushion type stopper
M	Metal type stopper
A	Shock absorber type stopper

8 Stopper mounting position

Code	Content
1	Stopper position for ① or ④
2	Stopper position for ② or ③

9 Stroke adjustment amount

Code	Content
Blank	Stroke adjustment range 10 mm
S02	Stroke adjustment range 20 mm

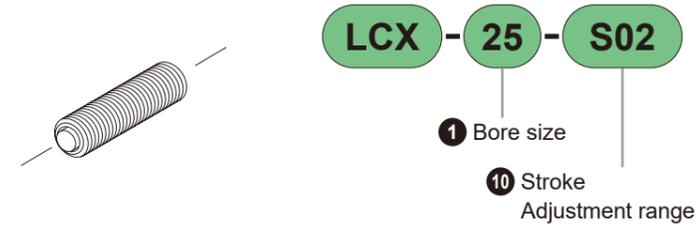
*7 In the case of Shock absorber type stopper "A", it cannot be selected.

● Stopper set weight (Unit : g)

Stopper type	S1, S2, M1, M2	A1, A2	
Stroke adjustment amount	Blank	S02	-
Bore size	Blank	S02	-
Equivalent to ø25	70	80	70
Equivalent to ø32			

Rubber cushion type stopper single item model No. notation method

- Hexagon socket set screw with urethane
- Used when changing stroke adjustment range or setting intermediate stroke



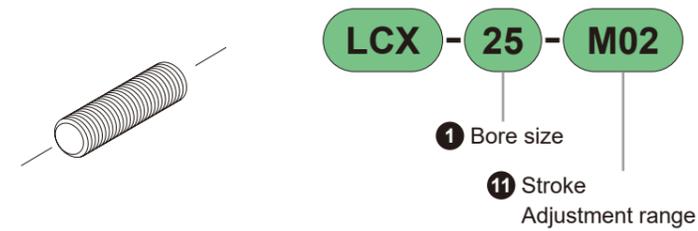
10 Stroke adjustment range

Code	Content
S01	One side 10 mm (Standard)
S02	One side 20 mm

- Rubber cushion type stopper weight
LCX-25, 32-S01 : 30 g
LCX-25, 32-S02 : 40 g

Metal type stopper single item model No. notation method

- Used when changing stroke adjustment range or setting intermediate stroke



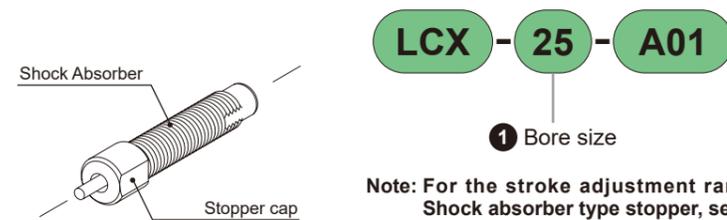
11 Stroke adjustment range

Code	Content
M01	One side 10 mm (Standard)
M02	One side 20 mm

- Metal type stopper weight
LCX-25, 32-M01 : 30 g
LCX-25, 32-M02 : 40 g

Shock absorber Type Stopper Single Item Model No. Notation Method

- Set of Shock absorber and stopper cap
- Used when changing from rubber cushion type, metal type stopper to Shock absorber type stopper



Note: For the stroke adjustment range of the Shock absorber type stopper, see P. 285.

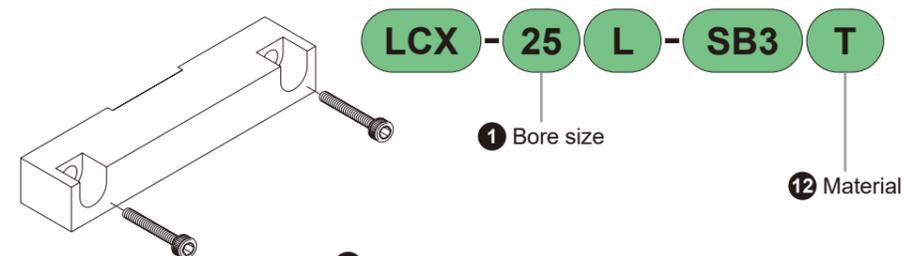
Shock absorber model No. used

Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

- Shock absorber type stopper weight
LCX-25, 32-A01 : 30 g

Stopper Block Single Item Model No. Notation

- Used when changing from standard to with rubber cushion type, with metal type stopper, with Shock absorber type stopper



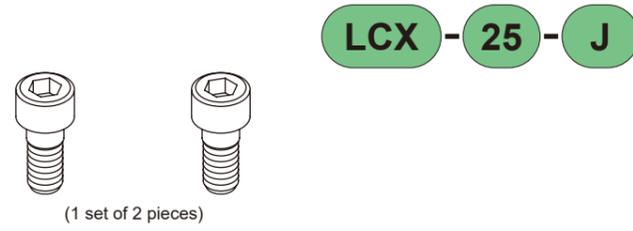
12 Material

Code	Content
Blank	Steel
T	Steel (nitriding treatment)

- Stopper block weight
LCX-25L,32L-SB3(T) : 250 g

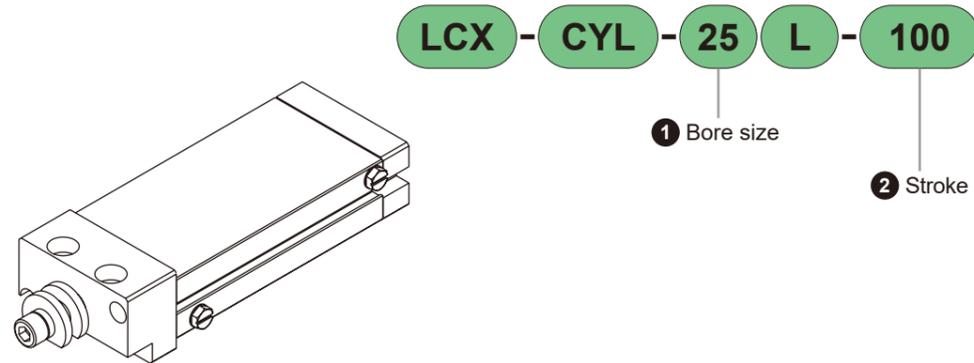
Locating bolt model No. notation

- Hexagon socket head cap screw with positioning mechanism
- Cross units and 2-stage units can be assembled without position adjustment.



- Locating bolt weight
* This is the weight of 1 set (2 pieces).
LCX-25-J : 10 g

Cylinder single item model No. notation



Specifications

Item	LCX	
Bore size	mm	Equivalent to ø25 Equivalent to ø32
Actuation method		Double Acting Type
Operating Fluid		Compressed Air
Max. Working Pressure	MPa	0.7
Min. Operating Pressure	MPa	0.15
Proof Pressure	MPa	1.05
Ambient Temperature	°C	-10 to 60 (However, no freezing) (*1)
Port Size		M5
Stroke tolerance	mm	+2.0 0 (*2)
Operating Piston Speed	mm/s	20 to 500 (*3)
Cushion		With Rubber Cushion
Lubrication		Not Available
Allowable Absorbed Energy	J	Refer to Table 3 on P. 301.

*1: Please consult us if using in a constantly low temperature (5°C or less) or high temperature (40°C or more) environment.
*2: When used without a stopper, please note that there is a slight gap between the plate and the floating bush.
*3: When using a metal type stopper, use at 20 to 200 mm/s.

Stroke

Bore Size (mm)	Standard Stroke (mm)
Equivalent to ø25	75, 100, 125, 150
Equivalent to ø32	75, 100, 125, 150

Note: Strokes other than the above cannot be manufactured.

Theoretical Thrust Table

Refer to P. 300.

Cylinder Weight

● Basic type (Unit : g)

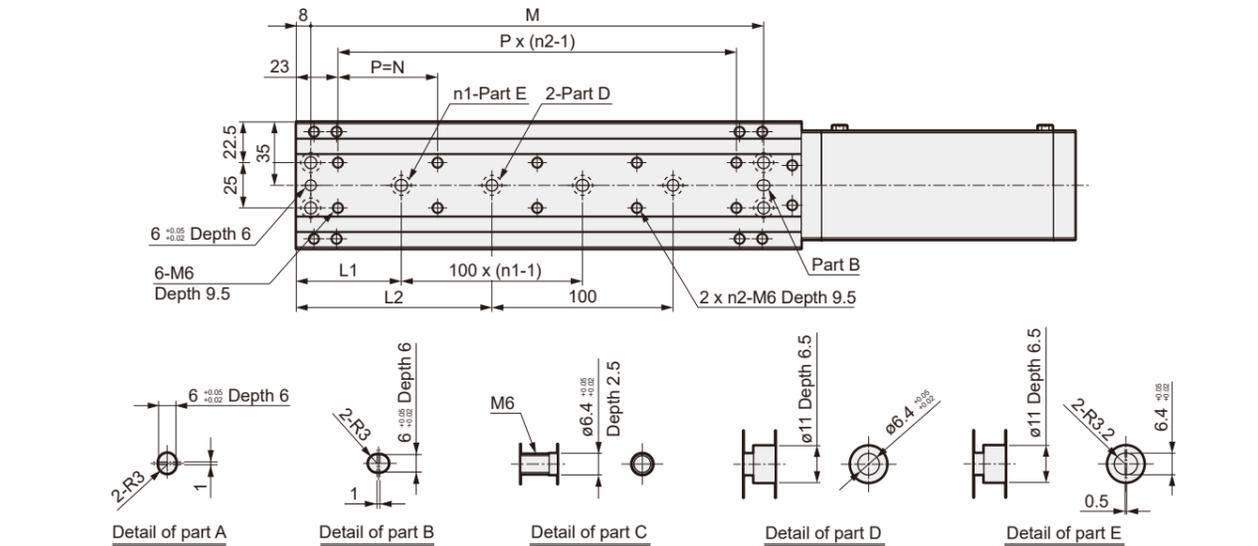
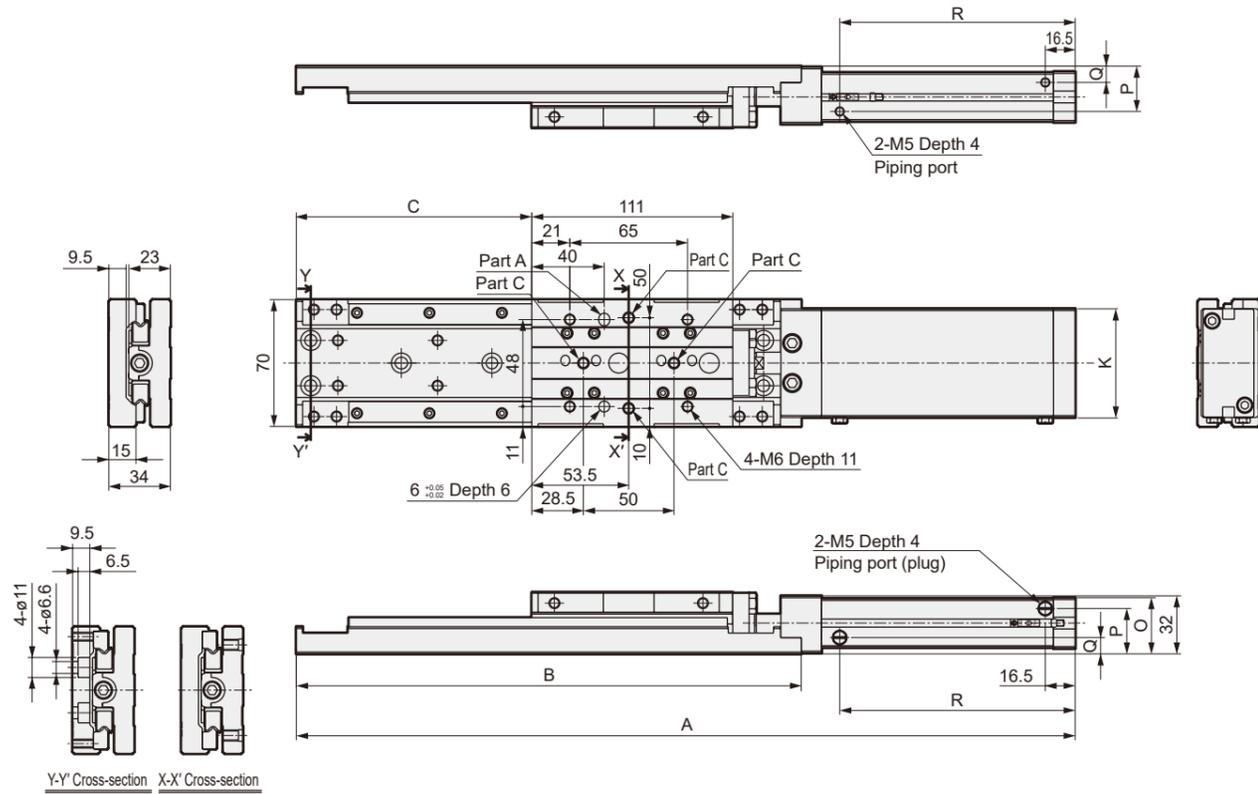
Bore size (mm)	Stroke (mm)			
	75	100	125	150
Equivalent to ø25	1.500	1,640	1.790	1.930
Equivalent to ø32	1,600	1.750	1.900	2.050

● Stopper part increase (Unit : g)

Bore size (mm)	Stopper code					
	S1 to S4	M1 to M4	A1 to A4	S5 / S6	M5 / M6	A5 / A6
Equivalent to ø25	320			400		
Equivalent to ø32	320			400		

Outline Dimension Drawing

● Double acting, Single rod type, Long stroke LCX-□L



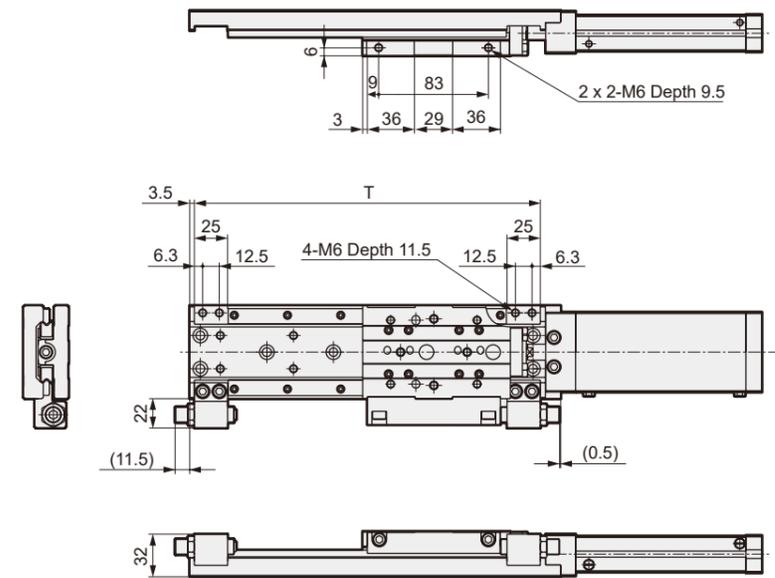
Code		A	B	C	K	L1	L2	n1	n2	M	N	O	P	Q	R
Bore size	Stroke														
Equivalent to ø25	75	380	254	105	50	45.5	95.5	2	5	225	49	29.5	24.5	9.5	105
	100	430	279	130		58	108	2	5	250	55				130
	125	480	304	155		45.5	95.5	3	6	275	49				155
	150	530	329	180		58	108	3	6	300	54				180
Equivalent to ø32	75	380	254	105	60	45.5	95.5	2	5	225	49	31	25	9	105
	100	430	279	130		58	108	2	5	250	55				130
	125	480	304	155		45.5	95.5	3	6	275	49				155
	150	530	329	180		58	108	3	6	300	54				180

Note: For dimensions with each switch, refer to P. 296.

Outer Dimensions Diagram with Option

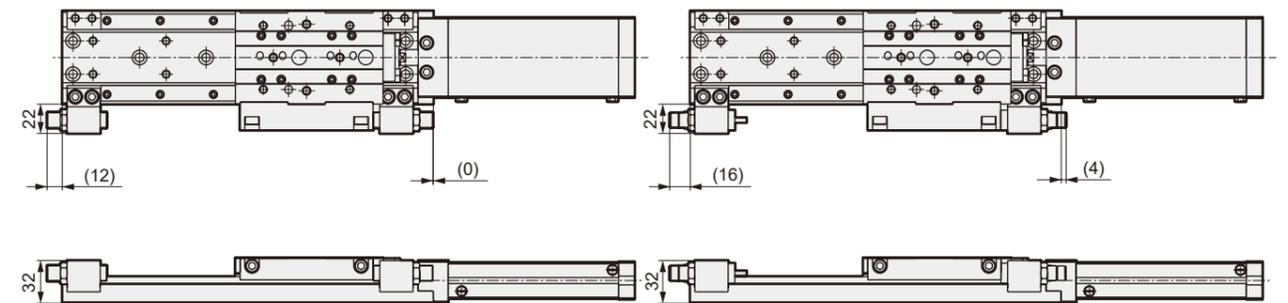
Outer Dimensions Diagram with Option

● Rubber cushion type stopper (S1 to S6)



● Metal type stopper (M1 to M6)

● Shock absorber type stopper (A1 to A6)

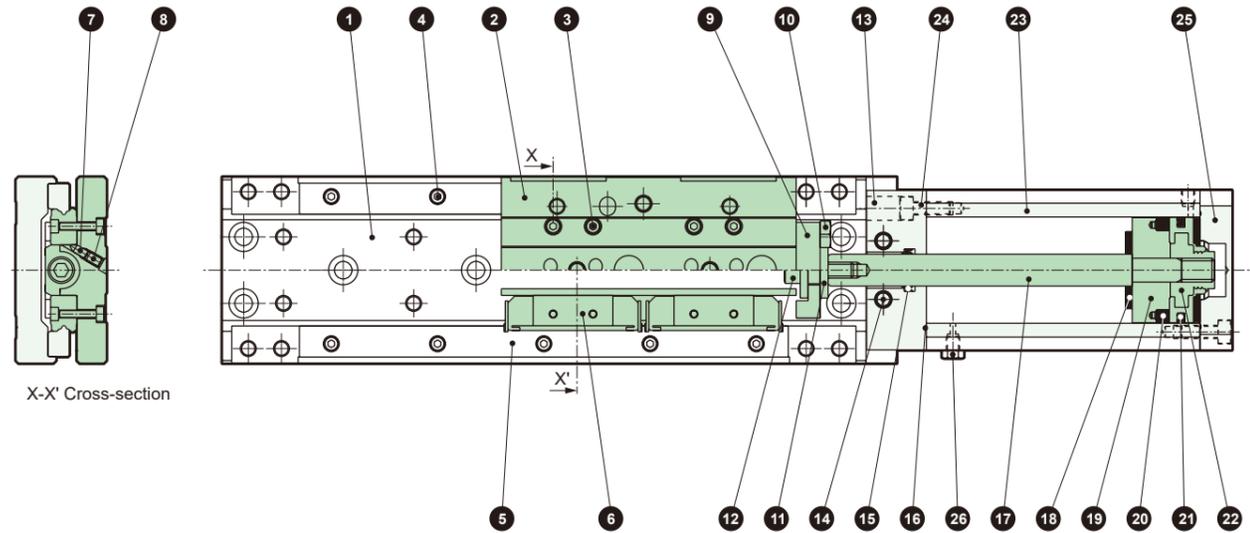


Note: If the stroke adjustment range is changed, the value of the dimension in () will change by the amount of change in the stroke adjustment range.

Code		T	Stroke adjustment range (one side)		
Bore size	Stroke		Rubber cushion type stopper	Metal type stopper	Shock absorber type stopper
Equivalent to ø25	75	235	10	10	7
	100	260			
	125	285			
Equivalent to ø32	75	235	10	10	7
	100	260			
	125	285			
	150	310			

Internal Structure Diagram / Material

● LCX

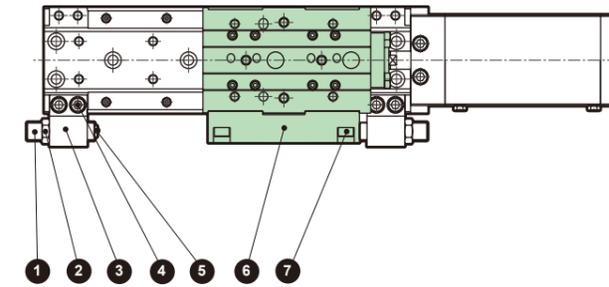


X-X' Cross-section

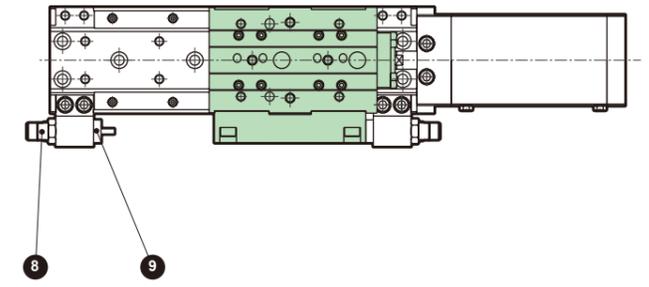
Internal structure diagram / materials (Option)

With stopper

● Rubber cushion type stopper, Metal type stopper



● Shock absorber type stopper



Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Stopper bolt	Alloy Steel	Nickel Plating	6	Stopper block (Stopper block code : Blank)	Steel	Nickel Plating
2	Hexagon Nut	Alloy Steel	Zinc Chromate		Stopper block (Stopper block code : T)	Steel	Nitriding Treatment
3	Stopper	Aluminum alloy	Alumite	7	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
4	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	8	Shock Absorber		
5	Cushion Rubber	Urethane Rubber	Rubber cushion type stopper only	9	Stop cap	Stainless Steel	

Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Base	Aluminum Alloy	Alumite	14	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
2	Table	Aluminum Alloy	Alumite	15	Rod Packing	Nitrile Rubber	
3	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	16	Gasket	Nitrile rubber	
4	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	17	Piston Rod	Alloy Steel	Industrial Hard Chrome Plating
5	Guide rail	Alloy Steel	Black chromium coating	18	Cushion Rubber	Urethane Rubber	
6	Guide block	Alloy steel, Resin	Black chromium coating (Alloy steel part)	19	Spacer	Aluminum Alloy	
7	Adjustment pin	Stainless Steel		20	Magnet	Plastic	
8	Hexagon socket head set screw	Alloy Steel	Zinc Chromate	21	Piston Packing	Nitrile Rubber	
9	Plate	Aluminum Alloy	Alumite	22	Piston	Aluminum alloy, Polyacetal	
10	Hexagon bolt	Stainless Steel		23	Cylinder Body	Aluminum Alloy	Hard Anodized
11	Floating bush	Stainless Steel		24	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
12	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	25	Head Cover	Aluminum Alloy	Alumite
13	Rod Cover	Aluminum Alloy	Alumite	26	Plug	Copper Alloy	Nickel Plating

Consumable Parts List

Bore Size (mm)	Kit No.	Basic consumable parts
ø25	LCX-25K	15 16
ø32	LCX-32K	18 21

With Linear Guide

LCM

LCR

LCG

LCW

LCX

MSDG

With Linear Guide

LCM

LCR

LCG

LCW

LCX

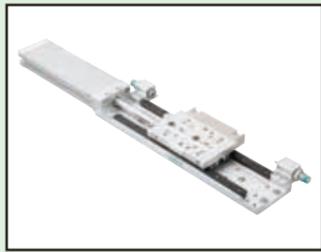
MSDG

Cylinder Switch

Ending

Cylinder Switch

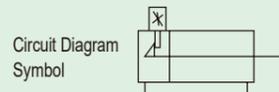
Ending



Low profile linear slide cylinder Double acting, Single rod, Drop prevention, Long stroke

LCX-Q-□L Series

● Bore size : Equivalent to ø25, ø32

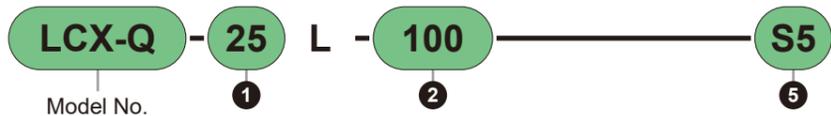


LCX-Q-□L Series

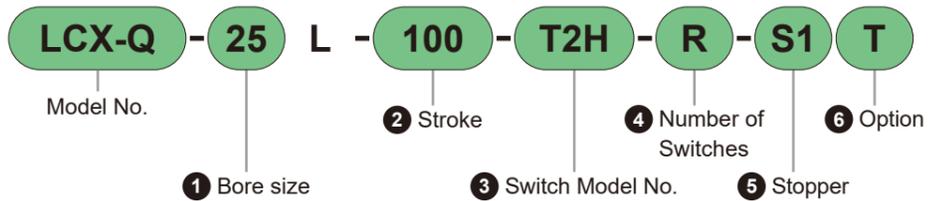
Model No. Notation Method

Model No. Notation Method

Without Switch
(Built-in magnet for switch)



With Switch
(Built-in magnet for switch)



1 Bore Size (mm)

Code	Content
25	Equivalent to ø25
32	Equivalent to ø32

2 Stroke (mm)

Code	Content
75	75
100	100
125	125
150	150

3 Switch Model No.

For switch details, please refer to P. 753.
Switches are included to the product and shipped.

Contact	Indicator LED Special Function	Wiring (Output)	Load Voltage (V)		Load Current (mA)		Lead Wire *1	
			AC	DC	AC	DC	Straight	L-shape
Solid State	1-Color	2-wire	-	10 to 30	-	5 to 20 *2	T2H□	T2V□
		3-wire (NPN)	-	30 or less	-	100 or less	T3H□	T3V□
		3-wire (PNP)	-	30 or less	-	100 or less	T3PH□	T3PV□
Solid State	2-Color	2-wire	-	24 ± 10%	-	5 to 20	T2WH□	T2WV□
		3-wire (NPN)	-	30 or less	-	50 or less	T3WH□	T3WV□
Reed	1-Color Flexible Lead Wire Type	2-wire	-	10 to 30	-	5 to 20 *2	T2HR3	T2VR3
			No Indicator LED	110	12/24	7 to 20	5 to 50	T0H□
Reed	No Indicator LED	2-wire	110	5/12/24	20 or less	50 or less	T5H□	T5V□

*1: For "□" in the switch model No., enter the code selected from the "Lead wire length" table.
*2: The maximum load current value above, 20 mA, is at 25°C. If the switch operating ambient temperature is higher than 25°C, it will be lower than 20 mA. (At 60°C, it will be 5 to 10 mA.)
*3: Switches other than the switch model Nos. are also available. (Custom order)
For details, refer to P. 753.

* Lead wire length

Code	Content
Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

Example) Lead wire length
1 m TOH
3 m TOH [3]
5 m TOH [5]

4 Number of Switches

Code	Content
R	With 1 pc on rod side
H	With 1 pc on head side
D	With 2 pcs

6 Option

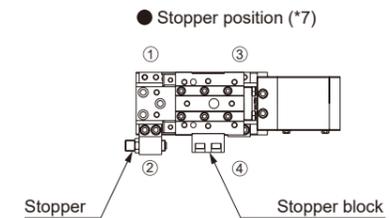
Code	Content
Stopper block material	
Blank	Steel
T	Steel (nitriding treatment)

*1: Selectable only when using stopper type.

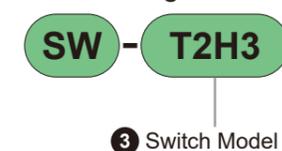
5 Stopper

Code	Content	
Blank	No stopper	
S Rubber cushion type stopper *2		
S1	Stopper position ①	Stopper mounting position
S2	Stopper position ②	
M Metal type stopper *2, *4, *6		
M1	Stopper position ①	Stopper mounting position
M2	Stopper position ②	
A Shock absorber type stopper *3		
A1	Stopper position ①	Stopper mounting position
A2	Stopper position ②	

*1: For stopper position ① to ②, refer to the diagram below.
*2: When changing the stroke adjustment range, use the rubber cushion type stopper / metal type stopper single item on P. 290.
*3: For the stroke adjustment range when using a Shock absorber type stopper, refer to the dimension table in the stopper external view on P. 285.
*4: When using a metal type stopper, stopper block material steel (nitriding treatment) (code : T) is recommended.
*5: When using a combination of rubber cushion type stopper, metal type stopper, and Shock absorber type stopper, it will be a custom product.
*6: In the case of a metal type stopper, use at 20 to 200 mm/s.
*7: Since the lock mechanism works at the stroke end, ③④ do not install it at the stopper position.
*8: Long stroke has standardized the locating hole option.



Switch Single Unit Model No. Notation Method



3 Switch Model No.

Stopper Set Model No. Notation Method

- Note: Since the lock mechanism works at the stroke end, do not install a stopper on the head side.
- Set of stopper part and rubber cushion type stopper, metal type stopper or Shock absorber type stopper
- Used when changing from standard to with rubber cushion type stopper, with metal type stopper, with Shock absorber type stopper

LCX - 25 - S 2 - S02

① Bore size ⑦ Stopper mounting position
⑥ Stopper type ⑧ Stroke adjustment amount

⑥ Stopper type

Code	Content
S	Rubber cushion type stopper
M	Metal type stopper
A	Shock absorber type stopper

⑦ Stopper mounting position

Code	Content
1	Stopper position ①
2	Stopper position ②

⑧ Stroke adjustment amount

Code	Content
Blank	Stroke adjustment range 10 mm
S02	Stroke adjustment range 20 mm

*⑧ In the case of Shock absorber type stopper "A", it cannot be selected.

● Stopper set weight (Unit : g)

Stopper type	S1, S2, M1, M2	A1, A2
Stroke adjustment amount	Blank	S02
Bore size		
Equivalent to ø25	70	80
Equivalent to ø32		70

Rubber cushion type stopper single item model No. notation method

- Hexagon socket set screw with urethane
- Used when changing stroke adjustment range or setting intermediate stroke

LCX - 25 - S02

① Bore size ⑨ Stroke Adjustment range

⑨ Stroke adjustment range

Code	Content
S01	One side 10 mm (Standard)
S02	One side 20 mm

● Rubber cushion type stopper weight
LCX-25, 32-S01 : 30 g
LCX-25, 32-S02 : 40 g

Metal type stopper single item model No. notation method

- Used when changing stroke adjustment range or setting intermediate stroke

LCX - 25 - M02

① Bore size ⑩ Stroke Adjustment range

⑩ Stroke adjustment range

Code	Content
M01	One side 10 mm (Standard)
M02	One side 20 mm

● Metal type stopper weight
LCX-25, 32-M01 : 30 g
LCX-25, 32-M02 : 40 g

Shock absorber Type Stopper Single Item Model No. Notation Method

- Set of Shock absorber and stopper cap
- Used when changing from rubber cushion type, metal type stopper to Shock absorber type stopper

LCX - 25 - A01

① Bore size

Note: For the stroke adjustment range of the Shock absorber type stopper, see P. 285.

Shock absorber model No. used

Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

● Shock absorber type stopper weight
LCX-25, 32-A01 : 30 g

Stopper Block Single Item Model No. Notation

- Used when changing from standard to with rubber cushion type, with metal type stopper, with Shock absorber type stopper

LCX - 25 L - SB3 T

① Bore size ⑪ Material

⑪ Material

Code	Content
Blank	Stopper block material Steel
T	Stopper block material Steel (nitriding treatment)

● Stopper block weight
LCX-25L,32L-SB3(T) : 250 g

Locating bolt model No. notation

- Hexagon socket head cap screw with positioning mechanism
- Cross units and 2-stage units can be assembled without position adjustment.

LCX - 25 - J

● Locating bolt weight
* This is the weight of 1 set (2 pieces).
LCX-25-J : 10 g

Cylinder single item model No. notation

LCX-Q - CYL - 25 L - 100

① Bore size ② Stroke

Specifications

Item	LCX-Q-□L	
Bore size	mm	Equivalent to ø25 Equivalent to ø32
Actuation method		Double Acting Type
Operating Fluid		Compressed Air
Max. Working Pressure	MPa	0.7
Min. Operating Pressure	MPa	0.15
Proof Pressure	MPa	1.05
Ambient Temperature	°C	-10 to 60 (However, no freezing) (*1)
Port Size		M5
Stroke tolerance	mm	+2.0 0 (*2)
Operating Piston Speed	mm/s	20 to 500 (*3)
Cushion		With Rubber Cushion
Holding Force	N	130 230
Fall prevention mechanism		Head Side
Lubrication		Not Available
Allowable absorption energy	J	Refer to Table 3 on P. 301.

*1: Please consult us if using in a constantly low temperature (5°C or less) or high temperature (40°C or more) environment.

*2: When used without a stopper, please note that there is a slight gap between the plate and the floating bush.

*3: When using a metal type stopper, use at 20 to 200 mm/s.

Stroke

Bore Size (mm)	Standard Stroke (mm)
Equivalent to ø25	75, 100, 125, 150
Equivalent to ø32	75, 100, 125, 150

Note: Strokes other than the above cannot be manufactured.

Theoretical Thrust Table

Refer to P. 300.

Cylinder Weight

● Drop prevention type

(Unit : g)

Bore size (mm)	Stroke type (mm)			
	75	100	125	150
Equivalent to ø25	1.580	1.720	1.870	2.010
Equivalent to ø32	1.730	1.880	2.030	2.180

● Stopper part increase

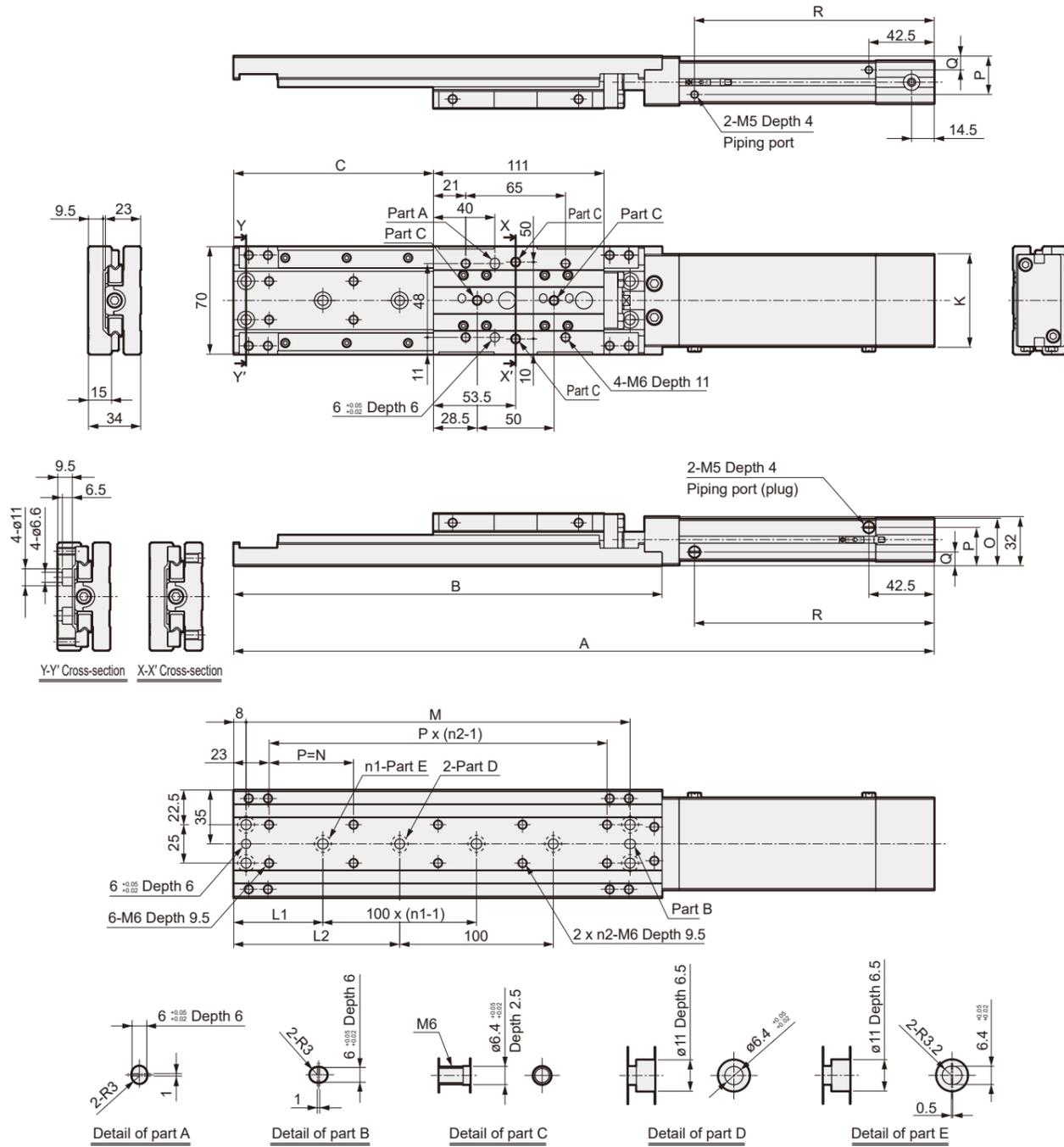
(Unit : g)

Bore size (mm)	Stopper code		
	S1, S2	M1 / M2	A1, A2
Equivalent to ø25	320		
Equivalent to ø32			

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Outline Dimension Drawing

● Double acting, Drop prevention type, Long stroke LCX-Q-□L

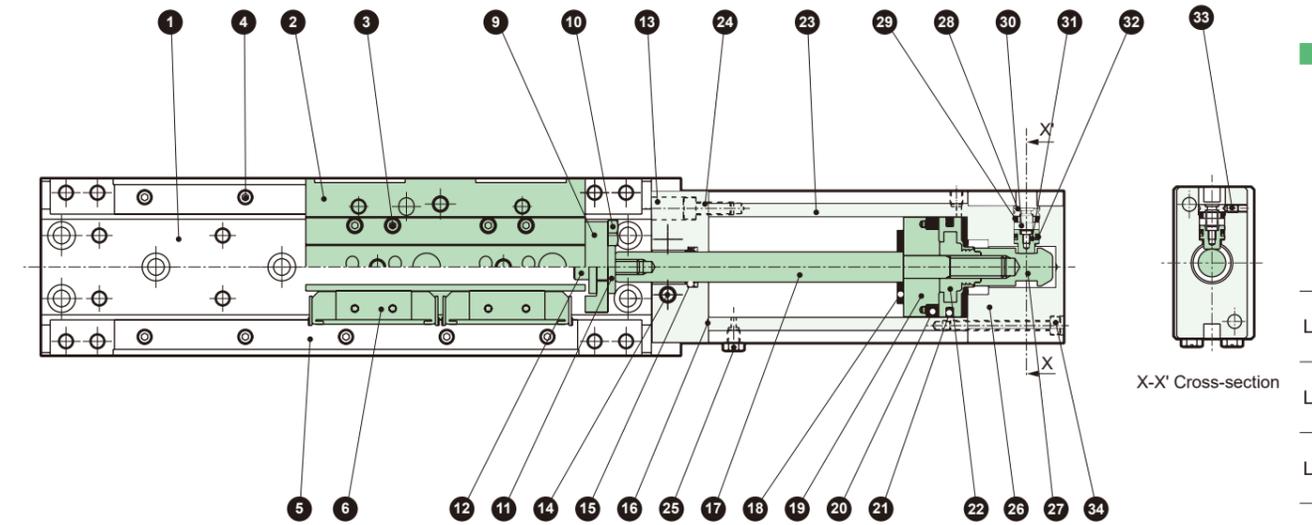


Code		A	B	C	K	L1	L2	n1	n2	M	N	O	P	Q	R
Bore size	Stroke														
Equivalent to ø25	75	406	254	105	50	45.5	95.5	2	5	225	49	29.5	24.5	9.5	131
	100	456	279	130		58	108	2	5	250	55				156
	125	506	304	155		45.5	95.5	3	6	275	49				181
	150	556	329	180		58	108	3	6	300	54				206
Equivalent to ø32	75	406	254	105	60	45.5	95.5	2	5	225	49	31	25	9	131
	100	456	279	130		58	108	2	5	250	55				156
	125	506	304	155		45.5	95.5	3	6	275	49				181
	150	556	329	180		58	108	3	6	300	54				206

Internal Structure Diagram / Material

Internal Structure Diagram / Material

● LCX-Q-□L



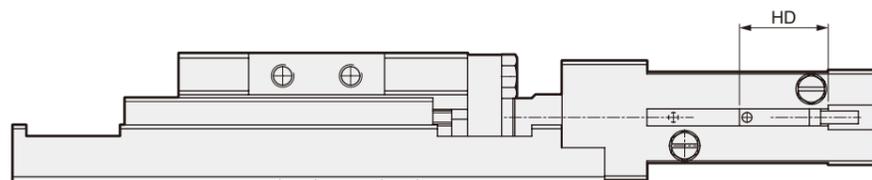
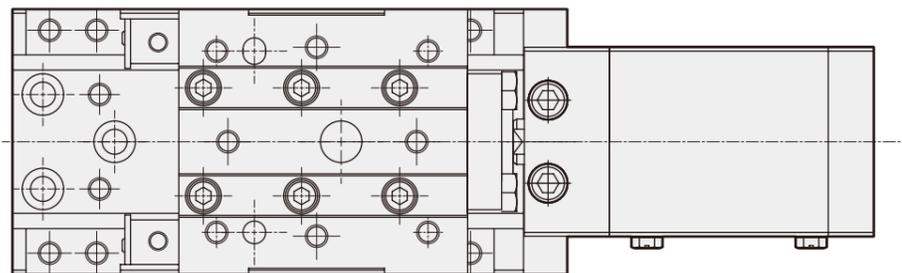
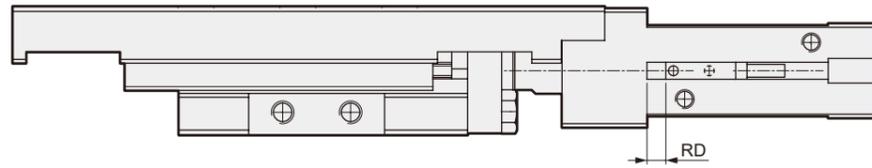
Part No.	Part Name	Material	Remarks	Part No.	Part Name	Material	Remarks
1	Base	Aluminum Alloy	Alumite	18	Cushion Rubber	Urethane Rubber	
2	Table	Aluminum Alloy	Alumite	19	Spacer	Aluminum Alloy	
3	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	20	Magnet	Plastic	
4	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	21	Piston Packing	Nitrile Rubber	
5	Guide rail	Alloy Steel	Black chromium coating	22	Piston	Aluminum alloy, Polyacetal	
6	Guide block	Alloy steel, Resin	Black chromium coating (Alloy steel part)	23	Cylinder Body	Aluminum Alloy	Hard Anodized
7	Adjustment pin	Stainless Steel		24	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate
8	Hexagon socket head set screw	Alloy Steel	Zinc Chromate	25	Plug	Copper Alloy	Nickel Plating
9	Plate	Aluminum Alloy	Alumite	26	Head Cover	Aluminum Alloy	Alumite
10	Hexagon bolt	Stainless Steel		27	Sleeve	Steel	Nitriding Treatment
11	Floating bush	Stainless Steel		28	Stopper Cover	Stainless Steel	
12	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	29	Cushion Rubber	Urethane Rubber	
13	Rod Cover	Aluminum Alloy	Alumite	30	Coil Spring	Steel	
14	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate	31	Stopper Piston	Steel	Nitriding Treatment
15	Rod Packing	Nitrile Rubber		32	Stopper packing	Nitrile Rubber	
16	Gasket	Nitrile Rubber		33	Hexagon socket head set screw	Alloy Steel	Black Oxide
17	Piston Rod	Alloy Steel	Industrial Hard Chrome Plating	34	Hexagon Socket Head Cap Screw	Alloy Steel	Zinc Chromate

Consumable Parts List

Bore size (mm)	Kit No.	Consumable Part No.	
		Drop prevention consumable parts	Basic consumable parts
Equivalent to ø25	LCX-Q-25K	29 32	15 16
Equivalent to ø32	LCX-Q-32K		18 21

LCX Series Switch External Dimensions Diagram

- T0H/V, T5H/V, T2H/V, T3H/V, T3PH/V, T2□R3, T2WH/V, T3WH/V, T2WLH/V
LCX, LCX-Q, LCX-□L, LCX-Q-□L



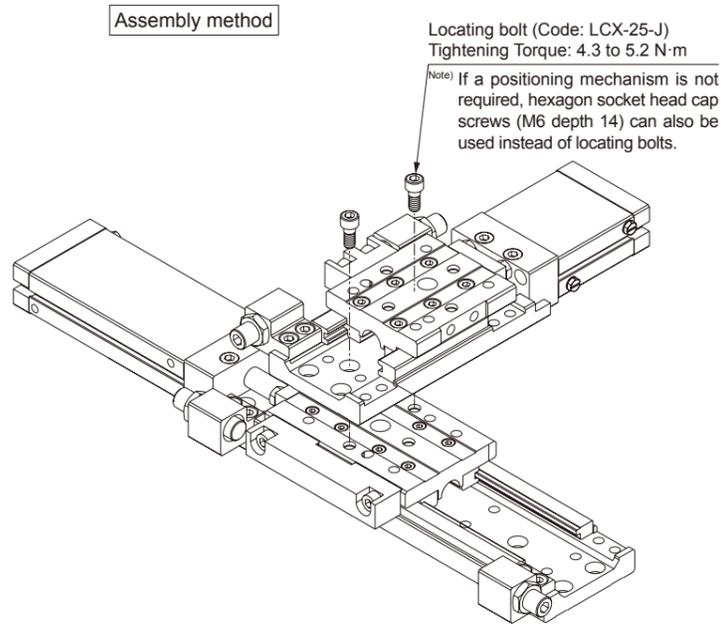
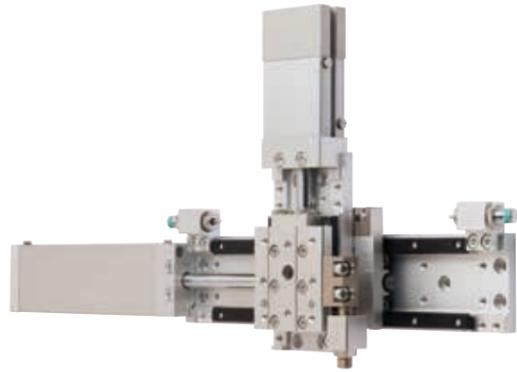
LCX, LCX-Q, LCX-□L, LCX-Q-□L				
Code	T0, T5, T2, T3, T3P, T2□R3		T2W, T3W, T2WL	
Bore Size (mm)	RD	HD	RD	HD
Equivalent to ø25	5	23.5	6.5	21.5
Equivalent to ø32	5	23.5	6.5	21.5

Note: For switch mountability, refer to the model No. notation method for each variation.

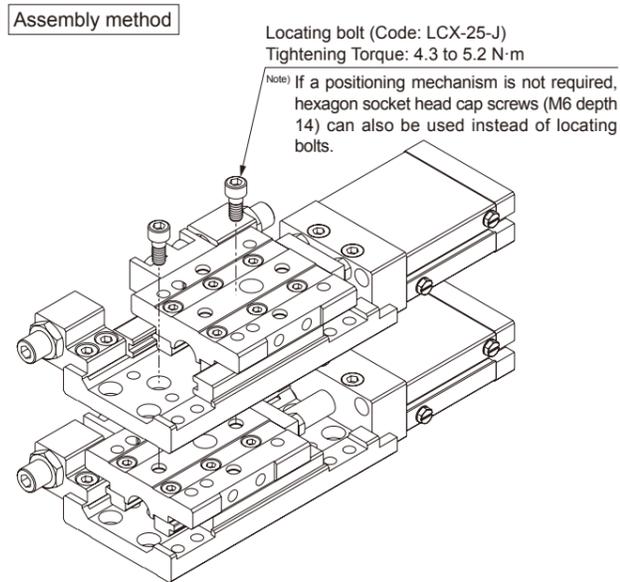
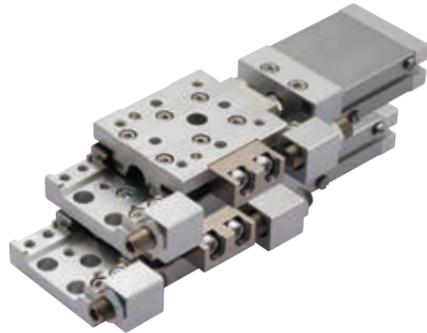
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Unit examples

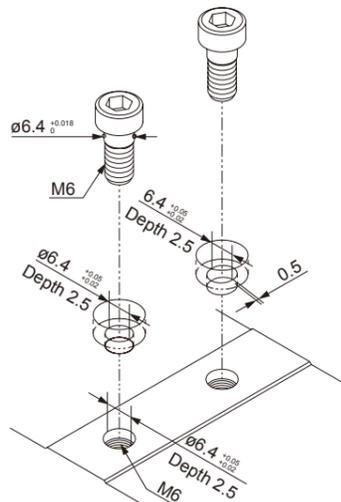
● Cross unit



● 2-stage unit



[Fastening with locating bolts]



Technical Data

[Table displacement due to M1, M2, M3 moments] (Reference value)

M1 moment: Displacement at the table tip when a load (F1) is applied to the table tip
 M2 moment: Displacement at the table end (Point A) when load (F2) is applied to a point 100 mm away from the center of the cylinder
 M3 moment: Displacement angle of the table when a rotational moment (M3) is applied to the cylinder

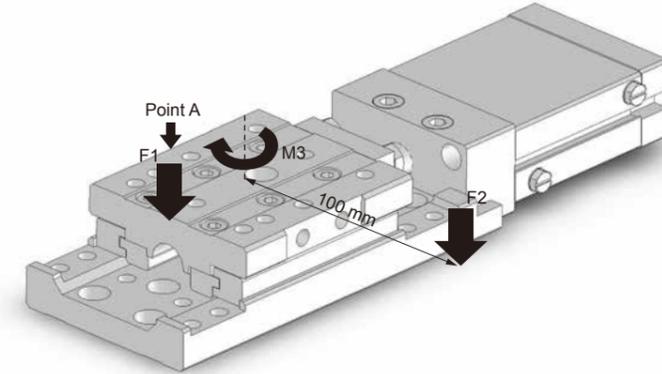


Table displacement of M1 moment

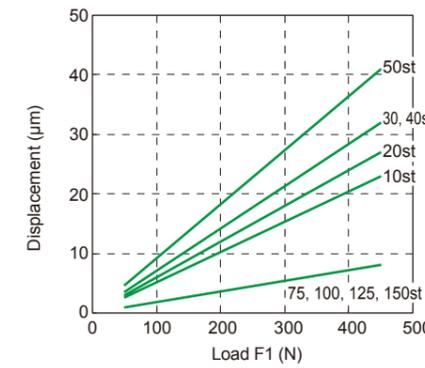


Table displacement of M2 moment

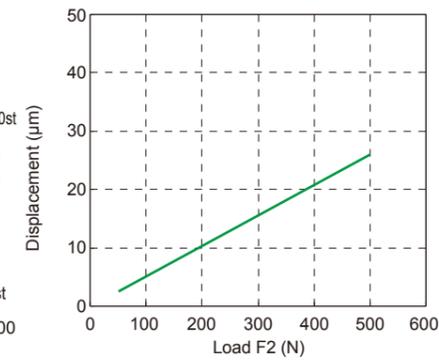
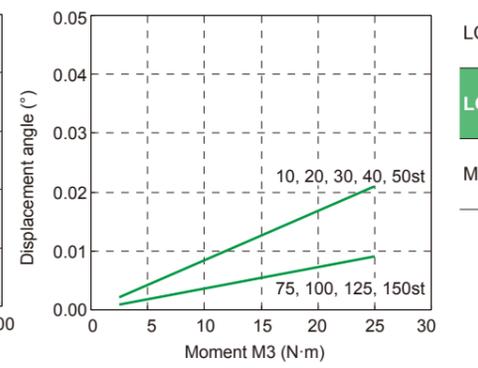


Table displacement angle of M3 moment



With Linear Guide
LCM
LCR
LCG
LCW
LCX
MSDG

Cylinder Switch
Ending

STEP-1

Confirm the load factor and determine the tube inner diameter.

$$\alpha = \frac{F_0}{F} \times 100 [\%]$$

α : Load factor

F_0 : Force required to move the work-piece (N)

F : Cylinder theoretical thrust (N) [Table 1]

[Table 1] Theoretical thrust table (Unit: N)

Bore size	Operating Direction	Operating pressure MPa						
		0.15	0.2	0.3	0.4	0.5	0.6	0.7
Equivalent to $\phi 25$	PUSH	74	99	148	197	246	296	345
	PULL	57	76	114	152	190	228	266
Equivalent to $\phi 32$	PUSH	116	155	233	310	388	466	543
	PULL	99	133	199	265	332	398	464

[Table 2] Load factor guide

Operating pressure MPa	Load factor (%)
0.2 to 0.3	$\alpha \leq 40$
0.3 to 0.6	$\alpha \leq 50$
0.6 to 0.7	$\alpha \leq 60$

LCM	During horizontal operation	During vertical operation
	$F_0 = Fw$	$F_0 = W + Fw$

FW: $W \times 0.2$ Note (N)

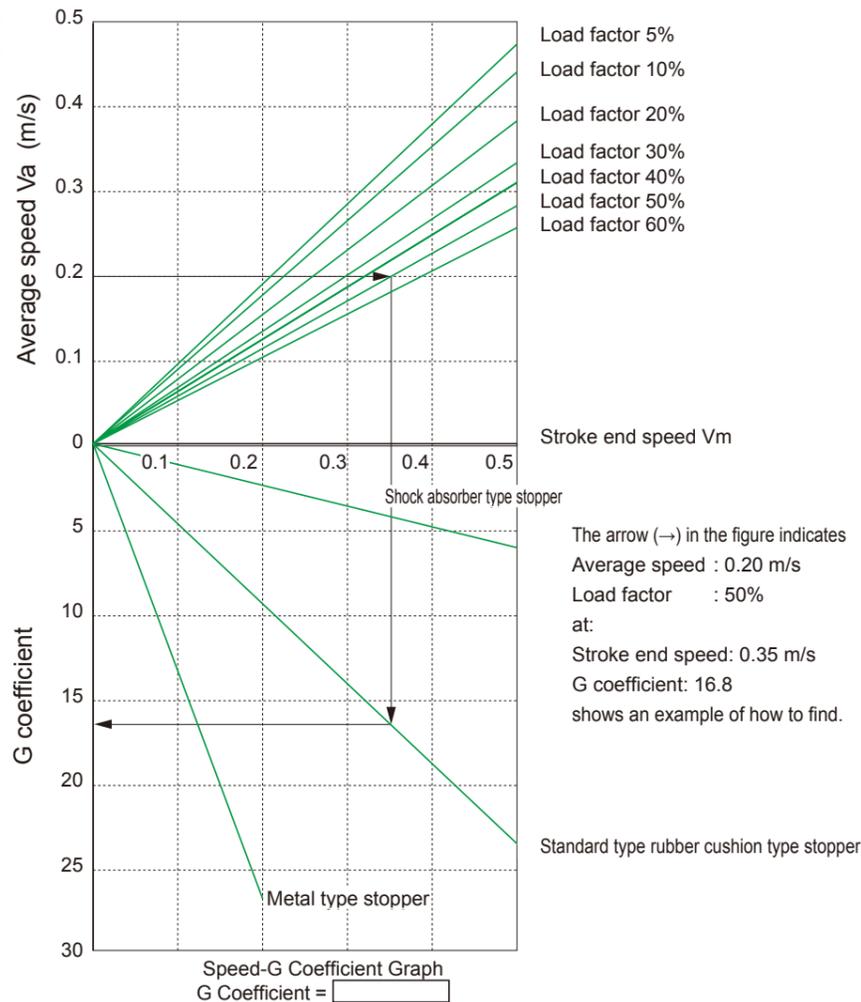
W: Load (N)

Note) Friction Coefficient

STEP-2

Determine the stroke end speed (V_m) and G coefficient.

Determine the stroke end speed (V_m) and G coefficient from the average speed (V_a) and the load factor obtained in STEP-1.



Ending

STEP-3

Confirm the allowable absorption energy.

$$E = \frac{1}{2} \times (m + m_a) \times V_m^2$$

E : Kinetic energy at workpiece end (J)

m : Load weight (kg) ($m \approx \frac{W(N)}{9.8}$)

m_a : [Table 4] Table Weight

V_m : Stroke end speed (m/s)

E_{max} : Max. allowable value of E_0 (from Table 3)

[Table 3] LCX Allowable absorption energy (E_0)

Bore size	Standard type (J)	Rubber cushion type stopper (J)	Metal type stopper (J)	Shock absorber type stopper (J)
Equivalent to $\phi 25$	0.34	0.14	0.07	1.3
Equivalent to $\phi 32$				

[Table 4] Table weight (Unit: kg)

Bore size	Stroke (mm)								
	10	20	30	40	50	75	100	125	150
Equivalent to $\phi 25$	0.030				0.035				
Equivalent to $\phi 32$									0.035

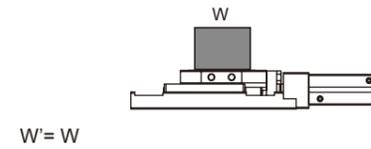
Confirm that $E \leq E_{max}$.

STEP-4

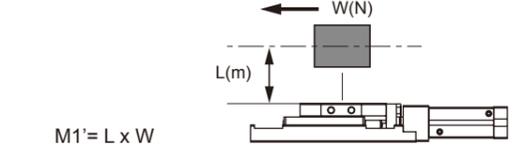
Confirm the combined moment $M'T$ at rest.

Determine the static load (moment) and impact moment generated at the stroke end, and confirm the combined moment $M'T$ at rest.

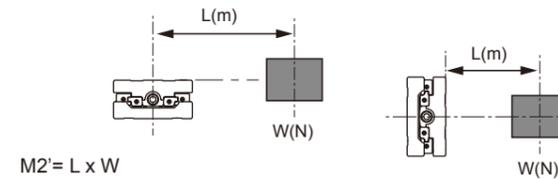
● Vertical load: W' (N)



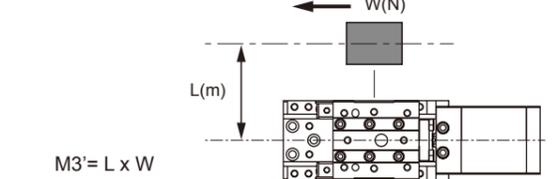
● Bending moment: $M1'$ (N·m)



● Lateral bending moment: $M2'$ (N·m)



Torsional Moment ●: $M3'$ (N·m)



W' = (N)

$M1' \times G$ = (N·m)

$M2'$ = (N·m)

$M3' \times G$ = (N·m)

$$M'T = \frac{W'}{W'_{max}} + \frac{M1' \times G}{M1'_{max}} + \frac{M2'}{M2'_{max}} + \frac{M3' \times G}{M3'_{max}} = \text{}$$

$M'T$: Combination of moments

G : G coefficient

W'_{max} : Max. allowable value of W' (from Table 5)

$M1'_{max}$: Max. allowable value of $M1'$ (from Table 5)

$M2'_{max}$: Max. allowable value of $M2'$ (from Table 5)

$M3'_{max}$: Max. allowable value of $M3'$ (from Table 5)

[Table 5] Allowable static load value

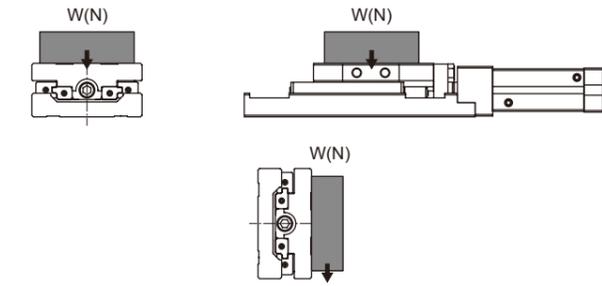
Bore size	Stroke	Vertical load W'_{max} (N)	Bending moment $M1'_{max}$ (N·m)	Lateral bending moment $M2'_{max}$ (N·m)	Torsional Moment $M3'_{max}$ (N·m)
Equivalent to $\phi 25$	10, 20,	670	52	110	52
Equivalent to $\phi 32$	30, 40, 50				
Equivalent to $\phi 25$	75, 100,	970	128	116	128
Equivalent to $\phi 32$	125, 150				

Confirm that $M'T \leq 1$.

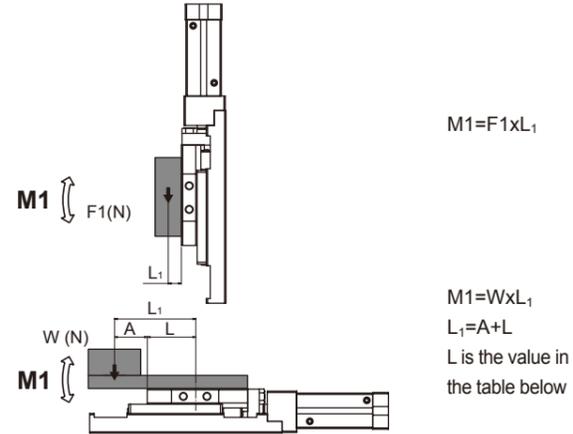
STEP-5

Confirm the combined moment M_T during travel. (Note that this is different from what was obtained in STEP-4.)

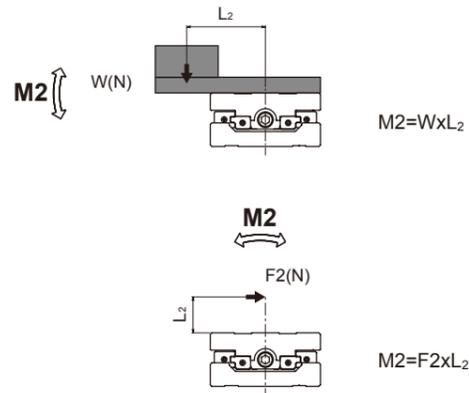
● Vertical load: W (N)



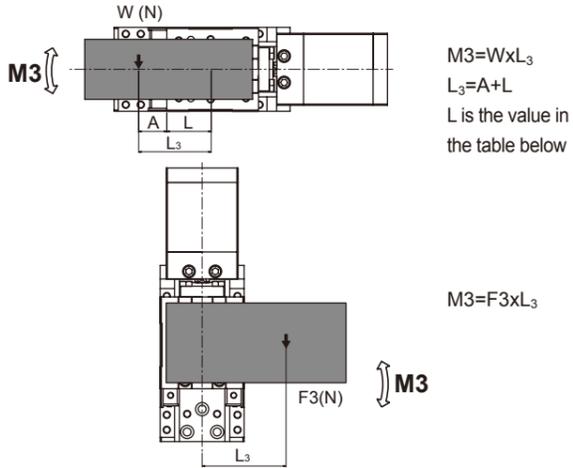
● Bending moment: M_1 (N·m)



● Lateral bending moment: M_2 (N·m)



● Torsional Moment M_3 (N·m)



L value (Distance from table end to bearing center)

Unit (m)

Bore size	Stroke									
	10	20	30	40	50	75	100	125	150	
Equivalent to $\phi 25$	0.037		0.042			0.0535				
Equivalent to $\phi 32$	0.037		0.042			0.0535				

$W=W$ = (N)

$M_1=M_1$ = (N·m)

$M_2=M_2$ = (N·m)

$M_3=M_3$ = (N·m)

$M_T = \frac{W}{W_{max}} + \frac{M_1}{M_1 \text{ max}} + \frac{M_2}{M_2 \text{ max}} + \frac{M_3}{M_3 \text{ max}} =$

[Table 7] Allowable Traveling Load Values

Bore size	Stroke	Vertical load W_{max} (N)	Bending moment $M_1 \text{ max}$ (N·m)	Lateral bending moment $M_2 \text{ max}$ (N·m)	Torsional Moment $M_3 \text{ max}$ (N·m)
Equivalent to $\phi 25$	10, 20,	97	7	15	7
Equivalent to $\phi 32$	30, 40, 50				
Equivalent to $\phi 25$	75, 100,	130	17	16.5	17
Equivalent to $\phi 32$	125, 150				

Can be used if $M_T \leq 1$.

MEMO

With Linear Guide

LCM

LCR

LCG

LCW

LCX

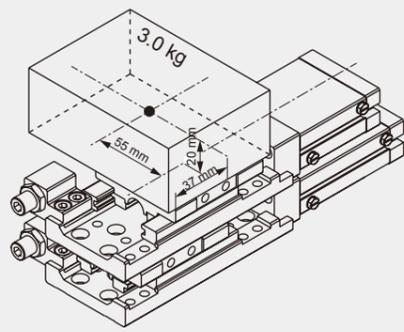
MSDG

Cylinder Switch

Ending

Model selection guide: Selection example ①

Model selection guide: Selection example ①

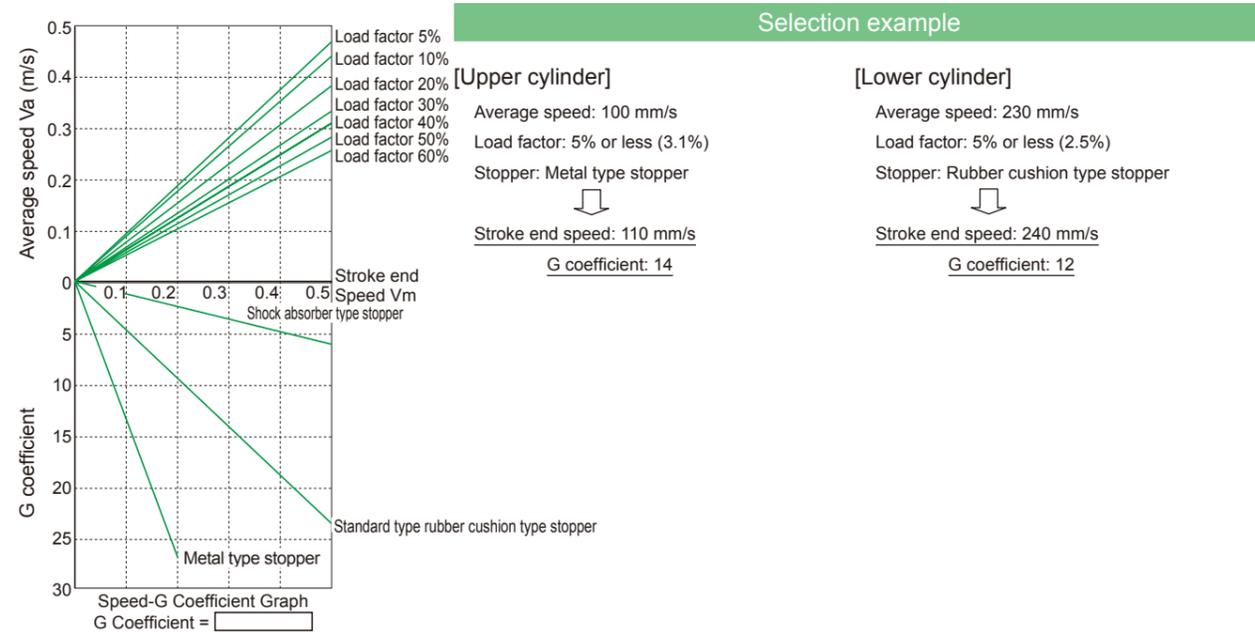


[Operating conditions]
 Model used (Upper side): LCX-25-30-M6 (Product Weight: 1,270 g)
 (Lower Side): LCX-32-30-S6 (Product Weight: 1,440 g)
 Pressure: 0.5 (MPa)
 Workpiece Weight: 3.0 (kg)
 Operating Direction: Horizontal
 Average speed (Upper side): 100 (mm/s)
 (Lower Side): 230 (mm/s)
 Workpiece shape: Left diagram

STEP-1 Checking the load factor and determination on the bore size (For details on how to calculate, refer to P. 300.)

LCM	Calculation formula	Selection example
LCR	$\alpha = \frac{F_0}{F} \times 100$ [%]	[Upper cylinder] $\alpha_1 = \frac{(3.0 \times 9.8) \times 0.2}{190} \times 100 = 3.1\%$
LCG	F_0 : Force required to move the workpiece (N)	[Lower cylinder] $\alpha_2 = \frac{\{(3.0 + 1.27 + 0.01) \times 9.8\} \times 0.2}{332} \times 100 = 2.5\%$
LCW	F : Cylinder theoretical thrust (N)	The guideline for the load factor is, at 0.5 MPa Usable because "α ≤ 50"

STEP-2 Confirmation of allowable running load (For detailed calculation method, please refer to P. 300)



STEP-3 Confirmation of allowable absorption energy (For detailed calculation method, please refer to P. 301)

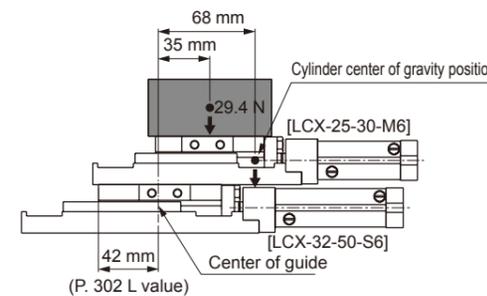
Calculation formula	Selection example
$E = \frac{1}{2} \times (m + m_0) \times Vm^2$	[Upper cylinder] $E = \frac{1}{2} \times (3.0 + 0.03) \times 0.11^2 = 0.02$ (J)
E : Kinetic energy at workpiece end (J)	[Lower cylinder] $E = \frac{1}{2} \times (3.0 + 1.27 + 0.01 + 0.035) \times 0.24^2 = 0.124$ (J)
m : Load weight (kg)	Allowable absorption energy of metal type stopper is "0.07J", so it can be used
m_0 : [Table 4] Table Weight	Allowable absorption energy of rubber cushion type stopper is "0.14J", so it can be used
Vm : Stroke end speed (m/s)	

STEP-4 Confirmation of allowable static load (For detailed calculation method, please refer to P. 301)

Calculation formula	Selection example
● Vertical load $W' = W$	[Upper cylinder] $W' = 3.0 \times 9.8 = 29.4$ (N)
● Bending moment: M1' (N·m) $M1' = L_1 \times W$	[Lower cylinder] $W' = 3.0 \times 9.8 + 1.27 \times 9.8 = 41.8$ (N)
● Lateral bending moment: M2' (N·m) $M2' = L_2 \times W$	$M1' = 0.02 \times 29.4 = 0.6$ (N·m)
● Torsional Moment: M3' (N·m) $M3' = L_3 \times W$	$M2' = 0.055 \times 29.4 = 1.6$ (N·m)
◎Combination of moments	$M3' = 0.055 \times 29.4 = 1.6$ (N·m)
$M'T = \frac{W'}{W'_{max}} + \frac{M1' \times G}{M1'_{max}} + \frac{M2' \times G}{M2'_{max}} + \frac{M3' \times G}{M3'_{max}}$	[Combination of moments when the upper cylinder operates] Stroke end speed: 110 mm/s G coefficient: 14
	[Upper cylinder] $M'T = \frac{29.4}{670} + \frac{0.6 \times 14}{52} + \frac{1.6}{110} + \frac{1.6 \times 14}{52} = 0.7$
	[Lower cylinder] $M'T = \frac{41.8}{670} + \frac{1.6 \times 14}{52} + \frac{1.6}{110} + \frac{1.6 \times 14}{52} = 1.0$
	Combination of moments (M'T) is "1 or less", so it can be used
	[Combination of moments when the lower cylinder operates] Stroke end speed: 110 mm/s G coefficient: 12
	[Upper cylinder] $M'T = \frac{29.4}{670} + \frac{0.6 \times 12}{52} + \frac{1.6}{110} + \frac{1.6 \times 12}{52} = 0.6$
	[Lower cylinder] $M'T = \frac{41.8}{670} + \frac{1.8 \times 12}{52} + \frac{1.6}{110} + \frac{1.6 \times 12}{52} = 0.9$
	Combination of moments (M'T) is "1 or less", so it can be used

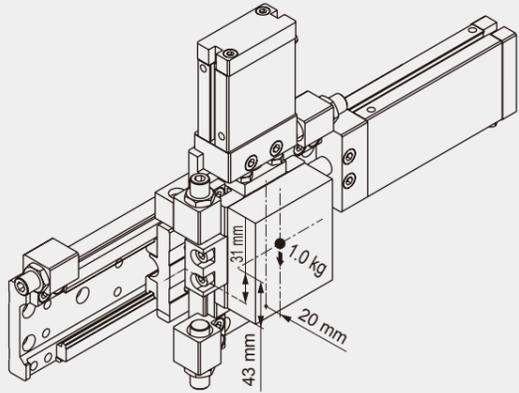
STEP-5 Confirmation of allowable running load (For detailed calculation method, please refer to P. 302)

Calculation formula	Selection example
● Vertical load $W = W$	[Upper cylinder] $W = 3.0 \times 9.8 = 29.4$ (N)
● Bending moment: M1 (N·m) $M1 = L_1 \times W$	[Lower cylinder] $W = 3.0 \times 9.8 + 1.27 \times 9.8 = 41.8$ (N)
● Lateral bending moment: M2 (N·m) $M2 = L_2 \times W$	$M1 = 0$ (N·m)
● Torsional Moment: M3 (N·m) $M3 = L_3 \times W$	$M2 = 0.055 \times 29.4 = 1.6$ (N·m)
◎Combination of moments	$M3 = 0$ (N·m)
$M_T = \frac{W}{W_{max}} + \frac{M1}{M1_{max}} + \frac{M2}{M2_{max}} + \frac{M3}{M3_{max}}$	[Combination of moments (M'T) is "1 or less", so it can be used]
	[Upper cylinder] $M_T = \frac{29.4}{97} + \frac{0}{7} + \frac{1.6}{15} + \frac{0}{7} = 0.4$
	[Lower cylinder] $M_T = \frac{41.8}{97} + \frac{1.9}{7} + \frac{1.6}{15} + \frac{0}{7} = 0.8$
	Combination of moments (M'T) is "1 or less", so it can be used



Model selection guide: Selection example ②

Model selection guide: Selection example ②



[Operating conditions]
 Model used (X-axis): LCX-32-150-A6 (Product Weight: 2,450 g)
 (Z-axis): LCX-32-30-S6 (Product Weight: 1,440 g)
 Pressure: 0.5 (MPa)
 Workpiece Weight: 1.0 (kg)
 Operating Direction: Horizontal + Vertical
 Average speed (X-axis): 300 (mm/s)
 (Z-axis): 50 (mm/s)
 Workpiece shape: Left diagram

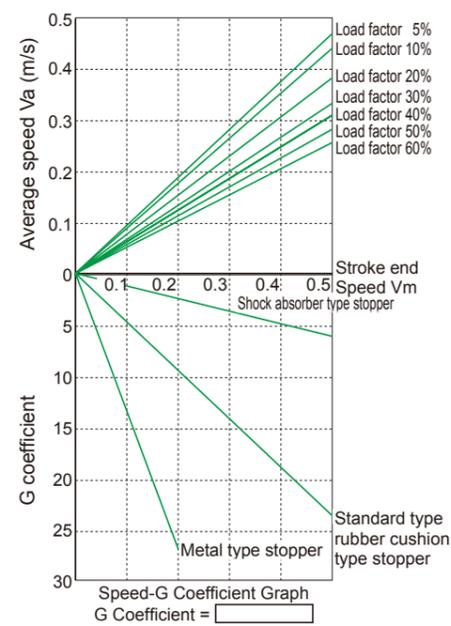
STEP-1 Checking the load factor and determination on the bore size (For details on how to calculate, refer to P. 300.)

Calculation formula

Selection example

	[X-axis cylinder]	[Z-axis cylinder]
$\alpha = \frac{F_0}{F} \times 100$ [%] α : Load factor F_0 : Force required to move the workpiece (N) F : Cylinder theoretical thrust (N)	$\alpha_1 = \frac{\{(1.0 + 1.29 + 0.01) \times 9.8\} \times 0.2}{332} \times 100 = 1.4\%$	$\alpha_2 = \frac{(1.0 \times 9.8) + 0.2 \times (1.0 \times 9.8)}{332} \times 100 = 3.5\%$
	The guideline for the load factor is, at 0.5 MPa Usable because " $\alpha \leq 50$ "	

STEP-2 Confirmation of allowable running load (For detailed calculation method, please refer to P. 300.)



	[X-axis cylinder]	[Z-axis cylinder]
Average speed	300 mm/s	50 mm/s
Load factor	5% or less (1.4%)	5% or less (3.5%)
Stopper	Shock absorber type stopper	Rubber cushion type stopper
Stroke end speed	310 mm/s	55 mm/s
G coefficient	4	3

STEP-3 Confirmation of allowable absorption energy (For detailed calculation method, please refer to P. 301.)

Calculation formula

Selection example

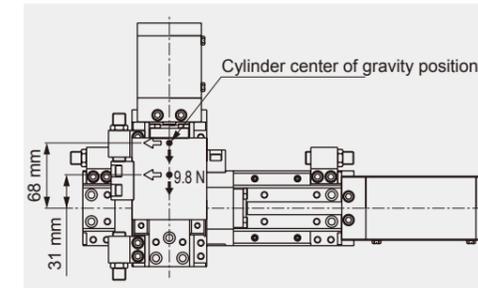
	[X-axis cylinder]	[Z-axis cylinder]
$E = \frac{1}{2} \times (m + m_c) \times Vm^2$ E : Kinetic energy at workpiece end (J) m : Load weight (kg) m_c : [Table 4] Table Weight Vm : Stroke end speed (m/s)	$E = \frac{1}{2} \times (1.0 + 1.29 + 0.01 + 0.035) \times 0.31^2 = 0.11$ (J) Allowable absorption energy of Shock absorber type stopper is "1.3J", so it can be used	$E = \frac{1}{2} \times (1.0 + 0.035) \times 0.055^2 = 0.002$ (J) Allowable absorption energy of rubber cushion type stopper is "0.14J", so it can be used

STEP-4 Confirmation of allowable static load (For detailed calculation method, please refer to P. 301.)

Calculation formula

Selection example

	[X-axis cylinder]	[Z-axis cylinder]
<ul style="list-style-type: none"> Vertical load $W = W$ Bending moment: $M1'$ (N·m) $M1' = L_1 \times W$ Lateral bending moment: $M2'$ (N·m) $M2' = L_2 \times W$ Torsional Moment: $M3'$ (N·m) $M3' = L_3 \times W$ Combination of moments $M'T = \frac{W}{W'_{max}} + \frac{M1' \times G}{M1'_{max}} + \frac{M2'}{M2'_{max}} + \frac{M3' \times G}{M3'_{max}}$ 	$W = 1.0 \times 9.8 + 1.44 \times 9.8 = 23.9$ (N) $M1' = 0.054 \times 9.8 + 0.017 \times 1.44 \times 9.8 = 0.8$ (N·m) (The Z-axis cylinder also acts as a moment, so it is added) $M2' = 0.054 \times 9.8 + 0.017 \times 1.44 \times 9.8 = 0.8$ (N·m) $M3' = 0.031 \times 9.8 + 0.068 \times 1.44 \times 9.8 = 1.3$ (N·m)	$W = 0$ (N) $M1' = 0.02 \times 9.8 = 0.2$ (N·m) $M2' = 0.02 \times 9.8 = 0.2$ (N·m) $M3' = 0.001 \times 9.8 = 0.01$ (N·m)
Note) In cross units, iMPact moment in the M2 direction may occur. Multiply the G coefficient by the value of M2' according to the operating conditions.	Stroke end speed: 310 mm/s G coefficient: 4 $M'T = \frac{23.9}{970} + \frac{0.8 \times 4}{128} + \frac{0.8}{116} + \frac{1.3 \times 4}{128} = 0.1$ Combination of moments (M'T) is "1 or less", so it can be used	Stroke end speed: 55 mm/s G coefficient: 3 $M'T = \frac{0}{670} + \frac{0.2}{52} + \frac{0.2 \times 3}{110} + \frac{0.01 \times 3}{52} = 0.01$ (For those where the X-axis cylinder operates and an iMPact moment in the M2 direction acts on the Z-axis cylinder, multiply by the G coefficient) Combination of moments (M'T) is "1 or less", so it can be used

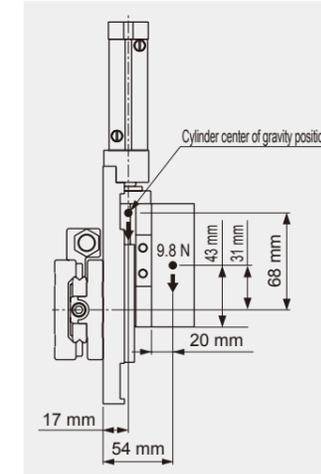


STEP-5 Confirmation of allowable running load (For detailed calculation method, please refer to P. 302.)

Calculation formula

Selection example

	[X-axis cylinder]	[Z-axis cylinder]
<ul style="list-style-type: none"> Vertical load $W = W$ Bending moment: $M1$ (N·m) $M1 = L_1 \times W$ Lateral bending moment: $M2$ (N·m) $M2 = L_2 \times W$ Torsional Moment: $M3$ (N·m) $M3 = L_3 \times W$ Combination of moments $M_T = \frac{W}{W_{max}} + \frac{M1}{M1_{max}} + \frac{M2}{M2_{max}} + \frac{M3}{M3_{max}}$ 	$W = 1.0 \times 9.8 + 1.44 \times 9.8 = 23.9$ (N) $M1 = 0$ (N·m) $M2 = 0.054 \times 9.8 + 0.017 \times 1.44 \times 9.8 = 0.8$ (N·m) $M3 = 0$ (N·m) $M_T = \frac{23.9}{130} + \frac{0}{17} + \frac{0.8}{16.5} + \frac{0}{17} = 0.2$ Combination of moments (M_T) is "1 or less", so it can be used	$W = 0$ (N) $M1 = 0.02 \times 9.8 = 0.2$ (N·m) $M2 = 0$ (N·m) $M3 = 0$ (N·m) $M_T = \frac{0}{97} + \frac{0.2}{7} + \frac{0}{15} + \frac{0}{7} = 0.03$ Combination of moments (M_T) is "1 or less", so it can be used



With Linear Guide

With Linear Guide

LCM

LCM

LCR

LCR

LCG

LCG

LCW

LCW

LCX

LCX

MSDG

MSDG

Cylinder Switch

Cylinder Switch

Ending

Ending



To Use This Product Safely

Be sure to read this before use.

For general information on cylinders, please see Intro 41, and for cylinder switches, please see P. 808.

Individual Precautions : Low profile linear slide cylinder LCX series

During Design / Selection

1. Common

Caution

For cylinder selection, follow the "LCX Selection Guide" on P. 300 to P. 302.

If the cylinder is used in a place exposed to water droplets or oil droplets, a place where there is a risk of corrosion, or a place with a lot of dust, it may cause damage or malfunction, so protect the product with a cover, etc.

Precautions for products with switches

For straight type lead wires with 30 strokes or less, and L-shaped type lead wires with 20 strokes or less, one switch is included to each of the two grooves on the main body, so pay attention to the lead wire extraction direction during design.

If the ambient temperature of the cylinder is 5°C or less, use a supply pressure of 0.5 MPa or more.

Please consult us if using in a constantly low temperature (5°C or less) or high temperature (40°C or more) environment.

Three types of stoppers with stroke adjustment function are available.

Rubber cushion type stopper
Stopper with built-in urethane cushion rubber. To stabilize the stop position, stoppers that make metal contact at a pressure of 0.4 MPa or more are also available, so please consult us.

Metal type stopper
Since there is no cushion mechanism, use for light loads and low speeds. There is no change in the stop position due to deformation of the rubber cushion.

Shock absorber type stopper
It has high energy absorption capacity, provides smooth stopping, and the stop position is determined by metal contact.

2. Drop prevention type LCX-Q

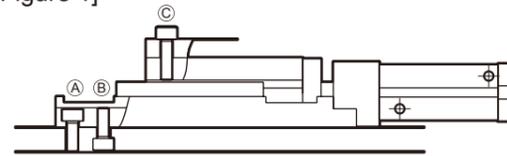
Caution

Do not use 3-position valves.

Avoid using in combination with 3-position valves (especially closed center metal seal type). If pressure is trapped in the port on the side with the lock mechanism, the lock will not engage. Also, even if locked once, air leaking from the valve may enter the cylinder, and the lock may be released over time.

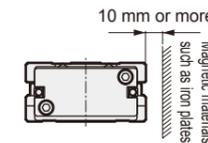
Keep the cylinder load factor at 50% or less.
If the load factor is high, the lock may not be released, or it may lead to damage to the lock part.

Observe the following values for the bolt screw-in length and tightening torque when mounting a jig to the table and base.
[Figure 1]

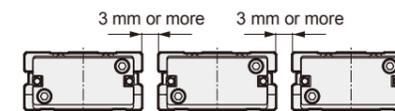


Item	A		B		C	
	Bolt used	Tightening torque (N·m)	Bolt used	Tightening torque (N·m)	Max. screw-in length	Max. screw-in length
LCX-25	M6	4.3 to 5.2	M6 x 1.0	4.3 to 5.2	9.5 mm	11 mm
LCX-32	M6	4.3 to 5.2	M6 x 1.0	4.3 to 5.2	9.5 mm	11 mm

If there is a magnetic material such as an iron plate near the cylinder switch, it may malfunction. You can use it safely by keeping it 10 mm or more away from the cylinder surface or by changing the mounting surface of the cylinder switch. (Common to all bore sizes)



If cylinders are adjacent, the cylinder switch may malfunction. Maintain the following distance from the cylinder surface. (Common to all bore sizes)



Treat our Shock absorbers as consumable parts. Replace when a decrease in energy absorption capacity is observed or when operation is no longer smooth.

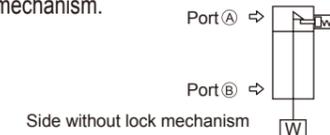
When using locating holes, use pins with dimensions that do not result in a press fit. Using press-fit dimension pins may cause damage to the linear guide part due to press-fitting load or accuracy deterioration due to distortion. The recommended tolerance for pins is JIS tolerance m6 or less.

For the guide part, apply AFF grease (manufactured by THK CO., LTD.) to the guide rail raceway surface every 6 months or 1 million operations, whichever comes first.

3. Drop prevention type LCX-Q

Warning

In the locked state, if pressure is supplied to port A from a state where both side ports are not pressurized, the lock may not be released, or the lock may suddenly be released and the piston rod may fly out, which is very dangerous. When releasing the lock mechanism, always supply pressure to port B and release it from a state where no load is applied to the lock mechanism.



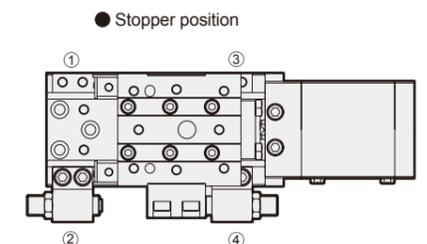
When using a quick exhaust valve to increase the lowering speed, the cylinder body may start moving before the lock pin operates, and normal release may not be possible. Do not use a quick exhaust valve with a drop prevention type cylinder.

Caution

The lock mechanism works at the stroke end. Do not install stoppers at stopper positions ③, ④. Also, if an external stopper is applied in the middle of the stroke, the lock mechanism may not work and there is a risk of falling. When setting the load, be sure to confirm that the lock mechanism is working before installing.

Supply pressure equal to or higher than the minimum operating pressure for each model to the port on the side with the lock mechanism.

If the piping on the side with the lock mechanism is thin and long, or if the speed controller is far from the cylinder port, the exhaust speed may be slow and it may take time for the lock to engage, so please be careful. Also, clogging of the silencer included to the EXH. port of the solenoid valve will lead to similar results.



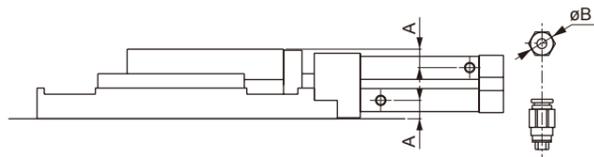
During Use

1. Common; During piping

Caution

Precautions for piping fittings

Be sure to use a speed controller when piping. Also, the usable fittings are as follows.



Item	Port Size	Port position dimension A	Usable fittings	Fitting outer diameter B
Cylinder Switch	M5	9.5	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5	ø17 or less
		9	GWL4-M5 GWS6-M5-S GWS6-M5 GWL6-M5	
Ending	ø32			

2. Common; During installation

Caution

To obtain high-precision linear motion, the mounting surfaces of the base and table of this product are precision machined. Therefore, by finishing the flatness of the mounting surface of equipment, etc. to a high precision by grinding, etc., stable high accuracy can be obtained. (Flatness : 0.01 mm or less) Also, do not make dents or scratches that may impair the flatness of the mounting surface.

With Linear Guide

LCM

LCR

LCG

LCW

LCX

MSDG

With Linear Guide

LCM

LCR

LCG

LCW

LCX

MSDG

Cylinder Switch

Ending

Cylinder Switch

Ending

■ If back pressure is applied to the lock mechanism side, the lock may be released, so use a single solenoid valve or a manifold with individual exhaust.

■ After manually operating the lock mechanism, return the lock mechanism to its original state. Also, do not perform manual operations other than during adjustment, as it is dangerous.

■ Release the lock when installing or adjusting the cylinder. If installation work, etc. is performed while the lock is engaged, the lock part may be damaged.

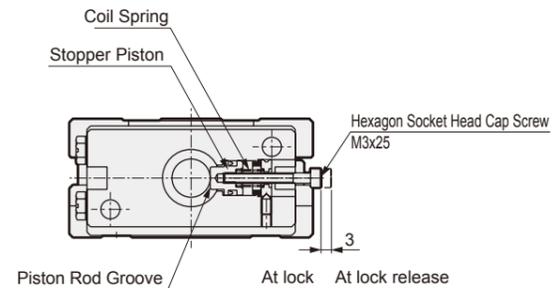
■ Do not use multiple cylinders synchronized. Do not use a method where two or more fall prevention type cylinders are synchronized to move one workpiece. The lock of one of the cylinders may become unremovable.

■ Use the speed controller with meter-out control. Lock may not be released with meter-in control.

■ On the side with the lock, be sure to use the cylinder to the stroke end. If the cylinder piston has not reached the stroke end, the lock may not engage, or it may not be possible to release the lock.

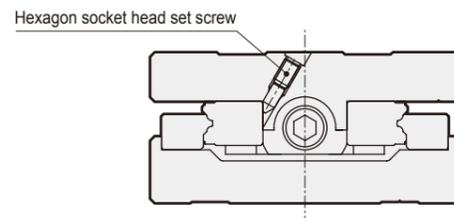
■ Release method

Screw a hexagon socket head cap screw (M3x25) into the stopper piston and pull the bolt with a force of 20N or more for 3 mm, the stopper piston will move and the lock will be released. (No-load horizontal mounting, rod port pressurization) Also, when you release your hand, the built-in spring returns the stopper piston, and if it enters the piston rod groove, the cylinder will be locked.



4. Long stroke LCX-□L

■ The linear guide has optimal preload adjustment. Do not loosen or retighten the hexagon socket set screws, as it may degrade product performance.



MEMO

For precautions regarding mounting, installation, adjustment, use, and maintenance, please see "Precautions for Use" in this catalog and the CKD Components Product website (<https://www.ckd.co.jp/kiki/en/>) → "Model No." → [Instruction Manual](#)