

LCX

Linear slide cylinder

Combined functions cylinder

ø25/ø32

Overview

Thin, light, rigid linear slide cylinder.
Perfect for narrow spaces.



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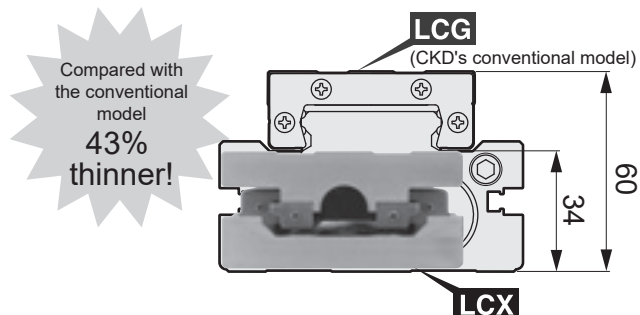
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Thin, light, rigid LCX Series

A wide variety of option variations are available for use in more applications.

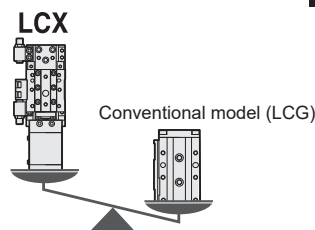
Thin

About 50% thinner than the conventional model (LCG).
The height **reduced from 60 mm to 34 mm**.
The extremely thin body can fit in narrow spaces.



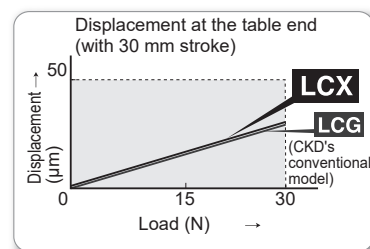
Lightweight

50% lighter than the conventional model (LCG).
The moving part becomes lighter and thus enables efficient, energy-saving equipment.

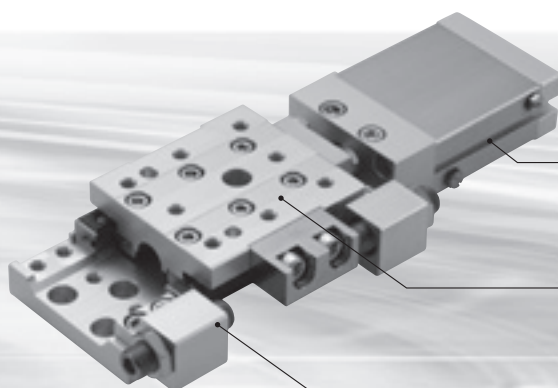


Rigid

The separated linear guide provides **the same level of rigidity as the conventional model (LCG)**, even with the thin and light body.

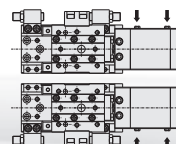


A wide range of variations



Laterally symmetrical

Pipes and stoppers can be installed on both the right and left sides.
← shows the piping direction.



Compatible with T-switch

The proximity 2-color LED switch is available.



Anti-rust

Anti-rust treated as standard.

Different types of stoppers



■ Metal stopper



■ Rubber cushion stopper



■ Shock absorber stopper

LCX Series

Linear slide cylinder

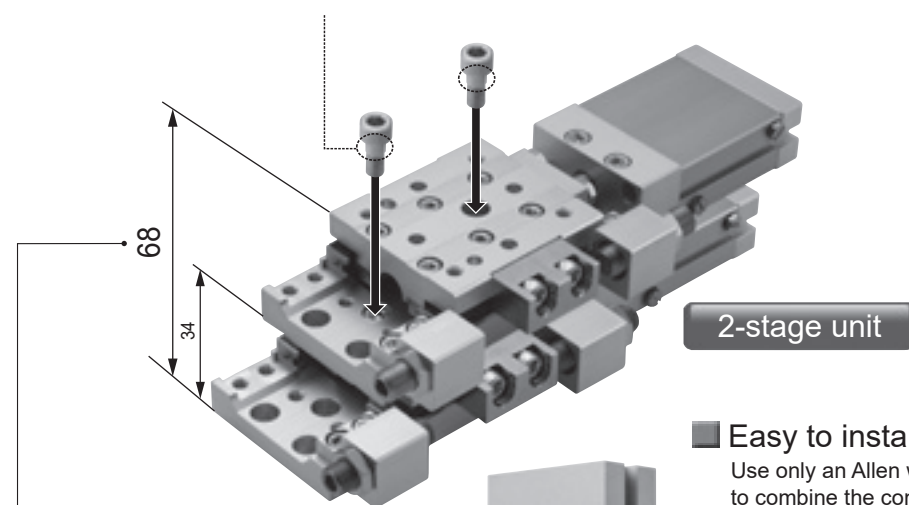
CKD

Integrated units - simple, secure, high precision

Components can be combined as desired. Select from various options such as the position locking, long stroke (max. 150 mm) and type with a positioning hole. Use the integrated units in a wide range of uses including conveyor and positioning so as to improve productivity of multiple products.

■ High precision positioning mechanism

Components can be simply combined with high precision positioning holes and a special bolt **for positioning**. Adjusting the positions is not necessary.



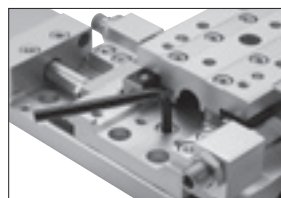
■ Only 68 mm even when components are stacked

Direct mount without connecting plates enables thin profile design.

2-stage unit

■ Easy to install

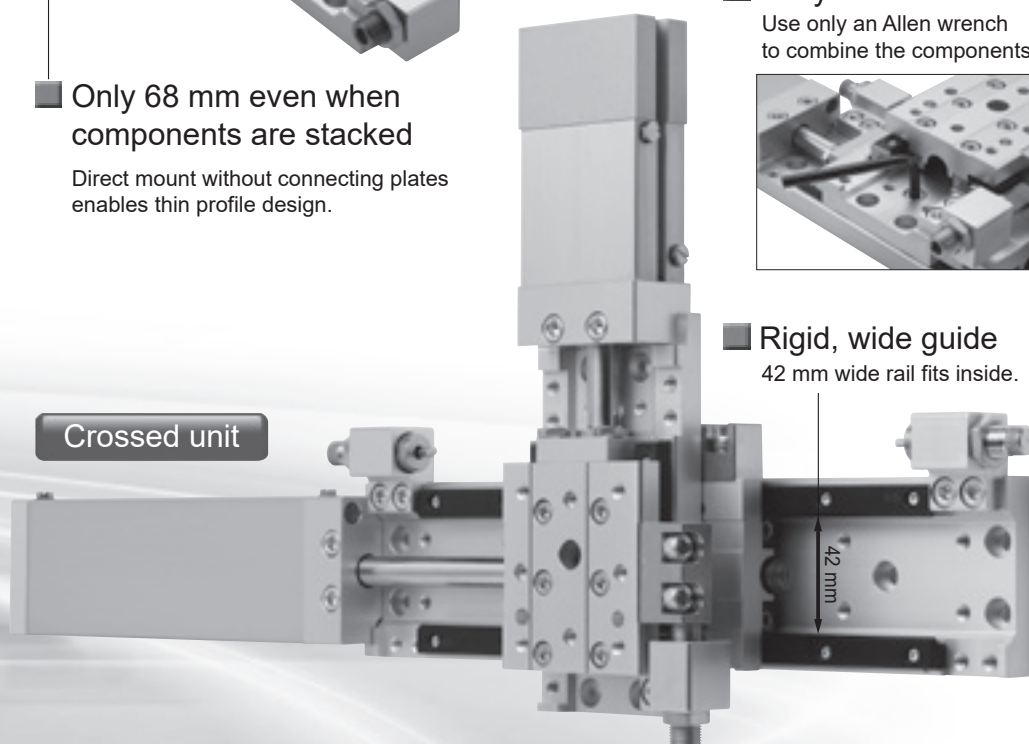
Use only an Allen wrench to combine the components.



■ Rigid, wide guide

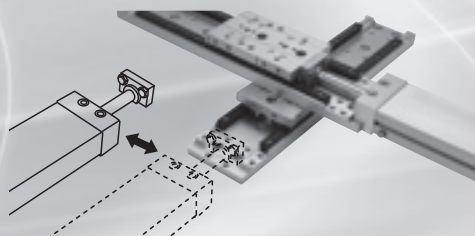
42 mm wide rail fits inside.

Crossed unit



■ Large reduction in maintenance time

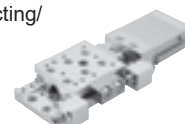
The cylinder can be replaced with the body installed on the equipment.



■ LCX product variations

■ LCX

Double acting/
single rod



ø 25, ø 32
Stroke: 10 to 50 mm

■ LCX-Q

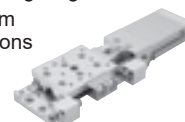
Double acting/
position locking



ø 25, ø 32
Stroke: 10 to 50 mm

■ LCX-P7*

Double acting/single rod
Clean room
specifications



ø 25, ø 32
Stroke: 10 to 50 mm

■ LCX-*L

Double acting/single rod
Long stroke



ø 25, ø 32
Stroke: 75 to 150 mm

■ LCX-Q*L

Double acting/
position locking
Long stroke



ø 25, ø 32
Stroke: 75 to 150 mm

■ LCX-*L-P7*

Double acting/single rod/
clean room specifications
Long stroke



ø 25, ø 32
Stroke: 75 to 150 mm

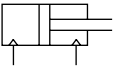
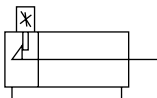
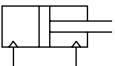
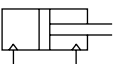
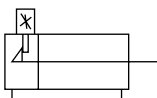
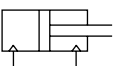
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Series variation



Linear slide cylinder LCX Series

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

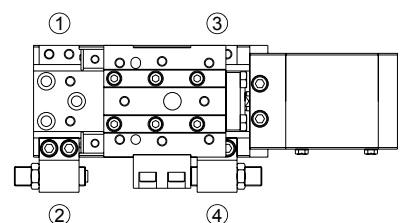
Variation	Model No. JIS symbol	Bore size (mm)	Stroke length (mm)									
			10	20	30	40	50	75	100	125	150	
Double acting/single rod	LCX 	ø25/ø32	●	●	●	●	●					
Double acting/position locking	LCX-Q 	ø25/ø32	●	●	●	●	●					
Double acting/single rod clean-room specifications	LCX-P7* 	ø25/ø32	●	●	●	●	●					
Double acting/single rod long stroke length	LCX-*L 	ø25/ø32						●	●	●	●	
Double acting/position locking long stroke length	LCX-Q-*L 	ø25/ø32						●	●	●	●	
Double acting/single rod clean-room specifications long stroke length	LCX-*L-P7* 	ø25/ø32						●	●	●	●	

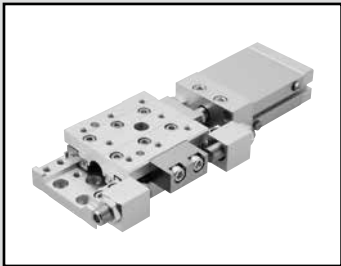
●: Standard ○: Option ○: Made to order ■: Not available

	Option																		With positioning hole	Center stopper	Switch	Page
	Cushion stopper						Metal stopper						Shock absorber stopper									
	Stopper position ①	Stopper position ②	Stopper position ③	Stopper position ④	Stopper position ①/③	Stopper position ②/④	Stopper position ①	Stopper position ②	Stopper position ③	Stopper position ④	Stopper position ①/③	Stopper position ②/④	Stopper position ①	Stopper position ②	Stopper position ③	Stopper position ④	Stopper position ①/③	Stopper position ②/④				
	S1	S2	S3	S4	S5	S6	M1	M2	M3	M4	M5	M6	A1	A2	A3	A4	A5	A6	E	*1		
	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	254
	○	○					○	○					○	○					○	○	○	264
	○	○	○	○	○	○	○	○	○	○	○	○							○	○	○	270
	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	○	276
	○	○					○	○					○	○					●	○	○	286
	○	○	○	○	○	○	○	○	○	○	○	○							●	○	○	292

*1: The center stopper is a made-to-order product. Contact CKD for details.

● Stopper position

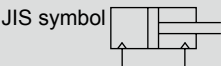




Linear slide cylinder Double acting/single rod

LCX Series

● Bore size: $\varnothing 25/\varnothing 32$



Specifications

Item	LCX	
Bore size mm	$\varnothing 25$	$\varnothing 32$
Actuation	Double acting	
Working fluid	Compressed air	
Max. working pressure MPa	0.7 (≈ 100 psi, 7 bar)	
Min. working pressure MPa	0.15 (≈ 22 psi, 1.5 bar)	
Proof pressure MPa	1.05 (≈ 150 psi, 10.5 bar)	
Ambient temperature $^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing) (*1)	
Port size	M5	
Stroke tolerance mm	$+2.0$ 0 (*2)	
Working piston speed mm/s	20 to 500 (*3)	
Cushion	With rubber cushion	
Lubrication	Not available	
Allowable absorbed energy J	Refer to Table 3 on page 299.	

*1: Contact CKD if the use environment is always cold (5°C or below) or hot (40°C and above).
 *2: Note that there will be a slight gap between the plate and floating bush if no stopper is attached.
 *3: Keep within 20 to 200 mm/s when using a metal stopper.

Stroke length

Bore size (mm)	Standard stroke length (mm)
$\varnothing 25$	10, 20, 30, 40, 50
$\varnothing 32$	10, 20, 30, 40, 50

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

Theoretical thrust table

Refer to page 298.

Switch specifications

Item	Reed 2-wire				Proximity 2-wire		Proximity 3-wire		
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3WH/ T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay		
Output method	-		-		-		NPN output	PNP output	NPN output
Power supply voltage	-		-		-		10 to 28 VDC		
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less		50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA				1 mA or less		10 μA or less		
Weight	g 1 m:18 3 m:49 5 m:80								

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C.
(5 to 10 mA at 60°C)

Cylinder weight

● Basic

(Unit: g)

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

● Additional weight of options

(Unit: g)

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

Specifications for rechargeable battery (Catalog No. CC-1226A)

LCX - ... -

P4*

● Design compatible with rechargeable battery manufacturing process.

* Contact CKD for details.

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

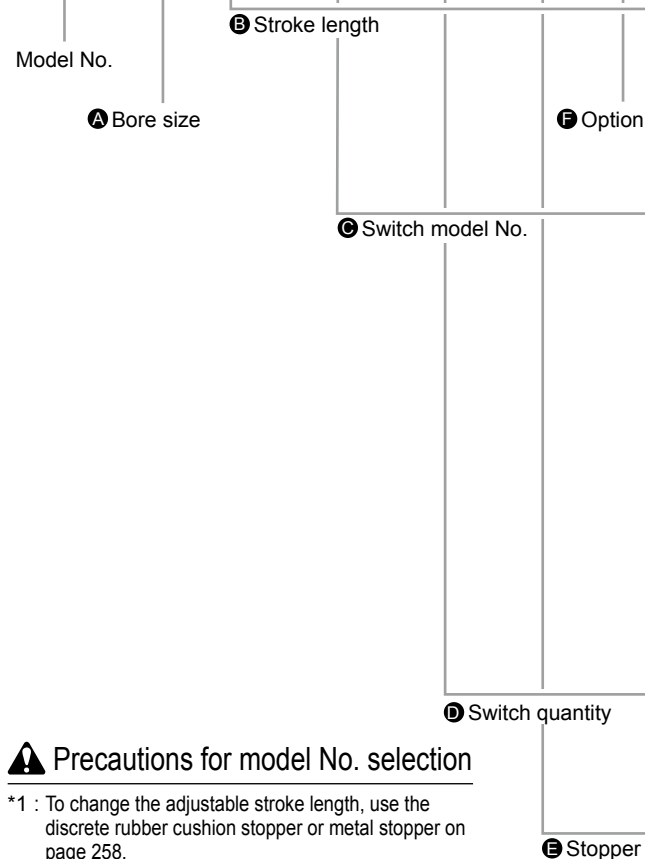
How to order

Without switch (built-in magnet for switch)

LCX - **25** - **40** ————— **S5** **E**

With switch (built-in magnet for switch)

LCX - **25** - **40** - **T2H*** - **R** - **A1T** **E**



⚠ Precautions for model No. selection

- *1 : To change the adjustable stroke length, use the discrete rubber cushion stopper or metal stopper on page 258.
- *2 : For the adjustable stroke range with a shock absorber stopper, refer to the stopper dimensions table on page 263.
- *3 : The steel stopper block (nitrided) (code: T) is recommended for a metal stopper.
- *4 : Combination of the rubber cushion stopper, metal stopper and shock absorber stopper is made to order.
- *5 : Keep within 20 to 200 mm/s when using a metal stopper.
- *6 : Can be selected for the type with stopper only.
- *7 : A5* and A6* cannot be selected for 10 mm stroke length.
- *8 : The positioning hole enables assembling of the crossed unit and two-stage unit without adjusting the position. Use a positioning bolt as well (page 259).
- *9 : Refer to page 259 for single cylinder model No.

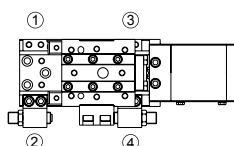
[Example of model No.]

LCX-25-40-T2H-R-A1TE

Model: Linear slide cylinder
double acting/single rod LCX

- A** Bore size : $\varnothing 25$
- B** Stroke length : 40 mm
- C** Switch model No. : Proximity/2-wire
Axial lead wire
- D** Switch quantity : 1 on rod side
- E** Stopper : Shock absorber stopper
Stopper position①
Material, steel (nitriding)
- F** Option : With positioning hole

● Stopper position



Code		Description				
A Bore size						
25	ø25					
32	ø32					
B Stroke length (mm)						
10	10					
20	20					
30	30					
40	40					
50	50					
C Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator lamp	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	no indicator lamp	
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*			●	display	3-wire
T3PH*	T3PV*			●	1-color display (PNP output)	3-wire
T2WH*	T2WV*			●	2-color display	2-wire
T3WH*	T3WV*			●	display	3-wire
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
D Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
E Stopper						
Blank	Without stopper					
S Cushion stopper						
*1, *4						
S1*	Stopper position ① (can be changed to ④)					
S2*	Stopper position ② (can be changed to ③)					
S3*	Stopper position ③ (can be changed to ②)					
S4*	Stopper position ④ (can be changed to ①)					
S5*	Stopper position ①,③					
S6*	Stopper position ②,④					
M Metal stopper						
*1, *3, *4, *5						
M1*	Stopper position ① (can be changed to ④)					
M2*	Stopper position ② (can be changed to ③)					
M3*	Stopper position ③ (can be changed to ②)					
M4*	Stopper position ④ (can be changed to ①)					
M5*	Stopper position ①,③					
M6*	Stopper position ②,④					
A Shock absorber stopper						
*2, *4, *7						
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					
* part						
Blank	Stopper block material: steel					
T	Stopper block material: steel (nitriding)					
F Option						
Blank	No option					
E	With positioning hole					

How to order switch

SW - T2H3

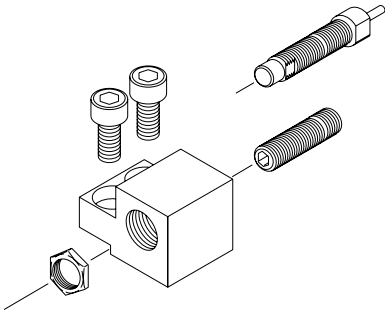
Switch model No.
(Item © on page 256)

How to order a stopper set

- Set of a stopper and rubber cushion stopper, metal stopper or shock absorber stopper
- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.

LCX - 25 - S 2 - S02

Bore size
(Item A on page 256)



*1: Cannot be selected for the shock absorber stopper "A".

A Stopper	
S	Cushion stopper
M	Metal stopper
A	Shock absorber stopper
B Stopper installation position	
1	Stopper position for ① or ④
2	Stopper position for ② or ③
C Adjustable stroke length *1	
Blank	Adjustable stroke range 10 mm
S02	Adjustable stroke range 20 mm

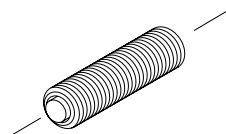
Model No.				Weight
LCX	25	S1	Blank	70
		S2	S02	80
	32	M1	Blank	70
		M2	S02	80
	A1	A2	-	70

(Unit: g)

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

How to order discrete rubber cushion stopper

- Hexagon socket set screw with urethane
- Use when changing the adjustable stroke range or when using a custom stroke length.



LCX - 25 - S02

Bore size
(Item A on page 256)

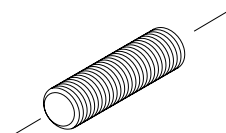
A Adjustable stroke range	
S01	Single side 10 mm (standard)
S02	Single side 20 mm

(Unit: g)

Model No.			Weight
LCX	25	S01	30
	32	S02	40

How to order discrete metal stopper

- Use when changing the adjustable stroke range or when using a custom stroke length.



LCX - 25 - M02

Bore size
(Item A on page 256)

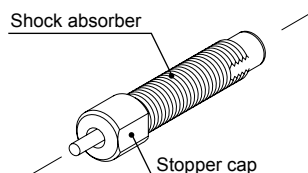
A Adjustable stroke range	
M01	Single side 10 mm (standard)
M02	Single side 20 mm

(Unit: g)

Model No.			Weight
LCX	25	M01	30
	32	M02	40

How to order discrete shock absorber stopper

- Set of a shock absorber and stopper cap
- Use when changing from the rubber cushion stopper or metal stopper to the shock absorber stopper.



LCX - 25 - A01

Bore size
(Item A on page 256)

Note: For the adjustable stroke range with a shock absorber stopper, refer to page 263.

Applicable shock absorber model No.

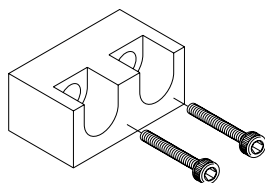
Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

(Unit: g)

Model No.			Weight
LCX	25	A01	30
	32		

How to order discrete stopper block

- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.



LCX - 25 - SB1 T

Bore size
(Item A on page 256)

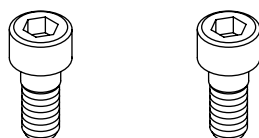
A Stopper block	
SB1	For 30, 50 mm stroke length
SB2	For 10, 20, 40 mm stroke length
B Material	
Blank	Stopper block material: steel
T	Stopper block material: steel (nitriding)

(Unit: g)

Model No.			Weight
LCX	25	SB1(T)	80
	32	SB2(T)	100

How to order positioning bolt

- Hexagon socket head cap screw for positioning
- Enables assembling of the crossed unit and two-stage unit without adjusting the position.



(2 pieces/set)

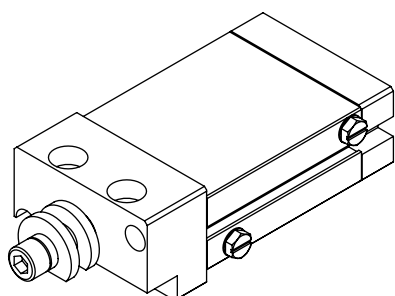
LCX - 25 - J

(Unit: g)

Model No.			Weight
LCX	25	J	10

* Weight per set (2 pieces)

How to order single cylinder



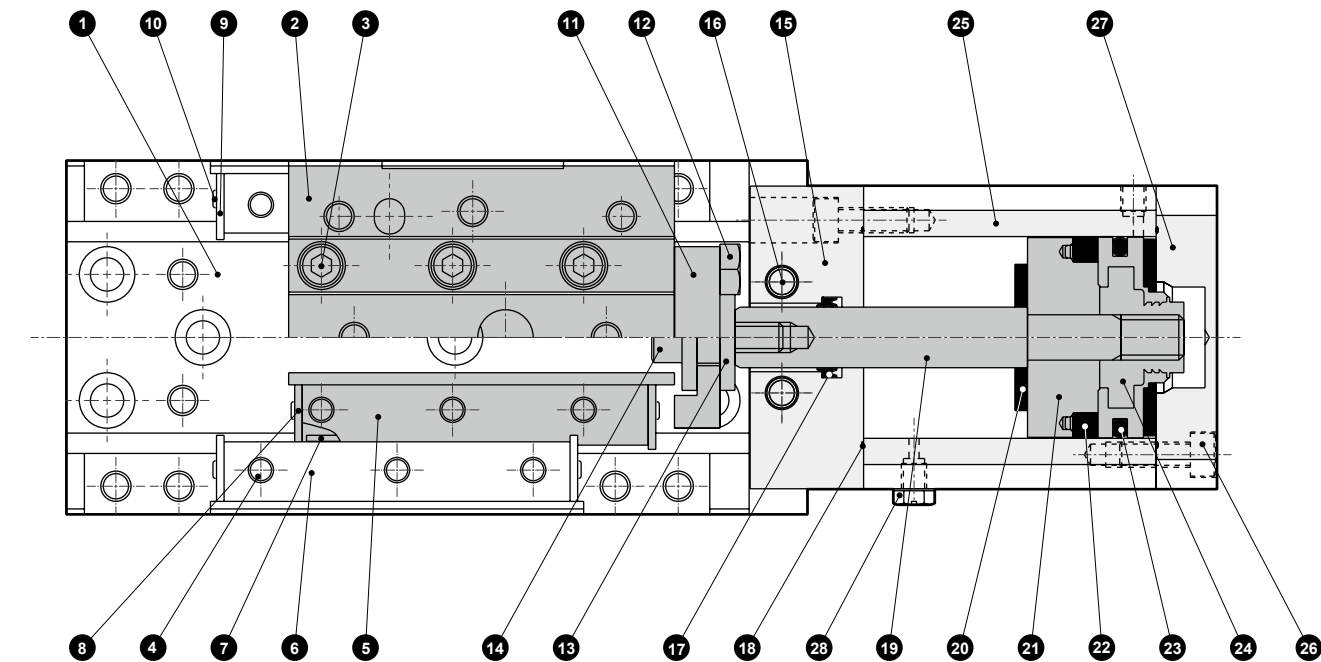
LCX - CYL - 25 - 40

Bore size
(Item A on page 256)

Stroke length
(Item B on page 256)

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list



Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Base	Aluminum alloy	Alumite	15	Rod cover	Aluminum alloy	Alumite
2	Table	Aluminum alloy	Alumite	16	Hexagon socket head cap screw	Alloy steel	Zinc chromate
3	Hexagon socket head cap screw	Stainless steel		17	Rod packing	Nitrile rubber	
4	Hexagon socket head cap screw	Stainless steel		18	Gasket	Nitrile rubber	
5	Guide rail (1)	Alloy steel	Black chromium film	19	Piston rod	Alloy steel	Industrial chrome plating
6	Guide rail (2)	Alloy steel	Black chromium film	20	Cushion rubber	Urethane rubber	
7	Cage	Resin		21	Spacer	Aluminum alloy	
8	Stopper (1)	Stainless steel		22	Magnet	Plastic	
9	Stopper (2)	Stainless steel		23	Piston packing	Nitrile rubber	
10	Phillips pan head machine screw	Stainless steel		24	Piston	Aluminum alloy + polyacetal	
11	Plate	Aluminum alloy	Alumite	25	Cylinder body	Aluminum alloy	Hard alumite
12	Hexagon head bolt	Stainless steel		26	Hexagon socket head cap screw	Alloy steel	Zinc chromate
13	Floating bush	Stainless steel		27	Head cover	Aluminum alloy	Alumite
14	Hexagon socket head cap screw	Alloy steel	Zinc chromate	28	Plug	Copper alloy	Nickeling

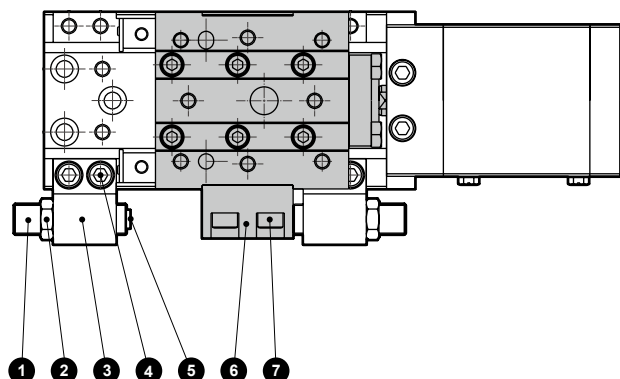
Repair parts list

Bore size (mm)	Kit No.	Repair parts No.
ø25	LCX-25K	17 18
ø32	LCX-32K	20 23

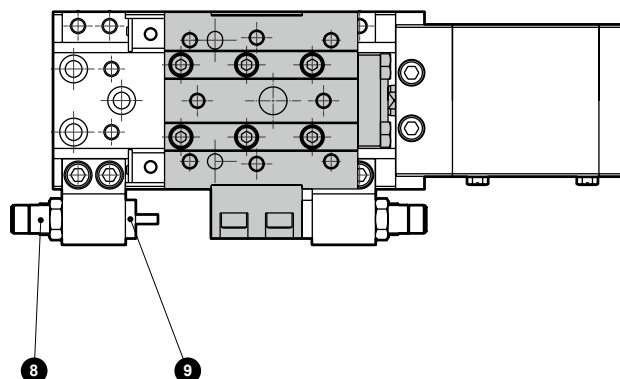
Internal structure and parts list

Structure with stopper

● Rubber cushion stopper, metal stopper



● Shock absorber stopper



Parts list

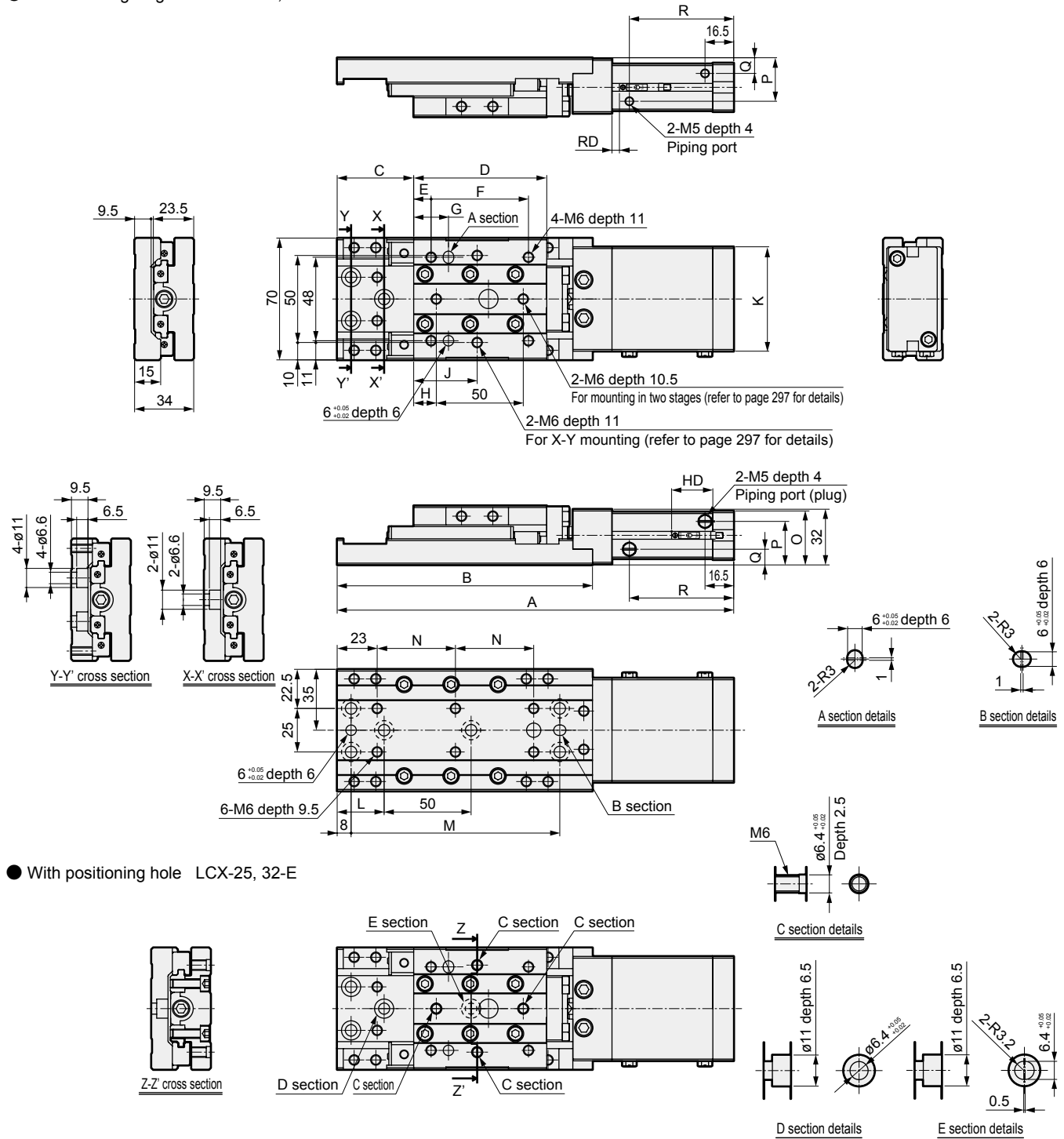
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Stopper bolt	Alloy steel	Nickeling	6	Stopper block (Stopper block code: Blank)	Steel	Nickeling
2	Hexagon nut	Alloy steel	Zinc chromate		Stopper block (Stopper block code: T)	Steel	Nitriding
3	Stopper	Aluminum alloy	Alumite	7	Hexagon socket 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	Cushion rubber stopper only	9	Stop cap	Stainless steel	

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions



● Double acting/single rod LCX-25, 32

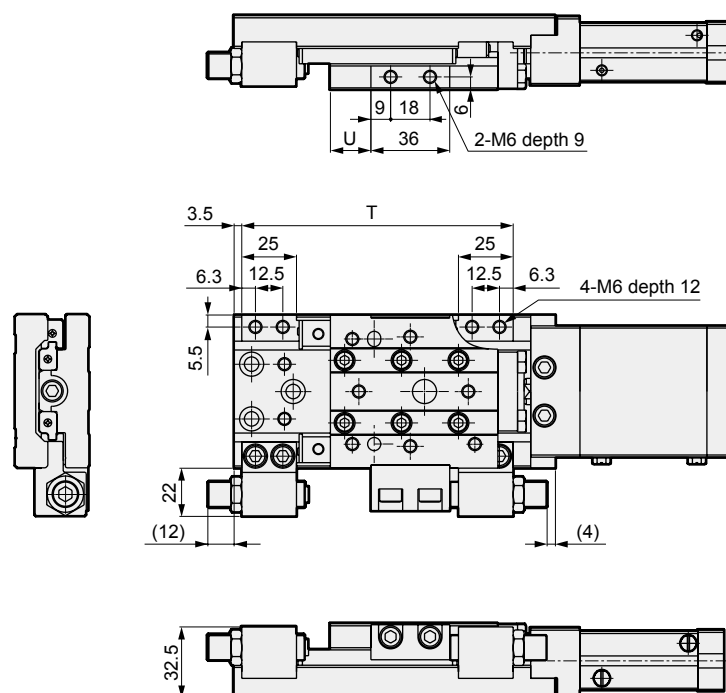


● With positioning hole LCX-25, 32-E

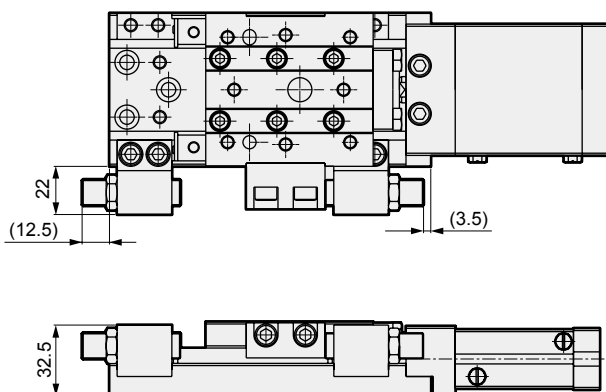
Bore size	Stroke length	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	RD			HD		
																			T0*	T2*	T2W*	T0*	T2*	T2W*
																			T5*	T3*	T3W*	T5*	T3*	T3W*
ø25	10	208	147	34	76.5	10	56	20	13	36.5	50	27	120	45	29.5	24.5	9.5	40	5	6.5	23.5	21.5		
	20	218		39														50						
	30	228		44														60						
	40	258	167	49								70												
	50	268		54								80												
ø32	10	208	147	34	76.5	10	56	20	13	36.5	60	27	120	45	31	25	9	40	5	6.5	23.5	21.5		
	20	218		39														50						
	30	228		44														60						
	40	258	167	49								70												
	50	268		54								80												

Dimensions: Option

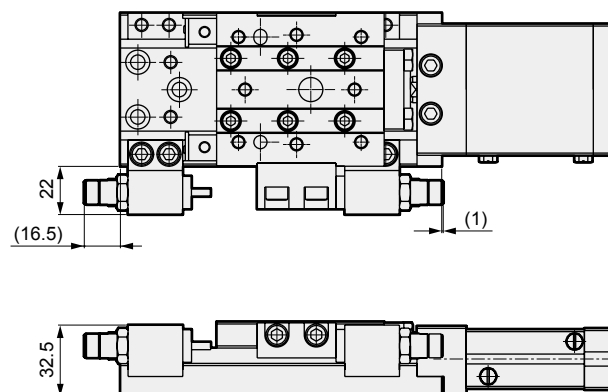
- Rubber cushion stopper (S1 to S6)



- Metal stopper (M1 to M6)



- Shock absorber stopper (A1 to A6)



Note: When the adjustable stroke range is increased or decreased with the rubber cushion stopper (S1 to S6) or metal stopper (M1 to M6), the dimensions in () increase or decrease accordingly.

Bore size	Stroke length	T	U	Adjustable stroke range (single side)		
				Cushion stopper	Metal stopper	Shock absorber stopper
ø25	10	124	18.5	5	5	1
	20			10	10	7
	30					
	40	144	28.5			
	50					
ø32	10	124	18.5	5	5	1
	20			10	10	7
	30					
	40	144	28.5			
	50					

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

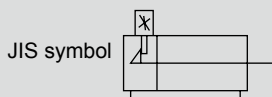
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFGD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Linear slide cylinder double acting/single rod/position locking

LCX-Q Series

● Bore size: $\phi 25/\phi 32$



Specifications

Item	LCX-Q	
Bore size	mm	$\phi 25$ $\phi 32$
Actuation	Double acting	
Working fluid	Compressed air	
Max. working pressure	MPa	0.7 (≈ 100 psi, 7 bar)
Min. working pressure	MPa	0.15 (≈ 22 psi, 1.5 bar)
Proof pressure	MPa	1.05 (≈ 150 psi, 10.5 bar)
Ambient temperature	$^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing) (*1)
Port size	M5	
Stroke tolerance	mm	+2.0 0 (*2)
Working piston speed	mm/s	20 to 500 (*3)
Cushion	With rubber cushion	
Position locking mechanism	Head side	
Holding force	N	130 230
Lubrication	Not available	
Allowable absorbed energy	J	Refer to Table 3 on page 299.

*1 : Contact CKD if the use environment is always cold (5 $^{\circ}\text{C}$ or below) or hot (40 $^{\circ}\text{C}$ and above).

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

*3 : Keep within 20 to 200 mm/s when using a metal stopper.

Stroke length

Bore size (mm)	Standard stroke length (mm)
$\phi 25$	10, 20, 30, 40, 50
$\phi 32$	10, 20, 30, 40, 50

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

Theoretical thrust table

Refer to page 298.

Switch specifications

Item	Reed 2-wire				Proximity 2-wire		Proximity 3-wire		
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3WH/T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay		
Output method	-		-		-		NPN output	PNP output	NPN output
Power supply voltage	-		-		-		10 to 28 VDC		
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less		50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA				1 mA or less		10 μA or less		
Weight	g 1 m:18 3 m:49 5 m:80				1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80		

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3 : The max. load current is 20 mA at 25 $^{\circ}\text{C}$. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25 $^{\circ}\text{C}$.
(5 to 10 mA at 60 $^{\circ}\text{C}$)

Cylinder weight

● Position locking

(Unit: g)

Bore size (mm)	Basic Stroke length (mm)				
	10	20	30	40	50
$\phi 25$	1,060	1,090	1,110	1,230	1,250
$\phi 32$	1,130	1,160	1,180	1,310	1,330

● Weight of variation/option (stopper)

(Unit: g)

Bore size (mm)	Option/stopper code		
	S1/S2	M1/M2	A1/A2
$\phi 25$	170		
$\phi 32$			

Without switch (built-in magnet for switch)

With switch (built-in magnet for switch)

A Bore size

Model No.

B Stroke length

F Option

© Switch model No.

D Switch quantity

Precautions for model No. selection

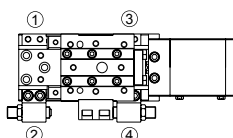
- *1 : To change the adjustable stroke length, use the discrete rubber cushion stopper or metal stopper on page 266.
- *2 : For the adjustable stroke range with a shock absorber stopper, refer to the stopper dimensions table on page 263.
- *3 : The steel stopper block (nitrided) (code: T) is recommended for a metal stopper.
- *4 : Combination of the rubber cushion stopper, metal stopper and shock absorber stopper is made to order.
- *5 : Keep within 20 to 200 mm/s when using a metal stopper.
- *6 : Can be selected for the type with stopper only.
- *7 : Do not attach to the stopper positions ③ and ④ since the locking mechanism works at the stroke end.
- *8 : The positioning hole enables assembling of the crossed unit and two-stage unit without adjusting the position. Use a positioning bolt as well (page 267).
- *9 : Refer to page 267 for single cylinder model No.

[Example of model No.]

LCX-Q-25-40-T2H-R-S1TE

Model: Linear slide cylinder Double acting/position
locking LCX-Q

- A** Bore size : $\varnothing 25$
- B** Stroke length : 40 mm
- C** Switch model No. : Proximity/2-wire
Axial lead wire
- D** Switch quantity : 1 on rod side
- E** Stopper : Rubber cushion stopper
Stopper position①
Material, steel (nitriding)
- F** Option : With positioning hole



Code	Description					
Ⓐ Bore size						
25	ø25					
32	ø32					
Ⓑ Stroke length (mm)						
10	10					
20	20					
30	30					
40	40					
50	50					
Ⓒ Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator lamp	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	no indicator lamp	
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*			●		display
T3PH*	T3PV*			●	1-color display (PNP output)	3-wire
T2WH*	T2WV*			●	2-color display	2-wire
T3WH*	T3WV*			●	display	3-wire
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
Ⓓ Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
Ⓔ Stopper						
Blank	Without stopper					
S Cushion stopper						*1, *4, *7
S1*	Stopper position①					Stopper mount position
S2*	Stopper position②					
M Metal stopper						*1, *3, *4, *5, *7
M1*	Stopper position①					Stopper mount position
M2*	Stopper position②					
A Shock absorber stopper						*2, *4, *7
A1*	Stopper position①					Stopper mount position
A2*	Stopper position②					
* part						
Blank	Stopper block material: steel					
T	Stopper block material: steel (nitriding) *6					
Ⓕ Option						
Blank	No option					
E	With positioning hole *8					

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Endin

How to order switch

SW - T2H3

Switch model No.
(Item © on page 265)

How to order a stopper set

- Set of a stopper and rubber cushion stopper, metal stopper or shock absorber stopper
- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.

LCX - 25 - S 2 - S02

Bore size
(Item A on page 265)

A Stopper	
S	Cushion stopper
M	Metal stopper
A	Shock absorber stopper

B Stopper installation position	
1	Stopper position①
2	Stopper position②

C Adjustable stroke length		*1
Blank	Adjustable stroke range 10 mm	
S02	Adjustable stroke range 20 mm	

*1: Cannot be selected for the shock absorber stopper "A".

(Unit: g)

Model No.				Weight
LCX	25 32	S1	Blank	70
		S2	S02	80
		M1	Blank	70
		M2	S02	80
		A1	-	70
		A2	-	70

How to order discrete rubber cushion stopper

- Hexagon socket set screw with urethane
- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - S02

Bore size
(Item A on page 265)

A Adjustable stroke range	
S01	Single side 10 mm (standard)
S02	Single side 20 mm

(Unit: g)

Model No.				Weight
LCX	25	S01		30
	32	S02		40

How to order discrete metal stopper

- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - M02

Bore size
(Item A on page 265)

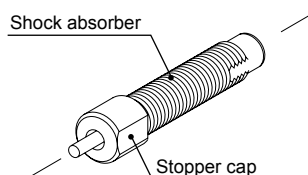
A Adjustable stroke range	
M01	Single side 10 mm (standard)
M02	Single side 20 mm

(Unit: g)

Model No.				Weight
LCX	25	M01		30
	32	M02		40

How to order discrete shock absorber stopper

- Set of a shock absorber and stopper cap
- Use when changing from the rubber cushion stopper or metal stopper to the shock absorber stopper.



LCX - 25 - A01

Bore size
(Item ① on page 265)

Note: For the adjustable stroke range with a shock absorber stopper, refer to page 263.

Applicable shock absorber model No.

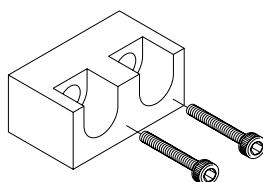
Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

(Unit: g)

	Model No.	Weight
LCX	25	A01
	32	30

How to order discrete stopper block

- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.



LCX - 25 - SB1 T

Bore size
(Item ① on page 265)

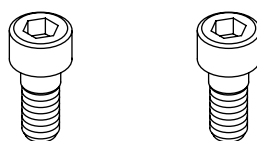
A Stopper block	
SB1	For 30, 50 mm stroke length
SB2	For 10, 20, 40 mm stroke length
B Material	
Blank	Stopper block material: steel
T	Stopper block material: steel (nitriding)

(Unit: g)

	Model No.	Weight
LCX	25	SB1(T)
	32	SB2(T)
		80
		100

How to order positioning bolt

- Hexagon socket head cap screw for positioning
- Enables assembling of the crossed unit and two-stage unit without adjusting the position.



(2 pieces/set)

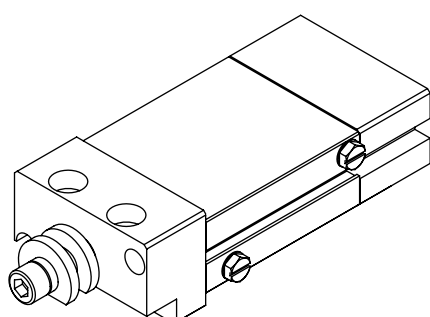
LCX - 25 - J

(Unit: g)

	Model No.	Weight
LCX	25	J
		10

* Weight per set (2 pieces)

How to order single cylinder



LCX-Q - CYL - 25 - 40

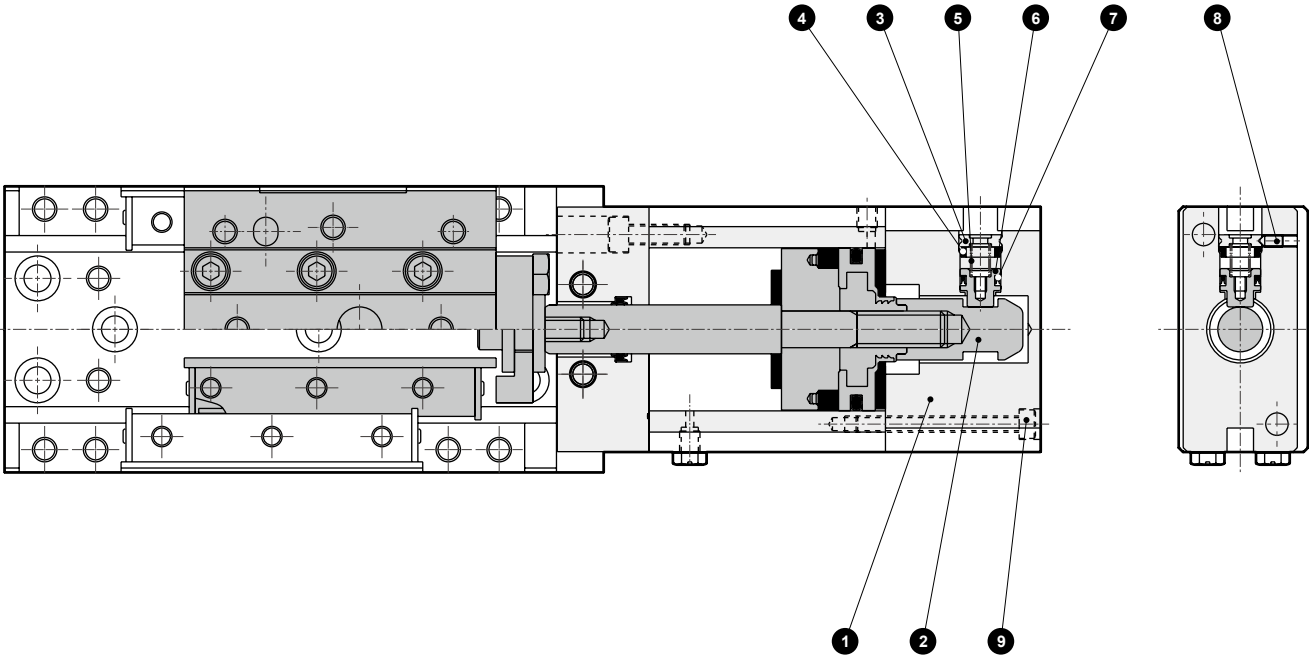
Bore size
(Item ① on page 265)

Stroke length
(Item ② on page 265)

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list



Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy	Alumite	6	Stopper piston	Carbon steel	Nitriding
2	Sleeve	Carbon steel	Nitriding	7	Stopper packing	Nitrile rubber	
3	Stopper cover	Stainless steel		8	Hexagon socket set screw	Alloy steel	Black finish
4	Cushion rubber	Urethane rubber		9	Hexagon socket head cap screw	Alloy steel	Zinc chromate
5	Coil spring	Steel					

Repair parts list

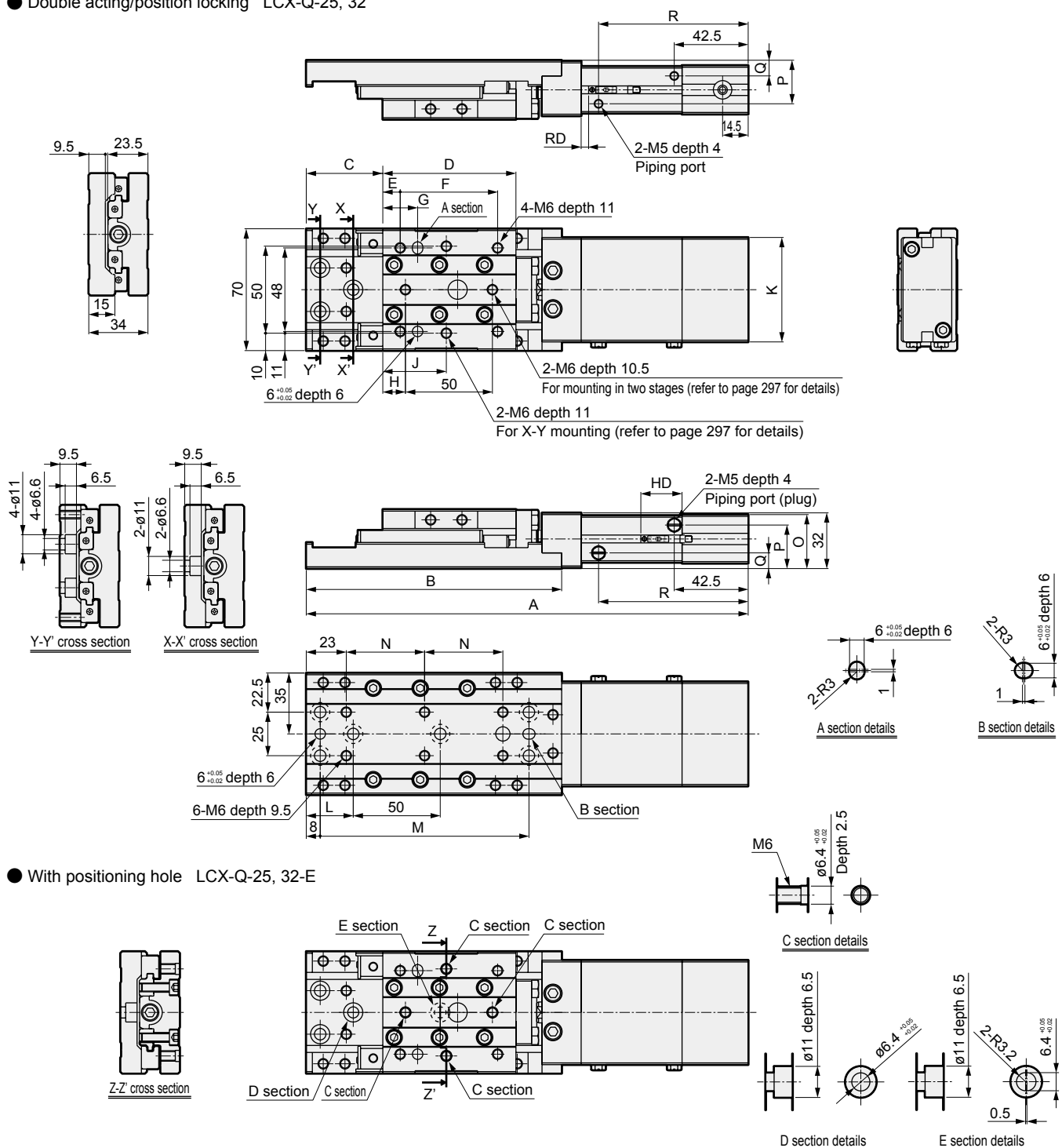
Bore size (mm)	Kit No.	Repair parts No.	
		Repair parts for position locking	Basic parts are repair parts
ø25	LCX-Q-25K	4 7	17 18
ø32	LCX-Q-32K		20 23

Note: The repair part numbers for the base section correspond to those in the double acting/single rod parts list on page 260.

Dimensions



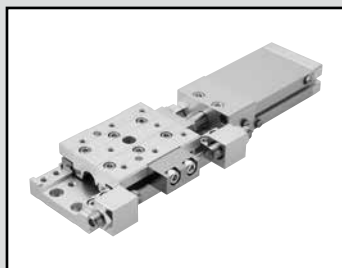
- Double acting/position locking LCX-Q-25, 32



- With positioning hole LCX-Q-25, 32-E

Bore size	Stroke length	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	RD			HD		
																			T0*	T2*	T2W*	T0*	T2*	T2W*
																			T5*	T3*	T3W*	T5*	T3*	T3W*
ø25	10	234		34														66						
	20	244	147	39	76.5	10	56	20	13	36.5		27	120	45				76						
	30	254		44							50				29.5	24.5	9.5	86						
	40	284		49	86.5	15	64	30	23	46.5		41	140	55				96						
	50	294	167	54														106						
ø32	10	234		34														66						
	20	244	147	39	76.5	10	56	20	13	36.5		27	120	45				76						
	30	254		44							60				31	25	9	86						
	40	284		49	86.5	15	64	30	23	46.5		41	140	55				96						
	50	294	167	54														106						

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Linear slide cylinder
Double acting/single rod clean-room specifications

LCX-P7* Series

● Bore size: $\phi 25/\phi 32$



Specifications

Item	LCX-P7*	
Bore size	mm	$\phi 25$ $\phi 32$
Actuation	Double acting	
Working fluid	Compressed air	
Max. working pressure	MPa	0.7 (≈ 100 psi, 7 bar)
Min. working pressure	MPa	0.15 (≈ 22 psi, 1.5 bar)
Proof pressure	MPa	1.05 (≈ 150 psi, 10.5 bar)
Ambient temperature	$^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing) (*1)
Port size	M5	
Pressure relief port size	M5	
Stroke tolerance	mm	+2.0 0 (*2)
Working piston speed	mm/s	20 to 500
Cushion	With rubber cushion	
Lubrication	Not available	
Allowable absorbed energy	J	Refer to Table 3 on page 299.

Stroke length

Bore size (mm)	Standard stroke length (mm)
$\phi 25$	10, 20, 30, 40, 50
$\phi 32$	10, 20, 30, 40, 50

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

*1: Contact CKD if the use environment is always cold (5°C or below) or hot (40°C and above).

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

*3: Keep within 20 to 200 mm/s when using a metal stopper.

Theoretical thrust table

Refer to page 298.

Switch specifications

Item	Reed 2-wire				Proximity 2-wire		Proximity 3-wire		
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3WH/ T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay		
Output method	-		-		-		NPN output	PNP output	NPN output
Power supply voltage	-		-		-		10 to 28 VDC		
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less		50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA				1 mA or less		10 µA or less		
Weight	g 1 m:18 3 m:49 5 m:80				1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80		

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: The max. load current is 20 mA at 25°C . The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C .
(5 to 10 mA at 60°C)

Cylinder weight

● Clean-room specifications

(Unit: g)

Bore size (mm)	Basic Stroke length (mm)				
	10	20	30	40	50
$\phi 25$	1,010	1,040	1,060	1,180	1,200
$\phi 32$	1,060	1,090	1,110	1,240	1,260

● Weight of variation/option (stopper)

(Unit: g)

Bore size (mm)	Option/stopper code			
	S1 to S4	M1 to M4	S5/S6	M5/M6
$\phi 25$	170		240	
$\phi 32$				

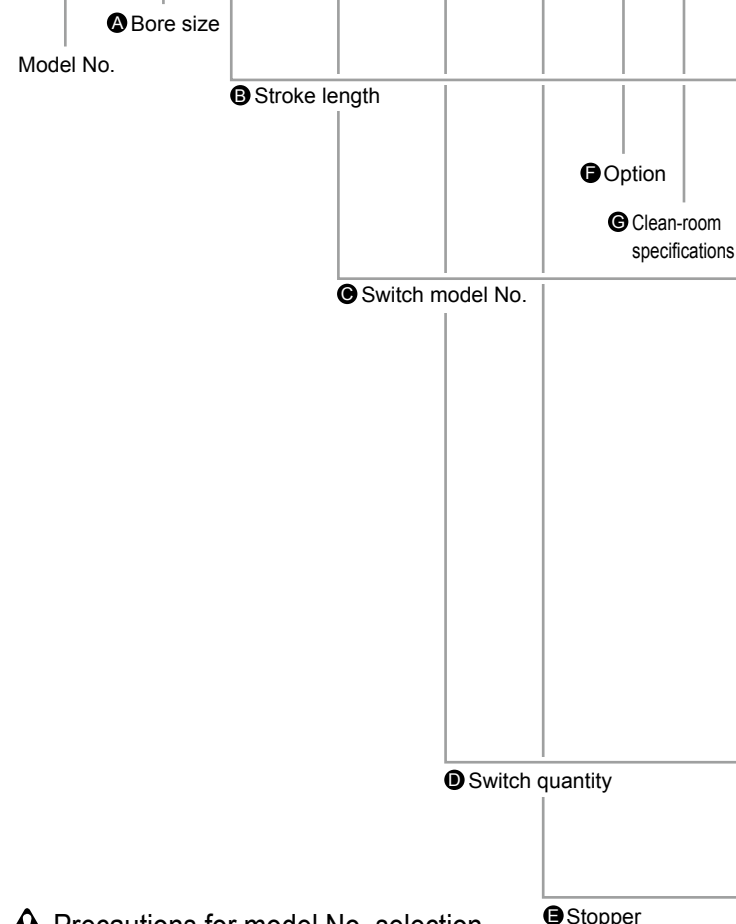
How to order

Without switch (built-in magnet for switch)

LCX - 25 - 40 - S5 E P72

With switch (built-in magnet for switch)

LCX - 25 - 40 - T2H* - R - S1T E P72



⚠ Precautions for model No. selection

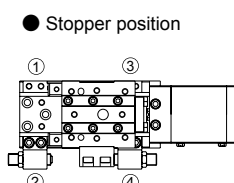
- *1 : To change the adjustable stroke length, use the discrete rubber cushion stopper or metal stopper on page 272.
- *2 : Can be selected for the type with stopper only.
- *3 : The steel stopper block (nitrided) (code: T) is recommended for a metal stopper.
- *4 : Combination of the rubber cushion stopper and metal stopper is made to order.
- *5 : Keep within 20 to 200 mm/s when using a metal stopper.
- *6 : Refer to page 273 for single cylinder model No.

[Example of model No.]

LCX-25-40-T2H-R-S1TEP72

Model: Linear slide cylinder
Double acting/single rod
(clean-room specifications) LCX-P7*

- A Bore size : $\phi 25$
- B Stroke length : 40 mm
- C Switch model No. : Proximity/2-wire
Axial lead wire
- D Switch quantity : 1 on rod side
- E Stopper : Cushion stopper
Stopper position①
Material, steel (nitriding)
- F Option : With positioning hole
- G Clean-room specifications : Exhaust port



Code	Description					
A Bore size						
25	ø25					
32	ø32					
B Stroke length (mm)						
10	10					
20	20					
30	30					
40	40					
50	50					
C Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator lamp	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	no indicator lamp	
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*			●	display	3-wire
T3PH*	T3PV*			●	1-color display (PNP output)	3-wire
T2WH*	T2WV*			●	2-color display	2-wire
T3WH*	T3WV*			●	display	3-wire
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
D Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
E Stopper						
Blank	Without stopper					
S Cushion stopper						*1, *2
S1*	Stopper position ① (can be changed to ④)					Stopper installation position
S2*	Stopper position ② (can be changed to ③)					
S3*	Stopper position ③ (can be changed to ②)					
S4*	Stopper position ④ (can be changed to ①)					
S5*	Stopper position ①,③					
S6*	Stopper position ②,④					
M Metal stopper						*1, *3, *4, *5
M1*	Stopper position ① (can be changed to ④)					Stopper installation position
M2*	Stopper position ② (can be changed to ③)					
M3*	Stopper position ③ (can be changed to ②)					
M4*	Stopper position ④ (can be changed to ①)					
M5*	Stopper position ①,③					
M6*	Stopper position ②,④					
* part						
Blank	Stopper block material: steel					
T	Stopper block material: steel (nitriding) *2					
F Option						
Blank	No option					
E	With positioning hole					
G Clean-room specifications						
	Structure					
P72	Exhaust port					
P73	Vacuum treatment					

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

How to order switch

SW - T2H3

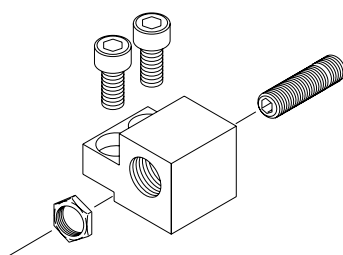
Switch model No.
(Item © on page 271)

How to order a stopper set

- Set of a stopper and rubber cushion stopper or metal stopper.
- Use when changing from the standard to the type with rubber cushion stopper or metal stopper.

LCX - 25 - S 2 - S02

Bore size
(Item A on page 271)



A Stopper	
S	Cushion stopper
M	Metal stopper
B Stopper installation position	
1	Stopper position for ① or ④
2	Stopper position for ② or ③
C Adjustable stroke length *1	
Blank	Adjustable stroke range 10 mm
S02	Adjustable stroke range 20 mm

(Unit: g)

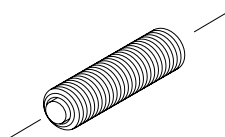
Model No.				Weight
LCX	25	S1	Blank	70
		S2	S02	80
		M1	Blank	70
		M2	S02	80
		A1	-	70
		A2	-	70

How to order discrete rubber cushion stopper

- Hexagon socket set screw with urethane
- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - S02

Bore size
(Item A on page 271)



A Adjustable stroke range	
S01	Single side 10 mm (standard)
S02	Single side 20 mm

(Unit: g)

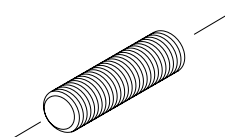
Model No.				Weight
LCX	25	S01		30
	32	S02		40

How to order discrete metal stopper

- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - M02

Bore size
(Item A on page 271)



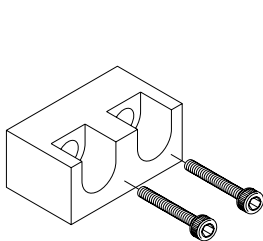
A Adjustable stroke range	
M01	Single side 10 mm (standard)
M02	Single side 20 mm

(Unit: g)

Model No.				Weight
LCX	25	M01		30
	32	M02		40

How to order discrete stopper block

- Use when changing from the standard to the type with rubber cushion stopper or metal stopper.



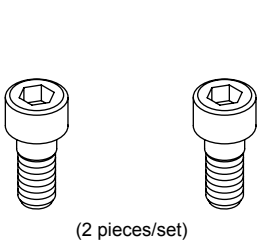
LCX - 25 - SB1 T

Bore size
(Item ① on page 271)

A Stopper block		
SB1	For 30, 50 mm stroke length	
SB2	For 10, 20, 40 mm stroke length	
B Material		
Blank	Stopper block material: steel	
T	Stopper block material: steel (nitriding)	
(Unit: g)		
Model No.		Weight
LCX	25	SB1(T) 80
	32	SB2(T) 100

How to order positioning bolt

- Hexagon socket head cap screw for positioning
- Enables assembling of the crossed unit and two-stage unit without adjusting the position.



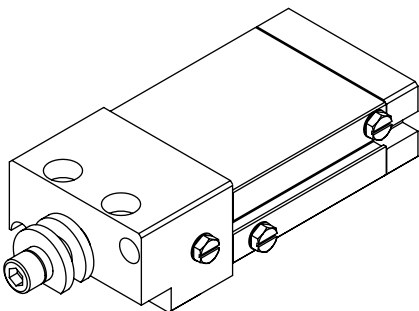
(2 pieces/set)

LCX - 25 - J

(Unit: g)			
Model No.			Weight
LCX	25	J	10

* Weight per set (2 pieces)

How to order single cylinder



LCX - CYL - 25 - 40 - P72

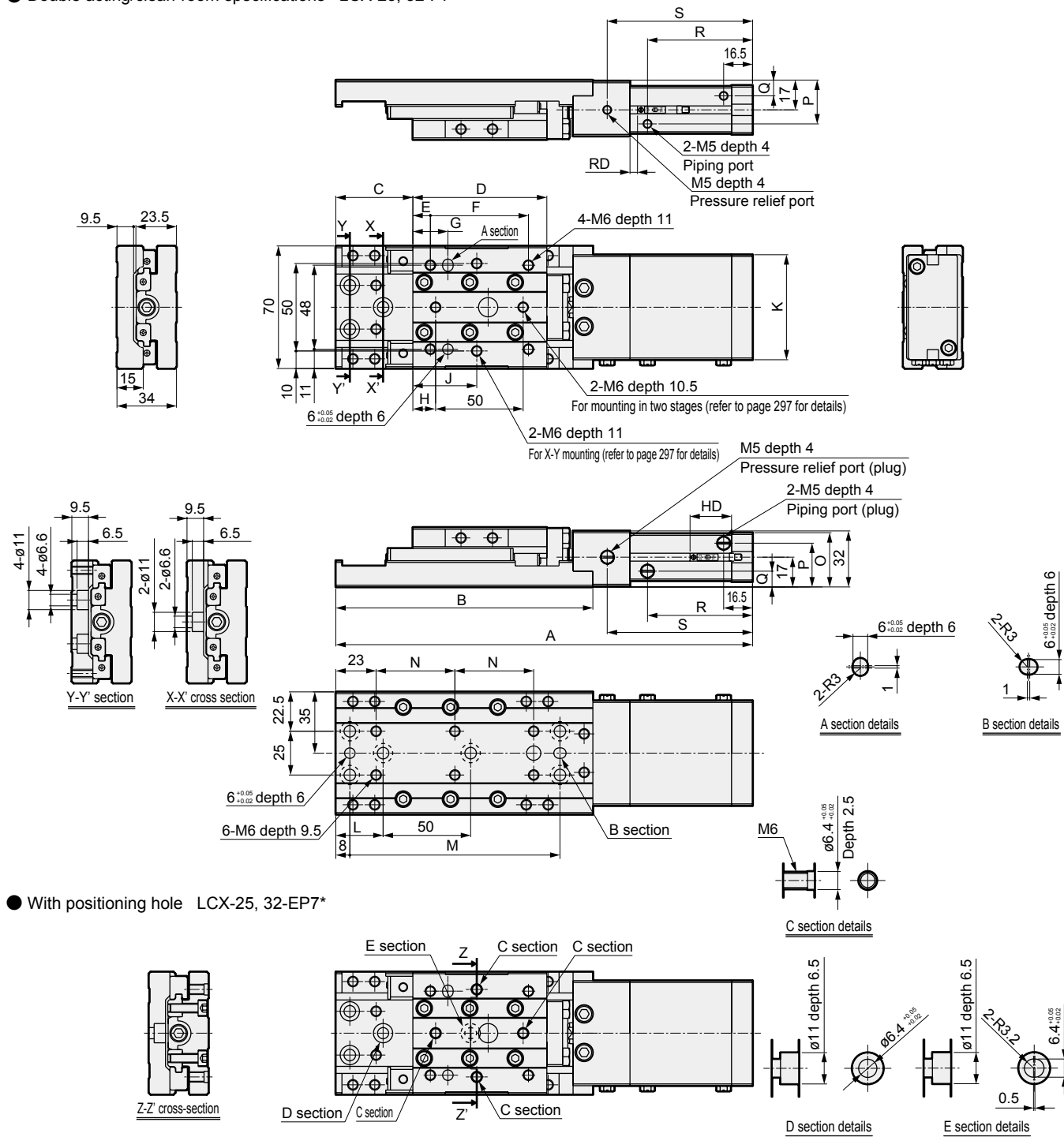
Bore size
(Item ① on page 271)

Stroke length
(Item ② on page 271)

A Variation	
P72	Clean-room specifications (exhaust port)
P73	Clean-room specifications (vacuum treatment)

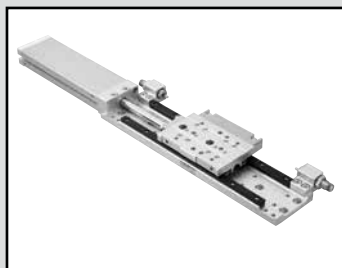
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

● Double acting/clean-room specifications LCX-25, 32-P7*



Bore size	Stroke length	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	RD		HD			
																				T0*	T2*	T2W*	T0*	T2*	T2W*
																				T5*	T3*	T3W*	T5*	T3*	T3W*
ø25	10	218	147	34	76.5	10	56	20	13	36.5	50	27	120	45	29.5	24.5	9.5	40	63	5	6.5	23.5	21.5		
	20	228		39														50	73						
	30	238		44														60	83						
	40	268	167	49	86.5	15	64	30	23	46.5		70	93												
	50	278		54								80	103												
ø32	10	218	147	34	76.5	10	56	20	13	36.5	60	27	120	45	31	25	9	40	63	5	6.5	23.5	21.5		
	20	228		39														50	73						
	30	238		44														60	83						
	40	268	167	49	86.5	15	64	30	23	46.5		70	93												
	50	278		54								80	103												

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending



Linear slide cylinder Double acting/single rod/long stroke

LCX-*L Series

● Bore size: $\varnothing 25/\varnothing 32$

JIS symbol



Specifications

Item	LCX	
Bore size mm	$\varnothing 25$	$\varnothing 32$
Actuation	Double acting	
Working fluid	Compressed air	
Max. working pressure MPa	0.7 (≈ 100 psi, 7 bar)	
Min. working pressure MPa	0.15 (≈ 22 psi, 1.5 bar)	
Proof pressure MPa	1.05 (≈ 150 psi, 10.5 bar)	
Ambient temperature $^{\circ}\text{C}$	-10 to 60 (no freezing) (*1)	
Port size	M5	
Stroke tolerance mm	+2.0 0 (*2)	
Working piston speed mm/s	20 to 500 (*3)	
Cushion	With rubber cushion	
Lubrication	Not available	
Allowable absorbed energy J	Refer to Table 3 on page 299.	

*1: Contact CKD if the use environment is always cold (5°C or below) or hot (40°C and above).

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

*3: Keep within 20 to 200 mm/s when using a metal stopper.

Stroke length

Bore size (mm)	Standard stroke length (mm)
$\varnothing 25$	75, 100, 125, 150
$\varnothing 32$	75, 100, 125, 150

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

Theoretical thrust table

Refer to page 298.

Switch specifications

Item	Reed 2-wire				Proximity 2-wire		Proximity 3-wire		
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/ T2WV	T3H/ T3V	T3PH/ T3PV	T3WH/ T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay		
Output method	-		-		-		NPN output	PNP output	NPN output
Power supply voltage	-		-		-		10 to 28 VDC		
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less		50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA				1 mA or less		10 µA or less		
Weight	g	1 m:18 3 m:49 5 m:80			1 m:18		1 m:18		
3 m:49					3 m:49				
5 m:80					5 m:80				

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C.
(5 to 10 mA at 60°C)

Cylinder weight

● Basic

(Unit: g)

Bore size (mm)	Basic Stroke length (mm)			
	75	100	125	150
ø25	1,500	1,640	1,790	1,930
ø32	1,600	1,750	1,900	2,050

● Additional weight of options

(Unit: g)

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

Specifications for rechargeable battery (Catalog No. CC-1226A)

LCX - *L ... - **P4***

● Design compatible with rechargeable battery manufacturing process.

* Contact CKD for details.

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

LCX-*L Series

How to order

Without switch (built-in magnet for switch)

LCX - 25 L - 100 - S5

With switch (built-in magnet for switch)

LCX - 25 L - 100 - T2H* - R - A1T

Model No.

Stroke length

Bore size

Switch model No.

Switch quantity

Stopper

Precautions for model No. selection

- *1 : To change the adjustable stroke length, use the discrete rubber cushion stopper or metal stopper on page 280.
- *2 : For the adjustable stroke range with a shock absorber stopper, refer to the stopper dimensions table on page 285.
- *3 : The steel stopper block (nitrided) (code: T) is recommended for a metal stopper.
- *4 : Combination of the rubber cushion stopper, metal stopper and shock absorber stopper is made to order.
- *5 : Keep within 20 to 200 mm/s when using a metal stopper.
- *6 : Can be selected for the type with stopper only.
- *7 : The long stroke length has a positioning hole option (code: E) as standard.
- *8 : Refer to page 281 for single cylinder model No.

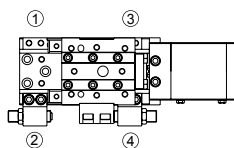
[Example of model No.]

LCX-25L-100-T2H-R-A1T

Model: Linear slide cylinder
Double acting/single rod LCX

- A Bore size : $\phi 25$
- B Stroke length : 100 mm
- C Switch model No. : Proximity/2-wire
Axial lead wire
- D Switch quantity : 1 on rod side
- E Stopper : Shock absorber stopper
Stopper position①
Material, steel (nitriding)

● Stopper position



Code	Description					
A Bore size						
25	ø25					
32	ø32					
B Stroke length (mm)						
75	75					
100	100					
125	125					
150	150					
C Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator lamp	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T2H*	T2V*	Proximity		●	1-color	2-wire
T3H*	T3V*			●	display	3-wire
T3PH*	T3PV*			●	1-color display (PNP output)	3-wire
T2WH*	T2WV*			●	2-color	2-wire
T3WH*	T3WV*			●	display	3-wire
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
D Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
E Stopper						
Blank	Without stopper					
S Cushion stopper						*1, *4
S1*	Stopper position ① (can be changed to ④)					Stopper installation position
S2*	Stopper position ② (can be changed to ③)					
S3*	Stopper position ③ (can be changed to ②)					
S4*	Stopper position ④ (can be changed to ①)					
S5*	Stopper position ①,③					
S6*	Stopper position ②,④					
M Metal stopper						*1, *3, *4, *5
M1*	Stopper position ① (can be changed to ④)					Stopper installation position
M2*	Stopper position ② (can be changed to ③)					
M3*	Stopper position ③ (can be changed to ②)					
M4*	Stopper position ④ (can be changed to ①)					
M5*	Stopper position ①,③					
M6*	Stopper position ②,④					
A Shock absorber stopper						*2, *4, *7
A1*	Stopper position ① (can be changed to ④)					Stopper installation position
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					
* part						
Blank	Stopper block material: steel					
T	Stopper block material: steel (nitriding)					*6

How to order switch

SW - T2H3

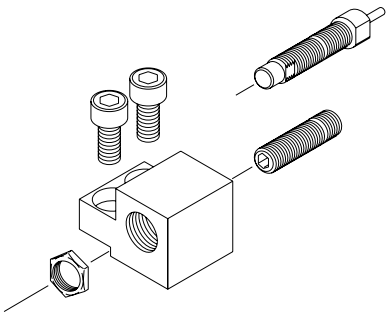
Switch model No.
(Item © on page 278)

How to order a stopper set

- Set of a stopper and rubber cushion stopper, metal stopper or shock absorber stopper
- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.

LCX - 25 - S 2 - S02

Bore size
(Item A on page 278)



*1: Cannot be selected for the shock absorber stopper "A".

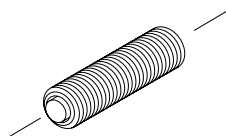
A Stopper	
S	Cushion stopper
M	Metal stopper
A	Shock absorber stopper
B Stopper installation position	
1	Stopper position for ① or ④
2	Stopper position for ② or ③
C Adjustable stroke length ^{*1}	
Blank	Adjustable stroke range 10 mm
S02	Adjustable stroke range 20 mm

Model No.				(Unit: g)	
LCX	25	S1	Blank	70	
			S02	80	
		M1	Blank	70	
			S02	80	
	32	A1	-	70	
		A2			

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

How to order discrete rubber cushion stopper

- Hexagon socket set screw with urethane
- Use when changing the adjustable stroke range or when using a custom stroke length.



LCX - 25 - S02

Bore size
(Item A on page 278)

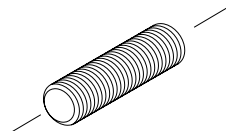
A Adjustable stroke range	
S01	Single side 10 mm (standard)
S02	Single side 20 mm

(Unit: g)

Model No.		Weight
LCX	25	S01 30
	32	S02 40

How to order discrete metal stopper

- Use when changing the adjustable stroke range or when using a custom stroke length.



LCX - 25 - M02

Bore size
(Item A on page 278)

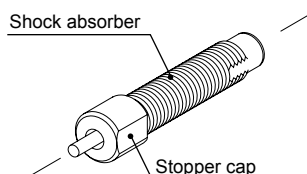
A Adjustable stroke range	
M01	Single side 10 mm (standard)
M02	Single side 20 mm

(Unit: g)

Model No.		Weight
LCX	25	M01 30
	32	M02 40

How to order discrete shock absorber stopper

- Set of a shock absorber and stopper cap
- Use when changing from the rubber cushion stopper or metal stopper to the shock absorber stopper.



LCX - 25 - A01

Bore size
(Item A on page 278)

Note: For the adjustable stroke range with a shock absorber stopper, refer to page 285.

Applicable shock absorber model No.

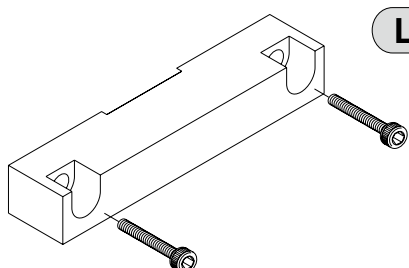
Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

(Unit: g)

Model No.		Weight
LCX	25	A01 30
	32	

How to order discrete stopper block

- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.



LCX - 25 L - SB3 T

Bore size
(Item A on page 278)

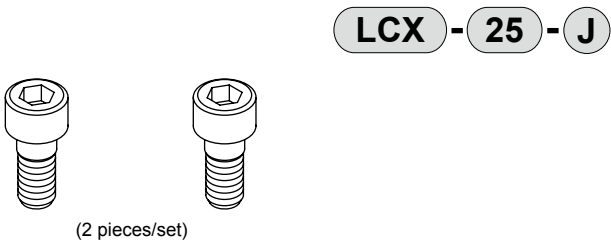
A Material	
Blank	Stopper block material: steel
T	Stopper block material: steel (nitriding)

(Unit: g)

Model No.		Weight
LCX	25L	SB3(T) 250
	32L	

How to order positioning bolt

- Hexagon socket head cap screw for positioning
- Enables assembling of the crossed unit and two-stage unit without adjusting the position.

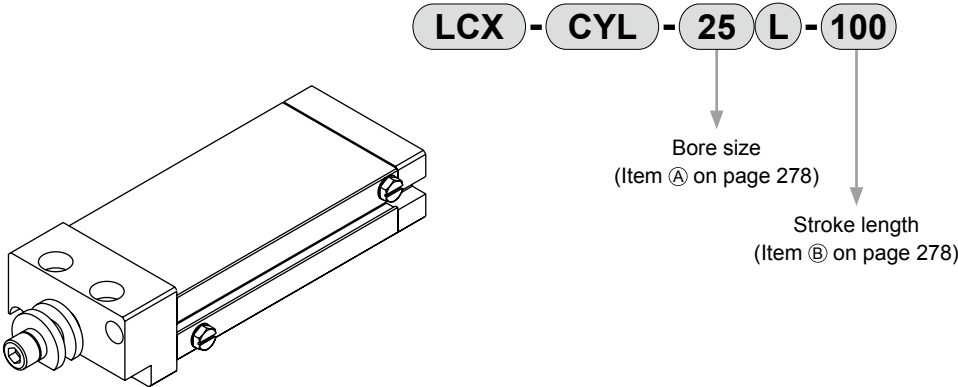


(Unit: g)

Model No.		Weight	
LCX	25	J	10

* Weight per set (2 pieces)

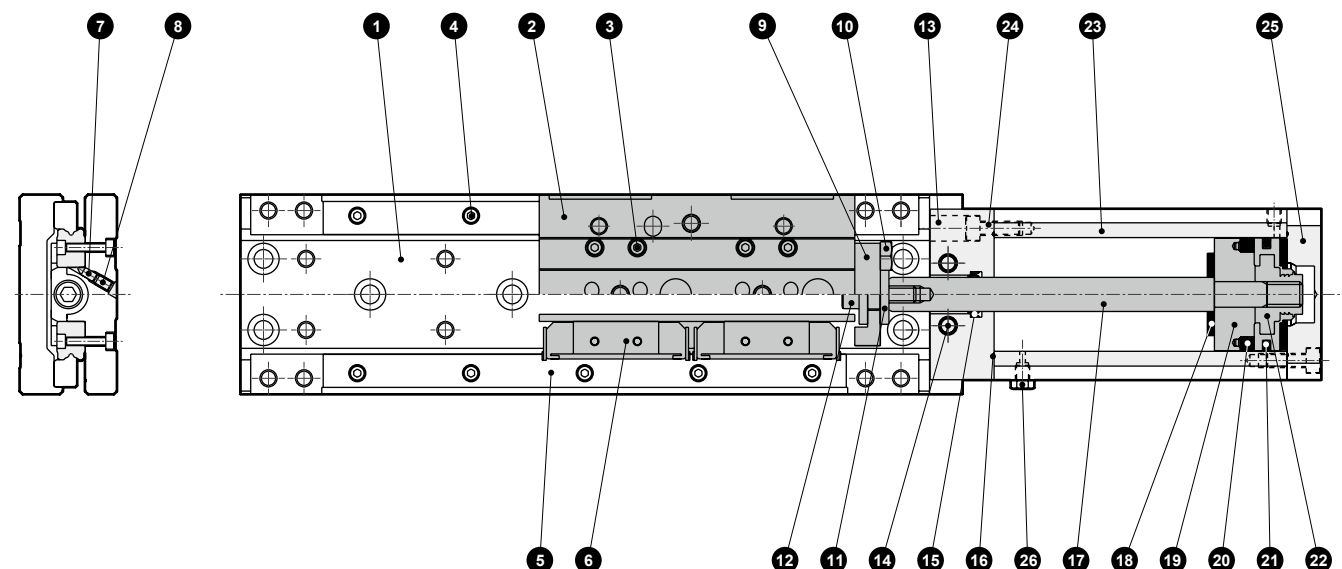
How to order single cylinder



LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list

● LCX



Parts list

No.	Part name	Material	Remarks	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 chrome plating
5	Guide rail	Alloy steel	Black chromium film	18	Cushion rubber	Urethane rubber	
6	Guide block	Alloy steel + resin	Black chromium film (alloy steel section)	19	Spacer	Aluminum alloy	
7	Adjusting pin	Stainless steel		20	Magnet	Plastic	
8	Hexagon socket set screw	Alloy steel	Zinc chromate	21	Piston packing	Nitrile rubber	
9	Plate	Aluminum alloy	Alumite	22	Piston	Aluminum alloy + polyacetal	
10	Hexagon head bolt	Stainless steel		23	Cylinder body	Aluminum alloy	Hard alumite
11	Floating bush	Stainless steel		24	Hexagon socket head cap screw	Stainless steel	
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	Nickeling

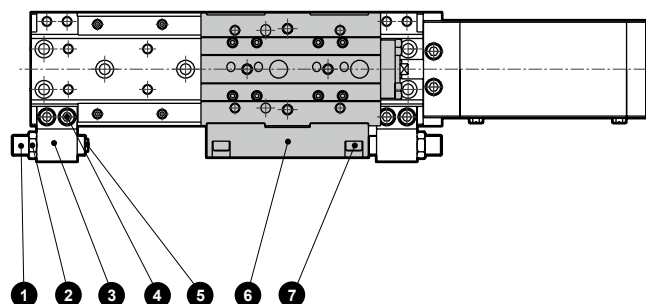
Repair parts list

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

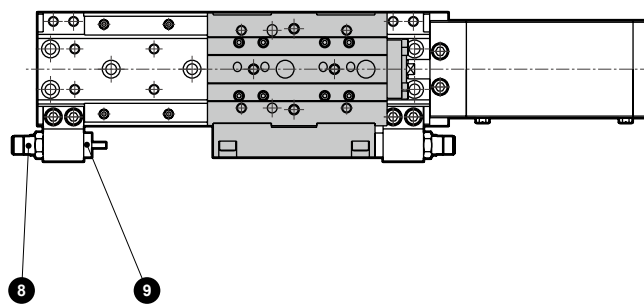
Internal structure and parts list

Structure with stopper

● Rubber cushion stopper, metal stopper



● Shock absorber stopper



Parts list

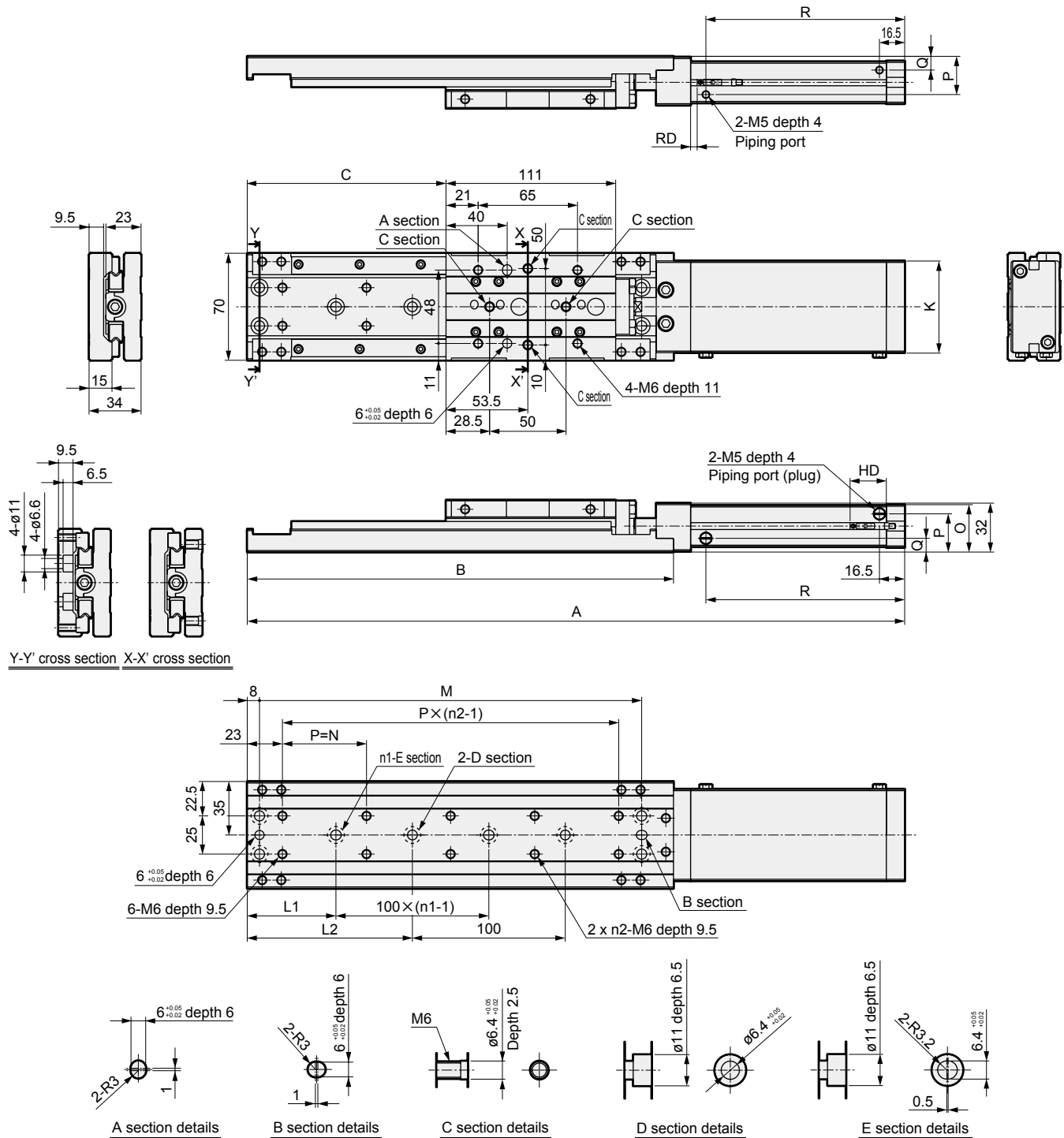
No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Stopper bolt	Alloy steel	Nickeling	6	Stopper block (Stopper block code: Blank)	Steel	Nickeling
2	Hexagon nut	Alloy steel	Zinc chromate		Stopper block (Stopper block code: T)	Steel	Nitriding
3	Stopper	Aluminum alloy	Alumite	7	Hexagon socket 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	Cushion rubber type stopper only	9	Stop cap	Stainless steel	

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Dimensions



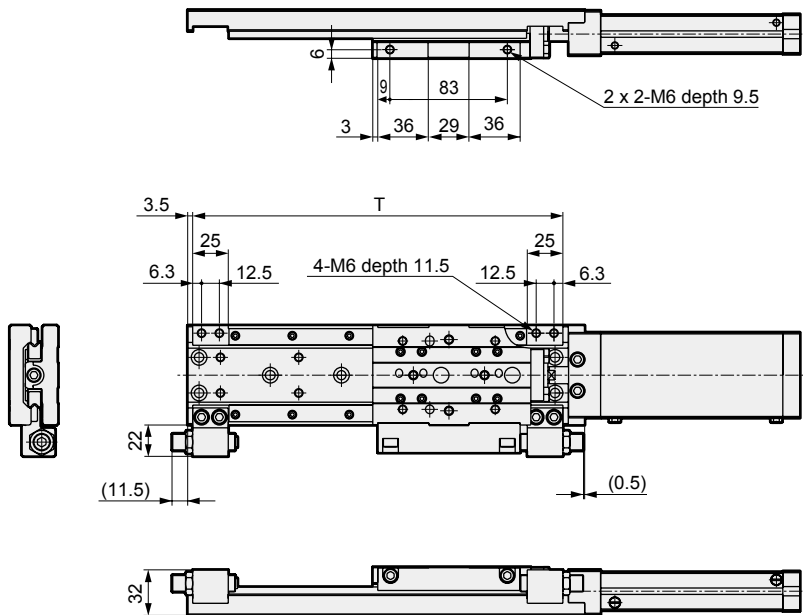
● Double acting/single rod/long stroke length LCX-*L



Bore size	Stroke length	A	B	C	K	L1	L2	n1	n2	M	N	O	P	Q	R	RD			HD		
																T0*	T2*	T2W*	T0*	T2*	T2W*
																T5*	T3*	T3W*	T5*	T3*	T3W*
ø25	75	380	254	105	50	45.5	95.5	2	5	225	49	29.5	24.5	9.5	105	5	6.5	23.5	21.5		
	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						
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						

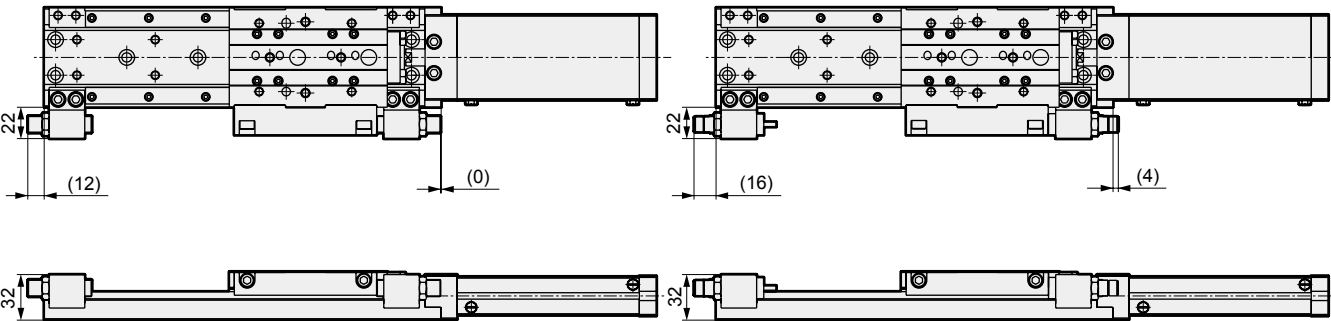
Dimensions: Option

● Rubber cushion stopper (S1 to S6)



● Metal stopper (M1 to M6)

● Shock absorber stopper (A1 to A6)

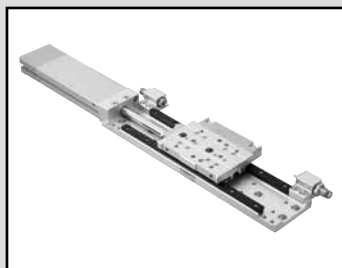


Note: When the adjustable stroke range increases or decreases with the rubber cushion stopper (S1 to S6) or metal stopper (M1 to M6), the dimensions in () increase or decrease accordingly.

Bore size	Stroke length	T	Adjustable stroke range (single side)		
			Cushion stopper	Metal stopper	Shock absorber stopper
ø25	75	235	10	10	7
	100	260			
	125	285			
	150	310			
ø32	75	235	10	10	7
	100	260			
	125	285			
	150	310			

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

LCM
 LCR
 LCG
 LCW
LCX
 STM
 STG
 STS/STL
 STR2
 UCA2
 ULK*
 JSK/M2
 JSG
 USC3/JSC4
 USSD
 UFCDD
 USC
 UB
 JSB3
 LMB
 LML
 HCM
 HCA
 LBC
 CAC4
 UCAC2
 CAC-N
 UCAC-N
 RCS2
 RCC2
 PCC
 SHC
 MCP
 GLC
 MFC
 BBS
 RRC
 GRC
 RV3*
 NHS
 HRL
 LN
 Hand
 Chuk
 MecHnd/Chuk
 ShkAbs
 FJ
 FK
 SpdContr
 Ending

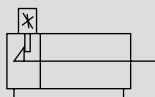


Linear slide cylinder
Double acting/single rod/position locking Long stroke length

LCX-Q-*L Series

● Bore size: $\phi 25/\phi 32$

JIS symbol



Specifications

Item	LCX-Q-*L	
Bore size	mm	$\phi 25$ $\phi 32$
Actuation	Double acting	
Working fluid	Compressed air	
Max. working pressure	MPa	0.7 (≈ 100 psi, 7 bar)
Min. working pressure	MPa	0.15 (≈ 22 psi, 1.5 bar)
Proof pressure	MPa	1.05 (≈ 150 psi, 10.5 bar)
Ambient temperature	$^{\circ}\text{C}$	-10 (14°F) to 60 (140°F) (no freezing) (*1)
Port size	M5	
Stroke tolerance	mm	+2.0 0 (*2)
Working piston speed	mm/s	20 to 500 (*3)
Cushion	With rubber cushion	
Holding force	N	130 230
Position locking mechanism	Head side	
Lubrication	Not available	
Allowable absorbed energy	J	Refer to Table 3 on page 299.

Stroke length

Bore size (mm)	Standard stroke length (mm)
$\phi 25$	75, 100, 125, 150
$\phi 32$	75, 100, 125, 150

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

*1 : Contact CKD if the use environment is always cold (5°C or below) or hot (40°C and above).
 *2 : Note that there will be a slight gap between the plate and floating bush if no stopper is attached.
 *3 : Keep within 20 to 200 mm/s when using a metal stopper.

Theoretical thrust table

Refer to page 298.

Switch specifications

Item	Reed 2-wire		Proximity 2-wire		Proximity 3-wire		
	T0H/T0V	T5H/T5V	T2H/T2V	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3WH/T3WV
Applications	For programmable controller, relay	For programmable controller, relay, IC circuit (without indicator lamp), serial connection	Dedicated for programmable controller		For programmable controller, relay		
Output method	-	-	-		NPN output	PNP output	NPN output
Power supply voltage	-	-	-		10 to 28 VDC		
Load voltage	12/24 VDC 110 VAC	5/12/24 VDC 110 VAC	10 to 30 VDC	24 VDC $\pm 10\%$	30 VDC or less		
Load current	5 to 50 mA 7 to 20 mA	50 mA or less 20 mA or less	5 to 20 mA		100 mA or less	50 mA or less	
Indicator lamp	LED (Lit when ON)	Without indicator lamp	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA		1 mA or less		10 μA or less		
Weight	g 1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80		

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
 *2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
 *3 : The max. load current is 20 mA at 25°C . The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C .
 (5 to 10 mA at 60°C)

Cylinder weight

● Position locking

Bore size (mm)	Basic Stroke length (mm)			
	75	100	125	150
$\phi 25$	1,580	1,720	1,870	2,010
$\phi 32$	1,730	1,880	2,030	2,180

● Weight of variation/option (stopper)

(Unit: g)

Bore size (mm)	Option/stopper code		
	S1/S2	M1/M2	A1/A2
$\phi 25$	320		
$\phi 32$			

How to order

Without switch (built-in magnet for switch)

LCX-Q-25 L - 100 ————— S5

With switch (built-in magnet for switch)

LCX-Q-25 L - 100 - T2H* - R - S1T

Model No.

A Bore size

B Stroke length

C Switch model No.

D Switch quantity

E Stopper

⚠ Precautions for model No. selection

- *1 : To change the adjustable stroke length, use the discrete rubber cushion stopper or metal stopper on page 288.
- *2 : For the adjustable stroke range with a shock absorber stopper, refer to the stopper dimensions table on page 285.
- *3 : The steel stopper block (nitrided) (code: T) is recommended for a metal stopper.
- *4 : Combination of the rubber cushion stopper, metal stopper and shock absorber stopper is made to order.
- *5 : Keep within 20 to 200 mm/s when using a metal stopper.
- *6 : Can be selected for the type with stopper only.
- *7 : Do not attach to the stopper positions ③ and ④ since the locking mechanism works at the stroke end.
- *8 : The long stroke length has a positioning hole option as standard.
- *9 : Refer to page 289 for single cylinder model No.

[Example of model No.]

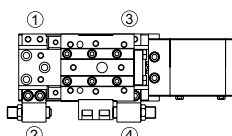
LCX-Q-25L-100-T2H-R-S1T

Model: Linear slide cylinder

Double acting/position locking LCX-Q

- A** Bore size : $\varnothing 25$
- B** Stroke length : 100 mm
- C** Switch model No. : Proximity/2-wire
Axial lead wire
- D** Switch quantity : 1 on rod side
- E** Stopper : Cushion stopper
Stopper position①
Material, steel (nitriding)

● Stopper position



Code	Description					
A Bore size						
25	ø25					
32	ø32					
B Stroke length (mm)						
75	75					
100	100					
125	125					
150	150					
C Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator lamp	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T2H*	T2V*	Proximity		●	1-color	2-wire
T3H*	T3V*			●	display	3-wire
T3PH*	T3PV*			●	1-color display (PNP output)	3-wire
T2WH*	T2WV*			●	2-color	2-wire
T3WH*	T3WV*			●	display	3-wire
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
D Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
E Stopper						
Blank	Without stopper					
S Cushion stopper *1, *4, *7						
S1*	Stopper position①					Stopper mount position
S2*	Stopper position②					
M Metal stopper *1, *3, *4, *5, *7						
M1*	Stopper position①					Stopper mount position
M2*	Stopper position②					
A Shock absorber stopper *2, *4, *7						
A1*	Stopper position①					Stopper mount position
A2*	Stopper position②					
* part						
Blank	Stopper block material: steel					
T	Stopper block material: steel (nitriding)					*6

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

How to order switch

SW - T2H3

Switch model No.
(Item © on page 287)

How to order a stopper set

- Set of a stopper and rubber cushion stopper, metal stopper or shock absorber stopper
- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.

LCX - 25 - S 2 - S02

Bore size
(Item A on page 287)

A Stopper	
S	Cushion stopper
M	Metal stopper
A	Shock absorber stopper

B Stopper installation position	
1	Stopper position①
2	Stopper position②

C Adjustable stroke length *1	
Blank	Adjustable stroke range 10 mm
S02	Adjustable stroke range 20 mm

(Unit: g)

Model No.				Weight
LCX	25	S1	Blank	70
		S2	S02	80
		M1	Blank	70
		M2	S02	80
		A1	-	70
		A2	-	70

*1: Cannot be selected for the shock absorber stopper "A".

How to order discrete rubber cushion stopper

- Hexagon socket set screw with urethane
- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - S02

Bore size
(Item A on page 287)

A Adjustable stroke range	
S01	Single side 10 mm (standard)
S02	Single side 20 mm

(Unit: g)

Model No.				Weight
LCX	25	S01		30
	32	S02		40

How to order discrete metal stopper

- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - M02

Bore size
(Item A on page 287)

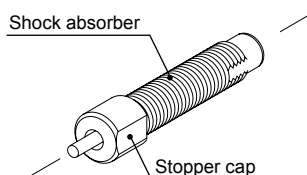
A Adjustable stroke range	
M01	Single side 10 mm (standard)
M02	Single side 20 mm

(Unit: g)

Model No.				Weight
LCX	25	M01		30
	32	M02		40

How to order discrete shock absorber stopper

- Set of a shock absorber and stopper cap
- Use when changing from the rubber cushion stopper or metal stopper to the shock absorber stopper.



LCX - 25 - A01

Bore size
(Item ① on page 287)

Note: For the adjustable stroke range with a shock absorber stopper, refer to page 285.

Applicable shock absorber model No.

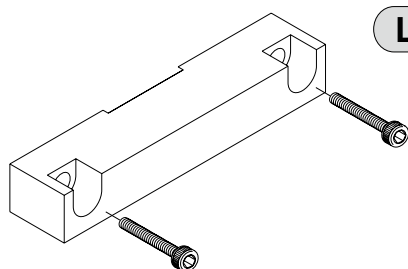
Model	Shock absorber model No.
LCX-25	NCK-00-1.2
LCX-32	NCK-00-1.2

(Unit: g)

	Model No.	Weight
LCX	25 32	A01 30

How to order discrete stopper block

- Use when changing from the standard to the type with rubber cushion stopper, metal stopper or shock absorber stopper.



LCX - 25 L - SB3 T

Bore size
(Item ① on page 287)

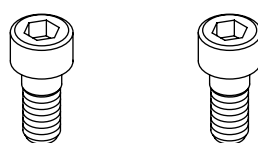
① Material	
Blank	Stopper block material: steel
T	Stopper block material: steel (nitriding)

(Unit: g)

	Model No.	Weight
LCX	25L 32L	SB3(T) 250

How to order positioning bolt

- Hexagon socket head cap screw for positioning
- Enables assembling of the crossed unit and two-stage unit without adjusting the position.



(2 pieces/set)

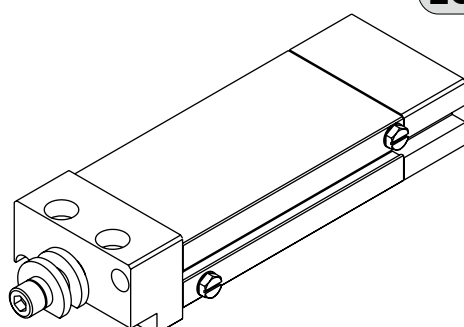
LCX - 25 - J

(Unit: g)

	Model No.	Weight
LCX	25	J 10

* Weight per set (2 pieces)

How to order single cylinder



LCX-Q - CYL - 25 L - 100

Bore size
(Item ① on page 287)

Stroke length
(Item ② on page 287)

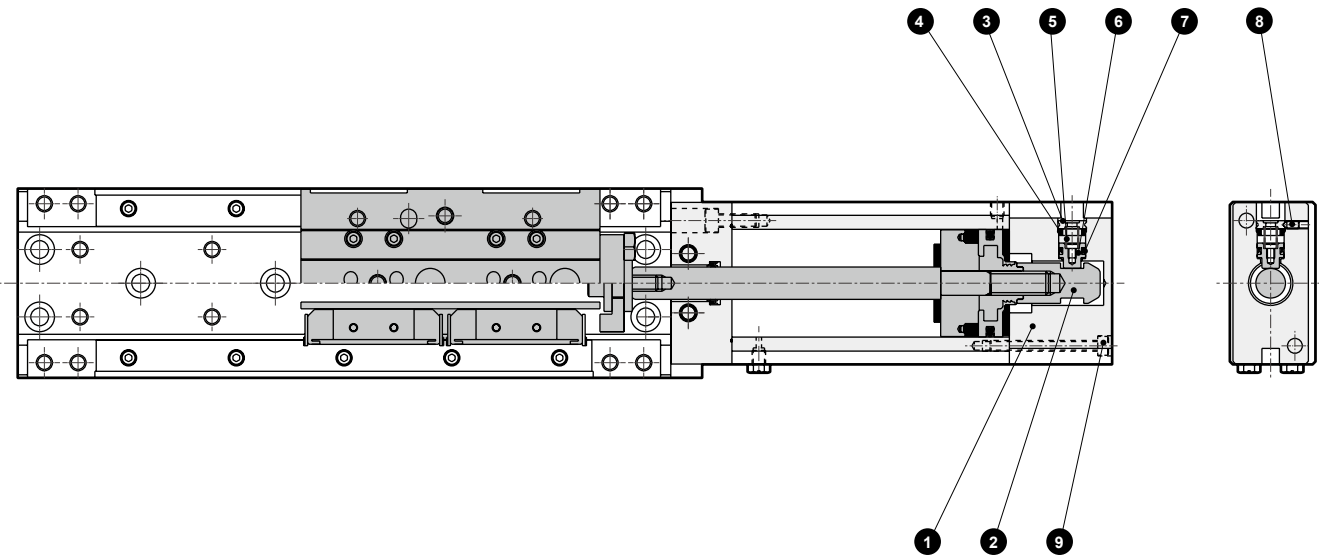
LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

LCX-Q-*L Series

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MecHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Internal structure and parts list

● LCX



Parts list

No.	Part name	Material	Remarks	No.	Part name	Material	Remarks
1	Head cover	Aluminum alloy	Alumite	6	Stopper piston	Carbon steel	Nitriding
2	Sleeve	Carbon steel	Nitriding	7	Stopper packing	Nitrile rubber	
3	Stopper cover	Stainless steel		8	Hexagon socket set screw	Alloy steel	Black finish
4	Cushion rubber	Urethane rubber		9	Hexagon socket head cap screw	Alloy steel	Zinc chromate
5	Coil spring	Steel					

Repair parts list

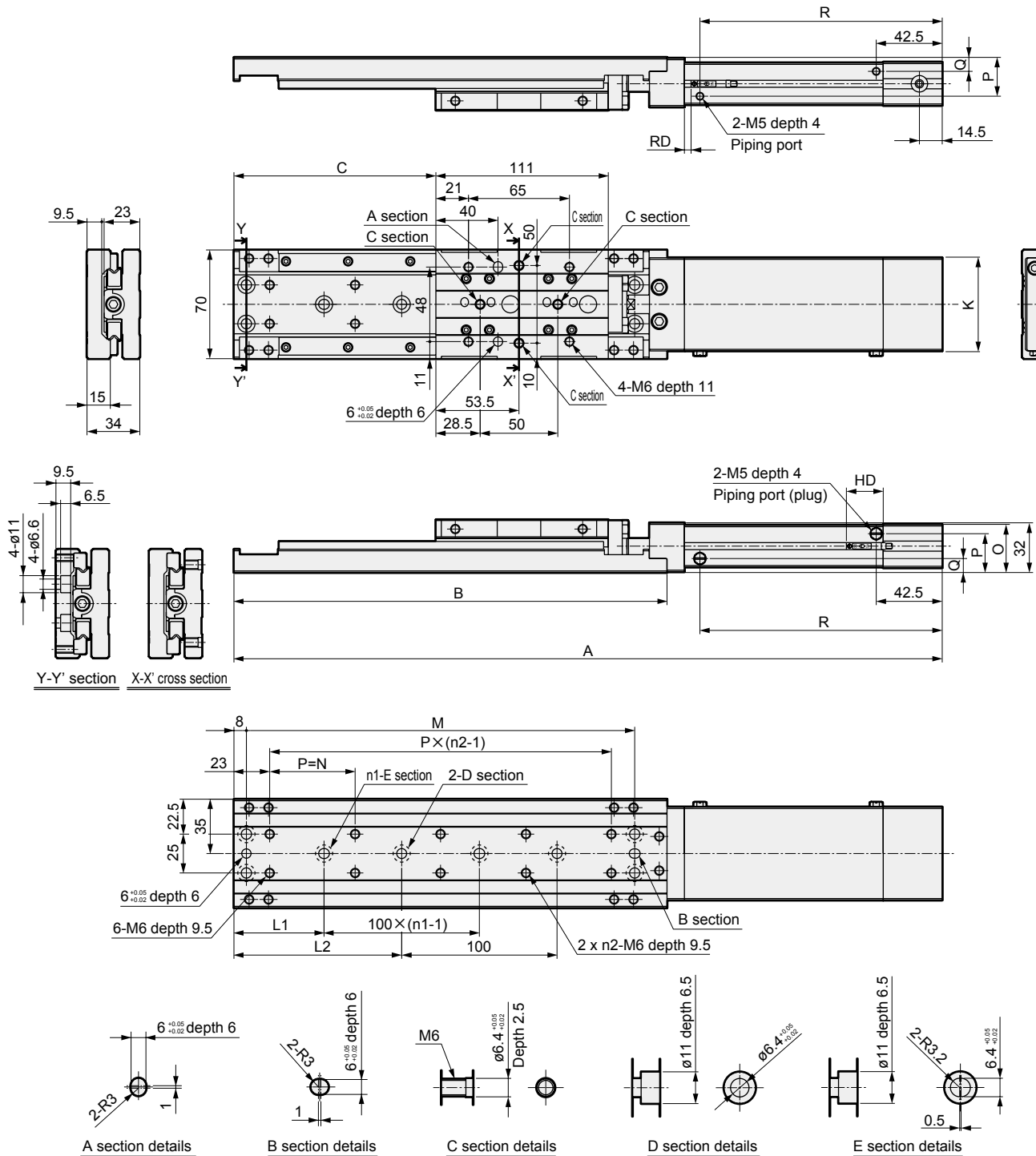
Bore size (mm)	Kit No.	Repair parts No.	
		Repair parts for position locking	Basic parts are repair parts
ø25	LCX-Q-25K		15 16
ø32	LCX-Q-32K	4 7	18 21

Note: The repair part numbers for base section correspond to those of the double acting/single rod/long stroke length on page 282.

Dimensions



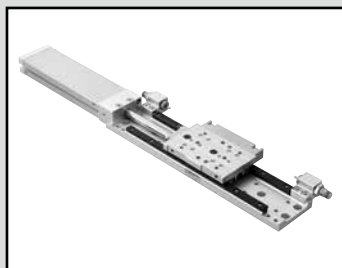
● Double acting/position locking/long stroke length LCX-Q-*L



Bore size	Stroke length	A	B	C	K	L1	L2	n1	n2	M	N	O	P	Q	R	RD			HD			
																T0*	T2*	T2W*	T0*	T2*	T2W*	
																T5*	T3*	T3W*	T5*	T3*	T3W*	
ø25	75	406	254	105	50	45.5	95.5	2	5	225	49	29.5	24.5	9.5	131	5	6.5	23.5	21.5			
	100	456	279	130		58	108	2	5	250	55											
	125	506	304	155		45.5	95.5	3	6	275	49											
	150	556	329	180		58	108	3	6	300	54											
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							

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr

Ending



Linear slide cylinder double acting/single rod
Clean-room specifications/long stroke length

LCX-*L-P7* Series

● Bore size: $\phi 25/\phi 32$

JIS symbol



Specifications

Item	LCX-*L-P7*	
Bore size	mm	$\phi 25$ $\phi 32$
Actuation	Double acting	
Working fluid	Compressed air	
Max. working pressure	MPa	0.7 (≈ 100 psi, 7 bar)
Min. working pressure	MPa	0.15 (≈ 22 psi, 1.5 bar)
Proof pressure	MPa	1.05 (≈ 150 psi, 10.5 bar)
Ambient temperature	$^{\circ}\text{C}$	-10 (14 $^{\circ}\text{F}$) to 60 (140 $^{\circ}\text{F}$) (no freezing) (*1)
Port size	M5	
Pressure relief port size	M5	
Stroke tolerance	mm	+2.0 0 (*2)
Working piston speed	mm/s	20 to 500
Cushion	With rubber cushion	
Lubrication	Not available	
Allowable absorbed energy	J	Refer to Table 3 on page 299.

*1: Contact CKD if the use environment is always cold (5 $^{\circ}\text{C}$ or below) or hot (40 $^{\circ}\text{C}$ and above).

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

*3: Keep within 20 to 200 mm/s when using a metal stopper.

Stroke length

Bore size (mm)	Standard stroke length (mm)
$\phi 25$	75, 100, 125, 150
$\phi 32$	75, 100, 125, 150

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

Theoretical thrust table

Refer to page 298.

Switch specifications

Item	Reed 2-wire				Proximity 2-wire		Proximity 3-wire		
	T0H/T0V		T5H/T5V		T2H/T2V	T2WH/T2WV	T3H/T3V	T3PH/T3PV	T3WH/T3WV
Applications	For programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection		Dedicated for programmable controller		For programmable controller, relay		
Output method	-		-		-		NPN output	PNP output	NPN output
Power supply voltage	-		-		-		10 to 28 VDC		
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	10 to 30 VDC	24 VDC ±10%	30 VDC or less		
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 20 mA		100 mA or less		50 mA or less
Indicator lamp	LED (Lit when ON)		Without indicator lamp		LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	0 mA				1 mA or less		10 μA or less		
Weight	g 1 m:18 3 m:49 5 m:80				1 m:18 3 m:49 5 m:80		1 m:18 3 m:49 5 m:80		

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

*2: Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.

*3: The max. load current is 20 mA at 25 $^{\circ}\text{C}$. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25 $^{\circ}\text{C}$. (5 to 10 mA at 60 $^{\circ}\text{C}$)

Cylinder weight

● Clean-room specifications

(Unit: g)

Bore size (mm)	Basic Stroke length (mm)			
	75	100	125	150
$\phi 25$	1,530	1,670	1,820	1,960
$\phi 32$	1,660	1,810	1,960	2,110

● Weight of variation/option (stopper)

(Unit: g)

Bore size (mm)	Option/stopper code			
	S1 to S4	M1 to M4	S5/S6	M5/M6
$\phi 25$	320		400	
$\phi 32$				

How to order

Without switch (built-in magnet for switch)

LCX - 25 L - 100 - S5 P72

With switch (built-in magnet for switch)

LCX - 25 L - 100 - T2H* - R - S1T P72

Model No.

A Bore size

B Stroke length

C Switch model No.

D Switch quantity

E Stopper

F Clean-room specifications

⚠ Precautions for model No. selection

- *1 : To change the adjustable stroke length, use the discrete rubber cushion stopper or metal stopper on page 294.
- *2 : Can be selected for the type with stopper only.
- *3 : The steel stopper block (nitrided) (code: T) is recommended for a metal stopper.
- *4 : Combination of the rubber cushion stopper and metal stopper is made to order.
- *5 : Keep within 20 to 200 mm/s when using a metal stopper.
- *6 : Refer to page 295 for single cylinder model No.
- *7 : The long stroke length has a positioning hole option as standard.

[Example of model No.]

LCX-25L-100-T2H-R-S1TP72

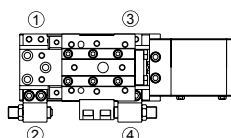
Model: Linear slide cylinder

Double acting/single rod

(clean-room specifications) LCX-P7*

- A** Bore size : $\phi 25$
- B** Stroke length : 100 mm
- C** Switch model No. : Proximity/2-wire
Axial lead wire
- D** Switch quantity : 1 on rod side
- E** Stopper : Cushion stopper
Stopper position①
Material, steel (nitriding)
- F** Clean-room specifications : Exhaust port

● Stopper position



Code		Description				
A Bore size						
25	ø25					
32	ø32					
B Stroke length (mm)						
75	75					
100	100					
125	125					
150	150					
C Switch model No.						
Axial lead wire	Radial lead wire	Contact	Voltage		Indicator lamp	Lead wire
			AC	DC		
T0H*	T0V*	Reed	●	●	1-color display	2-wire
T5H*	T5V*		●	●	Without indicator lamp	
T2H*	T2V*	Proximity		●	1-color display	2-wire
T3H*	T3V*			●	display	3-wire
T3PH*	T3PV*			●	1-color display (PNP output)	3-wire
T2WH*	T2WV*			●	2-color display	2-wire
T3WH*	T3WV*			●	display	3-wire
* Lead wire length						
Blank	1 m (standard)					
3	3 m (option)					
5	5 m (option)					
D Switch quantity						
R	1 on rod side					
H	1 on head side					
D	2					
E Stopper						
Blank	Without stopper					
S Cushion stopper						*1, *4
S1*	Stopper position ① (can be changed to ④)					Stopper installation position
S2*	Stopper position ② (can be changed to ③)					
S3*	Stopper position ③ (can be changed to ②)					
S4*	Stopper position ④ (can be changed to ①)					
S5*	Stopper position ①,③					
S6*	Stopper position ②,④					
M Metal stopper						*1, *3, *4, *5
M1*	Stopper position ① (can be changed to ④)					Stopper installation position
M2*	Stopper position ② (can be changed to ③)					
M3*	Stopper position ③ (can be changed to ②)					
M4*	Stopper position ④ (can be changed to ①)					
M5*	Stopper position ①,③					
M6*	Stopper position ②,④					
* part						
Blank	Stopper block material: steel					
T	Stopper block material: steel (nitriding) *2					
F Clean-room specifications						
	Structure					
P72	Exhaust port					
P73	Vacuum treatment					

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

How to order switch

SW - T2H3

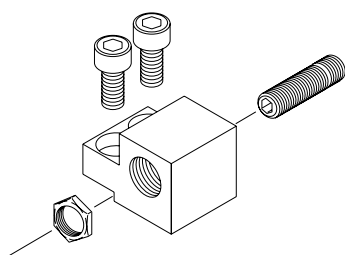
Switch model No.
(Item © on page 293)

How to order a stopper set

- Set of a stopper and rubber cushion stopper or metal stopper.
- Use when changing from the standard to the type with rubber cushion stopper or metal stopper.

LCX - 25 - S 2 - S02

Bore size
(Item ① on page 293)



A Stopper	
S	Cushion stopper
M	Metal stopper
B Stopper installation position	
1	Stopper position for ① or ④
2	Stopper position for ② or ③
C Adjustable stroke length ^{*1}	
Blank	Adjustable stroke range 10 mm
S02	Adjustable stroke range 20 mm

(Unit: g)

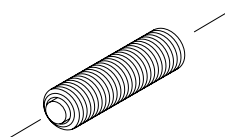
Model No.				Weight
LCX	25	S1	Blank	70
		S2	S02	80
		M1	Blank	70
		M2	S02	80
		A1	-	70
		A2	-	70

How to order discrete rubber cushion stopper

- Hexagon socket set screw with urethane
- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - S02

Bore size
(Item ① on page 293)



A Adjustable stroke range	
S01	Single side 10 mm (standard)
S02	Single side 20 mm

(Unit: g)

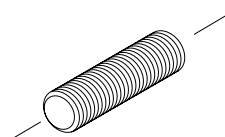
Model No.				Weight
LCX	25	S01		30
	32	S02		40

How to order discrete metal stopper

- Use when changing the adjustable stroke range or when using a custom stroke length.

LCX - 25 - M02

Bore size
(Item ① on page 293)



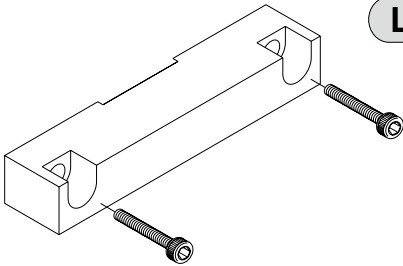
A Adjustable stroke range	
M01	Single side 10 mm (standard)
M02	Single side 20 mm

(Unit: g)

Model No.				Weight
LCX	25	M01		30
	32	M02		40

How to order discrete stopper block

- Use when changing from the standard to the type with rubber cushion stopper or metal stopper.



LCX - 25 L - SB3 T

Bore size
(Item ① on page 293)

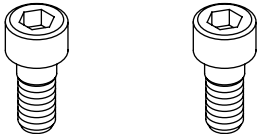
① Material	
Blank	Stopper block material: steel
T	Stopper block material: steel (nitriding)

(Unit: g)

Model No.			Weight
LCX	25L	SB3(T)	250
	32L		

How to order positioning bolt

- Hexagon socket head cap screw for positioning
- Enables assembling of the crossed unit and two-stage unit without adjusting the position.



(2 pieces/set)

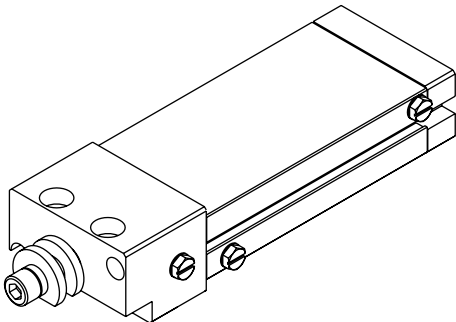
LCX - 25 - J

(Unit: g)

Model No.			Weight
LCX	25	J	10

* Weight per set (2 pieces)

How to order single cylinder



LCX - CYL - 25 L - 100 - P72

Bore size
(Item ① on page 293)

Stroke length
(Item ② on page 293)

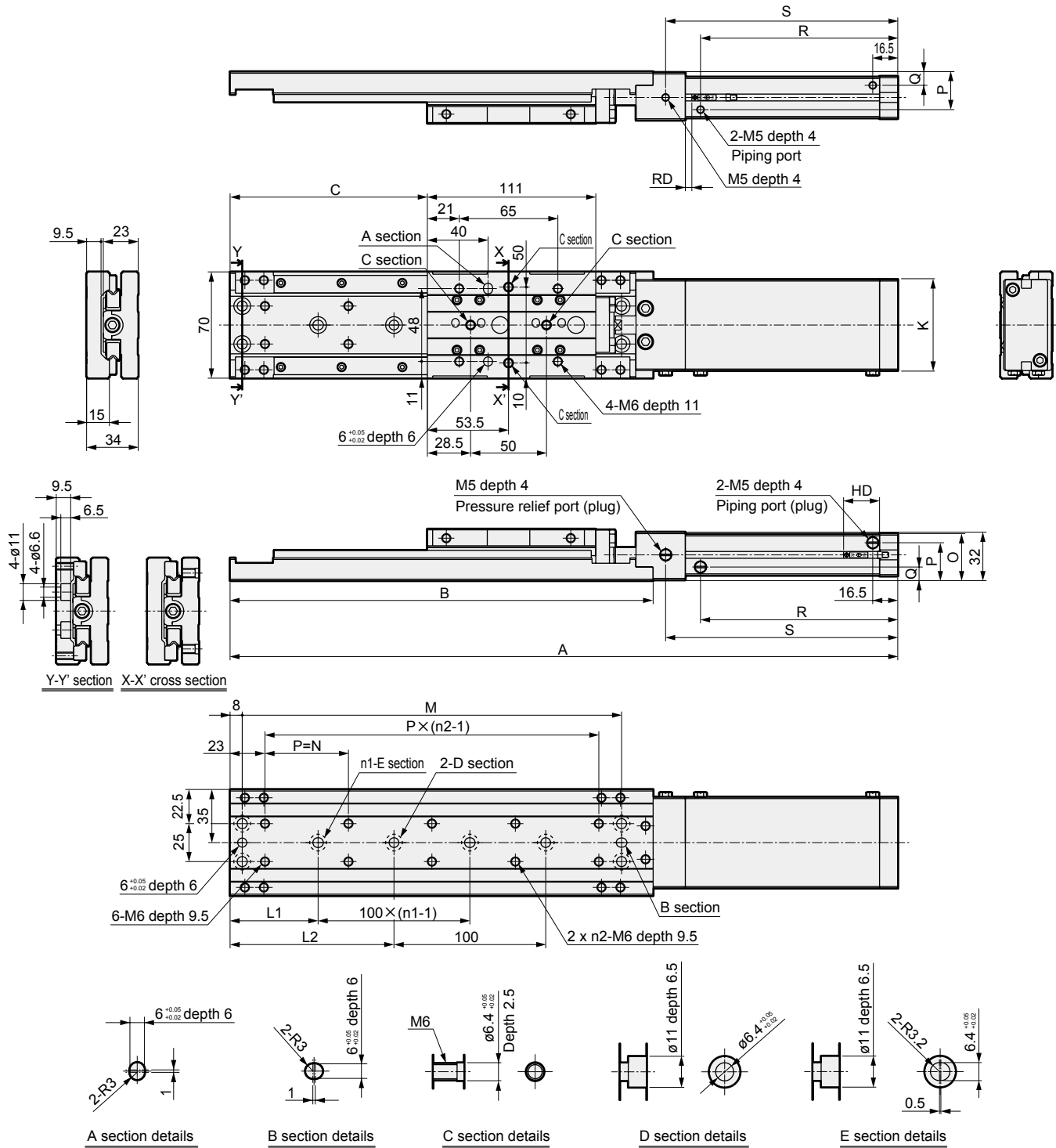
① Variation	
P72	Clean-room specifications (exhaust port)
P73	Clean-room specifications (vacuum treatment)

LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

LCX-*L-P7* Series

Dimensions

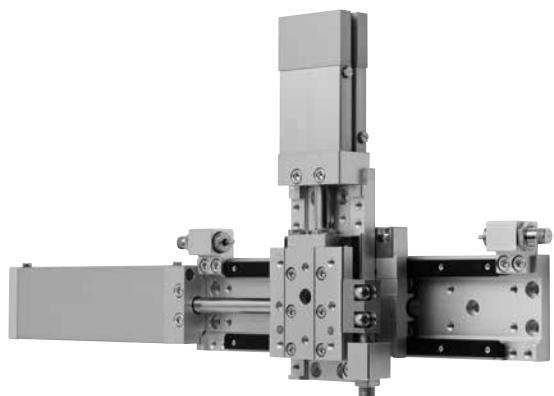
● Double acting/single rod/clean-room specifications/long stroke length LCX-*L-P7*



Bore size	Stroke length	A	B	C	K	L1	L2	n1	n2	M	N	O	P	Q	R	S	RD			HD		
																	T0*	T2*	T2W*	T0*	T2*	T2W*
																	T5*	T3*	T3W*	T5*	T3*	T3W*
ø25	75	390	254	105	50	45.5	95.5	2	5	225	49	29.5	24.5	9.5	105	128	5	6.5	23.5	21.5		
	100	440	279	130		58	108	2	5	250	55				130	153						
	125	490	304	155		45.5	95.5	3	6	275	49				155	178						
	150	540	329	180		58	108	3	6	300	54				180	203						
ø32	75	390	254	105	60	45.5	95.5	2	5	225	49	31	25	9	105	128						
	100	440	279	130		58	108	2	5	250	55				130	153						
	125	490	304	155		45.5	95.5	3	6	275	49				155	178						
	150	540	329	180		58	108	3	6	300	54				180	203						

Unit example

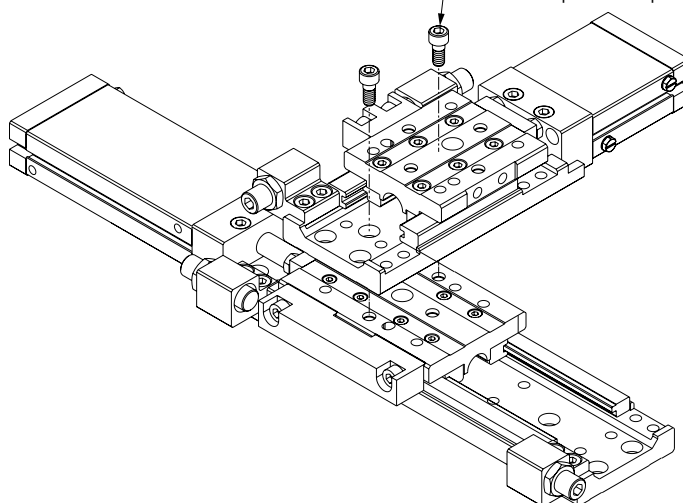
● Crossed unit



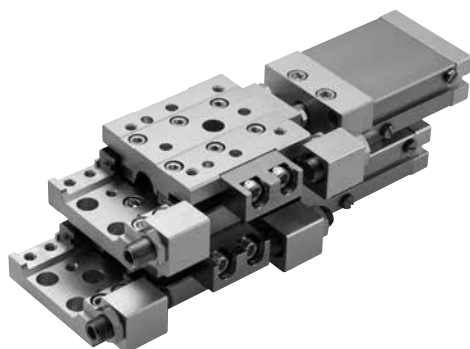
How to assemble

Positioning bolt (Code: LCX-25-J)
Tightening torque: 4.3 to 5.2 N·m

Note) If the positioning mechanism is not necessary, a hexagon socket head cap screw (M6 depth 14) can be used in place of the positioning bolt.



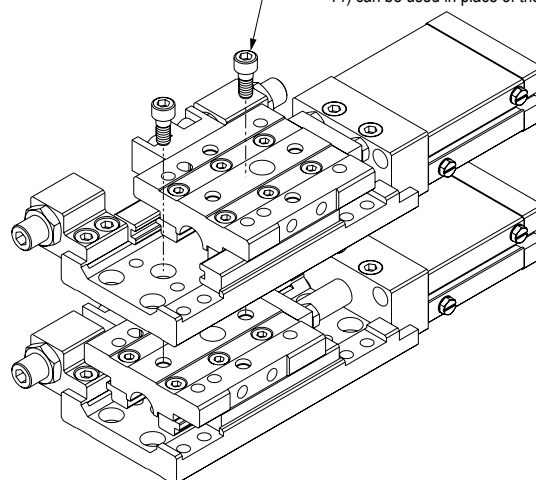
- 2-stage unit



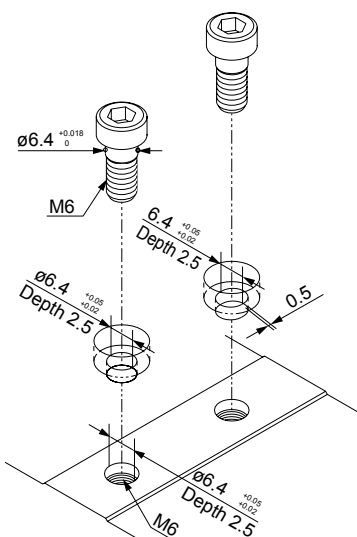
How to assemble

Positioning bolt (Code: LCX-25-J)
Tightening torque: 4.3 to 5.2 N·m

Note) If the positioning mechanism is not necessary, a hexagon socket head cap screw (M6 depth 14) can be used in place of the positioning bolt.



[Fastening with positioning bolt]



LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Endint

STEP 1

Calculate the load factor and decide the bore size.

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

α : Load factor

F_0 : Force (N) required to move the workpiece

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

For horizontal operation	For vertical operation
$F_0 = F_w$	$F_0 = W + F_w$
FW: $W \times 0.2$ Note (N)	
W: Load (N)	

Note: Coefficient of friction

[Table 1] Theoretical thrust table

(Unit: N)

Bore size	Operating direction	Working pressure MPa						
		0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø25 or equiv.	PUSH	74	99	148	197	246	296	345
	PULL	57	76	114	152	190	228	266
ø32 or equiv.	PUSH	116	155	233	310	388	466	543
	PULL	99	133	199	265	332	398	464

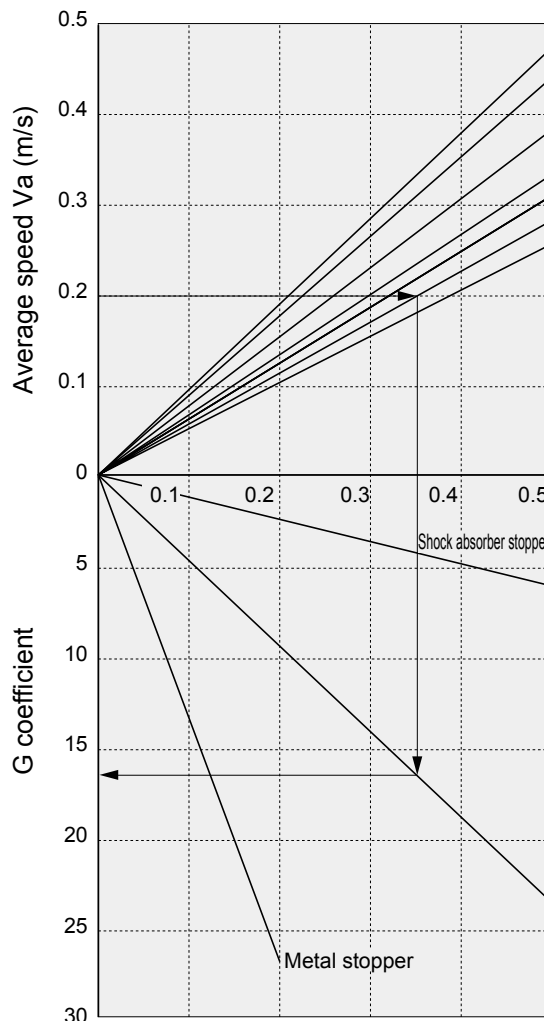
[Table 2] Load factor guidelines

Working 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	$\alpha \leq 60$

STEP 2

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

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



Load factor 5%
Load factor 10%
Load factor 20%
Load factor 30%
Load factor 40%
Load factor 50%
Load factor 60%

Stroke end speed V_m

The arrows (→) in the figure show an example in which stroke end speed of 0.35 m/s and G coefficient of 16.8 are obtained at a 0.20 m/s average speed and 50% load factor.

Standard rubber cushion stopper

Graph of speed and G coefficient
G coefficient =

STEP 3

Check the allowable absorbed energy.

$$E = \frac{1}{2} \times (m + m_0) \times Vm^2$$

E : Kinetic energy at workpiece end (J)

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

m_0 : Table weight (from Table 4)

Vm : Stroke end speed (m/s)

E max : Max. allowable value of E_0 (from Table 3)

[Table 3] LCX allowable absorbed energy (E_0)

Bore size	Standard (J)	Cushion stopper (J)	Metal stopper (J)	Shock absorber stopper (J)
ø25	0.34	0.14	0.07	1.3
ø32				

[Table 4] Table weight (unit: kg)

Bore size	Stroke length (mm)								
	10	20	30	40	50	75	100	125	150
ø25	0.030			0.035					
ø32									

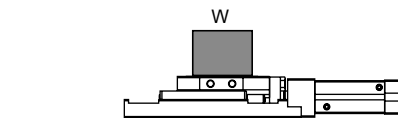
Confirm $E \leq E_{\max}$.

STEP 4

Obtain $M'T$ (resultant moment at rest).

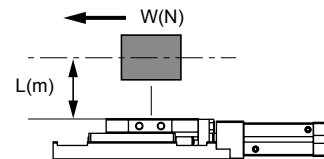
Calculate the load (moment) and the moment of impact occurring at the stroke end and obtain $M'T$ (resultant moment at rest).

● Vertical load: W' (N)



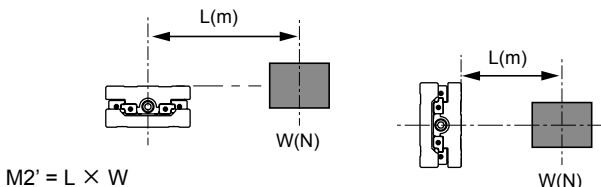
$$W' = W$$

● Bending moment: $M1'$ (N·m)



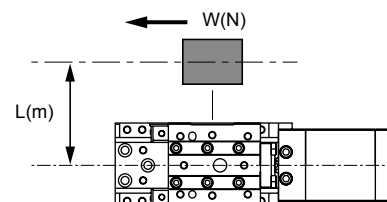
$$M1' = L \times W$$

● Radial moment: $M2'$ (N·m)



$$M2' = L \times W$$

● Torsion moment: $M3'$ (N·m)



$$M3' = L \times W$$

$$W' = \text{[] (N)}$$

$$M1' \times G = \text{[] (N·m)}$$

$$M2' = \text{[] (N·m)}$$

$$M3' \times G = \text{[] (N·m)}$$

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

$M'T$: Synthesis of moment

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

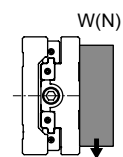
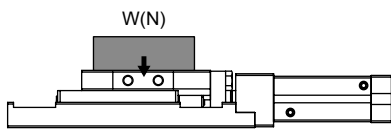
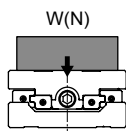
Bore size	Stroke length	Vertical load $W'_{\max}$ (N)	Bending moment $M1'_{\max}$ (N·m)	Radial moment $M2'_{\max}$ (N·m)	Torsion moment $M3'_{\max}$ (N·m)
ø25	10, 20, 30, 40, 50	670	52	110	52
ø32					
ø25	75, 100, 125, 150	970	128	116	128
ø32					

Confirm $M'T \leq 1$.

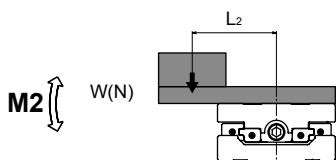
STEP 5

Obtain M_T (resultant moment during movement). (Note that it differs from that obtained in STEP 4.)

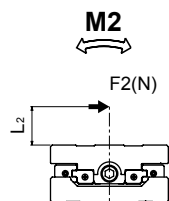
● Vertical load: W (N)



● Radial moment: M_2 (N·m)

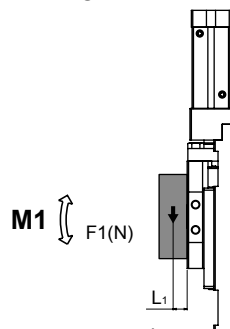


$$M_2 = W \times L_2$$

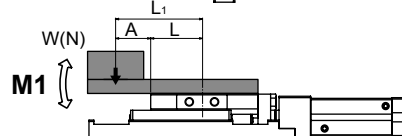


$$M_2 = F_2 \times L_2$$

● Bending moment: M_1 (N·m)



$$M_1 = F_1 \times L_1$$

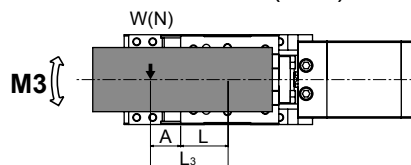


$$M_1 = W \times L_1$$

$$L_1 = A + L$$

L is value in table below

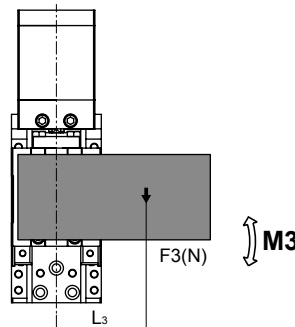
● Torsion moment: M_3 (N·m)



$$M_3 = W \times L_3$$

$$L_3 = A + L$$

L is value in table below



$$M_3 = F_3 \times L_3$$

L (length from the table end to the center of the bearing)

Unit (m)

Bore size	Stroke length								
	10	20	30	40	50	75	100	125	150
ø25	0.037			0.042		0.0535			
ø32									

$$W = W = \text{[] (N)}$$

$$M_1 = M_1 = \text{[] (N·m)}$$

$$M_2 = M_2 = \text{[] (N·m)}$$

$$M_3 = M_3 = \text{[] (N·m)}$$

$$M_T = \frac{W}{W_{\max}} + \frac{M_1}{M_{1\max}} + \frac{M_2}{M_{2\max}} + \frac{M_3}{M_{3\max}} = \text{[]}$$

M_T : Synthesis of moment

$W_{\max}$: Max. allowable value of W (from Table 7)

$M_{1\max}$: Max. allowable value of M_1 (from Table 7)

$M_{2\max}$: Max. allowable value of M_2 (from Table 7)

$M_{3\max}$: Max. allowable value of M_3 (from Table 7)

[Table 7] Allowable running load

Bore size	Stroke length	Vertical load $W_{\max}$ (N)	Bending moment $M_{1\max}$ (N·m)	Radial moment $M_{2\max}$ (N·m)	Torsion moment $M_{3\max}$ (N·m)
ø25	10, 20, 30, 40, 50	97	7	15	7
ø32					
ø25	75, 100, 125, 150	130	17	16.5	17
ø32					

Can be used when $M_T \leq 1$.

Displacement at point A

(Displacement of table due to M1, M2 and M3 moments)

M1 moment: Displacement at the table end when load (F1) is applied to the table end

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 rotation moment (M3) is applied to the cylinder

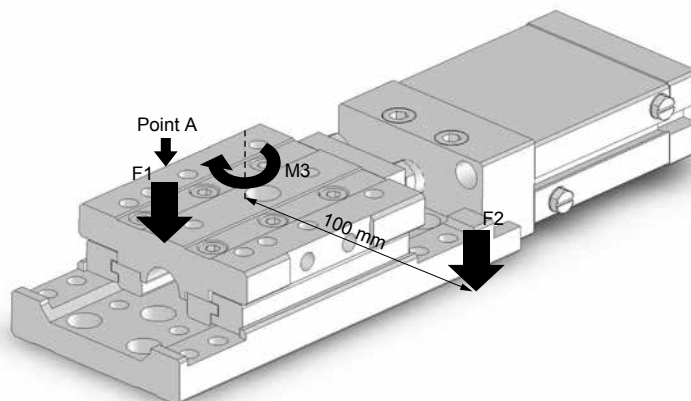


Table displacement for M1 moment

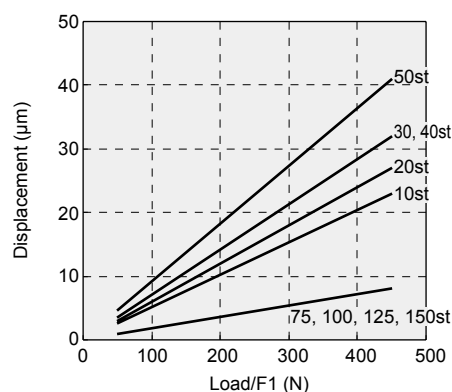


Table displacement for M2 moment

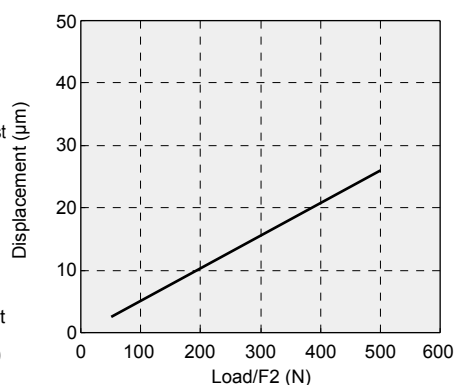
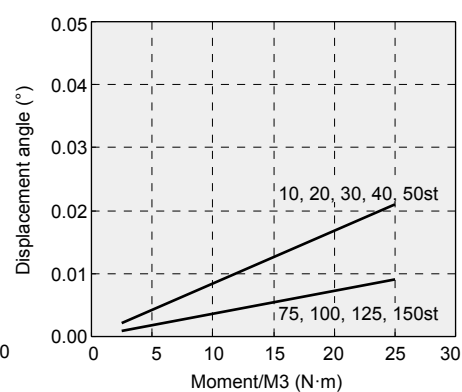
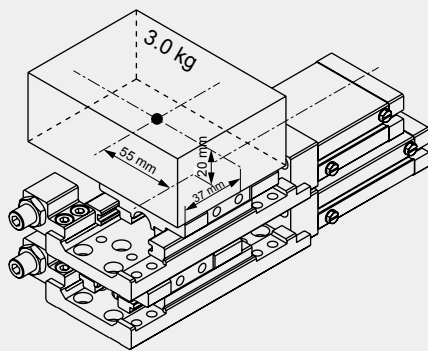


Table displacement for M3 moment



LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

Selection guide: selection example①



[Operation conditions]

Model used (upper): LCX-25-30-M6 (weight: 1,270 (g))
(lower): LCX-32-30-S6 (weight: 1,440 (g))

Pressure: 0.5 (MPa)

Weight of workpiece: 3.0 (kg)

Operating direction: Horizontal

Average speed (upper): 100 (mm/s)

(lower): 230 (mm/s)

Shape of workpiece: As shown on the left

STEP 1 Checking the load factor and decision on the bore size (For details on how to calculate, refer to page 298.)

Formula

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

α : Load factor

F_0 : Force (N) required to move the workpiece

F : Cylinder theoretical thrust (N)

Selection example

[Upper cylinder]

$$\alpha 1 = \frac{(3.0 \times 9.8) \times 0.2}{190} \times 100 = 3.1\%$$

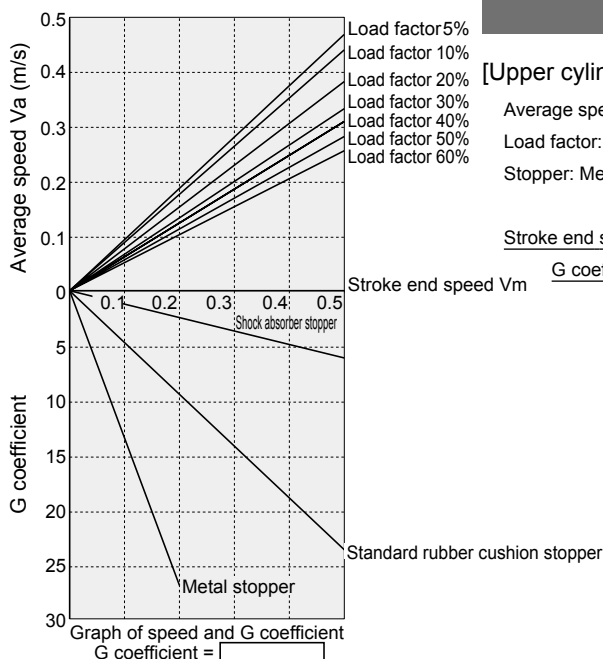
[Lower cylinder]

$$\alpha 2 = \frac{\{(3.0 + 1.27 + 0.01) \times 9.8\} \times 0.2}{332} \times 100 = 2.5\%$$

Load factor guidelines, at 0.5 MPa

Usable as $\alpha \leq 50$

STEP 2 Checking the stroke end speed and G coefficient (For details on how to calculate, refer to page 298.)



Selection example

[Upper cylinder]

Average speed: 100 mm/s
Load factor: 5% or less (3.1%)
Stopper: Metal stopper

Stroke end speed: 110 mm/s

G coefficient: 14

[Lower cylinder]

Average speed: 230 mm/s
Load factor: 5% or less (2.5%)
Stopper: Rubber cushion stopper

Stroke end speed: 240 mm/s

G coefficient: 12

STEP 3 Checking the allowable absorbed energy (For details on how to calculate, refer to page 299.)

Formula

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

E : Kinetic energy at workpiece end (J)

m : Load weight (kg)

m_a : Table weight (kg)

Vm : Stroke end speed (m/s)

Selection example

[Upper cylinder]

$$E = \frac{1}{2} \times (3.0 + 0.03) \times 0.11^2 = 0.02(J)$$

Can be used since the allowable absorbed energy of the metal stopper is "0.07J".

[Lower cylinder]

$$E = \frac{1}{2} \times (3.0 + 1.27 + 0.01 + 0.035) \times 0.24^2 = 0.124(J)$$

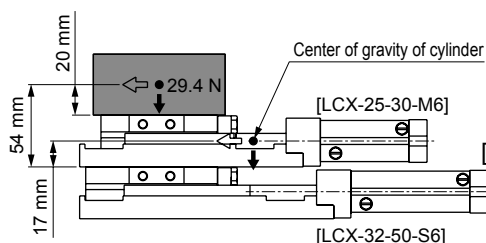
Can be used since the allowable absorbed energy of the rubber cushion stopper is "0.14J".

STEP 4 Checking the allowable static load (For details on how to calculate, refer to page 299.)

Formula

- Vertical load
 $W' = W$
- Bending moment: $M1'$ (N·m)
 $M1' = L_1 \times W$
- Radial moment: $M2'$ (N·m)
 $M2' = L_2 \times W$
- Torsion moment: $M3'$ (N·m)
 $M3' = L_3 \times W$
- ◎ Synthesis of moment

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



[Calculating load and moment]

[Upper cylinder]

$$\begin{aligned} W' &= 3.0 \times 9.8 = 29.4 \text{ (N)} \\ M1' &= 0.02 \times 29.4 = 0.6 \text{ (N·m)} \\ M2' &= 0.055 \times 29.4 = 1.6 \text{ (N·m)} \\ M3' &= 0.055 \times 29.4 = 1.6 \text{ (N·m)} \end{aligned}$$

[Lower cylinder]

$$\begin{aligned} W' &= 3.0 \times 9.8 + 1.27 \times 9.8 \\ &= 41.8 \text{ (N)} \\ M1' &= 0.054 \times 29.4 \\ &\quad + 0.017 \times 1.27 \times 9.8 \\ &= 1.8 \text{ (N·m)} \end{aligned}$$

(Omit the underlined part if the upper cylinder does not work as a moment of impact.)

$$\begin{aligned} M2' &= 0.055 \times 29.4 = 1.6 \text{ (N·m)} \\ M3' &= 0.055 \times 29.4 = 1.6 \text{ (N·m)} \end{aligned}$$

[Resultant moment when the upper cylinder operates]

Stroke end speed: 110 mm/s, G coefficient: 14

[Upper cylinder]

$$\begin{aligned} M'T &= \frac{29.4}{670} + \frac{0.6 \times 14}{52} + \frac{1.6}{110} + \frac{1.6 \times 14}{52} \\ &= 0.7 \end{aligned}$$

Can be used since the resultant moment ($M'T$) is "1 or less".

[Lower cylinder]

$$\begin{aligned} M'T &= \frac{41.8}{670} + \frac{1.6 \times 14}{52} + \frac{1.6}{110} + \frac{1.6 \times 14}{52} \\ &= 1.0 \end{aligned}$$

Can be used since the resultant moment ($M'T$) is "1 or less".

[Resultant moment when the lower cylinder operates]

Stroke end speed: 240 mm/s, G coefficient: 12

[Upper cylinder]

$$\begin{aligned} M'T &= \frac{29.4}{670} + \frac{0.6 \times 12}{52} + \frac{1.6}{110} + \frac{1.6 \times 12}{52} \\ &= 0.6 \end{aligned}$$

Can be used since the resultant moment ($M'T$) is "1 or less".

[Lower cylinder]

$$\begin{aligned} M'T &= \frac{41.8}{670} + \frac{1.8 \times 12}{52} + \frac{1.6}{110} + \frac{1.6 \times 12}{52} \\ &= 0.9 \end{aligned}$$

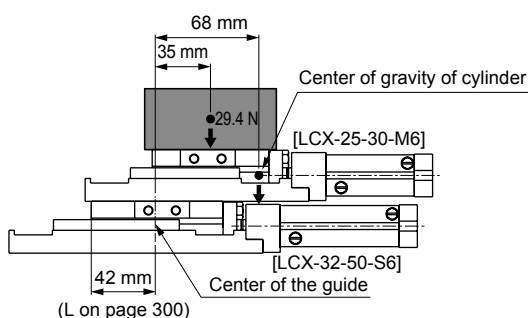
Can be used since the resultant moment ($M'T$) is "1 or less".

STEP 5 Checking the allowable dynamic load (For details on how to calculate, refer to page 300.)

Formula

- Vertical load
 $W = W$
- Bending moment: $M1$ (N·m)
 $M1 = L_1 \times W$
- Radial moment: $M2$ (N·m)
 $M2 = L_2 \times W$
- Torsion moment: $M3$ (N·m)
 $M3 = L_3 \times W$
- ◎ Synthesis of moment

$$M_T = \frac{W}{W_{\max}} + \frac{M1}{M1_{\max}} + \frac{M2}{M2_{\max}} + \frac{M3}{M3_{\max}}$$



Selection example

[Upper cylinder]

$$\begin{aligned} W &= 3.0 \times 9.8 = 29.4 \text{ (N)} \\ M1 &= 0 \text{ (N·m)} \\ M2 &= 0.055 \times 29.4 = 1.6 \text{ (N·m)} \\ M3 &= 0 \text{ (N·m)} \\ M_T &= \frac{29.4}{97} + \frac{0}{7} + \frac{1.6}{15} + \frac{0}{7} \\ &= 0.4 \end{aligned}$$

Can be used since the resultant moment (M_T) is "1 or less".

[Lower cylinder]

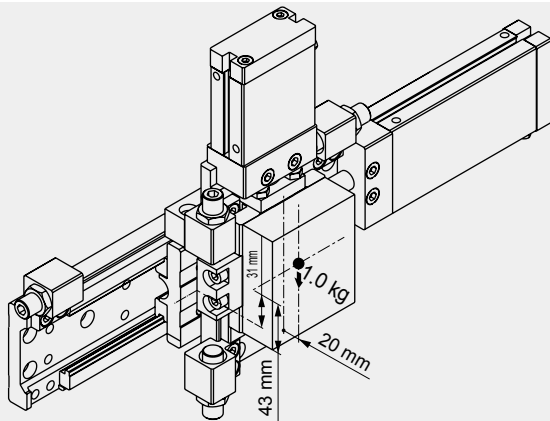
$$\begin{aligned} W &= 3.0 \times 9.8 + 1.27 \times 9.8 \\ &= 41.8 \text{ (N)} \\ M1 &= 0.035 \times 29.4 + 0.068 \times 1.27 \times 9.8 \\ &= 1.9 \text{ (N·m)} \end{aligned}$$

(Add the value of the upper cylinder since it works as a moment. Substitute the center of the external dimensions for the center of gravity of the cylinder.)

$$\begin{aligned} M2 &= 0.055 \times 29.4 = 1.6 \text{ (N·m)} \\ M3 &= 0 \text{ (N·m)} \\ M_T &= \frac{41.8}{97} + \frac{1.9}{7} + \frac{1.6}{15} + \frac{0}{7} \\ &= 0.8 \end{aligned}$$

Can be used since the resultant moment (M_T) is "1 or less".

Selection guide: selection example②



[Operation conditions]

Model used (X-axis): LCX-32-150-A6 (weight: 2,450 (g))

(Z-axis): LCX-32-30-S6 (weight: 1,440 (g))

Pressure: 0.5 (MPa)

Weight of workpiece: 1.0 (kg)

Operating direction: Horizontal + vertical

Average speed (X-axis): 300 (mm/s)

(Z-axis): 50 (mm/s)

Shape of workpiece: As shown on the left

STEP 1 Checking the load factor and decision on the bore size (For details on how to calculate, refer to page 298.)

Formula

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

α : Load factor

F_0 : Force (N) required to move the workpiece

F : Cylinder theoretical thrust (N)

Selection example

[X-axis cylinder]

$$\alpha_1 = \frac{\{(1.0 + 1.29 + 0.01) \times 9.8\} \times 0.2}{332} \times 100 = 1.4\%$$

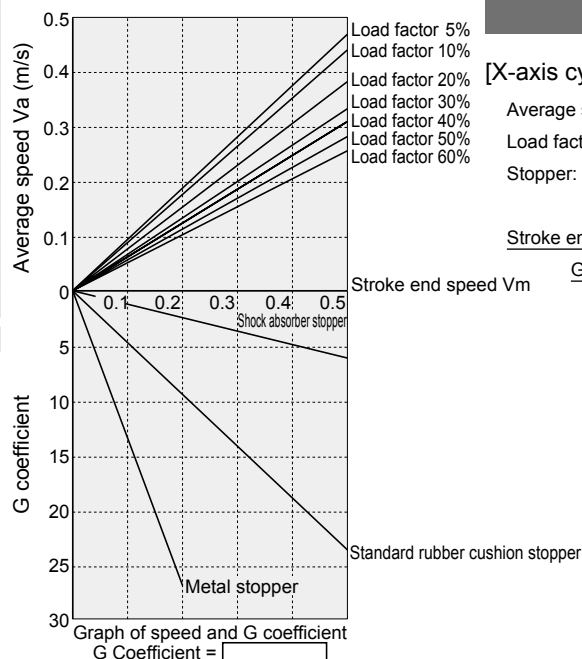
[Z-axis cylinder]

$$\alpha_2 = \frac{(1.0 \times 9.8) + 0.2 \times (1.0 \times 9.8)}{332} \times 100 = 3.5\%$$

Load factor guidelines, at 0.5 MPa

Usable as $\alpha \leq 50$

STEP 2 Checking the stroke end speed and G coefficient (For details on how to calculate, refer to page 298.)



Selection example

[X-axis cylinder]

Average speed: 300 mm/s
Load factor: 5% or less (1.4%)
Stopper: Shock absorber stopper
Stroke end speed: 310 mm/s
G coefficient: 4

[Z-axis cylinder]

Average speed: 50 mm/s
Load factor: 5% or less (3.5%)
Stopper: Rubber cushion stopper
Stroke end speed: 55 mm/s
G coefficient: 3

STEP-3 Checking the allowable absorbed energy (For details on how to calculate, refer to page 299.)

Formula

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

E : Kinetic energy at workpiece end (J)

m : Load weight (kg)

m_a : Table weight (kg)

Vm : Stroke end speed (m/s)

Selection example

[X-axis cylinder]

$$E = \frac{1}{2} \times (1.0 + 1.29 + 0.01 + 0.035) \times 0.31^2 = 0.11(J)$$

Can be used since the allowable absorbed energy of the shock absorber stopper is "1.3J".

[Z-axis cylinder]

$$E = \frac{1}{2} \times (1.0 + 0.035) \times 0.055^2 = 0.002(J)$$

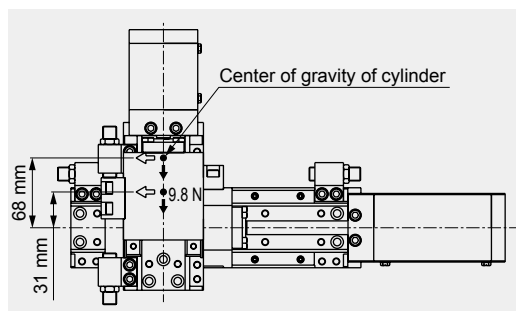
Can be used since the allowable absorbed energy of the rubber cushion stopper is "0.14J".

STEP 4 Checking the allowable static load (For details on how to calculate, refer to page 299.)

Formula

- Vertical load
 $W' = W$
- Bending moment: $M1'$ (N·m)
 $M1' = L1 \times W$
- Radial moment: $M2'$ (N·m)
 $M2' = L2 \times W$
- Torsion moment: $M3'$ (N·m)
 $M3' = L3 \times W$
- ◎ Synthesis of moment
$$M'T = \frac{W'}{W'max} + \frac{M1' \times G}{M1'max} + \frac{M2'}{M2'max} + \frac{M3' \times G}{M3'max}$$

Note) In the crossed unit, a moment of impact may occur in the M2 direction. Multiply the G coefficient with the M2' value as necessary.



Selection example

[Calculating load and moment]

[X-axis cylinder]

$$\begin{aligned} W' &= 1.0 \times 9.8 + 1.44 \times 9.8 = 23.9 \text{ (N)} \\ M1' &= 0.054 \times 9.8 + 0.017 \times 1.44 \times 9.8 \\ &= 0.8 \text{ (N·m)} \\ \text{(Add the value of the Z-axis cylinder since it works as a moment.)} \\ M2' &= 0.054 \times 9.8 + 0.017 \times 1.44 \times 9.8 \\ &= 0.8 \text{ (N·m)} \\ M3' &= 0.031 \times 9.8 + 0.068 \times 1.44 \times 9.8 \\ &= 1.3 \text{ (N·m)} \end{aligned}$$

[Z-axis cylinder]

$$\begin{aligned} W' &= 0 \text{ (N)} \\ M1' &= 0.02 \times 9.8 = 0.2 \text{ (N·m)} \\ M2' &= 0.02 \times 9.8 = 0.2 \text{ (N·m)} \\ M3' &= 0.001 \times 9.8 = 0.01 \text{ (N·m)} \end{aligned}$$

[Resultant moment when the X-axis cylinder operates]

Stroke end speed: 310 mm/s, G coefficient: 4

[X-axis cylinder]

$$M'T = \frac{23.9}{970} + \frac{0.8 \times 4}{128} + \frac{0.8}{116} + \frac{1.3 \times 4}{128} = 0.1$$

Can be used since the resultant moment (M'r) is "1 or less".

[Z-axis cylinder]

$$M'T = \frac{0}{670} + \frac{0.2}{52} + \frac{0.2 \times 4}{110} + \frac{0.01 \times 4}{52} = 0.01$$

(Multiply the G coefficient if moment of impact in M2 direction is caused in the Z-axis cylinder by operation of the X-axis cylinder.)

Can be used since the resultant moment (M'r) is "1 or less".

[Resultant moment when the Z-axis cylinder operates]

Stroke end speed: 55 mm/s, G coefficient: 3

[X-axis cylinder]

$$M'T = \frac{23.9}{970} + \frac{0}{128} + \frac{0.5 \times 3 + 0.2}{116} + \frac{0}{128} = 0.04$$

(Multiply the G coefficient if moment of impact in M2 direction is caused in the X-axis cylinder by operation of the Z-axis cylinder.)

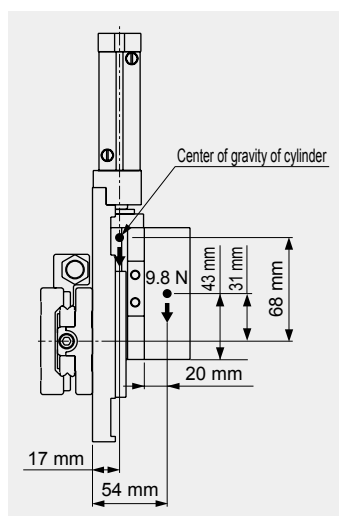
Can be used since the resultant moment (M'r) is "1 or less".

[Z-axis cylinder]

$$M'T = \frac{0}{670} + \frac{0.2 \times 3}{52} + \frac{0}{110} + \frac{0}{52} = 0.01$$

Can be used since the resultant moment (M'r) is "1 or less".

STEP 5 Checking the allowable dynamic load (For details on how to calculate, refer to page 300.)



Formula

- Vertical load
 $W = W$
- Bending moment: $M1$ (N·m)
 $M1 = L1 \times W$
- Radial moment: $M2$ (N·m)
 $M2 = L2 \times W$
- Torsion moment: $M3$ (N·m)
 $M3 = L3 \times W$
- ◎ Synthesis of moment
$$M_T = \frac{W}{W_{max}} + \frac{M1}{M1_{max}} + \frac{M2}{M2_{max}} + \frac{M3}{M3_{max}}$$

Selection example

[X-axis cylinder]

$$\begin{aligned} W &= 1.0 \times 9.8 + 1.44 \times 9.8 \\ &= 23.9 \text{ (N)} \\ M1 &= 0 \text{ (N·m)} \\ M2 &= 0.054 \times 9.8 + 0.017 \times 1.44 \times 9.8 \\ &= 0.8 \text{ (N·m)} \\ M3 &= 0 \text{ (N·m)} \\ M_T &= \frac{23.9}{130} + \frac{0}{17} + \frac{0.8}{16.5} + \frac{0}{17} \\ &= 0.2 \end{aligned}$$

Can be used since the resultant moment (M'r) is "1 or less".

[Z-axis cylinder]

$$\begin{aligned} W &= 0 \text{ (N)} \\ M1 &= 0.02 \times 9.8 = 0.2 \text{ (N·m)} \\ M2 &= 0 \text{ (N·m)} \\ M3 &= 0 \text{ (N·m)} \\ M_T &= \frac{0}{97} + \frac{0.2}{7} + \frac{0}{15} + \frac{0}{7} \\ &= 0.03 \end{aligned}$$

Can be used since the resultant moment (M'r) is "1 or less".



Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 73 for general information of the cylinder, and to Intro Page 80 for general information of the cylinder switch.

Product-specific cautions: Thin linear slide cylinder LCX Series

Design/selection

1. Common

⚠ CAUTION

- When selecting the cylinder, follow the "LCX selection guide" on pages 298 to 301.
- Protect the cylinder with a cover to prevent damage and malfunction in a place where it is exposed to dripping water or oil, corrosive conditions or much dust.
- Precautions for type with switch
 - Be careful of the lead wire direction when designing the 30 mm or less stroke length of axial lead wire and the 20 mm stroke length of radial lead wire, since a switch is installed in each groove of the body.
- Keep the supply pressure 0.5 MPa and over when the ambient temperature of the cylinder is 5°C or less.
- Contact CKD if the use environment is always cold (5°C or below) or hot (40°C and above).
- The following three types of stopper with stroke adjusting function are available.
 - Rubber cushion stopper

The stopper has an integrated urethane rubber cushion. A stopper allowing contact to the metal part at 0.4 MPa and over for a stable stop position is also available. Contact CKD for details.

● Metal stopper

The stopper has no cushion mechanism and should be used for low-load and low-speed applications. The stop position is stable since it does not suffer from deformation of a rubber cushion.

● Shock absorber stopper

The stopper enables smooth and accurate stop with high energy absorption performance and by allowing contact to the metal part.

2. Position locking LCX-Q

⚠ CAUTION

■ Do not use 3-position valves.

Avoid using the cylinder in combination with 3-position (especially closed center metal seal) valves. If the port at the side where the lock mechanism is provided is pressurized, the lock cannot be engaged. Even if it is locked once, the air leaked from the valve enters the cylinder, and the lock may be released after a certain period of time.

■ Cylinder load factor must be 50% or less.

If the load factor is high, the lock may not be released, or the lock section may be damaged.

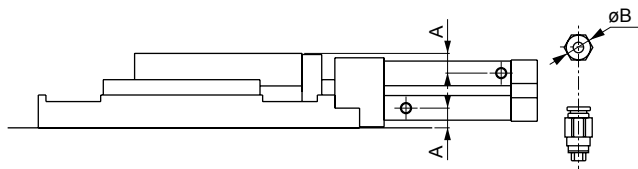
Mounting, installation and adjustment

1. Common; when piping

⚠ CAUTION

- Precautions for piping fittings

Be sure to attach a speed controller during piping before use. The available fittings are as below.



Item Bore size (mm)	Port size	Port position dimension A	Applicable fitting	Fitting O.D. B
ø25	M5	9.5	SC3W-M5-4 SC3W-M5-6 GWS4-M5-S GWS4-M5	ø17 or less
ø32		9	GWL4-M5 GWS6-M5-S GWS6-M5 GWL6-M5	

2. Common; when installing

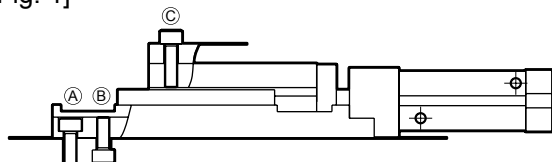
⚠ CAUTION

- The installation surfaces of the base and table have been finished with precision machining to obtain high-precision linear movement. Therefore, grinding the installation surface of the device to improve flatness will enable more stable high-precision performance. (Recommended flatness: 0.01 mm or less)
Do not damage surface flatness by denting or scratching the mounting surface.

Mounting, installation and adjustment

- Observe the following bolt insertion lengths and tightening torque when installing the jig on the table or base.

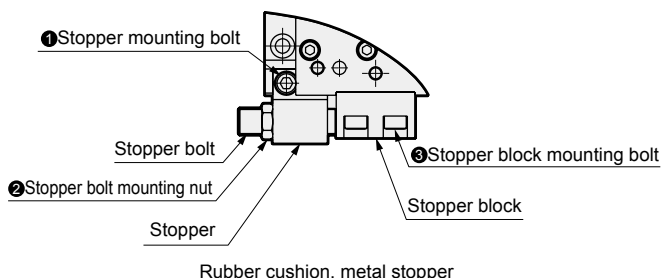
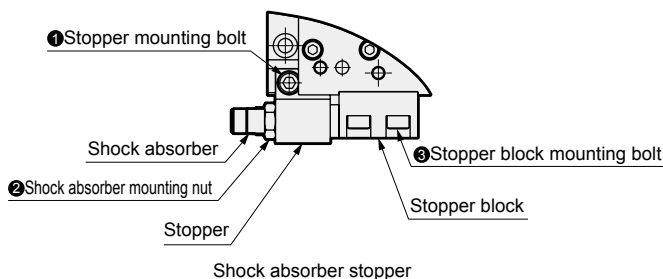
[Fig. 1]



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

- Observe the following tightening torque of bolts and nuts of the stopper.

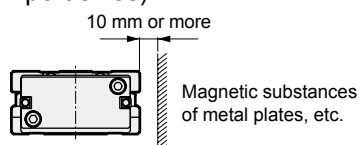
[Fig. A]



Item	① Stopper mounting bolt	② Stopper bolt mounting nut	③ Stopper block mounting bolt
	(N·m)	(N·m)	(N·m)
LCX-25	4.3 to 5.2	4.5 to 6.0	4.3 to 5.2
LCX-32			

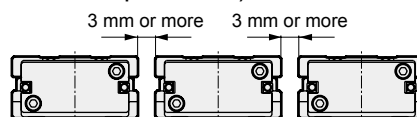
- The cylinder switch may malfunction if there is a magnetic substance such as a metal plate installed adjacently. To ensure safe operation, keep it 10 mm and over away from the cylinder surface or change the installation surface of the cylinder switch.

(Common for all port sizes)



- The cylinder switches may accidentally function if the cylinders are close to each other. Keep the distance between the surfaces of the cylinders.

(Common for all port sizes)

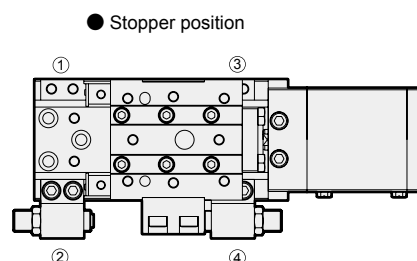


- CKD's shock absorber is a repair part. Replace it when the energy absorption performance has degraded or the operation is not smooth.
- When using a positioning hole, use a pin of dimensions that do not require press fitting. If a pin is press fitted, the load of press fitting may damage or distort the linear guide, lowering the accuracy. The recommended tolerance of a pin is JIS tolerance m6 or less.

3. Position locking LCX-Q

CAUTION

- The locking mechanism works at the stroke end. Do not attach a stopper to the stopper positions ③ and ④. If the stopper is engaged on the way of the stroke by the external stopper, the locking mechanism may not work and the piston could fall. When setting a load, make sure to check that the lock mechanism functions before installing the product.
- Supply pressure equal to or higher than the min. working pressure to the port on the lock mechanism side for each model.
- When the piping at the side where the lock mechanism is provided is long and thin, or when the speed controller is far away from the cylinder port, note that it takes time to engage the lock. Clogging in the silencer mounted on the EXH. port of the solenoid valve may also cause the same result.



LCM
LCR
LCG
LCW
LCX
STM
STG
STS/STL
STR2
UCA2
ULK*
JSK/M2
JSG
JSC3/JSC4
USSD
UFCD
USC
UB
JSB3
LMB
LML
HCM
HCA
LBC
CAC4
UCAC2
CAC-N
UCAC-N
RCS2
RCC2
PCC
SHC
MCP
GLC
MFC
BBS
RRC
GRC
RV3*
NHS
HRL
LN
Hand
Chuk
MechHnd/Chuk
ShkAbs
FJ
FK
SpdContr
Ending

1. Common

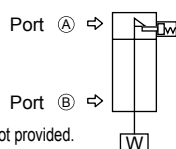
CAUTION

- Apply AFF grease (THK) to the guide rail surface after six months or when the number of operation cycles reaches one million, whichever comes first.

2. Position locking LCX-Q

WARNING

- If pressure is supplied to port ① when both ports are not pressurized and the piston is locked, the lock may not be released or the piston rod may suddenly pop out just after the lock is released. This can be extremely hazardous. To release the lock mechanism, make sure to supply pressure to port ②. Check that load is not applied to the lock mechanism.



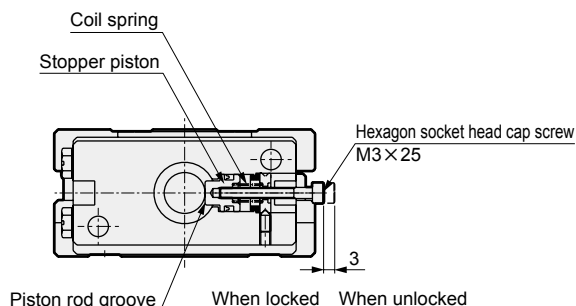
- For usage where the drop rate is increased using the quick exhaust valve, the lock may not release normally because the cylinder body starts operating before the lock pin. For the position locking cylinder, do not use the quick exhaust valve.

CAUTION

- If back pressure is applied to the locking mechanism, the lock may be released. Use a single solenoid valve, or an individual exhaust manifold.
- After the locking mechanism is manually operated, make sure to return the locking mechanism to the original state before use. Do not perform manual operation except for adjustment, as it is dangerous.
- When mounting or adjusting the cylinder, release the lock. If mounting work, etc., is done while the lock is engaged, the lock part may be damaged.
- Do not use multiple synchronized cylinders. Do not use so that 1 workpiece is moved by synchronizing 2 or more position locking cylinders. Lock release may fail for one of the cylinders.
- Use the speed controller with meter-out. If the meter-in control is used, the lock may not be able to be released.
- At the side where the lock mechanism is attached, be sure to use the cylinder from the stroke end. If the cylinder piston does not reach the stroke end, the lock may not be engaged or the lock may not be able to be released.

How to unlock

By screwing the hexagon socket head cap screw (M3 x 25) into the stopper piston and pulling the bolt 3 mm with force of 20 N or more, the stopper piston moves and the lock is released. (when horizontally installed with no load and with the rod port pressurized). When the screw is released, the internal spring returns the stopper piston. When the stopper piston fits in the piston rod groove, the cylinder is locked.



3. Long stroke length LCX-*L

- The preload of the linear guide has been adjusted to an optimum value. Do not loosen or tighten the hexagon socket set screw. Doing so may degrade the product performance.

