

## High Durability Series

# Dust Resistant Cylinder

## Up to 6 times more durable in dusty environments

Applicable powder particle size: 20 to 100  $\mu\text{m}$

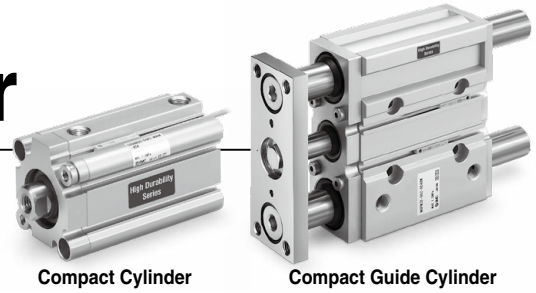
Suitable for environments with ceramic powder, toner powder, paper powder, and metallic powder

\* Excludes weld spatter

## Can be selected according to the application

A Lube-retainer (stable lubrication function) and a heavy-duty scraper can be mounted on the piston rod.

For the MGP series compact guide cylinder, they can also be mounted on the guide rod (one or both sides).

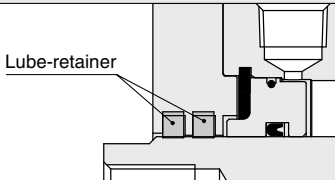

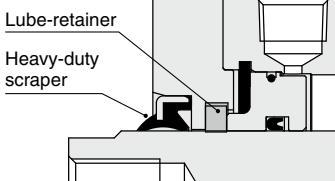

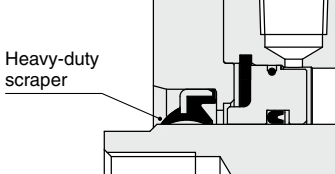



Compact Cylinder

Compact Guide Cylinder

### High Durability Series

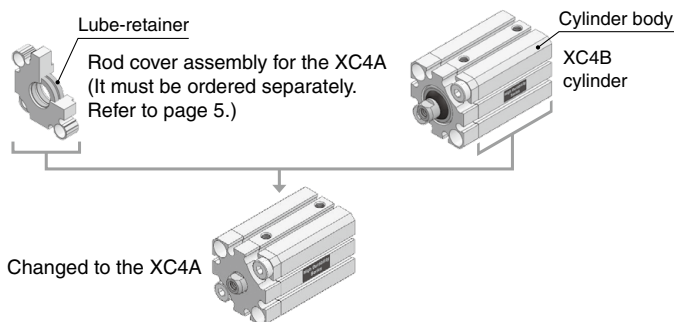
High Durability Series is the series name for the "special specification" that offers superior durability and environmental resistance compared to standard products.

Description	Structure (CQ2)	Applicable powder particle size	Durability
With 2 Lube-retainers <b>XC4A</b>		20 to 50 $\mu\text{m}$	 Standard model
With heavy-duty scraper + Lube-retainer <b>XC4B</b>		30 to 100 $\mu\text{m}$	 Standard model
With heavy-duty scraper <b>XC4C</b>		50 to 100 $\mu\text{m}$	 Standard model

## The rod cover assembly can be replaced according to the operating environment. (For details [p.5](#))

\* Only for bore sizes  $\phi 20$  to  $\phi 32$  of the CQ2 series (Cannot be replaced for the MGP series)

[Example of change] When changing from the XC4B to the XC4A



### <Rod Cover Assembly Replacement Comparison Chart>

Before replacement		After replacement
<b>XC4A</b>	➔	<b>XC4C</b>
<b>XC4B</b>	➔	<b>XC4A</b> *1 <b>XC4C</b> *1
<b>XC4C</b>	➔	<b>XC4A</b>

\*1 The overall length after replacement remains the same as that of the XC4B.

### Applicable Cylinders



Compact Cylinder  
**CQ2-XC4**□  
 $\phi 20$  to  $\phi 63$



Compact Guide Cylinder  
**MGP-XC4**□  
 $\phi 20$  to  $\phi 100$

# CQ2/MGP-XC4□

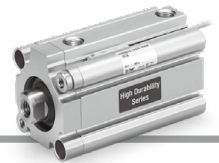


## High Durability Series

# Dust Resistant Cylinder

# CQ2-XC4□

ø20, ø25, ø32, ø40, ø50, ø63



## How to Order

Without auto switch  
ø20, ø25

CQ2 B 20 □ - 30 D □

- XC4B

Without auto switch  
ø32 to ø63

CQ2 B 32 □ - 30 D □ Z

- XC4B

With auto switch

CDQ2 B 32 □ - 30 D □ Z - M9BW □ - XC4B

With auto switch magnet

1

2

3

4

5

6

7

8

9

10

### 1 Mounting

B	Through-hole
A	Both ends tapped
L	Foot bracket
LC	Compact foot bracket
G	Head flange
D	Double clevis

\* Mounting brackets are shipped together with the product but do not come assembled.

\* For bore sizes 20 to 32, the body is the same for both the "B" type (through-hole) and the "A" type (both ends tapped), so the "A" type cannot be selected.  
Example) CQ2A32-10DZ-XC4□

### 2 Bore size

20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm

### 3 Port thread type

Nil	M thread	ø20, ø25
	Rc	
TN	NPT	ø32 to ø63
TF	G	

\* M threads are only compatible with bore size ø32 at a 5 mm stroke for cylinders without an auto switch magnet.

### 4 Cylinder stroke [mm]

Bore size	Standard stroke
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
50, 63	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

### 5 Action

D	Double acting
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### 6 Body option

Nil	Rod end female thread
F	With boss on head end
C	With rubber bumper
M	Rod end male thread

\* Combined body options, such as "FC," "FM," "FCM," and "CM," can be selected.

### 7 Auto switch mounting groove

Z	ø20 to ø63	4 surfaces
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### 8 Auto switch

Nil	Without auto switch
-----	---------------------

\* The applicable auto switches are the same as those for the standard model. Refer to the Web Catalog.

### 9 Number of auto switches

Nil	2
S	1
n	n

### 10 Dust resistant specifications

XC4A	With 2 Lube-retainers (Applicable powder particle size: 20 to 50 µm)	Lube-retainer	
XC4B	With heavy-duty scraper + Lube-retainer (Applicable powder particle size: 30 to 100 µm)	Lube-retainer Heavy-duty scraper	
XC4C	With heavy-duty scraper (Applicable powder particle size: 50 to 100 µm)	Heavy-duty scraper	

## Specifications

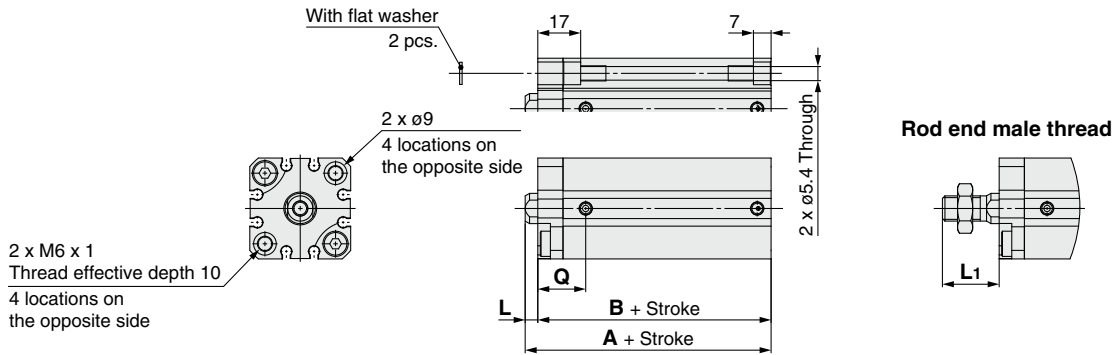
Bore size [mm]		20	25	32	40	50	63
Action		Double acting, Single rod					
Fluid		Air					
Proof pressure		1.5 MPa					
Max. operating pressure		1.0 MPa					
Min. operating pressure		0.1 MPa					
Applicable powder particle size	XC4A	20 to 50 μm					
	XC4B	30 to 100 μm*1					
	XC4C	50 to 100 μm					
Lubrication		Not required (Non-lube)					
Piston speed		50 to 500 mm/s				50 to 300 mm/s	
Stroke length tolerance		0 to +1.0 mm*2					

\*1 It can also be used in fine powder environments of less than 30 µm.

\*2 The stroke length tolerance does not include the amount of bumper change.

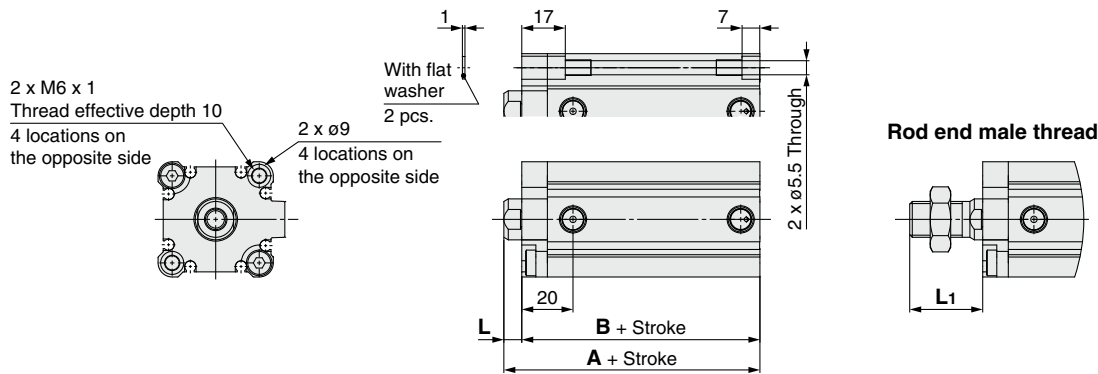
**Dimensions** (Dimensions other than those shown below are the same as those of the standard model.)

**ø20, ø25**



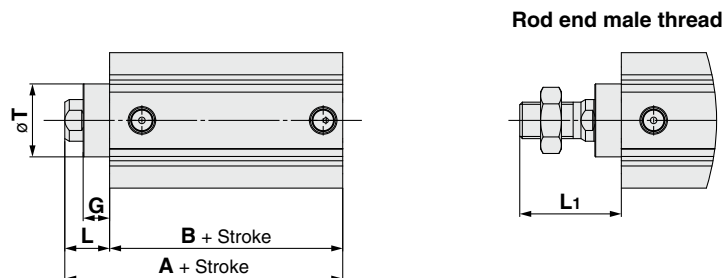
														[mm]
Bore size [mm]	XC4A, XC4C							XC4B						
	Without auto switch		With auto switch		L	L <sub>1</sub>	Q	Without auto switch		With auto switch		L	L <sub>1</sub>	Q
	A	B	A	B				A	B	A	B			
20	34	29.5	44	39.5	4.5	18.5	18	39	29.5	49	39.5	9.5	23.5	18
25	37.5	32.5	47.5	42.5	5	22.5	19	42.5	32.5	52.5	42.5	10	27.5	19

**ø32**



Bore size [mm]	Stroke range [mm]	XC4A, XC4C										XC4B							
		Without auto switch				With auto switch				L	L <sub>1</sub>	Without auto switch				With auto switch			
		A	B	F	P	A	B	F	P			A	B	F	P	A	B	F	P
32	5	40	33	5.5	M5 x 0.8	50	43	7.5	1/8	7	28.5	45	33	5.5	M5 x 0.8	55	43	7.5	1/8
	10 to 50			7.5	1/8									7.5	1/8				
	75, 100	50	43									55	43						

**ø40 to ø63**



Bore size [mm]	Stroke range [mm]	XC4A								XC4B								XC4C							
		Without auto switch		With auto switch		G	L	L <sub>1</sub>	T	Without auto switch		With auto switch		G	L	L <sub>1</sub>	T	Without auto switch		With auto switch		G	L	L <sub>1</sub>	T
		A	B	A	B					A	B	A	B					A	B	A	B				
40	5 to 50	46.5	29.5	56.5	39.5	10	17	38.5	28	51.5	29.5	61.5	39.5	10	22	43.5	28	46.5	29.5	56.5	39.5	5	17	38.5	28
	75, 100	56.5	39.5							61.5	39.5							56.5	39.5						
50	10 to 50	48.5	30.5	58.5	40.5	10	18	43.5	35	53.5	30.5	63.5	40.5	10	23	48.5	35	48.5	30.5	58.5	40.5	5	18	43.5	35
	75, 100	58.5	40.5							63.5	40.5							58.5	40.5						
63	10 to 50	54	36	64	46	10	18	43.5	35	59	36	69	46	10	23	48.5	35	54	36	64	46	5	18	43.5	35
	75, 100	64	46							69	46							64	46						

# Dust Resistant Cylinder

# MGP-XC4

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



## How to Order

**MGP** **M** **25** **30** **Z** **M9BW** **XC4B**

Compact Guide Cylinder

### 1 Bearing type

<b>M</b>	Slide bearing
<b>L</b>	Ball bushing

\* Only the slide bearing can be selected for the XC4A.

### 2 Bore size

<b>12</b>	12 mm	<b>40</b>	40 mm
<b>16</b>	16 mm	<b>50</b>	50 mm
<b>20</b>	20 mm	<b>63</b>	63 mm
<b>25</b>	25 mm	<b>80</b>	80 mm
<b>32</b>	32 mm	<b>100</b>	100 mm

\* Only the XC4A can be selected for bore sizes 12 and 16.

### 3 Port thread type

<b>Nil</b>	M5 x 0.8
<b>TN</b>	Rc
<b>TF</b>	NPT
<b>TF</b>	G

\* Only M5 x 0.8 can be selected for bore sizes 12 and 16.

### 5 Auto switch

<b>Nil</b>	Without auto switch (Built-in magnet)
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\* The applicable auto switches are the same as those for the standard model. Refer to the **Web Catalog**.

### 4 Cylinder stroke

Bore size [mm]	Standard stroke [mm]	
	XC4A	XC4B, XC4C
<b>12, 16</b>	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200	—
<b>20, 25</b>	20, 30, 40, 50, 75, 100, 125, 150, 175, 200	20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400
<b>32 to 100</b>	25, 50, 75, 100, 125, 150, 175, 200	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400

### 6 Number of auto switches

<b>Nil</b>	2
<b>S</b>	1
<b>n</b>	n

### 7 Dust resistant specifications

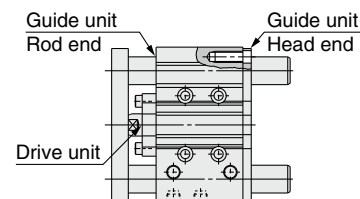
<b>XC4A</b>	<p>[Piston rod] With 2 Lube-retainers</p> <p>[Guide rod] With 1 Lube-retainer (Applicable powder particle size: 20 to 50 µm)</p>	
<b>XC4B</b>	<p>[Piston rod] With heavy-duty scraper + Lube-retainer</p> <p>[Guide rod] With heavy-duty scraper + Lube-retainer (Applicable powder particle size: 30 to 100 µm)</p>	
<b>XC4C</b>	<p>[Piston rod] With heavy-duty scraper (Outer lip type) + Lube-retainer</p> <p>[Guide rod] With heavy-duty scraper (Outer lip type) + Lube-retainer (Applicable powder particle size: 50 to 100 µm)</p>	

### 8 Suffix (Scraper or Lube-retainer mounting position)

For details, refer to "7 Dust resistant specifications."

Symbol	Type	Drive unit	Guide unit	
			Rod end	Head end
<b>Nil</b>	With single side	<b>XC4A</b>	○	—
		<b>XC4B</b>	○	—
		<b>XC4C</b>	○	—
<b>W</b>	With both sides	<b>XC4A</b>	○	○
		<b>XC4B</b>	○	○*1
		<b>XC4C</b>	○	○*1

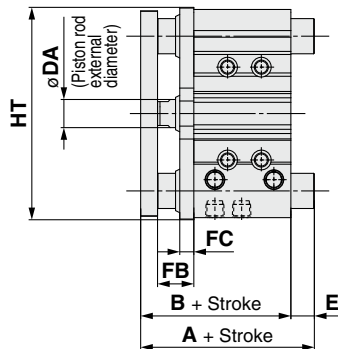
\*1 Only the heavy-duty scraper can be mounted on the head end of the XC4B and the XC4C.



## Specifications

Applicable series		<b>MGPM</b>	<b>MGPL</b>
Bearing type		Slide bearing	Ball bushing
Bore size [mm]		12, 16, 20, 25, 32, 40, 50, 63, 80, 100	
Min. operating pressure	With single side	<b>XC4A</b> ø12 to ø100	0.15 MPa
		<b>XC4B</b> ø20 to ø100	0.2 MPa
		<b>XC4C</b> ø20 to ø100	0.12 MPa
	With both sides	<b>XC4A</b> ø12 to ø100	0.2 MPa
		<b>XC4B</b> ø20 to ø100	0.3 MPa
		<b>XC4C</b> ø20 to ø100	0.14 MPa
Piston speed	<b>XC4A</b> □	ø12 to ø63	50 to 500 mm/s
		ø80, ø100	50 to 400 mm/s
		ø20, ø25	100 to 500 mm/s
	<b>XC4B</b> □	ø32 to ø100	100 to 400 mm/s
		ø20 to ø63	50 to 500 mm/s
		ø80, ø100	50 to 400 mm/s

Specifications other than the above are the same as those of the standard model.

**Dimensions** (Dimensions other than those shown below are the same as those of the standard model.)**With single side scraper****MGPM-XC4A: A, E, HT Dimensions**

[mm]

Bore size [mm]	A		E		HT
	50 st or less	Over 50 st to 200 st	50 st or less	Over 50 st to 200 st	
12	52	70.5	0	18.5	57
16	56	74.5	0	18.5	63
20	63	93	0	30	(83)
25	63.5	93.5	0	30	(93)
32	92	110.5	22.5	41	(112)
40	92	110.5	16	34.5	(120)
50	105.5	126.5	23.5	44.5	(148)
63	105.5	126.5	18.5	39.5	(162)
80	123.5	150.5	17	44	(202)
100	145.5	170.5	19.5	44.5	(240)

\* The dimensions in ( ) are the body dimensions of the standard model.

**Common Dimensions: MGPM, MGPL**

[mm]

Bore size [mm]	B	DA	FB	FC		
				XC4A MGPM	XC4B, XC4C MGPM	XC4C MGPL
12*1	52	6	16	5	—	—
16*1	56	8	16	5	—	—
20	63	10	18	0	9	5
25	63.5	10	17	0	9	5
32	69.5	14	22	0	9	5
40	76	14	22	0	9	5
50	82	20	26	0	10	8
63	87	20	26	0	10	5
80	106.5	25	34	0	15	6
100	126	30	41	0	15	6

\*1 Only applicable to the XC4A

**MGPM-XC4B, -XC4C: A, E, HT Dimensions**

[mm]

Bore size [mm]	A			E			HT
	50 st or less	Over 50 st to 200 st	Over 200 st	50 st or less	Over 50 st to 200 st	Over 200 st	
20	63	87.5	120	0	24.5	57	80
25	63.5	87.5	119.5	0	24	56	93
32	85	103.5	139.5	15.5	34	70	111.5
40	85	103.5	139.5	9	27.5	63.5	119
50	98.5	119.5	160.5	16.5	37.5	78.5	151
63	98.5	119.5	160.5	11.5	32.5	73.5	165
80	114.5	141.5	190.5	8	35	84	202
100	136.5	161.5	200.2	10.5	35.5	74.5	240

**MGPL-XC4B, -XC4C: A, E, HT Dimensions**

[mm]

Bore size [mm]	A				E				HT
	30 st or less	Over 30 st to 100 st	Over 100 st to 200 st	Over 200 st	30 st or less	Over 30 st to 100 st	Over 100 st to 200 st	Over 200 st	
20	69	86	110	127.5	6	23	47	64.5	80
25	75.5	91.5	110.5	127.5	12	28	47	64	93

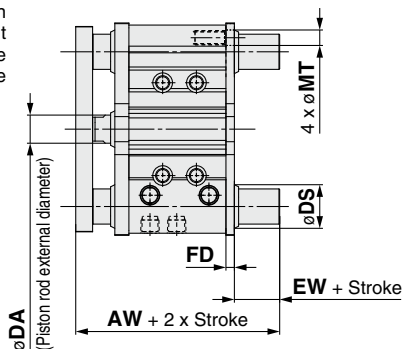
Bore size [mm]	A				E				HT
	50 st or less	Over 50 st to 100 st	Over 100 st to 200 st	Over 200 st	50 st or less	Over 50 st to 100 st	Over 100 st to 200 st	Over 200 st	
32	89.5	106.5	126.5	148.5	20	37	57	79	110
40	89.5	106.5	126.5	148.5	13.5	30.5	50.5	72.5	118
50	101.5	122.5	142.5	169.5	19.5	40.5	60.5	87.5	146
63	101.5	122.5	142.5	169.5	14.5	35.5	55.5	82.5	160

Bore size [mm]	A				E				HT
	25 st or less	Over 25 st to 100 st	Over 100 st to 200 st	Over 200 st	50 st or less	Over 50 st to 100 st	Over 100 st to 200 st	Over 200 st	
80	114.5	138.5	168.5	201.5	8	32	62	95	199
100	129.5	155.5	188.5	211.5	3.5	29.5	62.5	85.5	236

**With scraper on both sides**

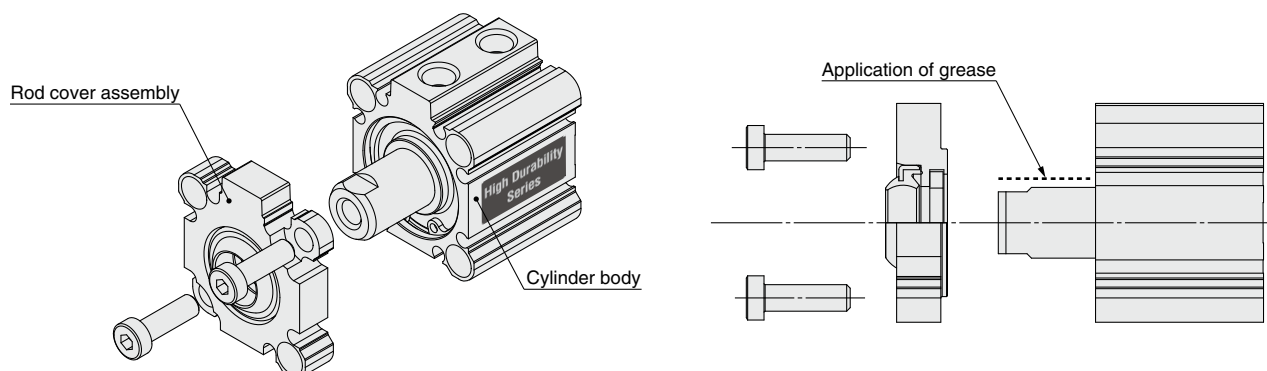
\* Dimensions other than those shown to the right are the same as those of the type with a single side scraper.

**Dimensions: AW, EW, FD, MT, DS**

[mm]

Bore size [mm]	AW	EW	FD	MT	DS (Bypass port for guide rod)		
					XC4A MGPM	XC4B, XC4C MGPM	XC4C MGPL
12*1	63	6	5	5	10	—	—
16*1	67	6	5	6	12	—	—
20	74	6	5	6	14	17	15
25	74.5	6	5	7	18	21	19
32	82.5	7	6	8.5	22	26	21
40	89	7	6	8.5	22	26	21
50	95	7	6	11	27	31	26
63	100	7	6	11	27	31	26
80	120.5	8	6	14	33	36	31
100	143	8	9	16	39	44	36

\*1 Only applicable to the XC4A

**CQ2 Series****Rod Cover Assembly Replacement Procedure****CQ2 Type (ø20 to ø32 only)**

When replacing the rod cover assembly for maintenance or specification changes, follow the instructions below. If the assembly is not replaced using the correct procedure, its performance may decline significantly.

Additionally, if the rod cover assembly is replaced, it will no longer be covered by the product warranty.

- 1. Remove the 2 hexagon socket head cap screws (M6 x 1), and remove the rod cover assembly from the cylinder.**
  - \* At this time, be careful not to scratch or dent the surface of the piston rod.
- 2. Apply grease to the surface of the piston rod, and install the new rod cover assembly without scratching the Lube-retainer or scraper.**
  - \* At this time, make sure that the Lube-retainer does not fall out.
  - \* Scratching the Lube-retainer or scraper during the installation of the rod cover assembly may seriously impair the performance of the product.
- 3. After confirming that the rod cover assembly is secured in the correct position (direction), tighten the 2 hexagon socket head cap screws removed in step 1 with the proper tightening torque (5.2 N·m).**
  - \* The application of adhesive to prevent looseness is not necessary.

**Rod Cover Assembly Part Nos.**


Bore size [mm]	XC4A	XC4B	XC4C
ø20	CQ2B20-XC4A	CQ2B20-XC4B	CQ2B20-XC4C
ø25	CQ2B25-XC4A	CQ2B25-XC4B	CQ2B25-XC4C
ø32	CQ2B32-XC4A	CQ2B32-XC4B	CQ2B32-XC4C

\* The rod cover assembly includes a cover and a seal.

\* A grease pack is not included. Please order one with the part numbers below.

**Grease Pack Part Nos.**

Kit no.	Grease weight
GR-S-005	5 g
GR-S-010	10 g
GR-S-020	20 g

 <b>Safety Instructions</b>	Be sure to read the “Handling Precautions for SMC Products” (M-E03-3) and “Operation Manual” before use.
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D-G