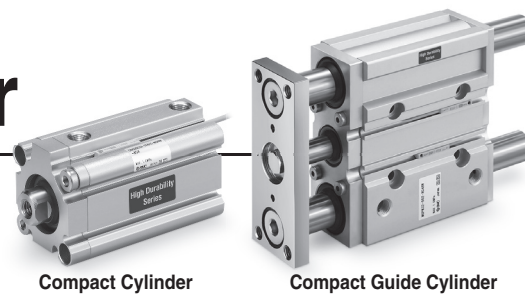


High Durability Series

Dust Resistant Cylinder



Compact Cylinder

Compact Guide Cylinder

Up to 6 times more durable in dusty environments

Applicable powder particle size: 20 to 100 μm

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).

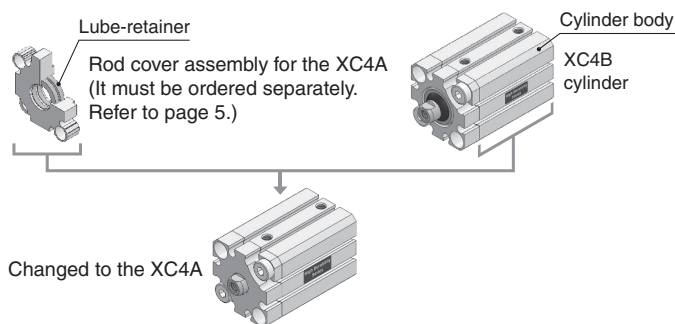
High Durability Series
High Durability Series is the series name for the "special specification" that offers superior durability and environmental resistance compared to standard products.

Description	Structure (CQ2)	Applicable powder particle size	Durability
With 2 Lube-retainers XC4A		20 to 50 μm	4 times Standard model
With heavy-duty scraper + Lube-retainer XC4B		30 to 100 μm	6 times Standard model
With heavy-duty scraper XC4C		50 to 100 μm	2 times Standard model

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

* Only for bore sizes Ø 20 to Ø 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>

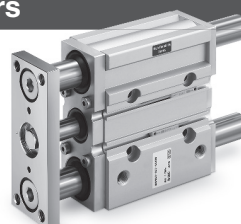
Before replacement		After replacement
XC4A	→	XC4C
XC4B	→	XC4A *1
		XC4C *1
XC4C	→	XC4A

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

Applicable Cylinders



Compact Cylinder
CQ2-XC4□
Ø 20 to Ø 63



Compact Guide Cylinder
MGP-XC4□
Ø 20 to Ø 100

CQ2/MGP-XC4□



21-EU774-UK

High Durability Series

Dust Resistant Cylinder

CQ2-XC4□

∅ 20, ∅ 25, ∅ 32, ∅ 40, ∅ 50, ∅ 63



How to Order

Without auto switch
∅ 20, ∅ 25

CQ2 B 20 □ - 30 D □

- XC4B

Without auto switch
∅ 32 to ∅ 63

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

—	M thread	∅ 20, ∅ 25
	Rc	
TN	NPT	∅ 32 to ∅ 63
TF	G	

* M threads are only compatible with bore size ∅ 32 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
---	---------------

6 Body option

—	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	∅ 20 to ∅ 63	4 surfaces
---	--------------	------------

8 Auto switch

—	Without auto switch
---	---------------------

* The applicable auto switches are the same as those for the standard model. Refer to the catalogue on www.smc.eu.

9 Number of auto switches

—	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

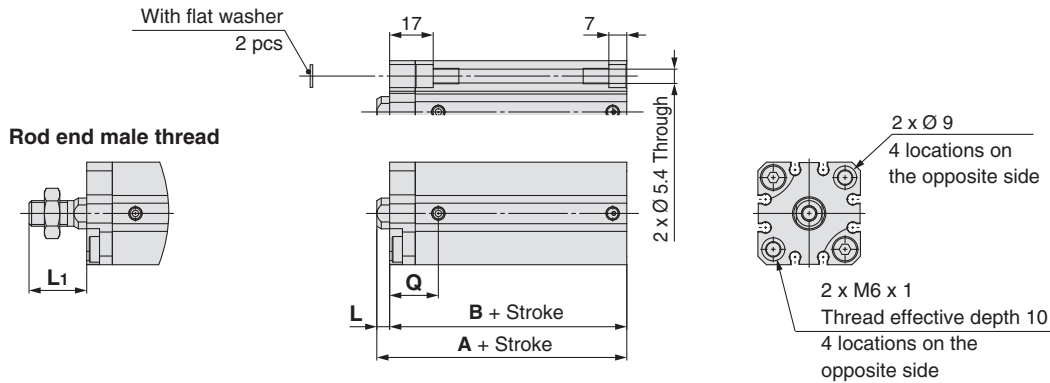
Bore size [mm]	20	25	32	40	50	63
Action	Double acting, Single rod					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.1 MPa					
Applicable powder particle size	XC4A	20 to 50 μm				
	XC4B	30 to 100 μm*1				
	XC4C	50 to 100 μm				
Lubrication	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.

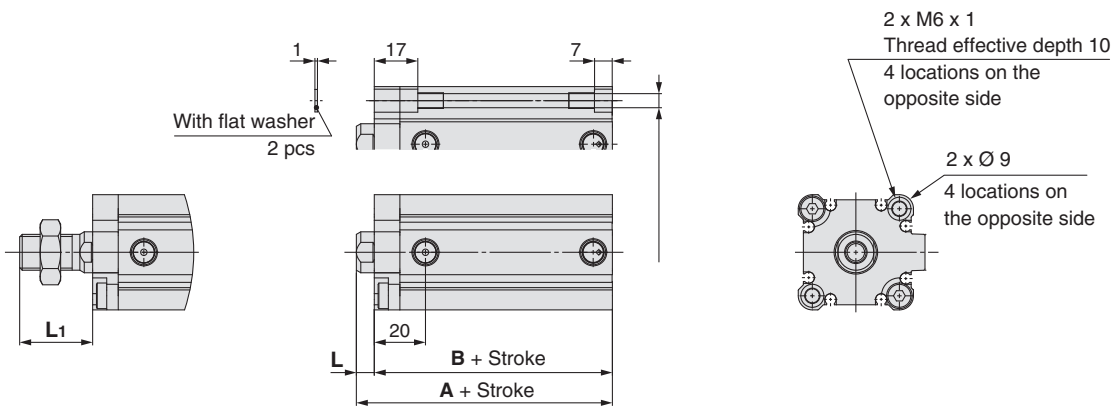
Dimensions (Dimensions other than those shown below are the same as those of the standard model.)

Ø 20, Ø 25



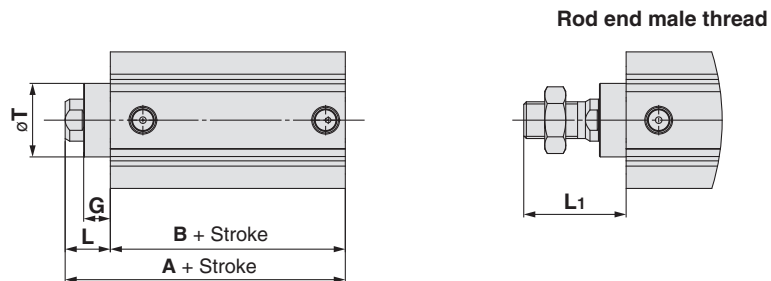
Bore size [mm]	XC4A, XC4C								XC4B					
	Without auto switch		With auto switch		L	L ₁	Q	Without auto switch		With auto switch		L	L ₁	Q
	A	B	A	B				A	B					
20	34	29.5	44	39.5	4.5	18.5	18	39	29.5	49	39.5	9.5	23.5	18
25	37.5	32.5	47.5	42.5	5	22.5	19	42.5	32.5	52.5	42.5	10	27.5	19

Ø 32



Bore size [mm]	Stroke range [mm]	XC4A, XC4C										XC4B													
		Without auto switch				With auto switch				L	L ₁	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									45	33	5.5	M5 x 0.8								
	10 to 50			7.5	1/8	50	43	7.5	1/8	7	28.5														
	75, 100	50	43											55	43	7.5	1/8	55	43	7.5	1/8	12	33.5		

Ø 40 to Ø 63



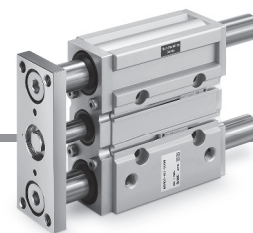
Bore size [mm]	Stroke range [mm]	XC4A								XC4B								XC4C							
		Without auto switch		With auto switch		G	L	L ₁	T	Without auto switch		With auto switch		G	L	L ₁	T	Without auto switch		With auto switch		G	L	L ₁	T
		A	B	A	B					A	B	A	B					A	B						
40	5 to 50	46.5	29.5	56.5	39.5	10	17	38.5	28	51.5	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						

High Durability Series

Dust Resistant Cylinder

MGP-XC4

∅ 12, ∅ 16, ∅ 20, ∅ 25, ∅ 32, ∅ 40, ∅ 50, ∅ 63, ∅ 80, ∅ 100



How to Order

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

Compact Guide Cylinder

1 Bearing type

M	Slide bearing
L	Ball bushing

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

2 Bore size

12	12 mm	40	40 mm
16	16 mm	50	50 mm
20	20 mm	63	63 mm
25	25 mm	80	80 mm
32	32 mm	100	100 mm

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

3 Port thread type

—	M5 x 0.8
	Rc
TN	NPT
TF	G

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

5 Auto switch

—	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 catalogue on www.smc.eu.

4 Cylinder stroke

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

—	2
S	1
n	n

7 Dust resistant specifications

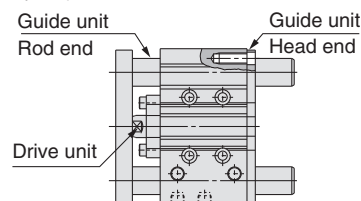
XC4A	<p>[Piston rod] With 2 Lube-retainers</p> <p>[Guide rod] With 1 Lube-retainer (Applicable powder particle size: 20 to 50 μm)</p>	
XC4B	<p>[Piston rod] With heavy-duty scraper + Lube-retainer</p> <p>[Guide rod] With heavy-duty scraper + Lube-retainer (Applicable powder particle size: 30 to 100 μm)</p>	
XC4C	<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
—	With single side	XC4A	○	—
		XC4B	○	—
		XC4C	○	—
W	With both sides	XC4A	○	○
		XC4B	○	○*1
		XC4C	○	○*1

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



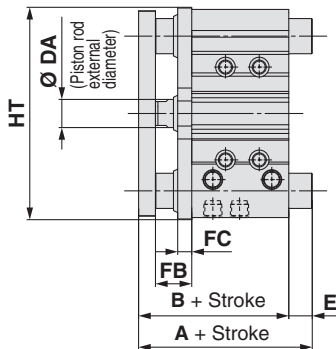
Specifications

		Applicable series	MGPM	MGPL
		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	XC4A ∅ 12 to ∅ 100	0.15 MPa	—
		XC4B ∅ 20 to ∅ 100	0.2 MPa	
	XC4C ∅ 20 to ∅ 100	0.12 MPa		
	With both sides	XC4A ∅ 12 to ∅ 100	0.2 MPa	—
XC4B ∅ 20 to ∅ 100		0.3 MPa		
	XC4C ∅ 20 to ∅ 100	0.14 MPa		
Piston speed	XC4A□	∅ 12 to ∅ 63	50 to 500 mm/s	
		∅ 80, ∅ 100	50 to 400 mm/s	
	XC4B□	∅ 20, ∅ 25	100 to 500 mm/s	
		∅ 32 to ∅ 100	100 to 400 mm/s	
XC4C□	∅ 20 to ∅ 63	50 to 500 mm/s		
	∅ 80, ∅ 100	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



Common Dimensions: MGPM, MGPL [mm]

Bore size [mm]	B	DA	FB	FC		
				XC4A	XC4B, XC4C	
				MGPM	MGPM	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-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.

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

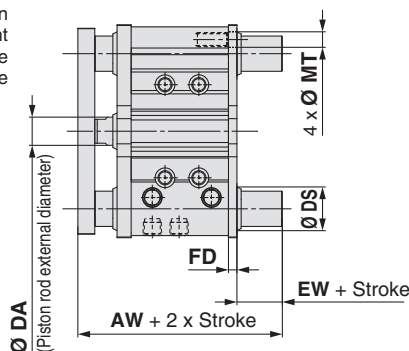
Bore size [mm]	A				E				HT
	30 st or less	Over 30 st to 100 st	Over 100 st to 200 st	Over 200 st	30 st or less	Over 30 st to 100 st	Over 100 st to 200 st	Over 200 st	
20	69	86	110	127.5	6	23	47	64.5	80
25	75.5	91.5	110.5	127.5	12	28	47	64	93

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.



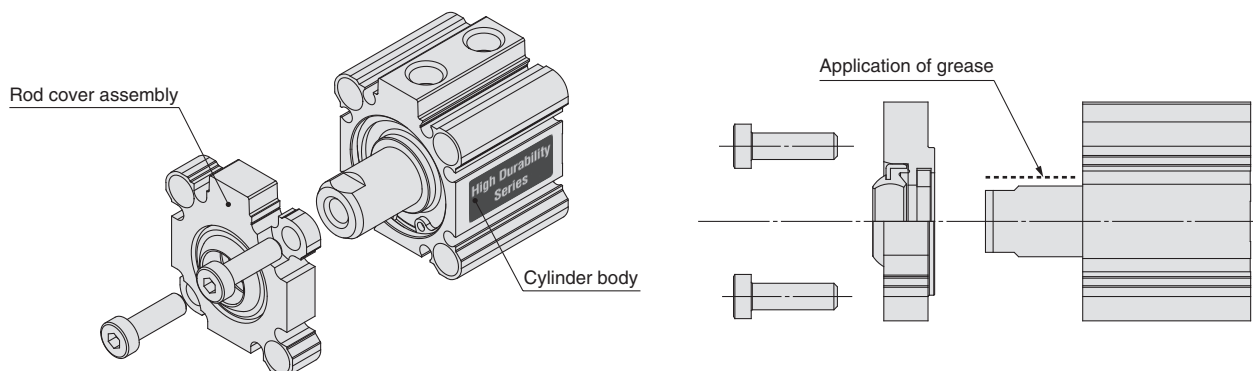
Dimensions: AW, EW, FD, MT, DS [mm]

Bore size [mm]	AW	EW	FD	MT	DS (Bypass port for guide rod)		
					XC4A	XC4B, XC4C	
					MGPM	MGPM	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 (Ø 20 to Ø 32 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
Ø 20	CQ2B20-XC4A	CQ2B20-XC4B	CQ2B20-XC4C
Ø 25	CQ2B25-XC4A	CQ2B25-XC4B	CQ2B25-XC4C
Ø 32	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

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)¹⁾, and other safety regulations.

-  **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
-  **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

- 1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
- ISO 10218-1: Manipulating industrial robots - Safety.
etc.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries. If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary. If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.²⁾ Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Caution

SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

SMC Corporation (Europe)

Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smc.dk.com	smc@smc.dk.com
Estonia	+372 651 0370	www.smcee.ee	info@smcee.ee
Finland	+358 207513513	www.smc.fi	smc.fi@smc.fi
France	+33 (0)164761000	www.smc-france.fr	supportclient@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smcautomation.ie	sales@smcautomation.ie
Italy	+39 03990691	www.smcitalia.it	mailbox@smcitalia.it
Latvia	+371 67817700	www.smc.lv	info@smc.lv

Lithuania	+370 5 2308118	www.smclt.lt	info@smclt.lt
Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	+48 222119600	www.smc.pl	office@smc.pl
Portugal	+351 214724500	www.smc.eu	apoioclientept@smc.smces.es
Romania	+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	+7 (812)3036600	www.smc.eu	sales@smcru.com
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 945184100	www.smc.eu	post@smc.smces.es
Sweden	+46 (0)86031240	www.smc.nu	smc@smc.nu
Switzerland	+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	+90 212 489 0 440	www.smcturkey.com.tr	satis@smcturkey.com.tr
UK	+44 (0)845 121 5122	www.smc.uk	sales@smc.uk

South Africa +27 10 900 1233 www.smcza.co.za zasales@smcza.co.za