

Air Cylinder: Standard Type Double Acting, Single Rod

CG1 Series

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

RoHS

How to Order

CG1 B N 20 - 100 Z - - -

With auto switch **CDG1 B N 20 - 100 Z - - - M9BW - - -**

Mounting

B	Basic
Z*	Basic (without trunnion mounting female thread)
L	Axial foot
F	Rod flange
G	Head flange
U*	Rod trunnion
T*	Head trunnion
D	Clevis

* Not available for ø80 and ø100.
* Mounting bracket is shipped together with the product, but not assembled.
* The cylinder for F, G, L, D mounting types is Z: Basic (without trunnion mounting female thread).

Bore size

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

Type

N	Rubber bumper
A	Air cushion

Pivot bracket

Nil	None
N	Pivot bracket is shipped together with the product, but not assembled

* Only for D, U, T mounting types
* Pivot bracket is shipped together with the product, but not assembled.

Rod end bracket

Nil	None
V	Single knuckle joint
W	Double knuckle joint

* No bracket is provided for the female rod end.
* Rod end bracket is shipped together with the product, but not assembled.
* A knuckle joint pin is not provided with the single knuckle joint.

Made to Order
For details, refer to page 293.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch

Nil	Without auto switch
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* For applicable auto switches, refer to the table below.

Suffix for cylinder (Rod boot)

Nil	Without rod boot
J	Nylon tarpaulin
K	Heat resistant tarpaulin

* In the case of w/rod boot, and a foot bracket or rod flange as a bracket, those parts are to be assembled at the time of shipment.
* For female rod end, no rod boot is provided.

Rubber bumper

Nil	Rc	ø20 to ø100
TF	NPT	ø20 to ø100
	M5 x 0.8	ø20, ø25
	G	ø32 to ø100

Air cushion

M5 x 0.8	ø20, ø25
Rc	ø32 to ø100
NPT*	ø32 to ø100
G*	ø32 to ø100

* Not available for ø20 and ø25.

Port thread type

Rod end thread

Nil	Male rod end
F	Female rod end

Cylinder stroke (mm)
Refer to "Standard Strokes" on page 293.

*** Refer to "Ordering Example of Cylinder Assembly" on page 294.**

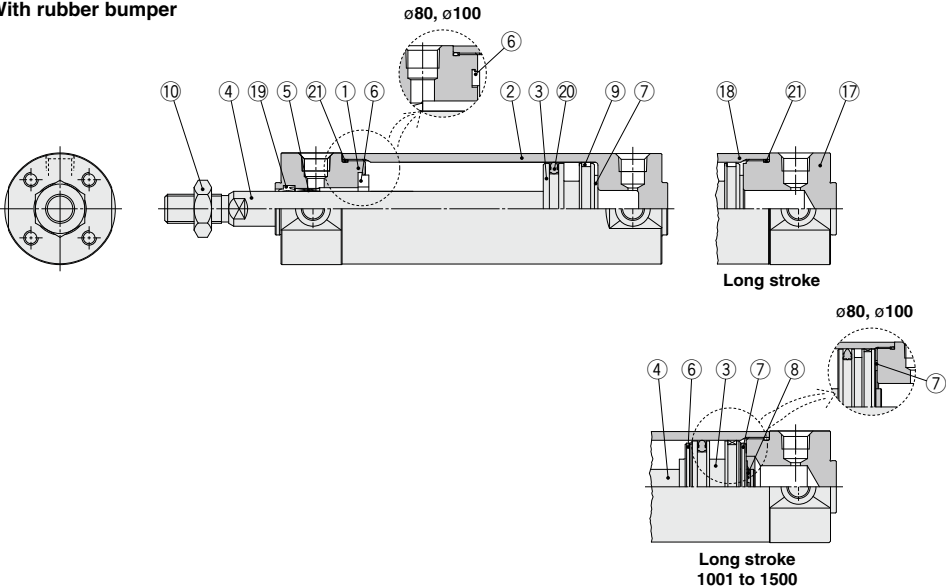
Applicable Auto Switches/Refer to pages 1575 to 1701 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model			Lead wire length (m)					Pre-wired connector	Applicable load						
					DC	AC	Applicable bore size			0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)								
							Perpendicular ø20 to ø63	In-line ø80, ø100	In-line													
Solid state auto switch	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	G59	●	●	●	●	○	—	IC circuit	Relay, PLC					
				3-wire (PNP)			M9PV	M9P	G5P	●	●	●	●	○								
		Connector		2-wire	12 V		M9BV	M9B	K59	●	●	●	●	○	—							
				3-wire (NPN)			M9NVV	M9NV	G59W	●	●	●	●	○								
		Grommet		3-wire (PNP)	M9PVV		M9PV	G5PW	●	●	●	●	○	—								
				2-wire	M9BWW		M9BW	K59W	●	●	●	●	○									
				3-wire (NPN)	5 V, 12 V		M9NAV ^{*1}	M9NA ^{*1}	—	○	○	○	○	—								
				3-wire (PNP)			M9PAV ^{*1}	M9PA ^{*1}	—	○	○	○	○									
				2-wire	12 V		M9BAV ^{*1}	M9BA ^{*1}	—	○	○	○	○	—								
				4-wire (NPN)			—	—	G5BA ^{*1}	●	●	●	●		○							
		Reed auto switch		Diagnostic indication (2-color indicator)	Grommet		Yes	3-wire (Equiv. to NPN)	24 V	12 V	A96V	A96	—	●	●	●		●	○	—	—	Relay, PLC
								—			A93V ^{*2}	A93	—	●	●	●		●	○			
Connector	—		—		—	—		—			—	—	—	—	—							
	—		—		—	—		—			—	—	—	—		—						
Grommet	—		—		—	—		—			—	—	—	—	—							
	—		—		—	—		—			—	—	—	—		—						

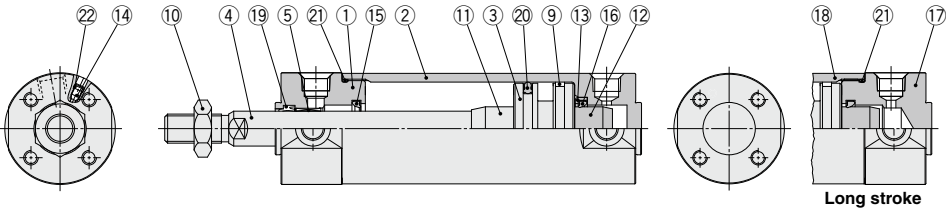
*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance.
A water-resistant type cylinder is recommended for use in an environment which requires water resistance. However, please contact SMC for water-resistant cylinder of ø20 and ø25.
*2 1 m type lead wire is only applicable to D-A93.
* Lead wire length symbols: 0.5 m..... Nil (Example) M9NW 1 m..... M (Example) M9NWM 3 m..... L (Example) M9NWL 5 m..... Z (Example) M9NWZ None..... N (Example) H7CN
* Solid state auto switches marked with "○" are produced upon receipt of order.
* Since there are other applicable auto switches than listed above, refer to page 361 for details.
* For details about auto switches with pre-wired connector, refer to pages 1648 and 1649.
* The D-A93□□/M9□□□ auto switches are shipped together, (but not assembled). (However, only the auto switch mounting brackets are assembled before shipment.)

Construction

With rubber bumper



With air cushion



Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Hard anodized
2	Tube cover	Aluminum alloy	Hard anodized
3	Piston	Aluminum alloy	
4	Piston rod	Stainless steel	For ø20 or ø25 with built-in magnet
5	Bushing	Carbon steel*	Hard chrome plating*
6	Bumper	Bearing alloy	
7	Bumper	Resin	ø32 or larger is common.
8	Retaining ring	Stainless steel	Except ø80 and ø100
9	Wear ring	Resin	
10	Rod end nut	Carbon steel	Zinc chromated
11	Cushion ring A	Aluminum alloy	
12	Cushion ring B	Aluminum alloy	
13	Seal retainer	Rolled steel	Zinc chromated
14	Cushion valve	Carbon steel	Electroless nickel plating
		ø40 or smaller	
		ø50 or larger	Steel wire
			Zinc chromated

Note) For cylinders with auto switches, the magnet is installed in the piston.

* The material for ø20, ø25 cylinders with auto switches is made of stainless steel.

No.	Description	Material	Note
15	Cushion seal A	Urethane	ø32 or larger is common.
16	Cushion seal B	Urethane	
17	Head cover	Aluminum alloy	Hard anodized
18	Cylinder tube	Aluminum alloy	Hard anodized
19	Rod seal	NBR	
20	Piston seal	NBR	
21	Tube gasket	NBR	
22	Valve seal	NBR	

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
20	CG1N20Z-PS	Set of the nos. 19, 20, 21
25	CG1N25Z-PS	
32	CG1N32Z-PS	
40	CG1N40Z-PS	

Note) As sizes ø50 and larger cannot be disassembled, the seal cannot be replaced.

Note) Refer to the Specific Product Precautions on page 362-1 for Disassembly/Replacement. Order with the kit number according to the bore size.

* The seal kit includes a grease pack (10 g).
Order with the following part number when only the grease pack is needed. Grease pack part number: GR-S-010 (10 g)