

Air Cylinder Short Type

Standard: Double Acting, Single Rod

CG3 Series

RoHS

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

How to Order



With auto switch

CG3 L N 25 - 100 -
CDG3 L N 25 - 100 - M9BW - C -

With auto switch
(Built-in magnet)

Mounting

B	Basic
L	Foot
F	Rod flange
G	Head flange
D	Clevis

* Mounting brackets are shipped together, (but not assembled).

Cushion

N Rubber bumper

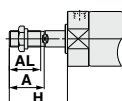
Bore size

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

Rod end thread

Nil	Male thread
F	Female thread
G	Long male rod end*

* G: Same rod end dimensions (A, AL, H) as CG1 series.



Made to Order

For details, refer to page 366.

Auto switch mounting bracket

Note) This symbol is indicated when the D-A9□ or M9□ type auto switch is specified. This mounting bracket does not apply to other auto switches (D-C7□ and H7□, etc.) (Nil)

Number of auto switches

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

Auto switch

Nil Without auto switch

* For applicable auto switches, refer to the below table.

Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.

(Example) CDG3FN32-100

Applicable Auto Switches

Refer to pages 1575 to 1701 in Best Pneumatics No. 2 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model Applicable bore size			Lead wire length (m)					Pre-wired connector	Applicable load	
					DC	AC	ø20 to ø63			0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)			
							Perpendicular	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	●	●	●	○	○	—		
				—	—		—	H7C	—	—	●	●	●	○			
		Grommet		3-wire (NPN)	24 V		5 V, 12 V	M9NVV	M9NW	G59W	●	●	●	○	○		IC circuit
				3-wire (PNP)				M9PVV	M9PW	G5PW	●	●	●	○	○		
	Water resistant (2-color indicator)	Grommet		2-wire	12 V	M9BVV	M9BW	K59W	●	●	●	○	○	—			
				3-wire (NPN)	5 V, 12 V	M9NAV ^{*1}	M9NA ^{*1}	—	—	○	●	●	○		IC circuit		
				3-wire (PNP)		M9PAV ^{*1}	M9PA ^{*1}	—	—	○	●	●	○			—	
				2-wire	12 V	M9BAV ^{*1}	M9BA ^{*1}	—	—	○	●	●	○		—		
				4-wire (NPN)	5 V, 12 V	—	—	G5BA ^{*1}	G59F	●	●	○	○			IC circuit	
				2-wire (NPN equivalent)	5 V	—	A96V	A96	G59F	●	●	●	○		○		—
Reed auto switch	Diagnostic indication (2-color indicator)	Grommet	Yes	2-wire	24 V	12 V	100 V	A93V ^{*2}	A93	—	●	●	●	○	IC circuit	Relay, PLC	
							100 V or less	A90V	A90	—	●	●	●	○			○
		Connector		Grommet	24 V or less	—	—	—	B54	●	●	●	○	○	—		
						—	—	—	B64	●	●	●	○	○			
		Grommet		24 V or less	—	—	—	C73C	—	—	—	—	—	—			
					—	—	—	C80C	—	—	—	—	—				
	Grommet	24 V or less		—	—	—	B59W	●	●	●	○	○	IC circuit				
				—	—	—	—	—	—	—	—	—		—			

*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 products 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.
* The D-G5□/K5□/B5□/B6□ types cannot be mounted on the bore size ø40.

* Since there are other applicable auto switches than listed above, refer to page 376 for details.

* For details about auto switches with pre-wired connector, refer to pages 1648 and 1649.

* The D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V) type auto switches are shipped together, (but not assembled). (However, auto switch mounting brackets are assembled when being shipped.)

CJ1

CJP

CJ2

JCM

CM2

CM3

CG1

CG3

JMB

MB

MB1

CA2

CS1

CS2

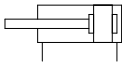
D-□

-X□

Technical Data

Symbol

Rubber bumper



Refer to pages 373 to 376 for cylinders with auto switches.

- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Minimum stroke for auto switch mounting
- Operating range
- Auto switch mounting brackets/Part no.



Made to Order

(For details, refer to pages 1703 to 1896.)

Symbol	Specification
-XA□	Change of rod end shape

Warning

- Operate the cylinder within the specified cylinder speed, kinetic energy and lateral load at the rod end.
Otherwise, cylinder and seal damage may occur.
- The allowable kinetic energy is different between the cylinders with male rod end and with female rod end due to the different thread sizes. Refer to page 368.
- When the cylinder is used as mounted with a single side fixed or free (basic type, flange type), be careful not to apply vibration or impact to the cylinder body. A bending moment will be applied to the cylinder due to the vibration generated at the stroke end, and the cylinder may be damaged. In such a case, mount a bracket to reduce the vibration of the cylinder or use the cylinder at a piston speed low enough to prevent the cylinder from vibrating at the stroke end.
Furthermore, when the cylinder is moved or mounted horizontally and with a single side fixed, use a bracket to fix the cylinder.
- When female rod end is used, use a washer, etc. to prevent the contact part at the rod end from being deformed depending on the material of the work piece.

Caution

- Do not use the air cylinder as an air-hydro cylinder.
This will result in oil leakage and damage the product.
- Use a thin wrench when tightening the piston rod.
- Check the mounting direction of the rod end nut (for male thread). Refer to Mounting Procedure on page 367 for details.
- There are some changes in the dimensions and the specifications of this model from the current model. Please check them when replacing from the current model. Check the operating conditions and interference with workpieces before use.

Specifications

Bore size (mm)		20	25	32	40	50	63	80	100
Action		Double acting, Single rod							
Lubrication		Not required (Non-lube)							
Fluid		Air							
Proof pressure		1.0 MPa							
Maximum operating pressure		0.7 MPa							
Minimum operating pressure		0.05 MPa							
Ambient and fluid temperature		Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)							
Piston speed		50 to 1000 mm/s						30 to 700 mm/s	
Stroke length tolerance		+1.4 0 mm							
Cushion		Rubber bumper							
Mounting		Basic, Foot, Rod flange, Head flange, Clevis (Used for changing the port location by 90°)							
Allowable kinetic energy	Male rod end	0.2 J	0.29 J	0.46 J	0.84 J	1.4 J	2.38 J	4.13 J	6.93 J
	Female rod end	0.11 J	0.18 J	0.29 J	0.52 J	0.91 J	1.54 J	2.71 J	4.54 J

* Operate the cylinder within the allowable kinetic energy. Refer to page 368 for details.

Standard Strokes

Bore size (mm)	Standard stroke (mm) ^{Note)}
20	25, 50, 75, 100, 125, 150, 200
25	
32	
40	
50	25, 50, 75, 100, 125, 150, 200, 250, 300
63	
80	
100	

Note) Manufacture of intermediate strokes in 1 mm increments is possible. (Spacers are not used.)

Accessories

Mounting	Basic	Foot	Rod flange	Head flange	Clevis
Standard					
Rod end nut (male thread)	●	●	●	●	●
Clevis pin	—	—	—	—	●
Option					
Single knuckle joint	●	●	●	●	●
Double knuckle joint (with pin) *	●	●	●	●	●
Pivoting bracket	—	—	—	—	●

* A double knuckle joint pin and retaining rings are shipped together.

* For part numbers and dimensions, refer to page 372.

Mounting Brackets/Part No.

Mounting bracket	Order Qty. ^{Note)}	Bore size (mm)								Contents
		20	25	32	40	50	63	80	100	
Foot	2	CG-L020	CG-L025	CG-L032	CG-L040	CG-L050	CG-L063	CG-L080	CG-L100	2 feet, 8 mounting bolts
Flange	1	CG-F020	CG-F025	CG-F032	CG-F040	CG-F050	CG-F063	CG-F080	CG-F100	1 flange, 4 mounting bolts
Clevis	1	CG-D020	CG-D025	CG-D032	CG-D040	CG-D050	CG-D063	CG-D080	CG-D100	1 clevis, 4 mounting bolts, 1 clevis pin, 2 retaining rings
Pivoting bracket	1	CG-020-24A	CG-025-24A	CG-032-24A	CG-040-24A	CG-050-24A	CG-063-24A	CG-080-24A	CG-100-24A	1 pivoting bracket

Note) Order 2 feet per cylinder.