Air Cylinder: Standard Type
Double Acting, Double Rod
Series CG1W
ø 20, ø 25, ø 32, ø 40, ø 50, ø 63, ø 80, ø 100

How to Order

CG1W L N 25 – 100 Z –

With auto switch **CDG1W L N 25 – 100 Z – M9BW –**

With auto switch
(Built-in magnet)

Double acting, Double rod type

B	Basic
Z*	Basic (without trunnion mounting female thread)
L	Axial foot
F	Flange
U*	Trunnion

Mounting

Type

N	Rubber bumper
A	Air cushion

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

* Not available for ø 80 and ø 100.
* Mounting bracket is shipped together with the product, but not assembled.
* The cylinder for F, L mounting types is Z: Basic (without trunnion mounting female thread).

Auto switch

—	Without auto switch

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

Number of auto switches

—	2 pcs.
S	1 pc.
n	"n" pcs.

Suffix for cylinder (Rod boot)

—		Without rod boot
One side	**J**	Nylon tarpaulin
	K	Heat resistant tarpaulin
Both sides	**JJ**	Nylon tarpaulin
	KK	Heat resistant tarpaulin

Note) 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.

Rod end thread

—	Male rod end
F	Female rod end

Cylinder stroke [mm]
Refer to "Standard Strokes" on page 24.

Made to Order
For details, refer to page 24.

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) CDG1WFA32-100Z

Applicable Auto Switches/Refer to the **Auto Switch Guide** for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Applicable bore size ø 20 to ø 63 Perpendicular	Auto switch model: Applicable bore size ø 20 to ø 63 In-line	Auto switch model: Applicable bore size ø 80, ø 100 In-line	Lead wire length [m] 0.5 (—)	1 (M)	3 (L)	5 (Z)	None (N)	Pre-wired connector	Applicable load	
Solid state auto switch	———	Grommet	Yes	3-wire (NPN)	24 V, 5 V, 12 V	—	**M9NV**	**M9N**	—	●	●	●	○	—	○	IC circuit	Relay, PLC
							—	—	**G59**	●	—	●	○	—	○		
				3-wire (PNP)			**M9PV**	**M9P**	—	●	●	●	○	—	○		
							—	—	**G5P**	●	—	●	○	—	○		
				2-wire			**M9BV**	**M9B**	—	●	●	●	○	—	○	—	
							—	—	**K59**	●	—	●	○	—	○		
		Connector					—	**H7C**	—	●	—	●	●	●	—		
	Diagnostic indication (2-colour indication)	Grommet		3-wire (NPN)			**M9NWV**	**M9NW**	—	●	●	●	○	—	○	IC circuit	
							—	—	**G59W**	●	—	●	○	—	○		
				3-wire (PNP)			**M9PWV**	**M9PW**	—	●	●	●	○	—	○		
							—	—	**G5PW**	●	—	●	○	—	○		
				2-wire			**M9BWV**	**M9BW**	—	●	●	●	○	—	○	—	
							—	—	**K59W**	●	—	●	○	—	○		
	Water resistant (2-colour indication)			3-wire (NPN)		5 V, 12 V	**M9NAV****	**M9NA****	—	○	○	●	○	—	○	IC circuit	
				3-wire (PNP)			**M9PAV****	**M9PA****	—	○	○	●	○	—	○		
				2-wire		12 V	**M9BAV****	**M9BA****	—	○	○	●	○	—	○	—	
							—	—	**G5BA****	—	—	●	○	—	○		
	Diagnostic output (2-colour indication)			4-wire (NPN)		5 V, 12 V	—	—	**H7NF**	●	—	●	○	—	○	IC circuit	
Reed auto switch	———	Grommet	Yes	3-wire (Equiv. to NPN)	—	5 V	—	**A96V**	**A96**	—	●	—	●	—	—	—	IC circuit	—
			Yes	2-wire	24 V	12 V	100 V	**A93V**	**A93**	—	●	—	●	●	—	—	—	Relay, PLC
			No				100 V or less	**A90V**	**A90**	—	●	—	●	—	—	—	IC circuit	
			Yes				100 V, 200 V	—	**B54**		●	—	●	●	—	—	—	
			No				200 V or less	—	**B64**		●	—	●	—	—	—	—	
		Connector	Yes				—	—	**C73C**	—	●	—	●	●	●	—		
			No				24 V or less	—	**C80C**	—	●	—	●	●	●	—	IC circuit	
	Diagnostic indication (2-colour indication)	Grommet	Yes			—	—	—	**B59W**		●	—	●	—	—	—	—	

** Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please consult with SMC regarding water resistant types with the above model numbers.

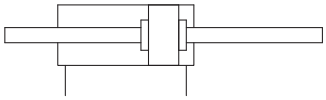
* Lead wire length symbols: 0.5 m ····· — (Example) M9NW
1 m ····· M (Example) M9NWM
3 m ····· L (Example) M9NWL
5 m ····· Z (Example) M9NWZ
None ····· N (Example) H7CN

* Solid state auto switches marked with "○" are produced upon receipt of order.

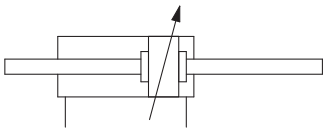
* Since there are other applicable auto switches than listed above, refer to page 74 for details.
* For details about auto switches with pre-wired connector, refer to **Auto Switch Guide.**
* The D-A9□□/M9□□□ auto switches are shipped together, (but not assembled). (However, only the auto switch mounting brackets are assembled before shipment.)

Symbol

Rubber bumper



Air cushion



Made to Order

(For details, refer to pages 77 to 93.)

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat resistant cylinder (–10 to 150 °C)*1
-XB7	Cold resistant cylinder (–40 to 70 °C)*2
-XC6	Made of stainless steel
-XC13	Auto switch rail mounting
-XC22	Fluororubber seal*1
-XC37	Larger throttle diameter of connection port
-XC85	Grease for food processing equipment

*1 Cylinders with rubber bumper have no bumper.
*2 Only compatible with cylinders with rubber bumper, but has no bumper.

Rod Boot Material

Symbol	Rod boot material	Maximum operating temperature
J	Nylon tarpaulin	70 °C
K	Heat resistant tarpaulin	110 °C*

* Maximum ambient temperature for the rod boot itself.

Refer to pages 68 to 74 for cylinders with auto switches.

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

Specifications

Bore size [mm]			20	25	32	40	50	63	80	100
Action			Double acting, Double rod							
Lubricant			Not required (Non-lube)							
Fluid			Air							
Proof pressure			1.5 MPa							
Maximum operating pressure			1.0 MPa							
Minimum operating pressure			0.08 MPa							
Ambient and fluid temperature			Without auto switch: –10 °C to 70 °C (No freezing) With auto switch : –10 °C to 60 °C							
Piston speed			50 to 1000 mm/s						50 to 700 mm/s	
Stroke length tolerance			Up to 1000 st $^{+1.4}_{0}$ mm, Up to 1500 st $^{+1.8}_{0}$ mm							
Cushion			Rubber bumper, Air cushion							
Mounting**			Basic, Basic (without trunnion mounting female thread), Axial foot, Flange, Trunnion							
Allowable kinetic energy (J)	**Rubber bumper**	**Male rod end**	0.28	0.41	0.66	1.20	2.00	3.40	5.90	9.90
		Female rod end	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54
	Air cushion	**Male rod end**	R: 0.35 H: 0.42	R: 0.56 H: 0.65	0.91	1.80	3.40	4.90	11.80	16.70
		Female rod end	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54

* R: Rod side, H: Head side
** Rod trunnion type is not available for ø 80 and ø 100.
Foot and flange types of cylinder sizes from ø 20 to ø 63 do not have trunnion mounting female thread. Operate the cylinder within the allowable kinetic energy.

Accessories

Mounting		Basic	Axial foot	Rod flange	Rod trunnion
Standard	Rod end nut	●	●	●	●
Option	Single knuckle joint	●	●	●	●
	Double knuckle joint** (with pin)	●	●	●	●
	Pivot bracket*	—	—	—	●*
	Rod boot	●	●	●	●

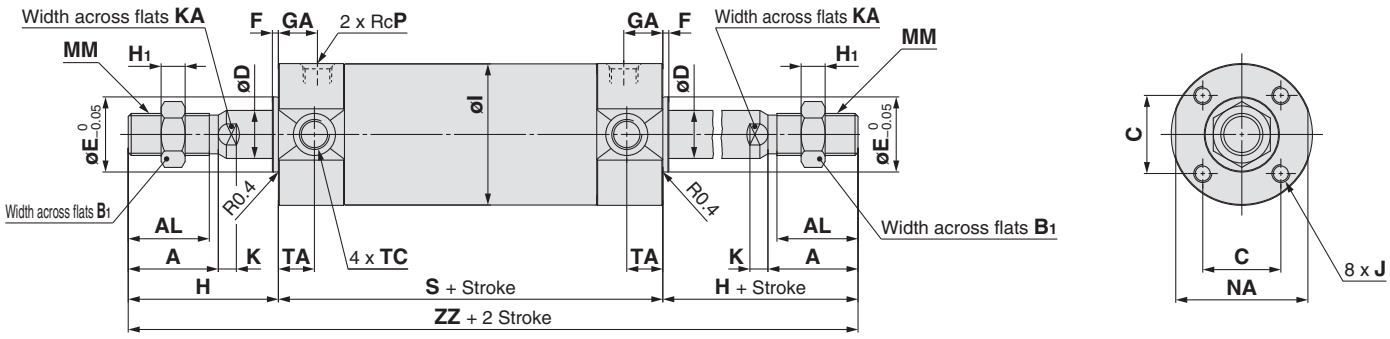
* Not available for ø 80 and ø 100.
** A double knuckle joint pin and retaining rings are shipped together.

Standard Strokes

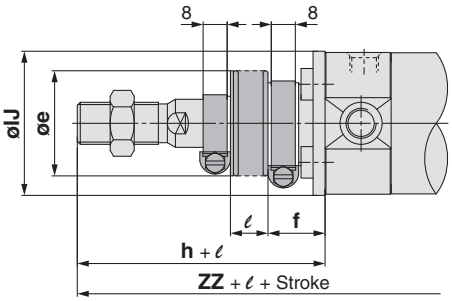
Bore size [mm]	Standard stroke [mm] Note1)	Maximum manufacturable stroke [mm] Note 2)
20	25, 50, 75, 100, 125, 150, 200	201 to 1500
25	25, 50, 75, 100, 125, 150, 200, 250, 300	301 to 1500
32		
40		
50, 63		
80		
100		

Note 1) Intermediate strokes not listed above are produced upon receipt of order. Manufacture of intermediate strokes at 1 mm intervals is possible. (Spacers are not used.)
Note 2) The maximum manufacturable stroke shows the long stroke.
Note 3) Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection". In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc.

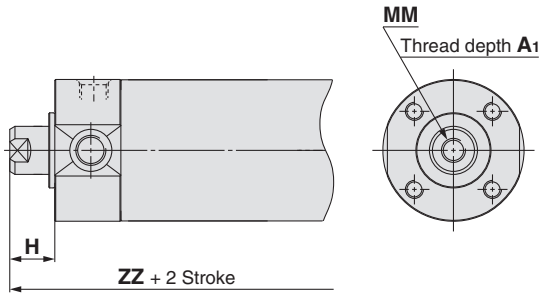
Basic with Rubber Bumper: CG1WBN



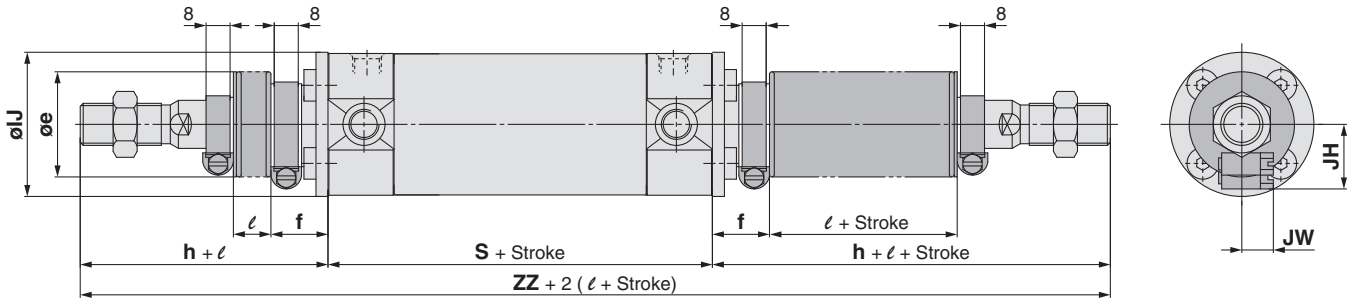
<With rod boot on one side>



Female rod end



<With rod boot on both sides>



[mm]

Bore size	Stroke range		A	AL	B1	C	D	E	F	GA	H1	I	J	K	KA	MM	NA	P	S
	Standard	Long stroke																	
20	Up to 200	201 to 1500	18	15.5	13	14	8	12	2	12	5	26	M4 x 0.7 depth 7	5	6	M8 x 1.25	24	1/8	77
25	Up to 300	301 to 1500	22	19.5	17	16.5	10	14	2	12	6	31	M5 x 0.8 depth 7.5	5.5	8	M10 x 1.25	29	1/8	77
32	Up to 300	301 to 1500	22	19.5	17	20	12	18	2	12	6	38	M5 x 0.8 depth 8	5.5	10	M10 x 1.25	35.5	1/8	79
40	Up to 300	301 to 1500	30	27	19	26	16	25	2	13	8	47	M6 x 1 depth 12	6	14	M14 x 1.5	44	1/8	87
50	Up to 300	301 to 1500	35	32	27	32	20	30	2	14	11	58	M8 x 1.25 depth 16	7	18	M18 x 1.5	55	1/4	102
63	Up to 300	301 to 1500	35	32	27	38	20	32	2	14	11	72	M10 x 1.5 depth 16	7	18	M18 x 1.5	69	1/4	102
80	Up to 300	301 to 1500	40	37	32	50	25	40	3	20	13	89	M10 x 1.5 depth 22	10	22	M22 x 1.5	86	3/8	122
100	Up to 300	301 to 1500	40	37	41	60	30	50	3	20	16	110	M12 x 1.75 depth 22	10	26	M26 x 1.5	106	1/2	122

Bore size	TA	TC**	Without rod boot		With rod boot on one side*								With rod boot* on both sides
			H	ZZ	e	f	h	IJ	JH (Reference)	JW (Reference)	ℓ	ZZ	ZZ
20	11	M5 x 0.8	35	147	30	18	55	27	15.5	10.5	1/4 stroke	167	187
25	11	M6 x 0.75	40	157	30	19	62	32	16.5	10.5		179	201
32	11	M8 x 1.0	40	159	35	19	62	38	18.5	10.5		181	203
40	12	M10 x 1.25	50	187	35	19	70	48	21.5	10.5		207	227
50	13	M12 x 1.25	58	218	40	19	78	59	24	10.5		238	258
63	13	M14 x 1.5	58	218	40	20	78	72	24	10.5		238	258
80	—	—	71	264	52	10	80	59	—	—		273	282
100	—	—	71	264	62	7	80	71	—	—		273	282

Female Rod End

[mm]

Bore size	A1	H	MM	ZZ
20	8	13	M4 x 0.7	103
25	8	14	M5 x 0.8	105
32	12	14	M6 x 1	107
40	13	15	M8 x 1.25	117
50	18	16	M10 x 1.5	134
63	18	16	M10 x 1.5	134
80	21	19	M14 x 1.5	160
100	25	22	M16 x 1.5	166

∗ The minimum stroke with rod boot is 20 mm.
∗∗ Cylinder sizes ø 80 and ø 100 do not have trunnion mounting female thread on the width across flats NA.