

Air Cylinder: Standard Type Double Acting, Single/Double Rod

RoHS

C96 Series

ø32, ø40, ø50, ø63, ø80, ø100, ø125



How to Order

C96S **B** **32** - **100** **C** **J** **W** -

With auto switch **C96SD** **B** **32** - **100** **C** **J** **W** - **M9BW** **S** -

Mounting

B	Basic
L	Axial foot
F	Rod flange
G	Head flange
C	Single clevis
D	Double clevis
T	Center trunnion
V	Adjustable position trunnion

* Mounting brackets are shipped together, but not assembled. (Excludes the center trunnion type and the adjustable position trunnion type)

Bore size

32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm
125	125 mm

Cylinder stroke [mm]
Refer to "Standard Strokes" on page 162.

Rod

Nil	Single rod
W	Double rod

Rod boot

Nil	Without rod boot
J	Nylon tarpaulin (One end)
JJ	Nylon tarpaulin (Both ends)
K	Heat-resistant tarpaulin (One end)
KK	Heat-resistant tarpaulin (Both ends)

Number of auto switches

Nil	2
S	1
3	3
n	n

Made to Order
Refer to page 162 for details.

Auto switch

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

Cushion

Symbol	Cushion	Bore size [mm]
C	Air cushion on both ends + Bumper cushion	ø32 to ø100
Nil	Air cushion	ø125

Applicable Auto Switches/Refer to the **Web Catalog** or Best Pneumatics 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	Tie-rod mounting	Band mounting	0.5 (Nil)	1 (M)	3 (L)	5 (Z)							
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9N	—	●	●	●	○	○	IC circuit	Relay, PLC			
		3-wire (PNP)		—				●	●	●	○	○	—						
		2-wire		—				●	●	●	○	○							
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)				5 V, 12 V	—	G39	—	—	—	—	—		IC circuit		
				2-wire				12 V	—	K39	—	—	—	—	—		—		
				3-wire (NPN)				5 V, 12 V	M9NW	—	●	●	●	○	○		IC circuit		
	3-wire (PNP)			12 V				M9PW	—	●	●	●	○	○	IC circuit				
	Water-resistant (2-color indicator)			3-wire (NPN)				5 V, 12 V	M9BW	—	●	●	●	○	○		—		
				3-wire (PNP)				12 V	M9NA*1	—	○	○	●	○	○		IC circuit		
				2-wire				12 V	M9PA*1	—	○	○	●	○	○		IC circuit		
	With diagnostic output (2-color indicator)			4-wire (NPN)				5 V, 12 V	M9BA*1	—	○	○	●	○	○		—		
								—	F59F	—	●	—	●	○	○		IC circuit		
Magnetic field resistant (2-color indicator)	2-wire (Non-polar)	—	P4DW	—	—	—	●	●	○	—									
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96	—	●	—	●	—	—	IC circuit	—			
				2-wire				24 V	12 V	100 V	A93	—	●	●	●		●	—	—
										100 V or less	A90	—	●	—	●		—	—	IC circuit
										100 V, 200 V	A54	—	●	—	●		●	—	—
		200 V or less	A64		—	●	—			●	—	—	—						
		—	—		A33	—	—			—	—	—	—						
		Terminal conduit	Yes	100 V, 200 V	—	A34	—	—	—	—	—	—							
				—	A44	—	—	—	—	—	—								
		DIN terminal	Yes	Grommet	—	—	A59W	—	●	—	●	—	—	—	Relay, PLC				

*1 Water-resistant type auto switches can be mounted on the above models, but SMC cannot guarantee water resistance.

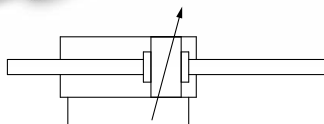
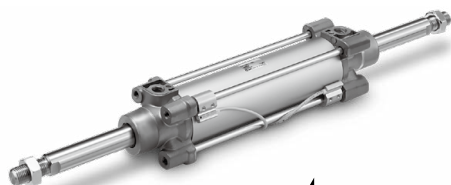
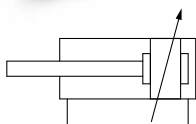
* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWZ

* 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 185 for details.

* The D-A9□/M9□/M9□W/M9□A auto switches are shipped together, but not assembled. (Only the auto switch mounting brackets are assembled before shipment.)

* The adjustable position trunnion (V) mounting bracket only supports D-A9□, M9□, M9□W, and M9□A auto switches.



Made to Order
(For details, refer to pages 190 to 199.)

Symbol	Specifications
-XA□	Change of rod end shape
-XC14	Change of trunnion bracket mounting position
-XB6	Heat-resistant cylinder (−10 to 150°C)
-XB7	Cold-resistant cylinder (−40 to 70°C)
-XC4	With heavy duty scraper
-XC7	Tie-rod, tie-rod nut, etc. made of stainless steel
-XC10	Dual stroke cylinder/Double rod type
-XC11	Dual stroke cylinder/Single rod type
-XC22	Fluororubber seal
-XC35	With coil scraper
-XC65	Made of stainless steel (Combination of -XC7 and -XC68)
-XC68	Made of stainless steel (with hard chrome plated piston rod)
-XC85	Grease for food processing equipment
-XC88	Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: Stainless steel 304)
-XC89	Spatter-resistant coil scraper, Lube-retainer, grease for welding (Piston rod: S45C)

Refer to pages 181 to 185 for cylinders with auto switches.

- Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height
- Minimum Stroke for Auto Switch Mounting
- Auto Switch Mounting Brackets/Part No.
- Operating Range

Specifications

Bore size [mm]		32	40	50	63	80	100	125	
Action		Double acting							
Fluid		Air							
Proof pressure		1.5 MPa							
Max. operating pressure		1.0 MPa							
Min. operating pressure		0.05 MPa							
Ambient and fluid temperatures		Without auto switch: −20 to 70°C (No freezing) With auto switch: −10 to 60°C (No freezing)							
Lubrication		Not required (Non-lube)							
Operating piston speed		50 to 1000 mm/s						50 to 700 mm/s	
Allowable stroke tolerance	Up to 500	+2 0						+1.0 0	
	501 to 1000	+2.4 0						+1.4 0	
	1001 to 1500	+2.8 0						+1.8 0	
	1501 to 2000	+3.2 0						+2.2 0	
Cushion		Air cushion on both ends + Bumper cushion							Air cushion
Port size		G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2	G 1/2	
Mounting		Basic, Axial foot, Rod flange, Head flange, Single clevis, Double clevis, Center trunnion, Adjustable position trunnion							

Standard Strokes

Bore size [mm]	Standard stroke [mm]	Max. stroke
32	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	1000
40	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500	1900
50	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	1900
63	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600	1900
80	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	1900
100	25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500, 600, 700, 800	1900
125	—	2000

- * Aside from the standard strokes, intermediate strokes are also available in 1 mm increments and are produced upon receipt of order.
- * Strokes exceeding the max. stroke are available as a special order.

Accessories

	Mounting	Basic	Foot	Rod flange	Head flange	Single clevis	Double clevis	Center trunnion	Adjustable position trunnion
Standard	Rod end nut	●	●	●	●	●	●	●	●
	Clevis pin	—	—	—	—	—	●	—	—
Option	Rod end	●	●	●	●	●	●	●	●
	Rod clevis	●	●	●	●	●	●	●	●
	Rod boot	●	●	●	●	●	●	●	●

- * Do not use a rod end (or floating joint) together with a single clevis with a ball joint (or clevis pivot bracket with a ball joint).
- * Refer to pages 169 to 172 for dimensions and part numbers of the accessories.

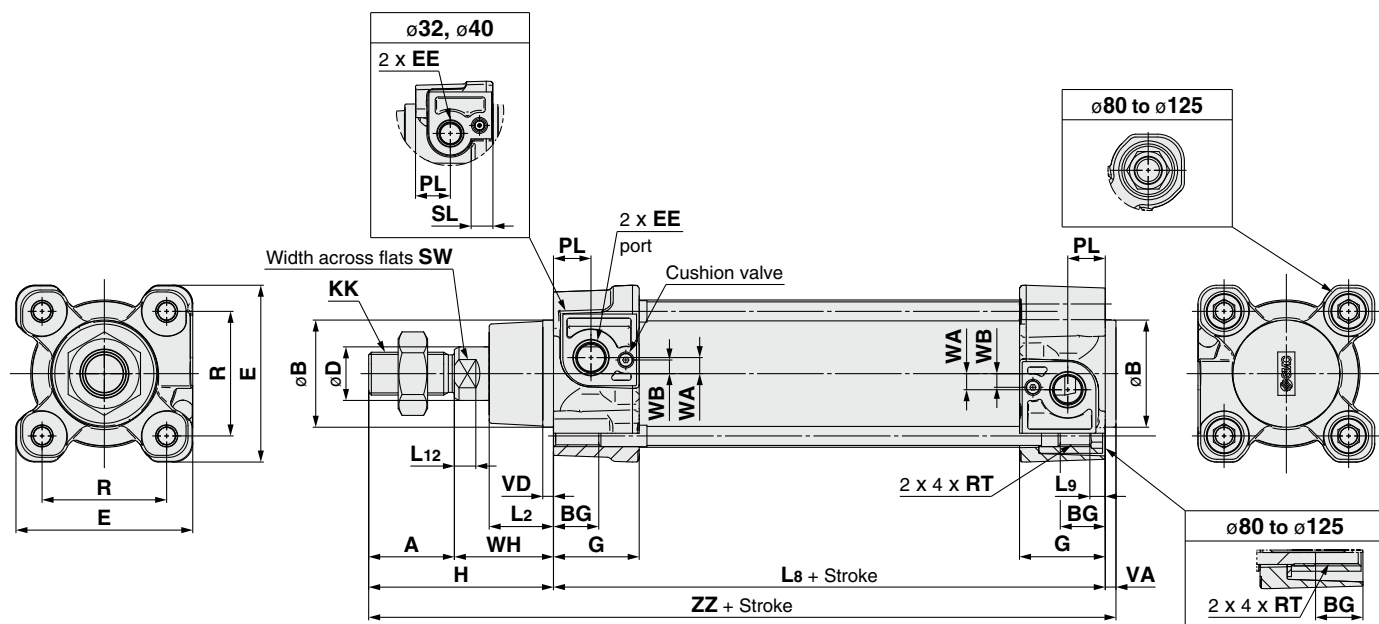
⚠ Precautions

Be sure to read this before handling the products. Refer to page 219 for safety instructions. For actuator and auto switch precautions, refer to the “Handling Precautions for SMC Products” and the “Operation Manual” on the SMC website: <http://www.smcworld.com>

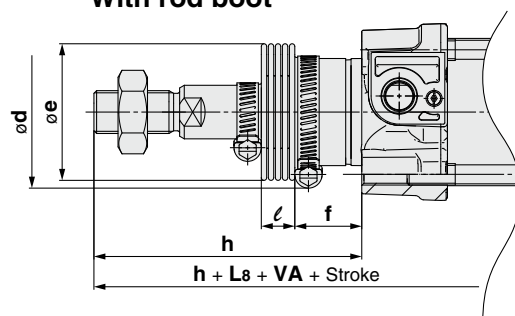
C96 Series

Dimensions

Basic: C96S (D) B Bore size – Stroke C (J)



With rod boot



Bore size [mm]	Stroke range*1 [mm]		A	øB d11	BG	øD	E	EE	G	H	KK	L2	L8	L9	L12	PL	R	RT	SL	SW	VA	VD	WA	WB	WH	ZZ
	Without rod boot	With rod boot																								
32	Up to 1000	Up to 1000	22	30	16	12	47	G 1/8	28.9	48	M10 x 1.25	15	94	4	6	13	32.5	M6 x 1	8	10	4	4	4	7	26	146
40	Up to 1900	Up to 1000	24	35	16	16	54	G 1/4	32.6	54	M12 x 1.25	17	105	4	6.5	14	38	M6 x 1	8	13	4	4	5	8.9	30	163
50	Up to 1900	Up to 1000	32	40	16	20	66	G 1/4	32	69	M16 x 1.5	24	106	5	8	14	46.5	M8 x 1.25	—	17	4	4	6	5.1	37	179
63	Up to 1900	Up to 1000	32	45	16	20	77	G 3/8	38.6	69	M16 x 1.5	24	121	5	8	16	56.5	M8 x 1.25	—	17	4	4	9	6.3	37	194
80	Up to 1900	Up to 1000	40	45	17	25	99	G 3/8	38.4	86	M20 x 1.5	30	128	—	10	16	72	M10 x 1.5	—	22	4	4	11.5	6	46	218
100	Up to 1900	Up to 1000	40	55	17	25	118	G 1/2	42.9	91	M20 x 1.5	32	138	—	10	18	89	M10 x 1.5	—	22	4	4	17	10	51	233
125	Up to 2000	Up to 1000	54	60	20	32	144	G 1/2	58	119	M27 x 2	40	160	—	13	19	110	M12 x 1.75	—	27	6	6	17	15	65	285

*1 Minimum stroke for trunnion mounting: 1 mm for bore size 32 to 80, 5 mm for bore size 100, 10 mm for bore size 125

Bore size [mm]	ød	øe	f	ℓ												h											
				1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 to 600	601 to 700	701 to 800	801 to 900	901 to 1000	1 to 50	51 to 100	101 to 150	151 to 200	201 to 300	301 to 400	401 to 500	501 to 600	601 to 700	701 to 800	801 to 900	901 to 1000
32	54	36	23	12.5	25	37.5	50	75	100	125	150	175	200	225	250	75	88	100	113	138	163	188	213	238	263	288	313
40	54	36	23	12.5	25	37.5	50	75	100	125	150	175	200	225	250	75	88	100	113	138	163	188	213	238	263	288	313
50	64	51	25	12.5	25	37.5	50	75	100	125	150	175	200	225	250	87	100	112	125	150	175	200	225	250	275	300	325
63	64	51	25	12.5	25	37.5	50	75	100	125	150	175	200	225	250	87	100	112	125	150	175	200	225	250	275	300	325
80	68	56	30	12.5	25	37.5	50	75	100	125	150	175	200	225	250	103	116	128	141	166	191	216	241	266	291	316	341
100	76	56	32	12.5	25	37.5	50	75	100	125	150	175	200	225	250	103	116	128	141	166	191	216	241	266	291	316	341
125	82	75	40	10	20	30	40	60	80	100	120	140	160	180	200	130	140	150	160	180	200	220	240	260	280	300	320