

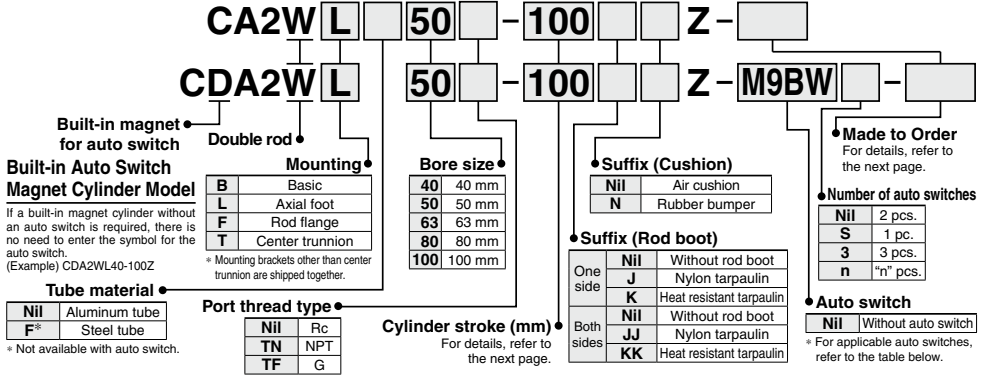
Air Cylinder: Standard Type Double Acting, Double Rod

CA2W Series

ø40, ø50, ø63, ø80, ø100



How to Order



Applicable Auto Switches/Refer to pages 1271 to 1365 for further information on auto switches.

Type	Special function	Electrical entry	Indication/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)	Relay, PLC	PLC
Solid state auto switch	—	Grommet	No	3-wire (NPN)	24 V	5 V, 12 V	—	M9N	●	●	○	○	IC circuit		
				3-wire (PNP)				G59	●	●	○	○			
				2-wire				M9P	●	●	○	○			
		3-wire (NPN)		G5P				●	●	○	○				
		2-wire		M9B				●	●	○	○				
		3-wire (PNP)		K59				●	●	○	○				
	Diagnostic indication (2-color indicator)	Terminal conduit	Yes	3-wire (NPN)	24 V	12 V	—	G39C	G39	—	—	—	—	IC circuit	—
				2-wire				K39C	K39	—	—	—	—		
				3-wire (NPN)				M9NW	●	●	○	○			
		3-wire (PNP)		G59W				●	●	○	○				
		2-wire		M9PW				●	●	○	○				
		2-wire		G5PW				●	●	○	○				
Water resistant (2-color indicator)	Grommet	No	3-wire (NPN)	24 V	12 V	—	M9BW	—	●	●	○	○	—	—	
			3-wire (PNP)				K59W	—	○	○	○	○			
			2-wire				M9NA*1	—	○	○	●	○			○
	3-wire (NPN)		M9PA*1				—	○	○	●	○	○			
	3-wire (PNP)		M9BA*1				—	○	○	●	○	○			
	2-wire		G5BA*1				—	—	—	—	—	—			
With diagnostic output (2-color indicator)	Terminal conduit	Yes	4-wire (NPN)	24 V	5 V, 12 V	—	F59F	G59F	●	—	●	○	○	IC circuit	—
			2-wire (Non-polar)				P3DWA	—	●	—	●	○	○		
			2-wire (Non-polar)				P4DW	—	—	—	●	—	○		
	3-wire (NPN equiv.)		A96				—	●	—	●	—	—	—		
	2-wire		A93				—	—	●	●	●	—	—		
	2-wire		A90				—	—	●	●	—	—	—		
Magnetic field resistant (2-color indicator)	Grommet	No	2-wire	24 V	12 V	—	100 V or less	A54	B54	●	—	●	—	IC circuit	Relay, PLC
							100 V, 200 V	A64	B64	●	—	●	—		
							200 V or less	A64	B64	●	—	●	—		
	100 V, 200 V						A33C	A33	—	—	—	—	—		
	100 V, 200 V						A34C	A34	—	—	—	—	—		
	100 V, 200 V						A44C	A44	—	—	—	—	—		
Diagnostic indication (2-color indicator)	Terminal conduit	Yes	2-wire	24 V	12 V	—	A59W	B59W	●	—	●	—	—	Relay, PLC	
							2-wire	A59W	B59W	●	—	●			—
							2-wire	A59W	B59W	●	—	●			—
	2-wire						A59W	B59W	●	—	●	—			
	2-wire						A59W	B59W	●	—	●	—			
	2-wire						A59W	B59W	●	—	●	—			

*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.

* Lead wire length symbols: 0.5 m.....Nil (Example) M9NW 3 m.....L (Example) M9NWL 1 m.....M (Example) M9NWM 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 613 for details.

* For details about auto switches with pre-wired connector, refer to pages 1340 and 1341.

* The D-A9□/M9□□/P3DWA□ auto switches are shipped together, (but not assembled). (However, auto switch mounting brackets are assembled for the D-A9□/M9□□ before shipment.)

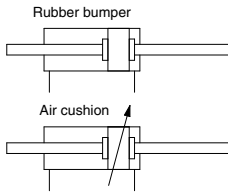
Specifications



Bore size (mm)	40	50	63	80	100
Fluid	Air				
Action	Double acting				
Proof pressure	1.5 MPa				
Maximum operating pressure	1.0 MPa				
Minimum operating pressure	0.08 MPa				
Piston speed	50 to 500 mm/s				
Ambient and fluid temperature	Without auto switch magnet : -10 to 70°C* Built-in magnet for auto switch: -10 to 60°C*				
Cushion	Air cushion or Rubber bumper				
Stroke length tolerance	Up to 250 st: $^{+1.0}_0$ 251 to 1000 st: $^{+1.4}_0$ 1001 to 1500 st: 0 to +1.8 1501 to 1800 st: 0 to +2.2				
Lubrication	Not required (Non-lube)				
Mounting	Basic, Axial foot, Rod flange, Center trunnion				

* No freezing

Symbol



Made to Order
[Click here for details](#)

Symbol	Specifications
-XA	Change of rod end shape
-XB6	Heat resistant cylinder (-10 to 150°C)
-XC3	Special port location*
-XC4	With heavy duty scraper
-XC5	Heat resistant cylinder (-10 to 110°C)
-XC7	Tie-rod, cushion valve, tie-rod nut, etc. made of stainless steel
-XC14	Change of trunnion bracket mounting position
-XC15	Change of tie-rod length
-XC22	Fluororubber seal
-XC28	Compact flange made of SS400
-XC35	With coil scraper
-XC58	Water resistant/ Built-in hard plastic magnet*
-XC59	Fluororubber seal/ Built-in hard plastic magnet*
-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

For special port location (-XC3), the mounting bracket and port location can be determined using the standard product corresponding to the operating conditions.

* The cover shape and model are the same as those of the existing CA2 series product.

Refer to pages 607 to 613 for cylinders with auto switches.

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

Standard Strokes

Bore size	Standard stroke	Stroke range ^{Note 3)}	
		Air cushion	Rubber bumper
40	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500	1 to 1800	1 to 700
50, 63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600		
80, 100	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700		1 to 650

Note 1) Aside from the standard strokes, intermediate strokes (within stroke range) are also available in 1 mm increments and are produced upon receipt of order.
Note 2) Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on front matter pages. In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc. Strokes which exceed the standard stroke length will be available as special order.

Note 3) The stroke range for the type with a rod boot is shown in the table below. Strokes exceeding those in the table below are only available as a special order.

Bore size	Stroke range (mm)	
	Air cushion	Rubber bumper
40 to 63		20 to 550
80, 100	20 to 1400	20 to 500

Minimum Stroke for Auto Switch Mounting

⚠ Caution

The minimum stroke for mounting varies with the auto switch type and cylinder mounting type. In particular, the center trunnion type needs careful attention. (For details, refer to pages 611 and 612.)

Rod Boot Material

Symbol	Rod boot material	Max. ambient temperature
J	Nylon tarpaulin	70°C
K	Heat resistant tarpaulin	110°C*

* Maximum ambient temperature for the rod boot

* The rod boot replacement part numbers are listed in the "Maintenance Parts List." [Click here](#) for further details.

Accessories

Mounting		Basic	Foot	Flange	Center trunnion
Standard	Rod end nut	●	●	●	●
Option	Single knuckle joint	●	●	●	●
	Double knuckle joint (with pin)	●	●	●	●
	With rod boot	●	●	●	●

* Refer to page 575 for part numbers and dimensions.

Weights/Aluminum Tube (Steel Tube)

Bore size (mm)		(kg)						
		40	50	63	80	100		
Basic weight	Basic	Aluminum tube	0.92	1.38	1.86	3.32	4.55	
		Steel tube	0.97	1.44	1.96	3.5	4.83	
	Axial foot	Aluminum tube	1.11	1.6	2.19	3.99	5.54	
		Steel tube	1.16	1.66	2.29	4.17	5.82	
	Flange	Aluminum tube	1.29	1.83	2.65	4.77	6.47	
		Steel tube	1.34	1.89	2.75	4.95	6.75	
Trunnion	Aluminum tube	1.28	1.86	2.66	4.87	6.83		
	Steel tube	1.33	1.92	2.76	5.05	7.11		
Additional weight per 50 mm of stroke	All mounting brackets	Aluminum tube	0.28	0.37	0.44	0.66	0.86	
	Steel tube	0.35	0.47	0.55	0.89	1.15		
Accessories	Single knuckle	0.23	0.26	0.26	0.60	0.83		
	Double knuckle (with pin)	0.37	0.43	0.43	0.87	1.27		

Calculation:

(Example) **CA2WL40-100**

(Axial foot, ø40, 100 stroke)

• Basic weight

.....1.18 (Axial foot, ø40)

• Additional weight

.....0.28/50 stroke

• Cylinder stroke

.....100 stroke

1.18 + 0.28 x 100/50 = **1.74 kg**

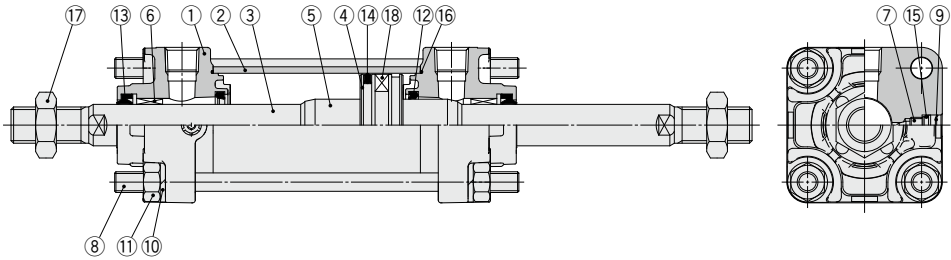
CA2W Series

Mounting Bracket Part No.

Bore size (mm)	40	50	63	80	100
Axial foot*	CA2-L04	CA2-L05	CA2-L06	CA2-L08	CA2-L10
Flange	CA2-F04	CA2-F05	CA2-F06	CA2-F08	CA2-F10

* When axial foot brackets are used, order two pieces per cylinder.

Construction



Component Parts

No.	Description	Material	Q'ty	Note
1	Rod cover	Aluminum die-casted	2	Trivalent chromated
2	Cylinder tube	Aluminum alloy	1	Hard anodized
3	Piston rod	Carbon steel	1	Hard chrome plating
4	Piston	Aluminum alloy	1	
5	Cushion ring	Aluminum alloy	2	Anodized
6	Bushing	Bearing alloy	1	
7	Cushion valve	Steel wire	2	Trivalent zinc chromated
8	Tie-rod	Carbon steel	4	Trivalent zinc chromated
9	Retaining ring	Spring steel	2	Phosphate coating
10	Spring washer	Steel wire	8	Trivalent zinc chromated
11	Tie-rod nut	Rolled steel	8	Trivalent zinc chromated
12	Cushion seal	Urethane	2	
13	Rod seal	NBR	2	
14	Piston seal	NBR	1	
15	Cushion valve seal	NBR	2	
16	Cylinder tube gasket	NBR	2	
17	Rod end nut	Rolled steel	2	Trivalent zinc chromated
18	Magnet	—	(1)	

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
	Pneumatic type	
40	CA2W40Z-PS	Set of the nos. 12, 13, 14, 16
50	CA2W50Z-PS	
63	CA2W63Z-PS	
80	CA2W80Z-PS	
100	CA2W100Z-PS	

* Do not disassemble the trunnion type. Refer to page 615.

* Seal kit includes 12, 13, 14, 16. Order the seal kit based on each bore size.

* Seal kit includes a grease pack (ø40, ø50: 10 g, ø63, ø80: 20 g, ø100: 30 g).

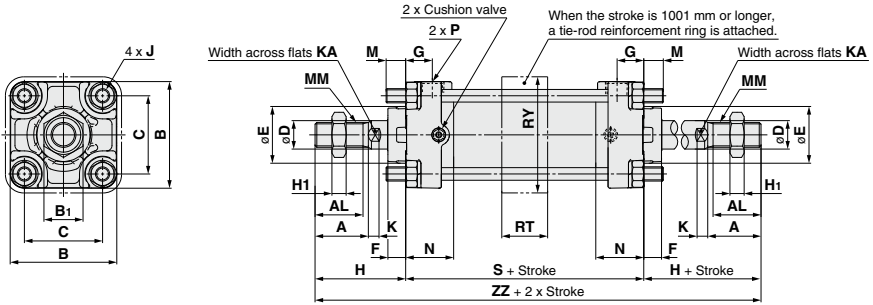
Order with the following part number when only the grease pack is needed.

Grease pack part number: GR-S-010 (10 g), GR-S-020 (20 g)

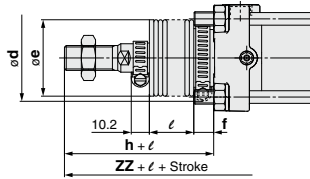
Air Cylinder: Standard Type **CA2W Series**

Double Acting, Double Rod

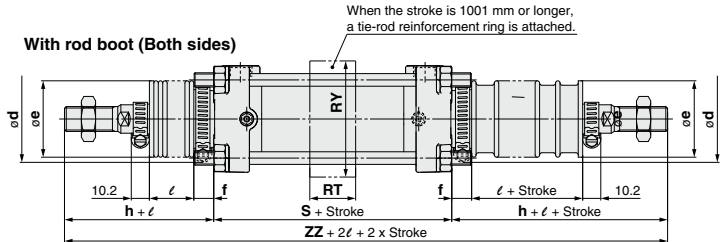
Basic: C□A2WB



With rod boot (One side)



With rod boot (Both sides)

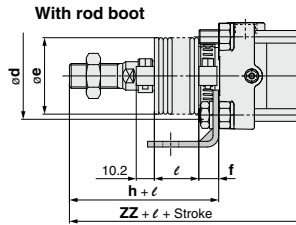
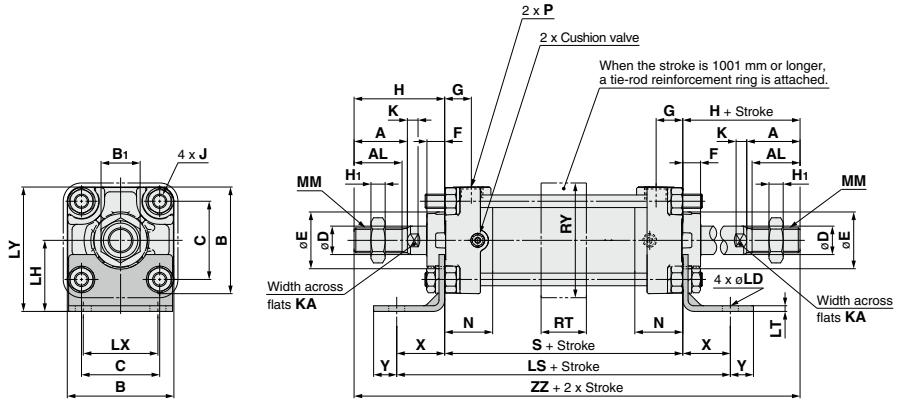


Bore size (mm)	A	AL	B	B ₁	C	D	E	F	G	H ₁	J	K	KA	M	MM
40	30	27	60	22	44	16	32	10	15	8	M8 x 1.25	6	14	11	M14 x 1.5
50	35	32	70	27	52	20	40	10	17	11	M8 x 1.25	7	18	11	M18 x 1.5
63	35	32	85	27	64	20	40	10	17	11	M10 x 1.25	7	18	14	M18 x 1.5
80	40	37	102	32	78	25	52	14	21	13	M12 x 1.75	10	22	17	M22 x 1.5
100	40	37	116	41	92	30	52	14	21	16	M12 x 1.75	10	26	17	M26 x 1.5

Bore size (mm)	N	P	RT	RY	S	Without rod boot		With rod boot (One side)							[Both sides]	
						H	ZZ	d	e	f	h	l	ZZ	ZZ		
40	27	1/4	30	64	84	51	186	56	43	11.2	59	1/4 stroke	194	202		
50	30	3/8	30	76	90	58	206	64	52	11.2	66	1/4 stroke	214	222		
63	31	3/8	40	92	98	58	214	64	52	11.2	66	1/4 stroke	222	230		
80	37	1/2	45	112	116	71	258	76	65	12.5	80	1/4 stroke	267	276		
100	40	1/2	50	136	126	72	270	76	65	14.0	81	1/4 stroke	279	288		

CA2W Series

Axial Foot: C□A2WL



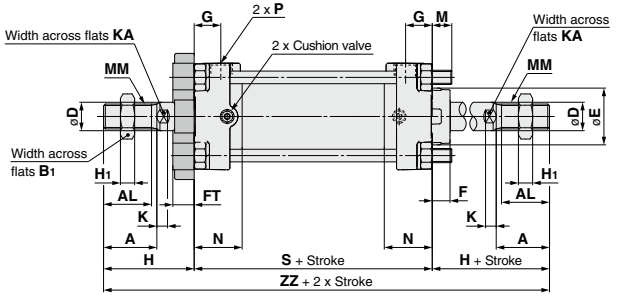
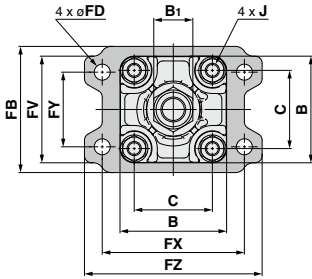
(mm)

Bore size (mm)	A	AL	B	B ₁	C	D	E	F	G	H ₁	J	K	KA	LD	LH	LS	LT	LX	LY
40	30	27	60	22	44	16	32	10	15	8	M8 x 1.25	6	14	9	40	138	3.2	42	70
50	35	32	70	27	52	20	40	10	17	11	M8 x 1.25	7	18	9	45	144	3.2	50	80
63	35	32	85	27	64	20	40	10	17	11	M10 x 1.25	7	18	11.5	50	166	3.2	59	93
80	40	37	102	32	78	25	52	14	21	13	M12 x 1.75	10	22	13.5	65	204	4.5	76	116
100	40	37	116	41	92	30	52	14	21	16	M12 x 1.75	10	26	13.5	75	212	6	92	133

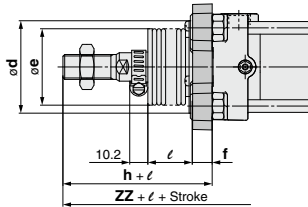
Bore size (mm)	MM	N	P	RT	RY	S	X	Y	Without rod boot		With rod boot (One side)						[Both sides]	
									H	ZZ	d	e	f	h	l	ZZ	ZZ	
40	M14 x 1.5	27	1/4	30	64	84	27	13	51	186	56	43	11.2	59	1/4 stroke	194	202	
50	M18 x 1.5	30	3/8	30	76	90	27	13	58	206	64	52	11.2	66	1/4 stroke	214	222	
63	M18 x 1.5	31	3/8	40	92	98	34	16	58	214	64	52	11.2	66	1/4 stroke	222	230	
80	M22 x 1.5	37	1/2	45	112	116	44	16	71	258	76	65	12.5	80	1/4 stroke	267	276	
100	M26 x 1.5	40	1/2	50	136	126	43	17	72	270	76	65	14.0	81	1/4 stroke	279	288	

Rod Flange: C□A2WF

Stroke of 1000 mm or less



With rod boot



Bore size (mm)	A	AL	B	B ₁	C	D	E	FB	FD	FT	FV	FX	FY	FZ	G	H ₁	J	K	KA	M
	40	30	27	60	22	44	16	32	71	9	12	60	80	42	100	15	8	M8 x 1.25	6	14
50	35	32	70	27	52	20	40	81	9	12	70	90	50	110	17	11	M8 x 1.25	7	18	11
63	35	32	85	27	64	20	40	101	11.5	15	86	105	59	130	17	11	M10 x 1.25	7	18	14
80	40	37	102	32	78	25	52	119	13.5	18	102	130	76	160	21	13	M12 x 1.75	10	22	17
100	40	37	116	41	92	30	52	133	13.5	18	116	150	92	180	21	16	M12 x 1.75	10	26	17

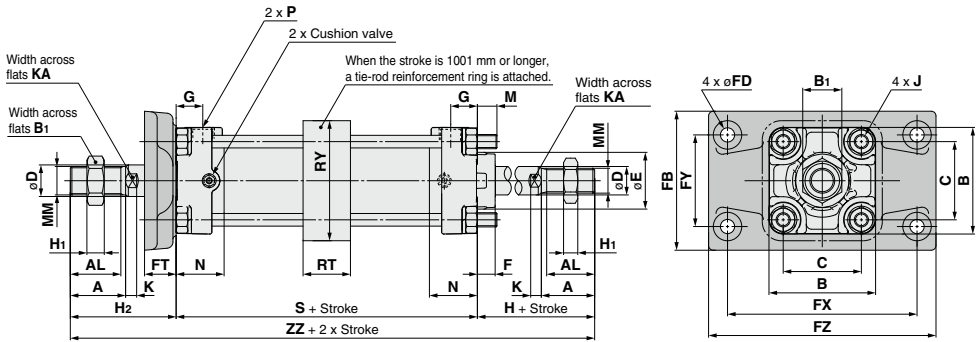
Bore size (mm)	MM	N	P	S	Without rod boot		With rod boot (One side)						Both sides	
					H	ZZ	*d	e	f	h	ℓ	ZZ	ZZ	
40	M14 x 1.5	27	1/4	84	51	186	52	43	15	59	1/4 stroke	194	202	
50	M18 x 1.5	30	3/8	90	58	206	58	52	15	66	1/4 stroke	214	222	
63	M18 x 1.5	31	3/8	98	58	214	58	52	17.5	66	1/4 stroke	222	230	
80	M22 x 1.5	37	1/2	116	71	258	80	65	21.5	80	1/4 stroke	267	276	
100	M26 x 1.5	40	1/2	126	72	270	80	65	21.5	81	1/4 stroke	279	288	

★For installing an air cylinder, when a hole must be made to accommodate the rod portion, make sure to machine a hole that is larger than the outer diameter of the boot mounting bracket ød.

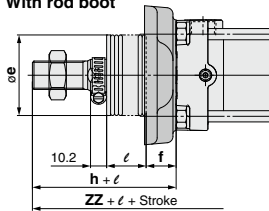
CA2W Series

Rod Flange: C□A2WF

Stroke of 1001 mm or more



With rod boot



(mm)

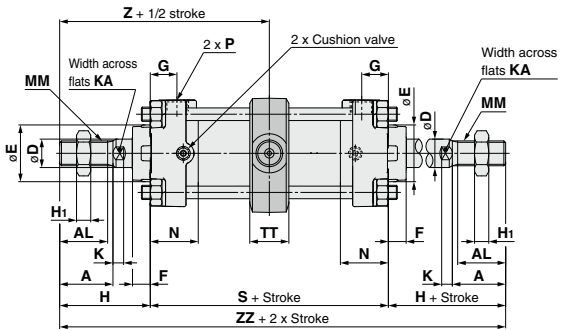
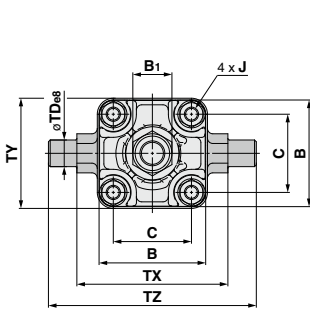
Bore size (mm)	A	AL	B	B ₁	C	D	E	FB	FD	FT	FX	FY	FZ	G	H ₁	J	K	KA	M
40	30	27	60	22	44	16	32	71	9	12	80	42	100	15	8	M8 x 1.25	6	14	11
50	35	32	70	27	52	20	40	88	9	20	120	58	144	17	11	M8 x 1.25	7	18	6
63	35	32	85	27	64	20	40	105	11.5	23	140	64	170	17	11	M10 x 1.25	7	18	10
80	40	37	102	32	78	25	52	124	13.5	28	164	84	198	21	13	M12 x 1.75	10	22	12
100	40	37	116	41	92	30	52	140	13.5	29	180	100	220	21	16	M12 x 1.75	10	26	12

Bore size (mm)	MM	N	P	RT	RY	S	Without rod boot			With rod boot (One side)						(Both sides)	
							H	H ₂	ZZ	d	e	f	h	ℓ	ZZ	ZZ	
40	M14 x 1.5	27	1/4	30	76	84	51	51	186	52	43	15	59	1/4 stroke	194	202	
50	M18 x 1.5	30	3/8	30	76	90	58	67	215	58	52	19	66	1/4 stroke	214	222	
63	M18 x 1.5	31	3/8	40	92	98	58	71	227	58	52	19	66	1/4 stroke	222	230	
80	M22 x 1.5	37	1/2	45	112	116	71	87	274	80	65	21	80	1/4 stroke	266	276	
100	M26 x 1.5	40	1/2	50	136	126	72	89	287	80	65	21	81	1/4 stroke	279	288	

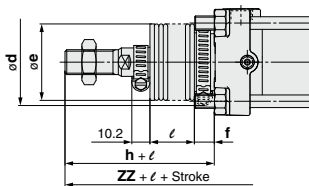
Note 1) For flange type with bore size of ø40, the same bracket is used for all strokes.

Note 2) For models with bore size of ø50 to ø100 and stroke of 1001 mm or more, do not mount a flange bracket on basic cylinders since H dimension is different from those shown above. When rod flange type is used, order with the part number with bracket.

Center Trunnion: C□A2WT



With rod boot



Bore size (mm)	A	AL	B	B ₁	C	D	E	F	G	H ₁	J	K	KA	MM	N	P	S	TD ₈₈
40	30	27	60	22	44	16	32	10	15	8	M8 x 1.25	6	14	M14 x 1.5	27	1/4	84	15 ^{+0.032} _{-0.059}
50	35	32	70	27	52	20	40	10	17	11	M8 x 1.25	7	18	M18 x 1.5	30	3/8	90	15 ^{+0.032} _{-0.059}
63	35	32	85	27	64	20	40	10	17	11	M10 x 1.25	7	18	M18 x 1.5	31	3/8	98	18 ^{+0.032} _{-0.059}
80	40	37	102	32	76	25	52	14	21	13	M12 x 1.75	10	22	M22 x 1.5	37	1/2	116	25 ^{+0.040} _{-0.073}
100	40	37	116	41	92	30	52	14	21	16	M12 x 1.75	10	26	M26 x 1.5	40	1/2	126	25 ^{+0.040} _{-0.073}

Bore size (mm)	TT	TX	TY	TZ	Without rod boot			With rod boot (One side)					(Both sides)			
					H	Z	ZZ	d	e	f	h	ℓ	Z	ZZ	Z	ZZ
40	22	85	62	117	51	93	186	56	43	11.2	59	1/4 stroke	101	194	101	202
50	22	95	74	127	58	103	206	64	52	11.2	66	1/4 stroke	111	214	111	222
63	28	110	90	148	58	107	214	64	52	11.2	66	1/4 stroke	115	222	115	230
80	34	140	110	192	71	129	258	76	65	12.5	80	1/4 stroke	138	267	138	276
100	40	162	130	214	72	135	270	76	65	14.0	81	1/4 stroke	144	279	144	288

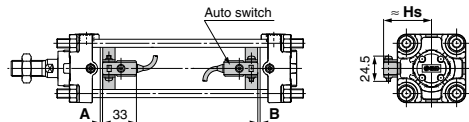
* Do not disassemble the trunnion type. Refer to page 615.

CA2 Series Auto Switch Mounting

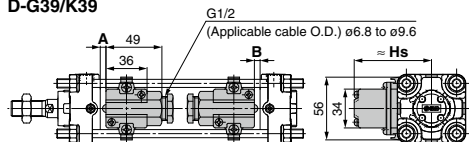
Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height

<Band mounting>

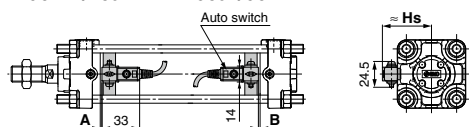
D-B5□/B64/B59W



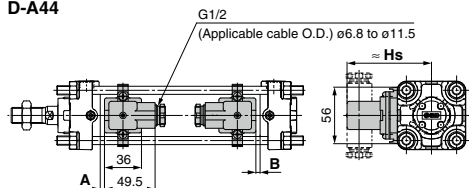
D-A3□
D-G39/K39



D-G5□/K59 D-G5BA
D-G5□W/K59W D-G59F/G5NT

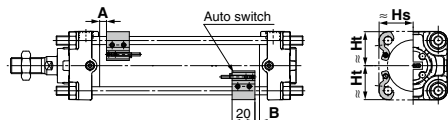


D-A44

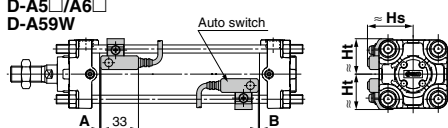


<Tie-rod mounting>

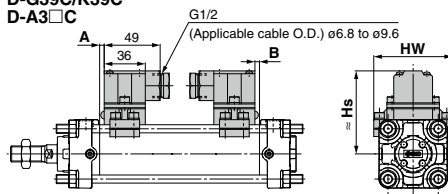
D-M9□/M9□V D-Y59□/Y69□/Y7P/Y7PV
D-M9□W/M9□WV D-Y7□W/Y7□WV
D-M9□A/M9□AV D-Y7BA
D-A9□/A9□V D-Z7□/Z80



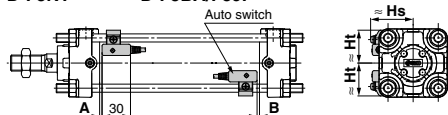
D-A5□/A6□
D-A59W



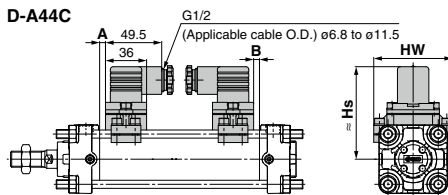
D-G39C/K39C
D-A3□C



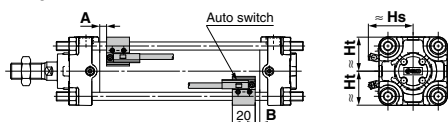
D-F5□/J59 D-F5□W/J59W
D-F5NT D-F5BA/F59F



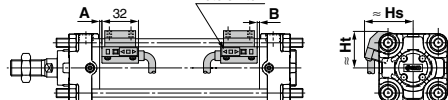
D-A44C



D-P3DWA



D-P4DW



Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height

Auto Switch Proper Mounting Position (Standard type)

(mm)

Auto switch model	D-M9□ D-M9□V D-M9□W D-M9□A D-M9□AV		D-A9□ D-A9□V		D-Y59□ D-Y69□ D-Y7P D-Y7PV D-Y7□W D-Y7□VW D-Y7BA D-Z7□ D-Z80 D-B59W		D-P3DWA		D-P4DW		D-F5□ D-J59 D-F59F D-F5□W D-J59W D-F5BA		D-F5NT		D-A59W		D-G39 D-G39C D-K39 D-K39C D-A5□ D-A6□ D-A3□ D-A3□C D-A44 D-A44C		D-G5□ D-K59 D-G5NT D-G5□W D-K59W D-G5BA D-G59F		D-B5□ D-B64	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
40	9	9	5	5	2.5	2.5	4.5	4.5	2	2	5.5	5.5	10.5	10.5	3	3	0	0	1	1	0	0
50	9.5	8.5	5.5	4.5	3	2	5	4	2.5	1.5	6	5	11	10	3.5	2.5	0	0	1.5	0.5	0	0
63	12.5	11.5	8.5	7.5	6	5	8	7	5.5	4.5	9	8	14	13	6.5	5.5	2.5	1.5	4.5	3.5	3	2
80	16.5	13.5	12.5	9.5	10	7	12	9	9.5	6.5	13	10	18	15	10.5	7.5	6.5	3.5	8.5	5.5	7	4
100	18	16	14	12	11.5	9.5	13.5	11.5	11	9	14.5	12.5	19.5	17.5	12	10	8	6	10	8	8.5	6.5

Note) Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Proper Mounting Height (Standard type)

(mm)

Auto switch model	D-M9□ D-M9□W D-M9□A D-A9□		D-M9□V D-M9□VW D-M9□AV		D-A9□V		D-Y59□ D-Y7P D-Y7BA D-Y7□W D-Z7□ D-Z80		D-Y69□ D-Y7PV D-Y7□VW		D-P3DWA		D-P4DW		D-G5□ D-K59 D-G5NT D-G5□W D-K59W D-G5BA D-G59F D-B5□ D-B64 D-B59W		D-G39 D-K39 D-A3□		D-A44		D-F5□ D-J59 D-F5□W D-J59W D-F5BA D-F59F D-F5NT		D-A5□ D-A6□ D-A59W		D-G39C D-K39C D-A3□C		D-A44C		
	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs
40	30	30	34	30	31	30	30	30	30	30	37.5	35	42.5	33	37	71.5	81.5	38	31.5	38.5	31.5	73	69	81	69				
50	34	34	38	34	35	34	34	34	34	34	41.5	39	46.5	37.5	42	76.5	86.5	42	35.5	42	35.5	78.5	77	86.5	77				
63	41	41	44	41	41.5	41	41	41	41	41	50	41	52	43	49	83.5	93.5	47	43	46.5	43	85.5	91	93.5	91				
80	49.5	49	52.5	49	50	49	49.5	49	49.5	49	58	49	58.5	51.5	57.5	92	102	53.5	51	53.5	51	94	107	102	107				
100	56.5	56	61	56	58.5	56	56.5	55.5	57.5	55.5	66	56	66	58.5	68	102.5	112.5	61	57.5	61.5	57.5	104	121	112	121				

Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height

Auto Switch Proper Mounting Position (Non-rotating rod type, With end lock)

(mm)

Auto switch model	D-M9□ D-M9□V D-M9□W D-M9□A D-M9□AV		D-A9□ D-A9□V		D-Y59□ D-Y69□ D-Y7P D-Y7PV D-Y7□W D-Y7□WV D-Y7BA D-B59W D-Z7□ D-Z80		D-P3DWA		D-P4DW		D-G39 D-G39C D-K39 D-K39C D-A5□ D-A6□ D-A3□ D-A3□C D-A44 D-A44C		D-G5□ D-K59 D-G5NT D-G5□W D-K59W D-G5BA D-G59F		D-B5□ D-B64		D-F5□ D-J59 D-F59F D-F5□W D-J59W D-F5BA		D-F5NT		D-A59W	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
40	10	8	6	4	4	1	5.5	3.5	3.5	0.5	0.5	0	2.5	0	1	0	7	4	12	9	4.5	1.5
50	10	8	6	4	3.5	1.5	5.3	3.5	3	1	0	0	2	0	0.5	0	6.5	4.5	11.5	9.5	4	2
63	12.5	11.5	8.5	7.5	6	5	8	7	5.5	4.5	2.5	1.5	4.5	3.5	3	2	9	8	14	13	6.5	5.5
80	16	14	12	10	9.5	7.5	11.5	9.5	9	7	6	4	8	6	6.5	4.5	12.5	10.5	17.5	15.5	10	8
100	17.5	16.5	13.5	12.5	11	10	13	12	10.5	9.5	7.5	6.5	9.5	8.5	8	7	14	13	19	18	11.5	10.5

Note) Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Proper Mounting Height (Non-rotating rod type, With end lock)

(mm)

Auto switch model	D-M9□ D-M9□V D-M9□W D-M9□A D-A9□		D-M9□V D-M9□W D-M9□AV		D-A9□V		D-Y59□ D-Y7P D-Y7□W D-Y7BA D-Z7□ D-Z80		D-Y69□ D-Y7PV D-Y7□WV		D-P3DWA		D-P4DW		D-G5□ D-K59 D-G5□W D-K59W D-G59F D-G5BA D-G5NT D-B5□ D-B64 D-B59W		D-G39 D-K39 D-A3□		D-A44		D-F5□ D-J59 D-F59W D-F59F D-F5BA D-F5NT		D-A5□ D-A6□		D-G39C D-K39C D-A3□C		D-A44C		
	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs
40	30	30	34	30	31	30	30	30	30	30	37.5	35	42.5	33	37	71.5	81.5	38	31.5	38.5	31.5	73	69	81	69				
50	34	34	38	34	35	34	34	34	34	34	41.5	39	46.5	37.5	42	76.5	86.5	42	35.5	42	35.5	78.5	77	86.5	77				
63	41	41	44	41	41.5	41	41	41	41	41	50	41	52	43	49	83.5	93	47	43	46.5	43	85.5	91	93.5	91				
80	49.5	49	52.5	49	50	49	49.5	49	49.5	49	58	49	58.5	51.5	57.5	92	102	53.5	51	53.5	51	94	107	102	107				
100	56.5	56	61	56	58.5	56	58.5	55.5	57.5	55.5	66	56	66	58.5	68	102.5	112.5	61	57.5	61.5	57.5	104	121	112	121				

Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height

Auto Switch Proper Mounting Position (Air-hydro type)

(mm)

Auto switch model	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV		D-A9□ D-A9□V		D-Y59□ D-Y69□ D-Y7P D-Y7PV D-Y7□W D-Y7□WV D-Y7BA D-B59W D-Z7□ D-Z80		D-P3DWA		D-P4DW		D-G39 D-G39C D-K39 D-K39C D-A5□ D-A6□ D-A3□ D-A3□C D-A44 D-A44C		D-G5□ D-K59 D-G5NT D-G5□W D-K59W D-G5BA D-G59F		D-B5□ D-B64		D-F5□ D-J59 D-F59F D-F5□W D-J59W D-F5BA		D-F5NT		D-A59W		
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A
40	10	8	6	4	4	1	5.5	3.5	3	1	0	0	2	0	0.5	0	6.5	4.5	11.5	9.5	4	2	
50	10	8	—	—	3.5	1.5	5.5	3.5	3	1	0	0	2	0	0.5	0	6.5	4.5	11.5	9.5	4	2	
63	12.5	11.5	—	—	6	5	8	7	5.5	4.5	2.5	1.5	4.5	3.5	3	2	9	8	14	13	6.5	5.5	
80	16	14	12	10	9.5	7.5	11.5	9.5	9	7	6	4	8	6	6.5	4.5	12.5	10.5	17.5	15.5	10	8	
100	17.5	16.5	13.5	12.5	11	10	13	12	10.5	9.5	7.5	6.5	9.5	8.5	8	7	14	13	19	18	11.5	10.5	

* D-A9□ and D-A9□V types cannot be mounted on ø50.

Note) Adjust the auto switch after confirming the operating conditions in the actual setting.

Auto Switch Proper Mounting Height (Air-hydro type)

(mm)

Auto switch model	D-M9□ D-M9□V D-M9□A D-A9□		D-M9□V D-M9□W D-M9□AV		D-A9□V		D-Y59□ D-Y7P D-Y7BA D-Y7□W D-Z7□ D-Z80		D-Y69□ D-Y7PV D-Y7□WV		D-P3DWA		D-P4DW		D-G5□ D-K59 D-G5NT D-G5□W D-K59W D-G5BA D-G59F D-B5□ D-B64 D-B59W		D-G39 D-K39 D-A3□		D-A44		D-F5□ D-J59 D-F5□W D-J59W D-F59F D-F5NT		D-A5□ D-A6□ D-A59W		D-G39C D-K39C D-A3□C		D-A44C		
	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs	Ht	Hs
40	30	30	35	30	32	30	30	30	30.5	30	38	36	43	33.5	38	38	72.5	82.5	82.5	38.5	31	40	31	73	69	81	69		
50	34	34	39	34	—	—	34	34	35	34	42	40.5	47	38	43.5	78	88	88	42.5	35	43.5	35	78.5	77	86.5	77			
63	41	41	46	41	43.5	41	41	41	42.5	41	51	41	53	44	51	85.5	95.5	95.5	48	42	49	42	85.5	91	93.5	91			
80	49.5	49	54	49	51.5	49	49.5	48.5	51	48.5	59	49	60	52	59	93.5	103.5	103.5	54	50	55.5	50	94	107	102	107			
100	57	56	62.5	56	59.5	56	58.5	56	59	56	67	56	67	59	69.5	104	114	114	62	57.5	63	57.5	104	121	112	121			

* D-A9□ and D-A9□V types cannot be mounted on ø50.

Operating Range

(mm)

Auto switch model	Bore size				
	40	50	63	80	100
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	4.5	5	5.5	5	6
D-A9□/A9□V	7.5 (7)	8.5 (—)	9.5 (9)	9.5 (9)	10.5 (9)
D-Z7□/Z80	8.5	7.5	9.5	9.5	10.5
D-A3□/A44 D-A3□C/A44C	9	10	11	11	11
D-A5□/A6□					
D-B5□/B64					
D-A59W	13	13	14	14	15
D-B59W	14	14	17	16	18

Auto switch model	Bore size				
	40	50	63	80	100
D-Y59□/Y69□ D-Y7P/Y7□V D-Y7□W/Y7□WV D-Y7BA	8	7	5.5	6.5	6.5
D-F5□/J59/F5□W D-J59W/F5BA D-F5NT/F59F	4	4	4.5	4.5	4.5
D-G5□/K59/G5□W D-K59W/G5BA D-G5NT/G59F	5	6	6.5	6.5	7
D-G39/K39 D-G39C/K39C	9	9	10	10	11
D-P3DWA	4.5	4.5	5.5	5.5	5.5
D-P4DW	4	4	4.5	4	4.5

* Values which include hysteresis are for guideline purposes only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

Note 1) (): For CDA2□H and CDA2W□H Series.

Note 2) D-A9□ and D-A9□V types cannot be mounted on ø50 of the CDA2□H and CDA2W□H series.

Minimum Stroke for Auto Switch Mounting

n: Number of auto switches (mm)

Auto switch model	Number of auto switches	Brackets other than center trunnion	Center trunnion				
			ø40	ø50	ø63	ø80	ø100
D-M9□ D-M9□W	2 (Different surfaces and same surface) 1	15	80		85	90	95
	n	$15 + 40 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$80 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$85 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$90 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$95 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-M9□V D-M9□WV	2 (Different surfaces and same surface) 1	10	55		60	65	70
	n	$10 + 30 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$55 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$60 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$65 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$70 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-M9□A	2 (Different surfaces and same surface) 1	15	80		85	95	100
	n	$15 + 40 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$80 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$85 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$95 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$100 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-M9□AV	2 (Different surfaces and same surface) 1	10	60		65	70	75
	n	$10 + 30 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$60 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$65 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$70 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$75 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-A9□	2 (Different surfaces and same surface) 1	15	75		80	85	90
	n	$15 + 40 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$75 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$80 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$85 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$90 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-A9□V	2 (Different surfaces and same surface) 1	10	50		55	60	65
	n	$10 + 30 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$50 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$55 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$60 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$65 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-F5□/J59 D-F5□W/J59W D-F5BA/F59F D-A5□/A6	2 (Different surfaces and same surface) 1	15	90		100	110	120
	n (Same surface)	$15 + 55 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$90 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$100 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$110 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$120 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-F5NT	2 (Different surfaces and same surface) 1	25	110		120	130	140
	n (Same surface)	$25 + 55 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$110 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$120 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$130 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$140 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
D-A59W	2 (Different surfaces and same surface) 1	20	90		100	110	120
	n (Same surface)	$20 + 55 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$90 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)		$100 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$110 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$120 + 55 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)
	1	15	90		100	110	120
D-G5□/K59 D-G5□W D-K59W D-G5BA D-G59F D-G5NT D-B5□/B64	2 Different surfaces	15	90	100	110		
	Same surface	75					
	n	Different surfaces	$15 + 50 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$90 + 50 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$100 + 50 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$110 + 50 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	
		Same surface	$75 + 50 (n-2)$ (n = 2, 3, 4...)	$90 + 50 (n-2)$ (n = 2, 4, 6, 8... Note 1)	$100 + 50 (n-2)$ (n = 2, 4, 6, 8... Note 1)	$110 + 50 (n-2)$ (n = 2, 4, 6, 8... Note 1)	
	1	10	90	100	110		
D-B59W	2 Different surfaces	20	90	100	110		
	Same surface	75					
	n	Different surfaces	$20 + 50 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8... Note 1)	$90 + 50 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$100 + 50 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	$110 + 50 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16... Note 2)	
		Same surface	$75 + 50 (n-2)$ (n = 2, 3, 4...)	$90 + 50 (n-2)$ (n = 2, 4, 6, 8... Note 1)	$100 + 50 (n-2)$ (n = 2, 4, 6, 8... Note 1)	$110 + 50 (n-2)$ (n = 2, 4, 6, 8... Note 1)	
1	15	90	100	110			

Note 1) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation.

Note 2) When "n" is an odd number, a multiple of 4 that is larger than this odd number is used for the calculation.

Minimum Stroke for Auto Switch Mounting

			n: Number of auto switches (mm)				
Auto switch model	Number of auto switches	Brackets other than center trunnion	Center trunnion				
			ø40	ø50	ø63	ø80	ø100
D-G39 D-K39 D-A3□	2	Different surfaces	35	75	80	90	
		Same surface	100	100	100	100	
	n	Different surfaces	$35 + 30(n-2)$ (n = 2, 3, 4...)	$75 + 30(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$80 + 30(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$90 + 30(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	
		Same surface	$100 + 100(n-2)$ (n = 2, 3, 4...)		$100 + 100(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}		
	1	10	75	80	90		
D-A44	2	Different surfaces	35	75	80	90	
		Same surface	55				
	n	Different surfaces	$35 + 30(n-2)$ (n = 2, 3, 4...)	$75 + 30(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$80 + 30(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$90 + 30(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	
		Same surface	$55 + 50(n-2)$ (n = 2, 3, 4...)	$75 + 50(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$80 + 50(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$90 + 50(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	
	1	10	75	80	90		
D-G39C D-K39C D-A3□C	2	Different surfaces	20	75	80	90	
		Same surface	100	100	100	100	
	n	Different surfaces	$20 + 35(n-2)$ (n = 2, 3, 4...)	$75 + 35(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$80 + 35(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$90 + 35(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	
		Same surface	$100 + 100(n-2)$ (n = 2, 3, 4, 5...)		$100 + 100(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}		
	1	10	75	80	90		
D-A44C	2	Different surfaces	20	75	80	90	
		Same surface	55	75	80	90	
	n	Different surfaces	$20 + 35(n-2)$ (n = 2, 3, 4...)	$75 + 35(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$80 + 35(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$90 + 35(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	
		Same surface	$55 + 50(n-2)$ (n = 2, 3, 4...)	$75 + 50(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$80 + 50(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	$90 + 50(n-2)$ (n = 2, 4, 6, 8...) ^{Note 1}	
	1	10	75	80	90		
D-Y59□/Y7P D-Y7□W D-Z7□/Z80	2 (Different surfaces and same surface) 1	15	80	85	90	95	105
	n	$15 + 40 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8...) ^{Note 1}	$80 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$85 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$90 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$95 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$105 + 40 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}
D-Y69□/Y7PV D-Y7□WV	2 (Different surfaces and same surface) 1	10	65	75	80	90	
	n	$10 + 30 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8...) ^{Note 1}	$65 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$75 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$80 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$90 + 30 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	
D-Y7BA	2 (Different surfaces and same surface) 1	20	95	100	105	110	
	n	$20 + 45 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8...) ^{Note 1}	$95 + 45 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$100 + 45 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$105 + 45 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$110 + 45 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	
D-P3DWA	2 (Different surfaces and same surface) 1	15		85			
	n	$15 + 50 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8...) ^{Note 1}		$85 + 50 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}			
D-P4DW	2 (Different surfaces and same surface) 1	15	120	130	140		
	n	$15 + 65 \frac{(n-2)}{2}$ (n = 2, 4, 6, 8...) ^{Note 1}	$120 + 65 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$130 + 65 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}	$140 + 65 \frac{(n-4)}{2}$ (n = 4, 8, 12, 16...) ^{Note 2}		

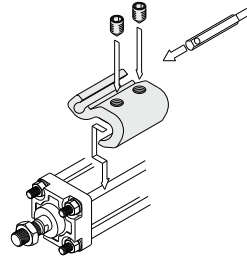
Note 1) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation.

Note 2) When "n" is an odd number, a multiple of 4 that is larger than this odd number is used for the calculation.

Auto Switch Mounting Brackets/Part No.

<Tie-rod mounting>

Auto switch model	Bore size (mm)				
	40	50	63	80	100
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV D-A9□/A9□V	BA7-040	BA7-040	BA7-063	BA7-080	BA7-080
D-F5□/J59 D-F5□W/J59W D-F59F/F5NT D-A5□/A6□ D-A59W	BT-04	BT-04	BT-06	BT-08	BT-08
D-G39C/K39C D-A3□C/A44C	BA3-040	BA3-050	BA3-063	BA3-080	BA3-100
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV D-Y7BA D-Z7□/Z80	BA4-040	BA4-040	BA4-063	BA4-080	BA4-080
D-P3DWA	BK7-040S	BK7-040S	BA10-063S	BA10-080S	BA10-080S
D-P4DW	BAP2-040	BAP2-040	BAP2-063	BAP2-080	BAP2-080



* The figure shows the mounting example for the D-M9□(V)/M9□W(V)/M9□A(V)/A9□(V) types.

<Band mounting>

Except air-hydro type

Auto switch model	Bore size (mm)				
	40	50	63	80	100
D-G39/K39 D-A3□/A44	BDS-04M	BDS-05M	BMB1-063	BMB1-080	BMB1-100
D-G5□/K59 D-G5□W/K59W D-G59F D-G5NT D-B5□/B64 D-B59W	BH2-040	BA5-050	BAF-06	BAF-08	BAF-10

Note 1) Auto switch brackets are included in the D-A3□C/A44C/G39C/K39C types. Specify the part number as follows depending on the cylinder size when ordering.
(Example) ø40: D-A3□C-4, ø50: D-A3□C-5, ø63: D-A3□C-6, ø80: D-A3□C-8, ø100: D-A3□C-10

[Stainless Steel Mounting Screw]

The following stainless steel mounting screw kit (including set screws) is also available. Use it in accordance with the operating environment.
(Since the auto switch mounting bracket and band are not included, order them separately.)

- BBA1: For D-A5/A6/F5/J5 types
- BBA3: For D-B5/B6/G5/K5 types

Note 2) Refer to pages 1369 and 1377 for details on the BBA1 and BBA3.

The above stainless steel screws are used when a cylinder is shipped with D-F5BA or G5BA auto switches. When only an auto switch is shipped independently, the BBA1 or BBA3 is attached.

Note 3) When using the D-M9□(A)V or Y7BA, do not use the steel set screws which are included with the above auto switch mounting brackets (BA7-□□□, BA4-□□□). Order a stainless steel screw kit (BBA1) separately, and use the M4 x 6 L stainless steel set screws included in the BBA1.

Note 4) There is a difference in the cylinder tube thickness depending on the cylinder model. Use caution when a band mounting type is used as an applicable auto switch and a cylinder model is changed.

Air-hydro type

Auto switch model	Bore size (mm)				
	40	50	63	80	100
D-G39/K39 D-A3□/A44	BD1-04M	BD1-05M	BD1-06M	BD1-08M	BD1-10M
D-G5□/K59 D-G5□W/K59W D-G59F D-G5NT D-B5□/B64 D-B59W	BA-04	BA-05	BA-06	BA-08	BA-10

Other than the applicable auto switches listed in "How to Order", the following auto switches are mountable.

Refer to pages 1271 to 1365 for the detailed specifications.

Type	Model	Electrical entry	Features	
Solid state	D-M9NV/M9PV/M9BV D-Y69A/Y69B/Y7PV D-M9NWV/M9PWV/M9BWW D-Y7NWW/Y7PWW/Y7BWW D-M9NAV/M9PAV/M9BAV	Grommet (Perpendicular)	—	
	D-Y59A/Y59B/Y7P D-F59/F5P/J59 D-Y7NW/Y7PW/Y7BW		Diagnostic indication (2-color indicator)	
	D-F59W/F5PW/J59W		Water resistant (2-color indicator)	
	D-F5BA/Y7BA D-F5NT/G5NT D-P5DW	Grommet (In-line)	Diagnostic indication (2-color indicator)	
	D-A93V/A96V D-A90V		Water resistant (2-color indicator)	
	D-A53/A56/B53/Z73/Z76 D-A67/Z80		With timer	
	Reed	D-A93V/A96V D-A90V	Grommet (Perpendicular)	Magnetic field resistant (2-color indicator)
		D-A53/A56/B53/Z73/Z76 D-A67/Z80		Without indicator light
		D-A53/A56/B53/Z73/Z76 D-A67/Z80	Grommet (In-line)	Without indicator light

* With pre-wired connector is also available for solid state auto switches. For details, refer to pages 1340 and 1341.

* Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)/Y7G/Y7H) are also available. For details, refer to pages 1290 and 1292.



1 Cylinder with Heat Resistant Reed Auto Switch (-10 to 120°C) Symbol **-X1184**

Applicable Series

Description	Model	Action	Note
Standard type	CA2	Double acting, Single rod	

How to Order

CDA2 Standard model no. Z - Pivot bracket Rod end bracket - Heat resistant reed auto switch - X1184

Switch model	
Symbol	Description
Nil	Without switch
B30	D-B30
B30J	D-B30J
B31	D-B31
B31J	D-B31J
B35	D-B35
B35J	D-B35J

Number of switches	
Symbol	Description
S	1 pc.
Nil	2 pcs.

Cylinder with heat resistant reed auto switch

* For details about auto switches, refer to pages 1363 to 1365.

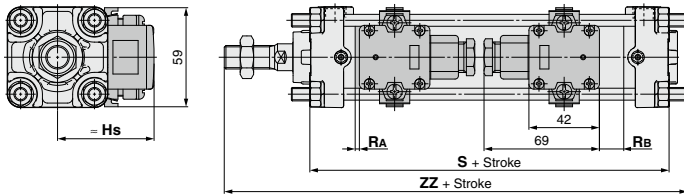
Specifications

Ambient temperature range	-10°C to 120°C
Seal material	Fluororubber
Grease	Heat resistant grease

Warning Precautions

Be aware that smoking cigarettes etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

Dimensions (Dimensions other than below are the same as standard type.)



(mm)

Bore size	Hs	RA	RB	S	ZZ	Minimum mounting stroke		Auto switch mounting bracket part number
						Other than center trunnion	Center trunnion	
40	57.5	4	13	99	161	1 pc. : 50 st or more	180 st or more	BD1-04M
50	62.5	4	13	105	174		180 st or more	BD1-05M
63	69	7	16	113	185	2 pcs.: Different surfaces 50 st or more	190 st or more	BD1-06M
80	78	5.5	23.5	131	219		200 st or more	BD1-08M
100	88.5	7.5	25.5	141	230	2 pcs.: Same surface 220 st or more	210 st or more	BD1-10M