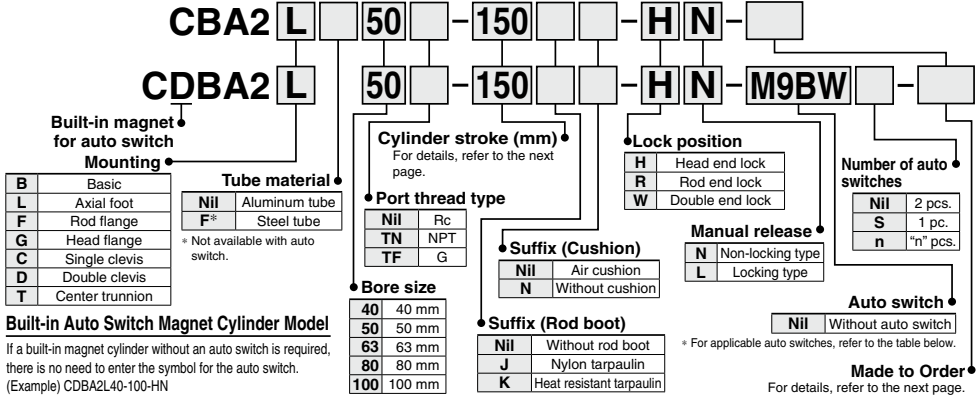


Air Cylinder: With End Lock

CBA2 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	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	—	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)				K39C	●	●	●	○	○			
	Diagnostic indication (2-color indicator)	Yes	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NW	●	●	●	○	○	IC circuit	Relay, PLC
					3-wire (PNP)				G59W	●	●	●	○	○		
					2-wire				M9PW	●	●	●	○	○		
					3-wire (NPN)				G5PW	●	●	●	○	○		
					2-wire				M9BW	●	●	●	○	○		
					3-wire (PNP)				K59W	●	●	●	○	○		
Reed auto switch	—	Grommet	—	3-wire (NPN equiv.)	24 V	12 V	—	M9NA ^{*1}	—	○	○	○	○	IC circuit	Relay, PLC	
				3-wire (PNP)				M9PA ^{*1}	—	○	○	○	○			
				2-wire				M9BA ^{*1}	—	○	○	○	○			
				4-wire (NPN)				G5BA ^{*1}	—	○	○	○	○			
				2-wire (Non-polar)				F59F	●	—	●	○	○			
				3-wire (NPN equiv.)				P3DWA	—	—	●	●	●			
	Diagnostic indication (2-color indicator)	Yes	Grommet	Yes	3-wire (NPN equiv.)	24 V	12 V	—	A96	●	●	●	—	IC circuit	—	
					2-wire				A93	—	●	●	●			—
					3-wire (NPN equiv.)				A90	—	●	●	●			—
					2-wire				A54	●	—	●	●			—
					3-wire (NPN equiv.)				A64	●	—	●	●			—
					2-wire				A33C	●	—	●	●			—
Diagnostic indication (2-color indicator)	Yes	Grommet	Yes	3-wire (NPN equiv.)	24 V	12 V	—	A34C	●	—	●	●	IC circuit	—		
				2-wire				A34A	●	—	●	●				
				3-wire (NPN equiv.)				A44C	●	—	●	●				
				2-wire				A44A	●	—	●	●				
				3-wire (NPN equiv.)				A59W	●	—	●	●				
				2-wire				B59W	●	—	●	●				

*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please contact SMC regarding water resistant types with the above model numbers.
 * Lead wire length symbols: 0.5 m..... Nil (Example) M9NW
 1 m..... M (Example) M9NW
 3 m..... L (Example) M9NW
 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.)

Maintains the cylinder's original position even if the air supply is interrupted.

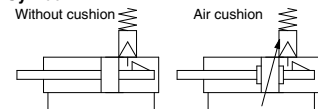
When air is discharged at the stroke end position, the lock engages to maintain the rod in that position.

Same dimensions as those of the standard cylinder (CA2 series)

Non-locking and locking types are standard for manual release.



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 *1	With heavy duty scraper
-XC6 *1	Made of stainless steel
-XC7	Tie-rod, cushion valve, tie-rod nut, etc. made of stainless steel
-XC8 *1	Adjustable stroke cylinder/Adjustable extension type
-XC9 *2	Adjustable stroke cylinder/Adjustable retraction type
-XC10	Dual stroke cylinder/Double rod type
-XC14	Change of trunnion bracket mounting position
-XC15	Change of tie-rod length
-XC22	Fluororubber seal
-XC27	Double clevis and double knuckle joint pins made of stainless steel
-XC28	Compact flange made of SS400
-XC29	Double knuckle joint with spring pin
-XC30	Rod trunnion
-XC35	With coil scraper

*1 For head end lock only
*2 For rod end lock only

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.

Specifications

Bore size (mm)	40	50	63	80	100
Fluid	Air				
Proof pressure	1.5 MPa				
Maximum operating pressure	1.0 MPa				
Minimum operating pressure	0.15 MPa*1				
Ambient and fluid temperature	Without auto switch magnet : -10 to 70°C*2 Built-in magnet for auto switch: -10 to 60°C*2				
Piston speed	50 to 500 mm/s				
Cushion	Air cushion or Without air cushion				
Stroke length tolerance	Up to 250 st: $^{+1.0}_{-0}$ 251 to 1000 st: $^{+1.4}_{-0}$ 1001 to 1500 st: $^{+1.8}_{-0}$ 1501 to 1800 st: 0 to +2.2				
Lubrication	Not required (Non-lube)				
Mounting	Basic, Axial foot, Rod flange, Head flange, Single clevis, Double clevis, Center trunnion				

*1 0.05 MPa except locking parts.
*2 No freezing

Lock Specifications

Lock position	Head end, Rod end, Double end				
Holding force (Max.) (N)	ø40 860	ø50 1340	ø63 2140	ø80 3450	ø100 5390
Backlash	2 mm or less				
Manual release	Non-locking type, Locking type				

Accessories / Refer to page 575 for part numbers and dimensions.

Accessories	Standard			Option		
	Rod end nut	Clevis pin	Lock release bolt (N type only)	Single knuckle joint	Double knuckle joint (with pin)	Rod boot
Mounting						
Basic	●	—	●	●	●	●
Axial foot	●	—	●	●	●	●
Rod flange	●	—	●	●	●	●
Head flange	●	—	●	●	●	●
Single clevis	●	—	●	●	●	●
Double clevis*	●	●	●	●	●	●
Center trunnion	●	—	●	●	●	●

* Double clevis and double knuckle joint types are packed with pin, split pin and flat washer.

Standard Strokes

Bore size	Standard stroke	Stroke range ^{Note 3)}	
		Rod end lock Double end lock	Head end lock
40	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500	1 to 1800	1 to 1800
50	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600		
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 1500	

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.
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)	
	Rod end lock Double end lock	Head end lock
40, 50	20 to 1800	20 to 1800
63, 80, 100	20 to 1200	

Minimum Stroke for Auto Switch Mounting

⚠ Caution

1. 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.)

CBA2 Series

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 itself.

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

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
Single clevis	CA2-C04	CA2-C05	CA2-C06	CA2-C08	CA2-C10
Double clevis**	CA2-D04	CA2-D05	CA2-D06	CA2-D08	CA2-D10

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

** A clevis pin, flat washers and split pins are shipped together with double clevis.

Weights/Aluminum Tube (Steel Tube)

Bore size (mm)		40	50	63	80	100
Basic weight	Basic	0.89 (0.94)	1.36 (1.40)	2.00 (2.04)	3.48 (3.63)	4.87 (5.07)
	Axial foot	1.08 (1.13)	1.58 (1.62)	2.34 (2.38)	4.15 (4.30)	5.86 (6.06)
	Flange	1.26 (1.30)	1.81 (1.86)	2.79 (2.84)	4.93 (5.08)	6.79 (6.99)
	Single clevis	1.12 (1.17)	1.70 (1.74)	2.63 (2.67)	4.59 (4.74)	6.65 (6.86)
	Double clevis	1.16 (1.21)	1.79 (1.84)	2.79 (2.83)	4.88 (5.03)	7.17 (7.38)
	Trunnion	1.25 (1.35)	1.84 (1.94)	2.80 (3.00)	5.03 (5.32)	7.15 (7.54)
Additional weight per 50 mm of stroke	All mounting brackets (Except steel tube trunnion)	0.22 (0.28)	0.28 (0.35)	0.37 (0.43)	0.52 (0.70)	0.65 (0.87)
	Steel tube trunnion	(0.36)	(0.46)	(0.65)	(0.86)	(1.07)
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

* Values inside the parentheses are those for the steel tube type.

Lock Unit Additional Weights

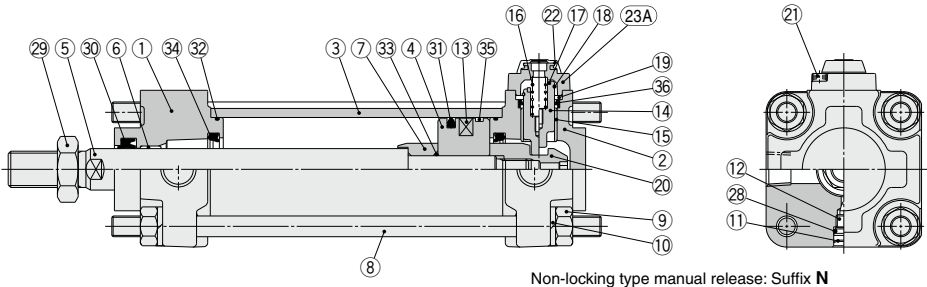
Bore size (mm)		40	50	63	80	100
Non-locking type manual release (N)	Head end lock (H)	0.02	0.03	0.03	0.10	0.12
	Rod end lock (R)	0.02	0.02	0.02	0.07	0.06
	Double end lock (W)	0.04	0.05	0.05	0.17	0.18
Locking type manual release (L)	Head end lock (H)	0.04	0.05	0.05	0.13	0.15
	Rod end lock (R)	0.04	0.04	0.04	0.10	0.09
	Double end lock (W)	0.08	0.09	0.09	0.23	0.24

Calculation: (Example) **CBA2L40-100-HN**

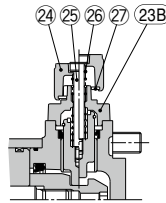
- Basic weight..... 1.08 kg (ø40, Axial foot)
 - Additional weight.... 0.22/50 stroke
 - Cylinder stroke 100 stroke
 - Lock unit weight 0.02 kg
- (Head end lock, Non-locking type manual release)
- $$1.08 + 0.22 \times 100/50 + 0.02 = 1.54 \text{ kg}$$

Construction

Head end lock



Non-locking type manual release: Suffix N



Locking type manual release: Suffix L

Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum die-casted	Metallic painted
2	Head cover	Aluminum die-casted	Metallic painted
3	Cylinder tube	Aluminum alloy	Hard anodized
4	Piston	Aluminum alloy	Chromated
5	Piston rod	Carbon steel	Hard chrome plating
6	Bushing	Bearing alloy	
7	Cushion ring A	Rolled steel	Electroless nickel plating
8	Tie-rod	Carbon steel	Zinc chromated
9	Tie-rod nut	Rolled steel	Trivalent zinc chromated
10	Spring washer	Steel wire	Trivalent zinc chromated
11	Retaining ring	Spring steel	Phosphate coating
12	Cushion valve	Steel wire	Trivalent zinc chromated
13	Magnet*	—	* With auto switch
14	Lock piston	Carbon steel	Quench hard chrome plating
15	Lock bushing	Lead-bronze casted	
16	Lock spring	Stainless steel	
17	Bumper	Urethane	
18	C-ring	Steel wire	Zinc chromated
19	Seal retainer	Rolled steel	Zinc chromated
20	Cushion ring nut	Chromium molybdenum steel	Quench, Electroless nickel plating
21	Hexagon socket head cap screw	Chromium molybdenum steel	Black zinc chromated
22	Rubber cap	Chloroprene rubber	
23A	Cap A	Aluminum casted	Black coated
23B	Cap B	Carbon steel	Oxide film treated

No.	Description	Material	Note
24	M/O knob	Zinc die-casted	Black coated
25	M/O bolt	Chromium molybdenum steel	Black zinc chromated, Red painted
26	M/O spring	Steel wire	Zinc chromated
27	Stopper ring	Carbon steel	Zinc chromated
28	Cushion valve seal	NBR	
29	Rod end nut	Rolled steel	Trivalent zinc chromated
30	Rod seal	NBR	
31	Piston seal	NBR	
32	Cylinder tube gasket	NBR	
33	Piston gasket	NBR	
34	Cushion seal	NBR	
35	Wear ring	Resin	
36	Lock piston seal	NBR	

Replacement Parts: Seal Kit

Bore size (mm)	Kit no.		Contents
	One end lock	Double end lock	
40	MBB40-PS	MBB40-PS-W	Set of the nos. 30, 31, 32, 34, 36.
50	MBB50-PS	MBB50-PS-W	
63	MBB63-PS	MBB63-PS-W	
80	MBB80-PS	MBB80-PS-W	
100	MBB100-PS	MBB100-PS-W	

* Seal kit includes 30, 31, 32, 34 and 36. Order the seal kit based on each bore size.

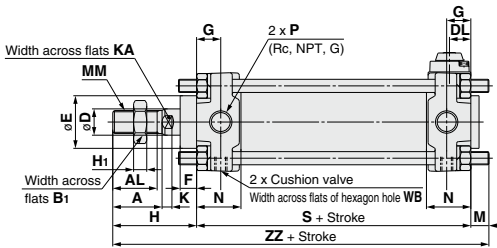
* Do not disassemble the trunnion type. Refer to page 615.

* 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)

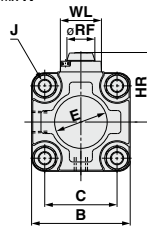
CBA2 Series

Basic (Dimensions are common to head end lock, rod end lock and double end lock types.)

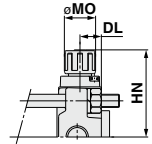
Head end lock: C□BA2B Bore size - Stroke -HN



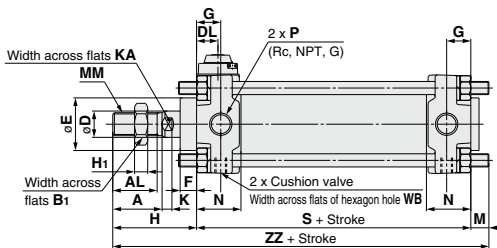
Non-locking type manual release:
Suffix N



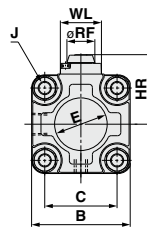
Locking type manual release:
Suffix L



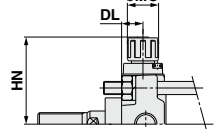
Rod end lock: C□BA2B Bore size - Stroke -RN



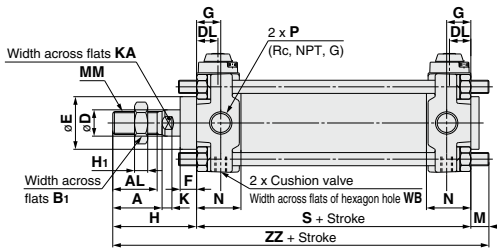
Non-locking type manual release:
Suffix N



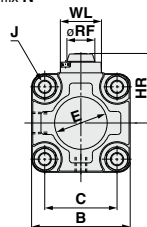
Locking type manual release:
Suffix L



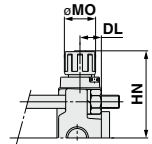
Double end lock: C□BA2B Bore size - Stroke -WN



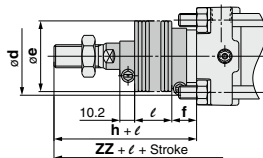
Non-locking type manual release:
Suffix N



Locking type manual release:
Suffix L



With rod boot



With Rod Boot

Bore size (mm)	d	e	f	h	l	ZZ
40	56	43	11.2	59	1/4 stroke	154
50	64	52	11.2	66	1/4 stroke	167
63	64	52	11.2	66	1/4 stroke	178
80	76	65	12.5	80	1/4 stroke	213
100	76	65	14	81	1/4 stroke	224

Bore size (mm)	A	AL	B	B ₁	C	D	DL	E	F	G	H	H ₁	HR	HN (Max.)	J	K	KA	M	MM	MO	N	P	RF	S	WB	WL	ZZ
40	30	27	60	22	44	16	13	32	10	15	51	8	42.3	56	M8 x 1.25	6	14	11	M14 x 1.5	19	27	1/4	17	84	2.5	25	146
50	35	32	70	27	52	20	13	40	12	17	58	11	47.3	61	M8 x 1.25	7	18	11	M18 x 1.5	19	30	3/8	17	90	2.5	25	159
63	35	32	85	27	64	20	15.5	40	10	17	58	11	54.8	68.5	M10 x 1.25	7	18	14	M18 x 1.5	19	31	3/8	17	98	4	25	170
80	40	37	102	32	78	25	18.5	52	14	21	71	13	65.8	80.5	M12 x 1.75	11	22	17	M22 x 1.5	23	37	1/2	21	116	4	40	204
100	40	37	116	41	92	30	20	52	14	21	72	16	72.8	87.5	M12 x 1.75	11	26	17	M26 x 1.5	23	40	1/2	21	126	4	40	215

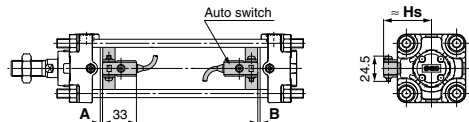
The dimensions for each mounting type and the dimensions of accessories (options) are the same as the standard double acting single rod model. Refer to pages 566 to 575.

CA2 Series Auto Switch Mounting

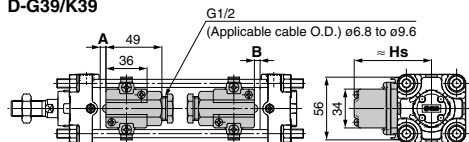
Auto Switch Proper Mounting Position (Detection at stroke end) and Its Mounting Height

<Band mounting>

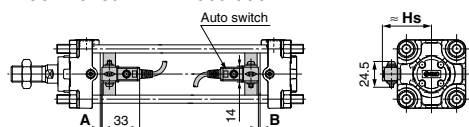
D-B5□/B64/B59W



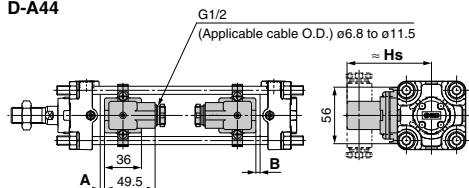
D-A3□
D-G39/K39



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

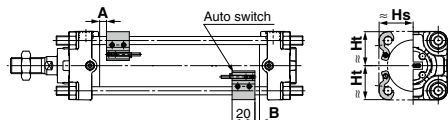


D-A44

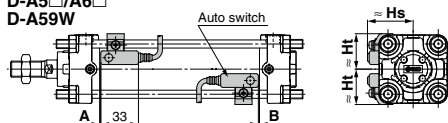


<Tie-rod mounting>

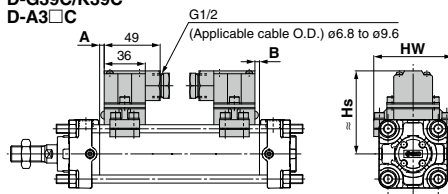
D-M9□/M9□V D-Y59□/Y69□/Y7P/Y7PV
D-M9□W/M9□WV D-Y7□W/Y7□WV
D-M9□A/M9□AV D-Y7BA
D-A9□/A9□V D-Z7□/Z80



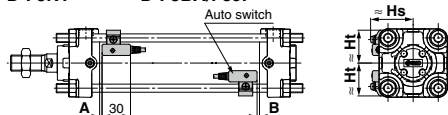
D-A5□/A6□
D-A59W



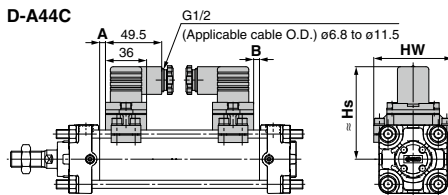
D-G39C/K39C
D-A3□C



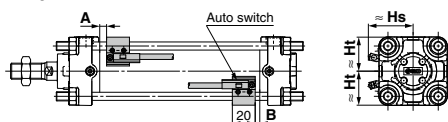
D-F5□/J59 D-F5□W/J59W
D-F5NT D-F5BA/F59F



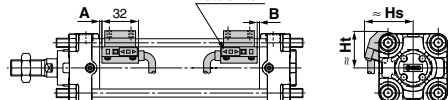
D-A44C



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□WV 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	A
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□WV 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-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	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	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-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	69	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	77	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	91	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	107	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	121	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}		

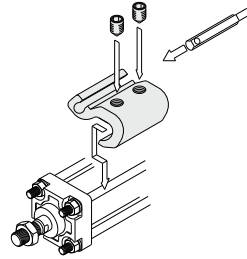
Note 1) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation.

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 D-F5BA/Y7BA D-F5NT/G5NT D-P5DW		Water resistant (2-color indicator)	
	D-A93V/A96V D-A90V D-A53/A56/B53/Z73/Z76 D-A67/Z80	Grommet (In-line)	Diagnostic indication (2-color indicator)	
			Water resistant (2-color indicator)	
	Reed		Grommet (Perpendicular)	With timer
				Magnetic field resistant (2-color indicator)
			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.

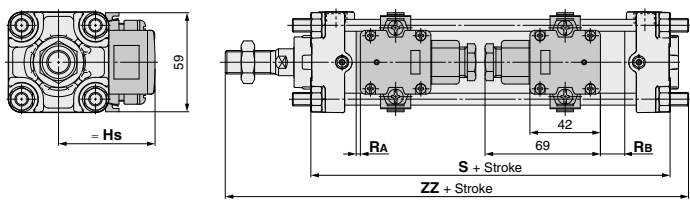
Specifications

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