

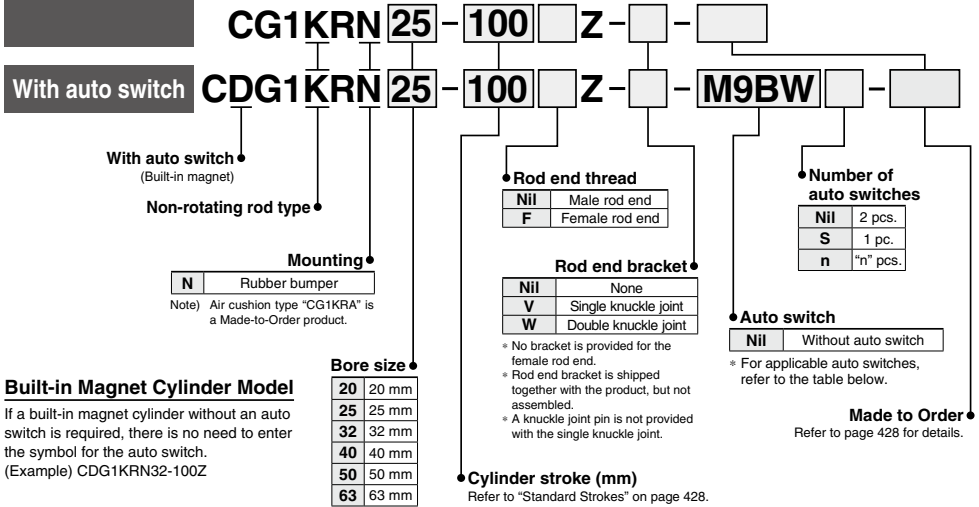
Air Cylinder: Direct Mount, Non-rotating Rod Type

CG1KR Series

ø20, ø25, ø32, ø40, ø50, ø63

RoHS

How to Order



Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) CDG1KRN32-100Z

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	Applicable bore size ø20 to ø63		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)		IC circuit	Relay, PLC			
							Perpendicular	In-line											
Solid state auto switch	—	Grommet	—	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	○	—	○	—	IC circuit	Relay, PLC			
				3-wire (PNP)			M9PV	M9P	●	●	○	—	○						
	Diagnostic indication (2-color indicator)	Connector	Yes	2-wire	12 V	—	M9BV	M9B	●	●	○	—	○	—	—				
				—	—	H7C	●	—	●	●	—	—							
	Water resistant (2-color indicator)	Grommet	—	3-wire (NPN)	5 V, 12 V	—	M9NVV	M9NV	●	●	○	—	○	—	IC circuit				
				3-wire (PNP)			M9PVV	M9PV	●	●	○	—	○						
	Diagnostic output (2-color indicator)	—	Grommet	—	2-wire	12 V	—	M9BWW	M9BW	●	●	○	—	○	—		—		
					3-wire (NPN)	M9NAV ^{*1}	M9NA ^{*1}	○	○	○	—	○	—	—					
3-wire (PNP)					M9PAV ^{*1}	M9PA ^{*1}	○	○	○	—	○	—	—						
2-wire					M9BAV ^{*1}	M9BA ^{*1}	○	○	○	—	○	—	—						
Reed auto switch	—	Grommet	Yes	3-wire (Equiv. to NPN)	—	5 V	—	A96V	A96	●	—	●	—	—	—	—	IC circuit	—	
				No	24 V	12 V	100 V	A93V ^{*2}	A93	●	●	●	●	—	—	—	—	—	IC circuit
							100 V or less	A90V	A90	●	—	—	—	—	—	—	—	—	—
							100 V, 200 V	—	B54	●	—	●	●	—	—	—	—	—	—
		Connector	No	2-wire	No	200 V or less	—	—	B64	●	—	—	—	—	—	—	—	—	
						—	—	C73C	●	—	●	●	—	—	—	—	—		
						24 V or less	—	C80C	●	—	●	●	—	—	—	—	—	—	IC circuit
						—	—	B59W	●	—	●	—	—	—	—	—	—	—	

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

Please consult with SMC regarding water resistant types with the above model numbers.

*2 1 m type lead wire is only applicable to D-A93.

* Lead wire length symbols: 0.5 m Nil (Example) M9NV
1 m M (Example) M9NVV
3 m L (Example) M9NWL
5 m Z (Example) M9NWX
None N (Example) H7CN

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

* Since there are other applicable auto switches than listed above, refer to page 446 for details.

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

* The D-A93□□M9□□□□ auto switches are shipped together, (but not assembled). (However, only auto switch mounting brackets are assembled before shipment.)

CG1KR Series

CG1KR series direct mount, non-rotating rod type cylinder can be installed directly through the use of a square rod cover.

Space-saving has been realized.

Because it is a directly mounted type without using brackets, its overall length is shorter, and its installation pitch can be made smaller. Thus, the space that is required for installation has been dramatically reduced.



Symbol Rubber bumper



Made to Order
Click here for details

Symbol	Specifications
-XC8	Adjustable stroke cylinder/Adjustable extension type
-XC9	Adjustable stroke cylinder/Adjustable retraction type
-XC20	Head cover axial port

Accessories

	Mounting	Basic
Standard	Rod end nut	●
Option	Single knuckle joint	●
	Double knuckle joint*1 (with pin)	●

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

*2 Refer to page 395 for part numbers and dimensions of the accessories.

*3 Stainless steel accessories are also available. Refer to page 396 for details.

Refer to pages 440 to 446 for cylinders with auto switches.

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

⚠ Precautions

Refer to page 448 before handling.

Specifications

Bore size (mm)	20	25	32	40	50	63
Action	Double acting, Single rod					
Lubricant	Not required (Non-lube)					
Fluid	Air					
Proof pressure	1.5 MPa					
Maximum operating pressure	1.0 MPa					
Minimum operating pressure	0.05 MPa					
Ambient and fluid temperature	Without auto switch: -10°C to 70°C (No freezing) With auto switch: -10°C to 60°C					
Piston speed	50 to 500 mm/s					
Stroke length tolerance	Up to 300 st ⁺¹⁴ ₀ mm					
Cushion	Rubber bumper					
Rod non-rotating accuracy	±1°		±0.8°			±0.5°

Weights

Bore size (mm)	20	25	32	40	50	63
Basic weight	0.14	0.24	0.35	0.56	1.04	1.48
Single knuckle joint	0.05	0.09	0.09	0.10	0.22	0.22
Double knuckle joint (with pin)	0.05	0.09	0.09	0.13	0.26	0.26
Additional weight per 50 mm of stroke	0.05	0.07	0.09	0.15	0.22	0.26
Weight reduction for female rod end	-0.01	-0.02	-0.02	-0.05	-0.10	-0.10

Calculation (Example) **CG1KRN32-100Z** (ø32, 100 stroke)
 • Basic weight 0.35
 • Additional weight 0.09/50 stroke
 • Air cylinder stroke 100 stroke
 0.35 + 0.09 × 100/50 = **0.53 kg**

Standard Strokes

Bore size	Standard stroke* (mm)
20	25, 50, 75, 100, 125, 150
25, 32	25, 50, 75, 100, 125, 150, 200
40, 50, 63	25, 50, 75, 100, 125, 150, 200, 250, 300

* Please consult with SMC for strokes which exceed the standard stroke length.

Note 1) Intermediate strokes not listed above are produced upon receipt of order.

Manufacture of intermediate strokes at 1 mm intervals is possible. (Spacers are not used.)

Note 2) Applicable strokes should be confirmed according to the usage. For details, refer to "Air Cylinders Model Selection" on pages 8 to 19. In addition, the products that exceed the standard stroke might not be able to fulfill the specifications due to the deflection etc.

Tightening Torque: Tighten the cylinder mounting bolts with the following tightening torque.

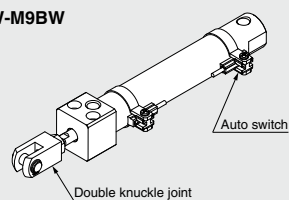
Bore size (mm)	Hexagon socket head cap screw size	Tightening torque (N·m)
20	M5 x 0.8	2.4 to 3.6
25	M6	4.2 to 6.2
32	M8	10.0 to 15.0
40	M10	19.6 to 29.4
50	M12	33.6 to 50.4
63	M16	84.8 to 127.2

Ordering Example of Cylinder Assembly

Cylinder model: **CDG1KRN20-100Z-W-M9BW**

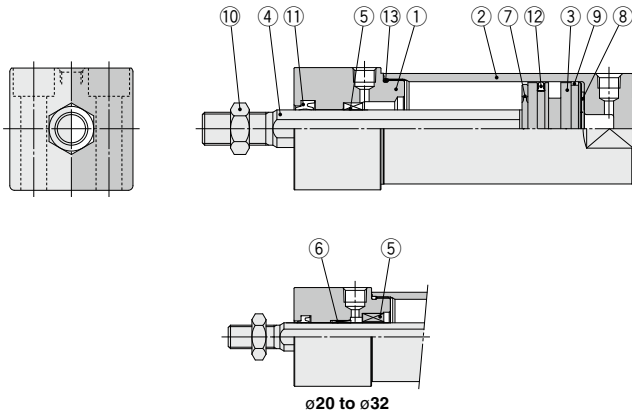
Rod end bracket W: Double knuckle joint
Auto switch D-M9BW: 2 pcs.

* Double knuckle joint and auto switch are shipped together with the product, but not assembled.



Construction

Non-rotating rod type/ Bottom mounting type



Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Anodized
2	Tube cover	Aluminum alloy	Hard anodized
3	Piston	Aluminum alloy	
4	Piston rod	ø20 to ø32	Stainless steel
		ø40 to ø63	Carbon steel
5	Non-rotating guide	Oil-impregnated sintered alloy	
6	Bushing	Oil-impregnated sintered alloy	ø20 to ø32 only
7	Bumper	Resin	
8	Bumper	Resin	
9	Wear ring	Resin	
10	Rod end nut	Carbon steel	Zinc chromated
11	Rod seal	NBR	
12	Piston seal	NBR	
13	Tube gasket	NBR	

Replacement parts/Seal kit are the same as double acting, non-rotating rod type. Refer to page 416.

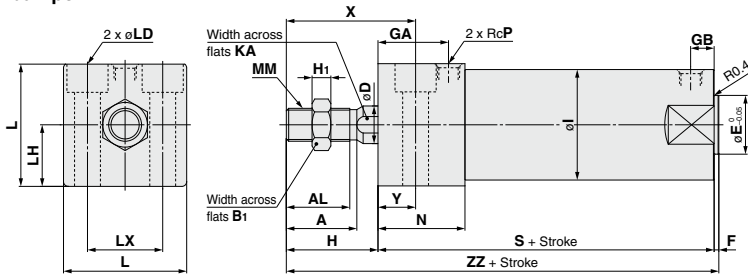
Note) As sizes ø50 and larger cannot be disassembled, the seal cannot be replaced.

Note) Refer to the Specific Product Precautions on page 448 for Disassembly/Replacement.

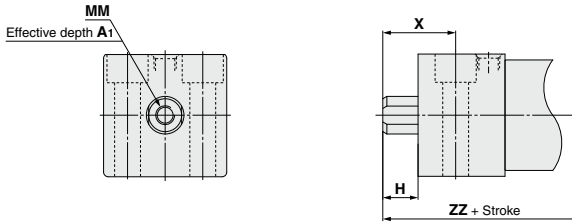
CG1KR Series

Basic with Bottom Mounting: CG1KRN

With rubber bumper



Female rod end



Female Rod End (mm)

Bore size (mm)	A ₁	H	MM	X	ZZ
20	8	13	M4 x 0.7	24	90
25	8	14	M5 x 0.8	26	93
32	12	14	M6 x 1	27	99
40	13	15	M8 x 1.25	31	111
50	18	16	M10 x 1.5	33	126
63	18	16	M10 x 1.5	35	132

Bore size (mm)	Stroke range (mm)	A	AL	B ₁	D	E	F	GA	GB	H	H ₁	I	KA	L	LD	LH	LX	MM	N	P	S	X	Y	ZZ
20	Up to 150	18	15.5	13	9.2	12	2	20	10	27	5	26	8	30.4	ø5.5, ø9.5 depth of counterbore 6	15	18	M8 x 1.25	27	1/8	75	38	11	104
25	Up to 200	22	19.5	17	11	14	2	22	10	32	6	31	10	36.4	ø6.6, ø11 depth of counterbore 7	18	22	M10 x 1.25	29	1/8	77	44	12	111
32	Up to 200	22	19.5	17	12	18	2	26	10	32	6	38	10	42.4	ø9, ø14 depth of counterbore 9	21	24	M10 x 1.25	33	1/8	83	45	13	117
40	Up to 300	30	27	19	16	25	2	30	10	39	8	47	14	52.4	ø11, ø17.5 depth of counterbore 12	26	32	M14 x 1.5	37	1/8	94	55	16	135
50	Up to 300	35	32	27	20	30	2	33	12	45	11	58	18	64.5	ø14, ø20 depth of counterbore 14	32	41	M18 x 1.5	44	1/4	108	62	17	155
63	Up to 300	35	32	27	20	32	2	39	12	45	11	72	18	76.6	ø18, ø26 depth of counterbore 18	38	46	M18 x 1.5	50	1/4	114	64	19	161

Auto switch mounting position is the same as that on page 442.

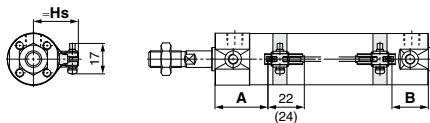
CG1 Series Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

Solid state auto switch

D-M9□/M9□W, D-M9□A

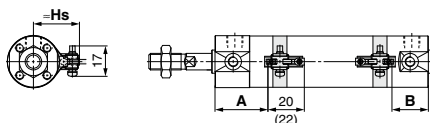
ø20 to ø63



(): Dimension of the D-M9□A
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-M9□V/M9□WV, D-M9□AV

ø20 to ø63

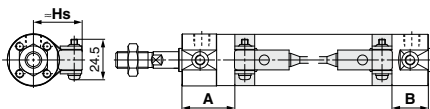


(): Dimension of the D-M9□AV
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-G5/K5/G5□W/G5BA

D-K59W, D-G59F, D-G5NT

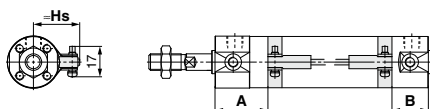
ø20 to ø100



D-H7□/H7□W

D-H7NF/H7BA/D-H7C

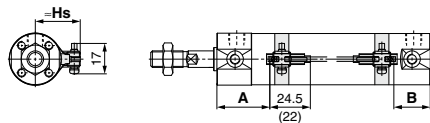
ø20 to ø63



Reed auto switch

D-A9□

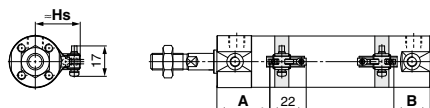
ø20 to ø63



(): Dimension of the D-A96
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-A9□V

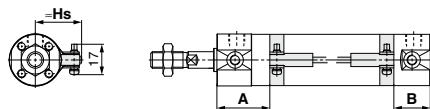
ø20 to ø63



A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

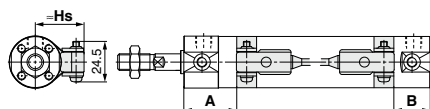
D-C7/C8, D-C73C/C80C

ø20 to ø63



D-B5/B6/B59W

ø20 to ø100



Auto Switch Mounting Height

(mm)

Auto switch model	D-M9□(V) D-M9□W(V) D-M9□A(V) D-A9□(V)	D-H7□ D-H7□W D-H7NF D-H7BA D-C7/C8	D-C73C D-C80C	D-G5/K5 D-G5□W D-K59W D-B5/B6 D-B59W	D-G5NT D-G59F D-H7C D-G5BA
	Hs	Hs	Hs	Hs	
Bore size 20	26.5	27	27	27.5	
25	29	29.5	29.5	30	
32	32.5	33	33	33.5	
40	37	37.5	37.5	38	
50	42.5	43	43	43.5	
63	49.5	50	50	50.5	
80	—	—	—	59	
100	—	—	—	69.5	

Auto Switch Proper Mounting Position (Detection at Stroke End)

Except Single Acting, Direct Mount Type (CG1R, CG1KR) and With End Lock (CBG1)

(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-H7□W D-H7NF D-H7BA D-H7□ D-H7C		D-C7□ D-C80 D-C73C D-C80C		D-G5□/K59 D-G5□W/K59W D-G59F D-G5NT D-G5BA		D-B5□ D-B64		D-B59W	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
20	33	24 (32)	29	20 (28)	28.5	19.5 (27.5)	29.5	20.5 (28.5)	25	16 (24)	23.5	14.5 (22.5)	26.5	17.5 (25.5)
25	32.5	24.5 (32.5)	28.5	20.5 (28.5)	28	20 (28)	29	21 (29)	24.5	16.5 (24.5)	23	15 (23)	26	18 (26)
32	34	25 (33)	30	21 (29)	29.5	20.5 (28.5)	30.5	21.5 (29.5)	26	17 (25)	24.5	15.5 (23.5)	27.5	18.5 (26.5)
40	39	27 (36)	35	23 (32)	34.5	22.5 (31.5)	35.5	23.5 (32.5)	31	19 (28)	29.5	17.5 (26.5)	32.5	20.5 (29.5)
50	46	32 (44)	42	28 (40)	41.5	27.5 (39.5)	42.5	28.5 (40.5)	38	24 (36)	36.5	22.5 (34.5)	39.5	25.5 (37.5)
63	44.5	33.5 (45.5)	40.5	29.5 (41.5)	40	29 (41)	41	30 (42)	36.5	25.5 (37.5)	35	24 (36)	38	27 (39)
80	—	—	—	—	—	—	—	—	49.5	30.5 (44.5)	48	29 (43)	51	32 (46)
100	—	—	—	—	—	—	—	—	48.5	31.5 (45.5)	47	30 (44)	50	33 (47)

Note 1) The values in () are for long stroke.

Note 2) Adjust the auto switch after confirming the operating condition in the actual setting.

Single Acting, Spring Return Type (S)

Auto switch model	Bore size	A dimensions				B
		Up to 50 st	51 to 100 st	101 to 125 st	126 to 200 st	
D-M9□(V) D-M9□W(V) D-M9□A(V)	20	58	83	108	—	24
	25	57.5	82.5	107.5	132.5	24.5
	32	59	84	109	134	25
	40	64	89	114	139	27
D-A9□(V)	20	54	79	104	—	20
	25	53.5	78.5	103.5	128.5	20.5
	32	55	80	105	130	21
	40	60	85	110	135	23
D-H7□W D-H7□W D-H7C D-H7BA D-H7NF	20	53.5	78.5	103.5	—	19.5
	25	53	78	103	128	20
	32	54.5	79.5	109.5	129.5	20.5
	40	59.5	84.5	109.5	134.5	22.5
D-C7□ D-C80 D-C73C D-C80C	20	54.5	79.5	104.5	—	20.5
	25	54	79	104	129	21
	32	55.5	80.5	105.5	130.5	21.5
	40	60.5	85.5	110.5	135.5	23.5
D-G5NT D-G59F	20	50	75	100	—	16
	25	49.5	74.5	99.5	124.5	16.5
	32	51	76	101	126	17
	40	56	81	106	131	19
D-B5□ D-B64	20	48.5	73.5	98.5	—	14.5
	25	48	73	98	123	15
	32	49.5	74.5	99.5	124.5	15.5
	40	54.5	79.5	104.5	129.5	17.5
D-B59W	20	51.5	76.5	101.5	—	17.5
	25	51	76	101	126	18
	32	52.5	77.5	102.5	127.5	18.5
	40	57.5	82.5	107.5	132.5	20.5

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

Auto Switch Proper Mounting Position (Detection at Stroke End)

Single Acting, Spring Extend Type (T)

(mm)

Auto switch model	Bore size	A	B dimensions			
			Up to 50 st	51 to 100 st	101 to 125 st	126 to 200 st
D-M9□(V) D-M9□W(V) D-M9□A(V)	20	33	49	74	99	—
	25	32.5	49.5	74.5	99.5	124.5
	32	34	50	75	100	125
D-A9□(V)	40	39	52	77	102	127
	20	29	45	70	95	—
	25	28.5	45.5	70.5	95.5	120.5
	32	30	46	71	96	121
D-H7□ D-H7□W D-H7C D-H7BA D-H7NF	40	35	48	73	98	123
	20	28.5	44.5	69.5	94.5	—
	25	28	45	70	95	120
	32	29.5	45.5	70.5	95.5	120.5
D-C7□ D-C80 D-C73C D-C80C	40	34.5	47.5	72.5	97.5	122.5
	20	29.5	45.5	70.5	95.5	—
	25	29	46	71	96	121
	32	30.5	46.5	71.5	96.5	121.5
D-G5NT D-G59F	40	35.5	48.5	73.5	98.5	123.5
	20	25	41	66	91	—
	25	24.5	41.5	66.5	91.5	116.5
	32	26	42	67	92	117
D-B5□ D-B64	40	31	44	69	94	119
	20	23.5	39.5	64.5	89.5	—
	25	23	40	65	90	115
	32	24.5	40.5	65.5	90.5	115.5
D-B59W	40	29.5	42.5	67.5	92.5	117.5
	20	26.5	42.5	67.5	92.5	—
	25	26	43	68	93	118
	32	27.5	43.5	68.5	93.5	118.5
	40	32.5	45.5	70.5	95.5	120.5

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

Direct Mount Type (CG1R, CG1KR)

(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-H7□W D-H7NF D-H7BA D-H7□ D-H7C		D-C7□ D-C80 D-C73C D-C80C		D-G59F D-G5NT		D-B5□ D-B64		D-B59W	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Bore size														
20	12	24	8	20	7.5	19.5	8.5	20.5	4	16	2.5	14.5	5.5	17.5
25	11.5	24.5	7.5	20.5	7	20	8	21	3.5	16.5	2	15	5	18
32	13	25	9	21	8.5	20.5	9.5	21.5	5	17	3.5	15.5	6.5	18.5
40	18	27	14	23	13.5	22.5	14.5	23.5	10	19	8.5	17.5	11.5	20.5
50	20	32	16	28	15.5	27.5	16.5	28.5	12	24	10.5	22.5	13.5	25.5
63	18.5	33.5	14.5	29.5	14	29	15	30	10.5	25.5	9	24	12	27

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

Auto Switch Proper Mounting Position (Detection at Stroke End)

With End Lock (CBG1)

(mm)

Auto switch model	Lock position	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV		D-A9□ D-A9□V		D-H7□ D-H7C D-H7□W D-H7BA D-H7NF		D-G5□W D-K59W D-G59F D-G5 D-K5 D-G5NT D-G5BA		D-C7 D-C8 D-C73C D-C80C		D-B5 D-B6		D-B59W	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B
20	Head end	33	36	29	32	28.5	31.5	25	28	29.5	32.5	23.5	26.5	26.5	29.5
	Rod end	44	24 (32)	40	20 (28)	39.5	19.5 (27.5)	36	16 (24)	40.5	20.5 (28.5)	34.5	14.5 (22.5)	37.5	17.5 (25.5)
	Double end	44	36	40	32	39.5	31.5	36	28	40.5	32.5	34.5	26.5	37.5	29.5
25	Head end	33	36	29	32	28.5	31.5	25	28	29.5	32.5	23.5	26.5	26.5	29.5
	Rod end	44	24 (32)	40	20 (28)	39.5	19.5 (27.5)	36	16 (24)	40.5	20.5 (28.5)	34.5	14.5 (22.5)	37.5	17.5 (25.5)
	Double end	44	36	40	32	39.5	31.5	36	28	40.5	32.5	34.5	26.5	37.5	29.5
32	Head end	34	35	30	31	29.5	30.5	26	27	30.5	31.5	24.5	25.5	27.5	28.5
	Rod end	44	25 (33)	40	21 (29)	39.5	20.5 (28.5)	36	17 (25)	40.5	21.5 (29.5)	34.5	15.5 (23.5)	37.5	18.5 (26.5)
	Double end	44	35	40	31	39.5	30.5	36	27	40.5	31.5	34.5	25.5	37.5	28.5
40	Head end	39	41	35	37	34.5	36.5	31	33	35.5	37.5	29.5	31.5	32	34.5
	Rod end	48	27 (36)	44	23 (32)	43.5	22.5 (31.5)	40	19 (28)	44.5	23.5 (32.5)	38.5	17.5 (26.5)	41	20.5 (29.5)
	Double end	48	41	44	37	43.5	36.5	40	33	44.5	37.5	38.5	31.5	41	34.5
50	Head end	46	49	42	45	41.5	44.5	38	41	42.5	45.5	36.5	39.5	39.5	42.5
	Rod end	58	32 (44)	54	28 (40)	53.5	27.5 (39.5)	50	24 (36)	54.5	28.5 (40.5)	48.5	22.5 (34.5)	51.5	25.5 (37.5)
	Double end	58	49	54	45	53.5	44.5	50	41	54.5	45.5	48.5	39.5	51.5	42.5
63	Head end	46	49	42	45	41.5	44.5	38	41	42.5	45.5	36.5	39.5	39.5	42.5
	Rod end	58	32 (44)	54	28 (40)	53.5	27.5 (39.5)	50	24 (36)	54.5	28.5 (40.5)	48.5	22.5 (34.5)	51.5	25.5 (37.5)
	Double end	58	49	54	45	53.5	44.5	50	41	54.5	45.5	48.5	39.5	51.5	42.5
80	Head end							48	54			46.5	52.5	49.5	55.5
	Rod end	—	—	—	—	—	—	64	32 (46)	—	—	62.5	30.5 (44.5)	65.5	33.5 (47.5)
	Double end							64	54			62.5	52.5	65.5	55.5
100	Head end							48	54			46.5	52.5	49.5	55.5
	Rod end	—	—	—	—	—	—	64	32 (46)	—	—	62.5	30.5 (44.5)	65.5	33.5 (47.5)
	Double end							64	54			62.5	52.5	65.5	55.5

Note 1) The values in () are for long stroke.

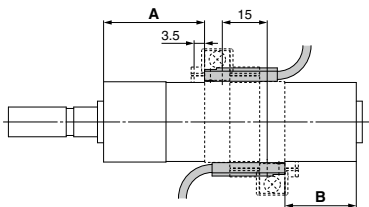
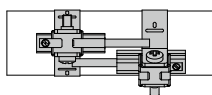
Note 2) Adjust the auto switch after confirming the operating condition in the actual setting.

Minimum Stroke for Auto Switch Mounting

Auto switch model	n: Number of auto switches (mm)					
	With 1 pc.	Number of auto switches			With n pcs.	
		Different surfaces	Same surface	Different surfaces	Same surface	
D-M9□	5	15 <small>Note 1</small>	40 <small>Note 1</small>	$20 + 35 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$55 + 35 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-M9□W	10	15 <small>Note 1</small>	40 <small>Note 1</small>	$20 + 35 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$55 + 35 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-M9□A	10	25	40 <small>Note 1</small>	$25 + 35 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$60 + 35 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-A9□	5	15	30 <small>Note 1</small>	$15 + 35 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$50 + 35 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-M9□V	5	20	35	$20 + 35 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$35 + 35 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-A9□V	5	15	25	$15 + 35 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$25 + 35 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-M9□WV D-M9□AV	10	20	35	$20 + 35 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$35 + 35 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-C7□ D-C80	5	15	50	$15 + 45 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$50 + 45 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-H7□ D-H7□W D-H7BA D-H7NF	10	15	60	$15 + 45 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$60 + 45 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-H7C D-C73C D-C80C	5	15	65	$15 + 50 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$65 + 50 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-G5□ D-K59□ D-B5□ D-B64	5	15	75	$15 + 50 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$75 + 55 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	
D-B59W	10	20	75	$20 + 50 \frac{(n-2)}{2}$ <small>(n = 2, 4, 6...)</small> <small>Note 3</small>	$75 + 55 (n-2)$ <small>(n = 2, 3, 4, 5...)</small>	

Note 1) Auto switch mounting

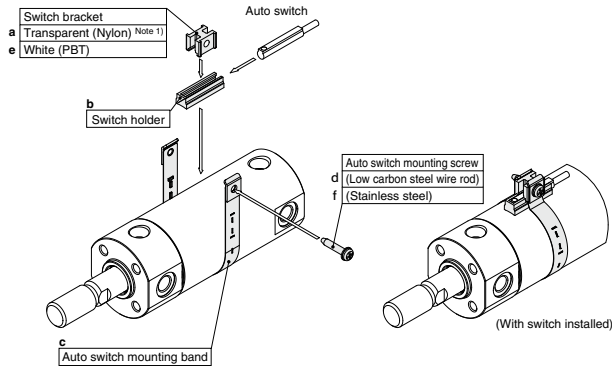
Note 3) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation.

Auto switch model	With 2 auto switches	
	Different surfaces <small>Note 1</small>	Same surface <small>Note 1</small>
	 <p>Correct auto switch mounting position is 3.5 mm from the back face of the switch holder.</p>	 <p>The auto switch is mounted by slightly displacing it in a direction (cylinder tube circumferential exterior) so that the auto switch and lead wire do not interfere with each other.</p>
D-M9□ D-M9□W	Less than 20 stroke <small>Note 2</small>	Less than 55 stroke <small>Note 2</small>
D-M9□A	Less than 20 stroke <small>Note 2</small>	Less than 60 stroke <small>Note 2</small>
D-A9□	—	Less than 50 stroke <small>Note 2</small>

Note 2) Minimum stroke for auto switch mounting in types other than those mentioned in Note 1.

Auto Switch Mounting Brackets/Part No.

Auto switch model	Bore size (mm)							80	100
	20	25	32	40	50	63			
D-M9□(V) D-M9□W(V) D-A9□(V)	Note 1) BMA3-020 (A set of a, b, c, d)	Note 1) BMA3-025 (A set of a, b, c, d)	Note 1) BMA3-032 (A set of a, b, c, d)	Note 1) BMA3-040 (A set of a, b, c, d)	Note 1) BMA3-050 (A set of a, b, c, d)	Note 1) BMA3-063 (A set of a, b, c, d)	—	—	
D-M9□A(V) ^{Note 2)}	BMA3-020S (A set of b, c, e, f)	BMA3-025S (A set of b, c, e, f)	BMA3-032S (A set of b, c, e, f)	BMA3-040S (A set of b, c, e, f)	BMA3-050S (A set of b, c, e, f)	BMA3-063S (A set of b, c, e, f)	—	—	



* Band (c) is mounted so that the projected part is on the internal side (contact side with the tube).

D-H7□ D-H7□W D-H7NF D-C7□/C80 D-C73C/C80C	BMA2-020A (A set of c and d)	BMA2-025A (A set of c and d)	BMA2-032A (A set of c and d)	BMA2-040A (A set of c and d)	BMA2-050A (A set of c and d)	BMA2-063A (A set of c and d)	—	—
D-H7BA	BMA2-020AS (A set of c and f)	BMA2-025AS (A set of c and f)	BMA2-032AS (A set of c and f)	BMA2-040AS (A set of c and f)	BMA2-050AS (A set of c and f)	BMA2-063AS (A set of c and f)	—	—
D-G5□/K59 D-G5□W/K59W D-G5BA/G59F D-G5NT D-B5□/B64 D-B59W	BA-01 (A set of c and d)	BA-02 (A set of c and d)	BA-32 (A set of c and d)	BA-04 (A set of c and d)	BA-05 (A set of c and d)	BA-06 (A set of c and d)	BA-08 (A set of c and d)	BA-10 (A set of c and d)

Note 1) Since the switch bracket (made from nylon) are affected in an environment where alcohol, chloroform, methylamines, hydrochloric acid or sulfuric acid is splashed over, so it cannot be used. Please contact SMC regarding other chemicals.

Note 2) When mounting a D-M9□A(V) type auto switch, if the switch bracket is mounted on the indicator light, it may damage the auto switch. Therefore, be sure to avoid mounting the switch bracket on the indicator light.

Band Mounting Brackets Set Part No.

Set part no.	Contents
BJ4-1	- Switch bracket (White/PBT) (e) - Switch holder (b)
BJ5-1	- Switch bracket (Transparent/Nylon) (a) - Switch holder (b)

[Stainless Steel Mounting Screw]

The following stainless steel mounting screw kit is available. Use it in accordance with the operating environment. (Since the auto switch mounting bracket is not included, order it separately.)

BBA3: D-B5/B6/G5/K5 types

Note) Refer to page 1369 for details on the BBA3.







When the D-G5BA type auto switch is shipped independently, the BBA3 is attached.

Operating Range

Auto switch model	Bore size (mm)							
	20	25	32	40	50	63	80	100
D-M9□(V) D-M9□W(V) D-M9□A(V)	4.5	5.0	4.5	5.5	5.0	5.5	—	—
D-A9□	7	6	8	8	8	9	—	—
D-C7/C80 D-C73C/C80C	8	10	9	10	10	11	—	—
D-B5□/B64 D-B59W	8	10	9	10	10	11	11	11
D-H7□/H7□W D-H7NF/H7BA	4	4	4.5	5	6	6.5	—	—
D-H7C	7	8.5	9	10	9.5	10.5	—	—
D-G5□/G5□W/G59F D-G5BA/K59/K59W	4	4	4.5	5	6	6.5	6.5	7
D-G5NT	4	4	4.5	5	6	6.5	6.5	7

* 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.

Cylinder Mounting Bracket, by Stroke/Auto Switch Mounting Surfaces

Auto switch model	Basic, Foot, Flange, Clevis			Trunnion		
	With 1 pc. (Rod cover side)	With 2 pcs. (Different surfaces)	With 2 pcs. (Same surface)	With 1 pc. (Rod cover side)	With 2 pcs. (Different surfaces)	With 2 pcs. (Same surface)
Auto switch mounting surface	Port surface 	Port surface 	Port surface 			
Auto switch type						
D-M9□(V) D-M9□W(V) D-M9□A(V) D-A9□	10 st or more	15 to 44 st	45 st or more	10 st or more	15 to 44 st	45 st or more
D-C7/C8	10 st or more	15 to 49 st	50 st or more	10 st or more	15 to 49 st	50 st or more
D-H7□/H7□W D-H7BA/H7NF	10 st or more	15 to 59 st	60 st or more	10 st or more	15 to 59 st	60 st or more
D-H7C/C73C/C80C	10 st or more	15 to 64 st	65 st or more	10 st or more	15 to 64 st	65 st or more
D-G5/K5/B5/B6 D-G5□W/K59W/G5BA D-G59F/G5NT	10 st or more	15 to 74 st	75 st or more	10 st or more	15 to 74 st	75 st or more
D-B59W	15 st or more	20 to 74 st	75 st or more	15 st or more	20 to 74 st	75 st or more

* Trunnion type is not available for ø80 and ø100.

* Adjust the auto switch mounting angle according to the customer's application.

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	Applicable bore size	
Solid state	D-H7A1, H7A2, H7B	Grommet (In-line)	—	ø20 to ø63	
	D-H7NW, H7PW, H7BW		Diagnostic indication (2-color indicator)		
	D-H7BA		Water resistant (2-color indicator)		
	D-G5NT		With timer	ø20 to ø100	
Reed	D-C73, C76		—	Without indicator light	ø20 to ø63
	D-C80		—		
	D-B53		—	—	ø20 to ø100

* 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)) are also available. For details, refer to page 1290.



1 PTFE Grease

Symbol

-X446

Applicable to environments incompatible with mineral oil
PTFE grease (fluorine grease) is used as the lubricating grease.

Applicable Series

Description	Model	Action	Note
Standard type	CG1	Double acting, Single rod	Except with air cushion

How to Order

Standard model no.

- X446

PTFE grease ●

Specifications: Same as standard type

Dimensions: Same as standard type

* When grease is necessary for maintenance, grease pack is available,
please order it separately.
GR-F-005 (Grease: 5 g)