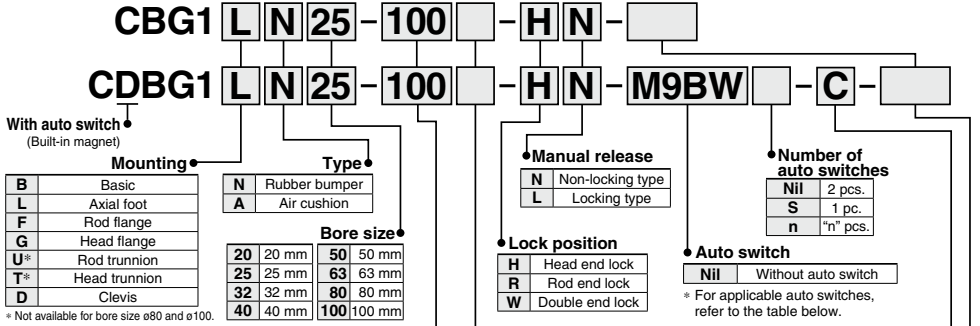


# Air Cylinder: With End Lock

# CBG1 Series

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

## How to Order



\* Not available for bore size ø80 and ø100. Besides, trunnion cannot be attached in the side to which an end lock is attached. Note) Mounting brackets are shipped together, (but not assembled).

**Cylinder stroke (mm)**  
Refer to "Standard Strokes" on page 432.

**With rod boot**  
**Nil** Without rod boot  
**J** Nylon tarpaulin  
**K** Heat resistant tarpaulin

**Auto switch mounting bracket** (Note)  
 Note) This symbol is indicated when the D-A9□ or M9□ type auto switch is specified. This mounting bracket does not apply to other auto switches (D-C7□ and H7□, etc.) (Nil)

### 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) CDBG1FA32-100-RL

\* In the case of w/rod boot, and a foot bracket or rod side flange as a bracket, those parts are to be assembled at the time of shipment.

**Made to Order**  
Refer to page 432 for details.

### 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		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)																
							ø20 to ø63	ø80, ø100																					
Solid state auto switch	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	○	—	○	IC circuit	Relay, PLC														
				3-wire (PNP)					—	—	—	—	—																
				2-wire					—	—	—	—	—																
		Connector	3-wire (NPN)	24 V					5 V, 12 V	—	M9NV	M9N	●			●	○	—	○										
			3-wire (PNP)										—			—	—	—	—										
			2-wire										—			—	—	—	—										
	Grommet	3-wire (NPN)	5 V, 12 V		—	M9NV	M9N	●					●	○		—	○												
		3-wire (PNP)						—					—	—		—	—												
		2-wire						—					—	—		—	—												
	Water resistant (2-color indicator)	Grommet		Yes				3-wire (NPN)	5 V, 12 V	—	M9NAV <sup>*1</sup>	M9NA <sup>*1</sup>	○	○		●	—	○											
								3-wire (PNP)					—	—		—	—	—											
								2-wire					—	—		—	—	—											
Diagnostic output (2-color indicator)	Grommet	Yes	4-wire (NPN)	5 V, 12 V	—	M9NAV <sup>*1</sup>	M9NA <sup>*1</sup>	○					○	●	—	○													
			3-wire (PNP)					—					—	—	—	—													
			2-wire					—					—	—	—	—													
Reed auto switch	Diagnostic indication (2-color indicator)	Grommet	Yes					2-wire	24 V	12 V	A96V	A96	●	—	—	—	—	IC circuit	Relay, PLC										
													Connector	No	—	—	—			—	A90V	A90	●	●	●	—	—		
																							Grommet	Yes	—	—	—	—	—
		No	—	—	—	—	—																						
													Yes	—	—	—	—			—	—	—							
																							No	—	—	—	—	—	—
	Yes	—	—	—	—	—	—	—	●	●	●	—						—											
									No	—	—	—	—	—	—	—	●	●		●	—	—							
																	Yes	—		—	—	—	—	—	—	●	●	●	—
	No	—	—	—	—	—	—	—																		●	●	●	—
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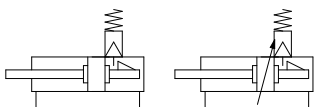
# CBG1 Series



## Symbol

Rubber bumper

Air cushion



**Made to Order**

[Click here for details](#)

Symbol	Specifications
-XA□	Change of rod end shape
-XC13	Auto switch rail mounting

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	80	100
<b>Action</b>	Double acting, Single rod							
<b>Lubricant</b>	Not required (Non-lube)							
<b>Fluid</b>	Air							
<b>Proof pressure</b>	1.5 MPa							
<b>Maximum operating pressure</b>	1.0 MPa							
<b>Minimum operating pressure</b>	0.15 MPa*							
<b>Ambient and fluid temperature</b>	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)							
<b>Piston speed</b>	50 to 1000 mm/s						50 to 700 mm/s	
<b>Stroke length tolerance</b>	Up to 1000 <sup>+14</sup> mm, Up to 1500 <sup>+18</sup> mm							
<b>Cushion</b>	Rubber bumper, Air cushion							
<b>Mounting**</b>	Basic, Axial foot, Rod flange, Head flange, Rod trunnion, Head trunnion, Clevis							

\* 0.05 MPa except locking parts.

\*\* Rod/Head trunnion types are not available for ø80 and ø100.

Trunnion is not attached for a cover on which lock mechanism is equipped.

## Lock Specifications

Lock position	Head end, Rod end, Double end							
<b>Holding force (Max.) (N)</b>	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
	215	330	550	860	1340	2140	3450	5390
<b>Backlash</b>	2 mm or less							
<b>Manual release</b>	Non-locking type, Locking type							

Adjust the switch position so that it operates upon movement to both the stroke end and backlash (2 mm) positions.

## Standard Strokes

Bore size	Standard stroke <sup>Note1)</sup>	Manufacturable stroke <sup>(mm)</sup>
<b>20</b>	25, 50, 75, 100, 125, 150, 200	1 to 1500
<b>25</b>	25, 50, 75, 100, 125, 150, 200, 250, 300	
<b>32</b>		
<b>40</b>		
<b>50, 63</b>		
<b>80</b>		
<b>100</b>		

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.

## Rod Boot Material

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

\* Maximum ambient temperature for the rod boot itself.

## Accessories

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

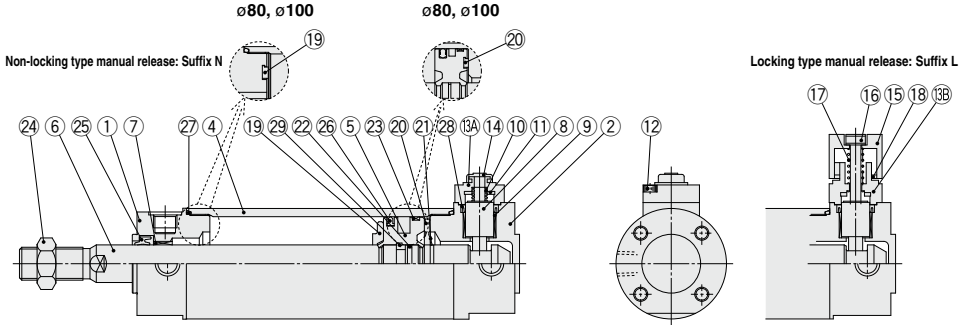
\*1 A double knuckle joint pin and retaining rings are shipped together.

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

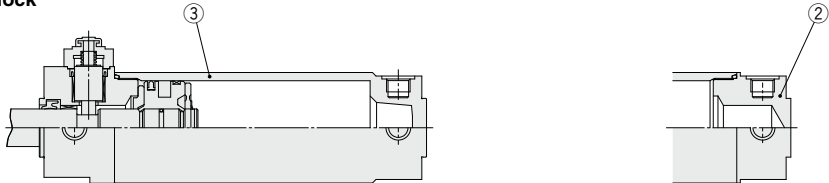
\*3 Stainless steel mounting brackets and accessories are also available. Refer to page 396 for details.

## Construction: With Rubber Bumper

### Head end lock



### Rod end lock



Long stroke

### Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Anodized
2	Head cover	Aluminum alloy	Anodized
3	Tube cover	Aluminum alloy	Hard anodized
4	Cylinder tube	Aluminum alloy	Hard anodized
5	Piston	Aluminum alloy	
6	Piston rod	Carbon steel*	Hard chrome plating*
7	Bushing	Bearing alloy	
8	Lock piston	Carbon steel	Hard chrome plating, Heat treated
9	Lock bushing	Bearing alloy	
10	Lock spring	Stainless steel	
11	Bumper	Resin	
12	Hexagon socket head cap screw	Alloy steel	Black zinc chromated
13A	Cap A	Aluminum die-casted	Black painted
13B	Cap B	Carbon steel	Oxide film treated
14	Rubber cap	Synthetic rubber	

Note) For cylinders with auto switches, the magnet is installed in the piston.

\* The material for ø20, ø25 cylinders with auto switches is made of stainless steel.

### Replacement Parts: Seal Kit (With one end lock)

Series	Bore size (mm)	Kit no.	Contents
CBG1□N Rubber bumper type	20	CBG1N20-PS	Set of the nos. 25, 26, 27, 28 and grease pack
	25	CBG1N25-PS	
	32	CBG1N32-PS	
	40	CBG1N40-PS	

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

\* The seal kit includes a grease pack (10 g). Order with the following part number when only the grease pack is needed.  
**Grease pack part number: GR-S-010** (10 g)

No.	Description	Material	Note
15	M/O knob	Zinc die-casted	Black painted
16	M/O bolt	Alloy steel	Black zinc chromated, Red painted
17	M/O spring	Steel wire	Zinc chromated
18	Stopper ring	Carbon steel	Zinc chromated
19	Bumper A	Resin	
20	Bumper B	Resin	ø40 or larger: Same as bumper A
21	Retaining ring	Stainless steel	Not available for ø80, ø100
22	Piston gasket	NBR	
23	Wear ring	Resin	
24	Rod end nut	Carbon steel	Zinc chromated
25	Rod seal	NBR	
26	Piston seal	NBR	
27	Cylinder tube gasket	NBR	1 pc. when using tube cover
28	Lock piston seal	NBR	2 pcs. for double end lock
29	Piston holder	Resin	ø40 to ø100, head end lock only

### Replacement Parts: Seal Kit (With double end lock)

Series	Bore size (mm)	Kit no.	Contents
CBG1□N Rubber bumper type	20	CBG1N20-PS-W	Set of the nos. 25, 26, 27, 28 and grease pack
	25	CBG1N25-PS-W	
	32	CBG1N32-PS-W	
	40	CBG1N40-PS-W	

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

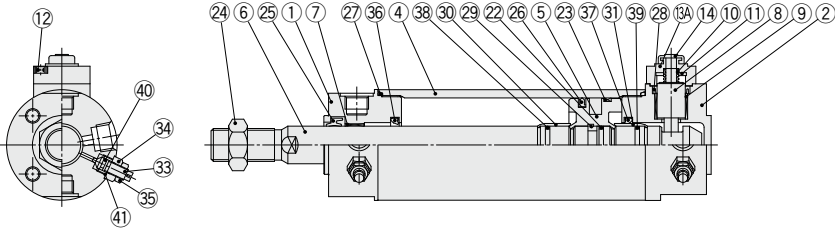
\* The seal kit includes a grease pack (10 g). Order with the following part number when only the grease pack is needed.  
**Grease pack part number: GR-S-010** (10 g)

# CBG1 Series

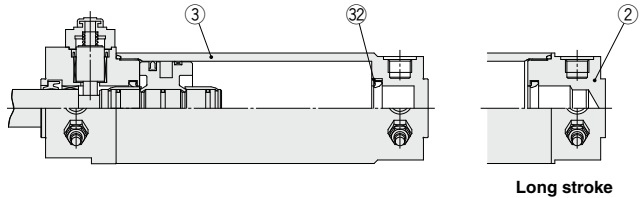
## Construction: With Air Cushion

### With air cushion Head end lock

Non-locking type manual release: Suffix N



### Rod end lock



## Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Anodized
2	Head cover	Aluminum alloy	Anodized
3	Tube cover	Aluminum alloy	Hard anodized
4	Cylinder tube	Aluminum alloy	Hard anodized
5	Piston	Aluminum alloy	
6	Piston rod	Carbon steel*	Hard chrome plating*
7	Bushing	Bearing alloy	
8	Lock piston	Carbon steel	Hard chrome plating, Heat treated
9	Lock bushing	Bearing alloy	
10	Lock spring	Stainless steel	
11	Bumper	Resin	
12	Hexagon socket head cap screw	Alloy steel	Black zinc chromated
13A	Cap A	Aluminum die-casted	Black painted
13B	Cap B	Carbon steel	Oxide film treated
14	Rubber cap	Synthetic rubber	
15	M/O knob	Zinc die-casted	Black painted
16	M/O bolt	Alloy steel	Black zinc chromated, Red painted
17	M/O spring	Steel wire	Zinc chromated
18	Stopper ring	Carbon steel	Zinc chromated

Note) For cylinders with auto switches, the magnet is installed in the piston.  
\* The material for ø20, ø25 cylinders with auto switches is made of stainless steel.

### Replacement Parts: Seal Kit (With one end lock)

Series	Bore size (mm)	Kit no.	Contents
CBG1□A Air cushion type	20	CBG1A20-PS	Set of the nos. 25, 26, 27, 28, 40, 41 and grease pack
	25	CBG1A25-PS	
	32	CBG1A32-PS	
	40	CBG1A40-PS	

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

\* The seal kit includes a grease pack (10 g). Order with the following part number when only the grease pack is needed.  
**Grease pack part number: GR-S-010** (10 g)

No.	Description	Material	Note
22	Piston gasket	NBR	
23	Wear ring	Resin	
24	Rod end nut	Carbon steel	Zinc chromated
25	Rod seal	NBR	
26	Piston seal	NBR	
27	Cylinder tube gasket	NBR	1 pc. when using tube cover
28	Lock piston seal	NBR	2 pcs. for double end lock
29	Piston holder	Resin	ø40 to ø100 only
30	Cushion ring A	Aluminum alloy	Anodized
31	Cushion ring B	Aluminum alloy	Anodized
32	Seal retainer	Rolled steel	Only when using nickel plating, tube cover
33	Cushion valve	Rolled steel	Electroless nickel plating
34	Valve retainer	Rolled steel	Electroless nickel plating
35	Lock nut	Rolled steel	Nickel plating
36	Cushion seal A	Urethane	
37	Cushion seal B	Urethane	ø32 or larger: Same as A
38	Cushion ring gasket A	NBR	
39	Cushion ring gasket B	NBR	ø32 or larger: Same as A
40	Valve seal	NBR	
41	Valve retaining gasket	NBR	

### Replacement Parts: Seal Kit (With double end lock)

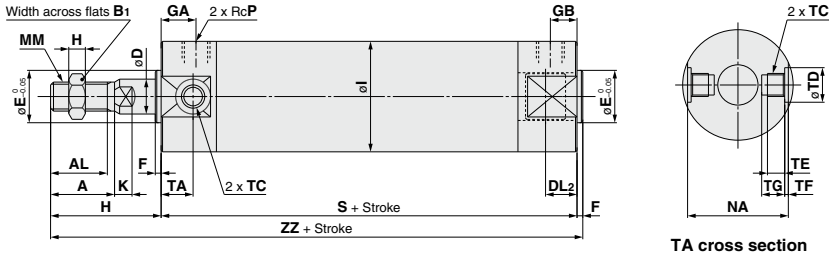
Series	Bore size (mm)	Kit no.	Contents
CBG1□A Air cushion type	20	CBG1A20-PS-W	Set of the nos. 25, 26, 27, 28, 40, 41 and grease pack
	25	CBG1A25-PS-W	
	32	CBG1A32-PS-W	
	40	CBG1A40-PS-W	

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

\* The seal kit includes a grease pack (10 g). Order with the following part number when only the grease pack is needed.  
**Grease pack part number: GR-S-010** (10 g)

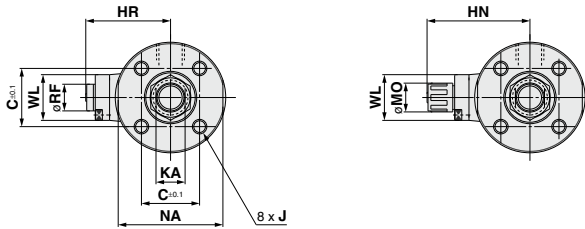
**Basic with Rubber Bumper: CBG1BN**

Head end lock: CBG1BN  —  — H



Non-locking type manual release: Suffix N

Locking type manual release: Suffix L



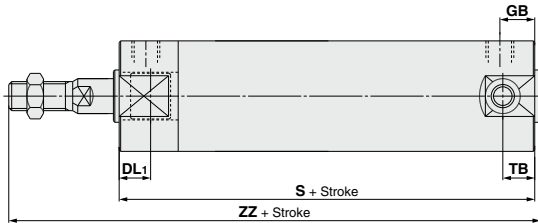
Bore size (mm)	Stroke range	A	AL	B <sub>1</sub>	C	D	DL <sub>2</sub>	E	F	GA	GB	H	H <sub>1</sub>	HR	HN (Max.)	I	J
20	Up to 350	18	15.5	13	14	8	12.5	12	2	12	12	35	5	25.3	37	26	M4 x 0.7 depth 7
25	Up to 400	22	19.5	17	16.5	10	12.5	14	2	12	12	40	6	28.3	40	31	M5 x 0.8 depth 7.5
32	Up to 450	22	19.5	17	20	12	12	18	2	12	12	40	6	31.3	43	38	M5 x 0.8 depth 8
40	Up to 800	30	27	19	26	16	15	25	2	13	13	50	8	38.3	52.5	47	M6 x 1 depth 12
50	Up to 1200	35	32	27	32	20	16.5	30	2	14	14	58	11	44.5	58.5	58	M8 x 1.25 depth 16
63	Up to 1200	35	32	27	38	20	16.5	32	2	14	14	58	11	45	59	72	M10 x 1.5 depth 16
80	Up to 1400	40	37	32	50	25	19	40	3	20	20	71	13	53.5	68	89	M10 x 1.5 depth 22
100	Up to 1500	40	37	41	60	30	20	50	3	20	20	71	16	64.5	79	110	M12 x 1.75 depth 22

Bore size (mm)	K	KA	MM	MO	NA	P	RF	S	TA	TC	TD	TE	TF	TG	WL	ZZ
20	5	6	M8 x 1.25	15	24	1/8	11	81	11	M5 x 0.8	8 <sup>+0.08/0</sup>	4	0.5	5.5	15	118
25	5.5	8	M10 x 1.25	15	29	1/8	11	81	11	M6 x 0.75	10 <sup>+0.08/0</sup>	5	1	6.5	15	123
32	5.5	10	M10 x 1.25	15	35.5	1/8	11	81	11	M8 x 1.0	12 <sup>+0.08/0</sup>	5.5	1	7.5	24	123
40	6	14	M14 x 1.5	19	44	1/8	11	92	12	M10 x 1.25	14 <sup>+0.08/0</sup>	6	1.25	8.5	24	144
50	7	18	M18 x 1.5	19	55	1/4	11	107	13	M12 x 1.25	16 <sup>+0.08/0</sup>	7.5	2	10	24	167
63	7	18	M18 x 1.5	19	69	1/4	11	107	13	M14 x 1.5	18 <sup>+0.08/0</sup>	11.5	3	14.5	24	167
80	10	22	M22 x 1.5	23	80	3/8	21	130	—	—	—	—	—	—	40	204
100	10	26	M26 x 1.5	23	100	1/2	21	130	—	—	—	—	—	—	40	204

# CBG1 Series

## Basic with Rubber Bumper: CBG1BN

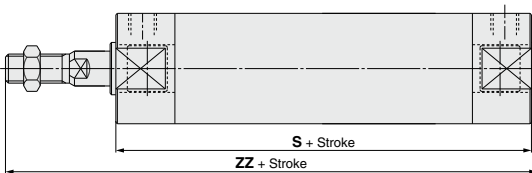
Rod end lock: CBG1BN  Bore size  —  Stroke  — R



Bore size (mm)	(mm)				
	DL1	GB	S	TB	ZZ
20	19.5	10 (12)	80 (88)	11	117 (125)
25	19.5	10 (12)	80 (88)	11	122 (130)
32	20	10 (12)	81 (89)	10 (11)	123 (131)
40	19	10 (13)	87 (96)	10 (12)	139 (148)
50	23.5	12 (14)	102 (114)	12 (13)	162 (174)
63	23.5	12 (14)	102 (114)	12 (13)	162 (174)
80	27	16 (20)	124 (138)	—	198 (212)
100	30	16 (20)	124 (138)	—	198 (212)

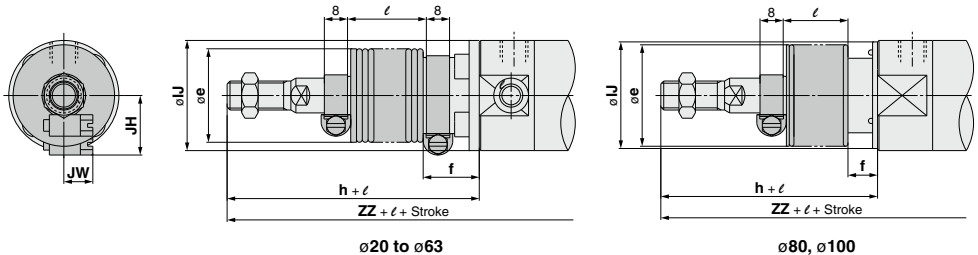
\* ( ): Denotes the dimensions for long stroke.

Double end lock: CBG1BN  Bore size  —  Stroke  — W



Bore size (mm)	(mm)	
	S	ZZ
20	92	129
25	92	134
32	91	133
40	101	153
50	119	179
63	119	179
80	146	220
100	146	220

## With rod boot



ø20 to ø63

ø80, ø100

Bore size (mm)	e	f	h	J	JH (Reference)	JW (Reference)	l	(mm)		
								Head end lock: -H <input type="text"/>	Rod end lock: -R <input type="text"/>	Double end lock: -W <input type="text"/>
								ZZ	ZZ	ZZ
20	30	18	55	27	15.5	10.5	1/4 stroke	138	137 (145)	149
25	30	19	62	32	16.5	10.5		145	144 (152)	156
32	35	19	62	38	18.5	10.5		145	145 (153)	155
40	35	19	70	48	21.5	10.5		164	159 (168)	173
50	40	19	78	59	24	10.5		187	182 (194)	199
63	40	20	78	72	24	10.5		187	182 (194)	199
80	52	10	80	59	—	—		213	207 (221)	229
100	62	7	80	71	—	—		213	207 (221)	229

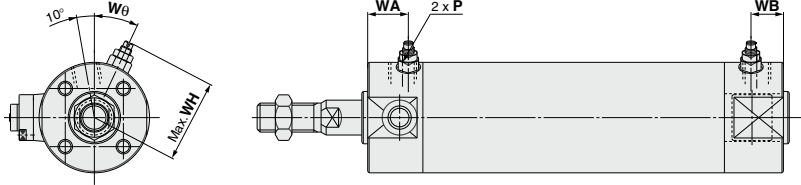
\* ( ): Denotes the dimensions for long strokes.

\*\* The minimum stroke with rod boot is 20 mm.

**Basic with Air Cushion: CBG1BA**

Head end lock: CBG1BA  Bore size  —  Stroke  — H

Rod end lock: CBG1BA  Bore size  —  Stroke  — R



**Head End Lock: -H**

(mm)

Bore size (mm)	P	WA	WB	WH	Wθ
20	M5 x 0.8	16	16	23	30°
25	M5 x 0.8	16	16	25	30°
32	Rc1/8	16	16	28.5	25°
40	Rc1/8	16	16	33	20°
50	Rc1/4	18	18	40.5	20°
63	Rc1/4	18	18	47.5	20°
80	Rc3/8	22	22	60.5	20°
100	Rc1/2	22	22	71	20°

\* For dimensions other than listed above, refer to the dimensions with rubber bumper.

**Rod End Lock: -R**

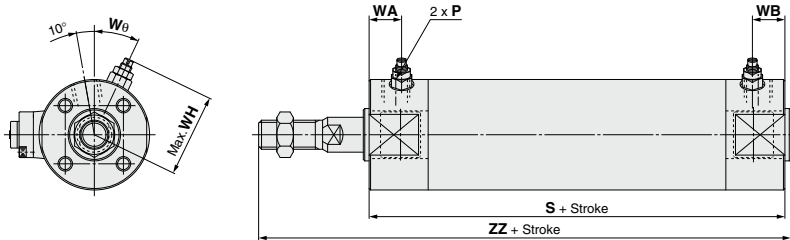
(mm)

Bore size (mm)	P	WA	WB	WH	Wθ
20	M5 x 0.8	16	15 (16)	23	30°
25	M5 x 0.8	16	15 (16)	25	30°
32	Rc1/8	16	15 (16)	28.5	25°
40	Rc1/8	16	15 (16)	33	20°
50	Rc1/4	18	17 (18)	40.5	20°
63	Rc1/4	18	17 (18)	47.5	20°
80	Rc3/8	22	22	60.5	20°
100	Rc1/2	22	22	71	20°

\* ( ): Denotes the dimensions for long strokes.

\*\* For dimensions other than the listed above, refer to the dimensions with rubber bumper.

Double end lock: CBG1BA  Bore size  —  Stroke  — W



(mm)

Bore size (mm)	P	S	WA	WB	WH	Wθ	ZZ
20	M5 x 0.8	92	16	16	23	30°	129
25	M5 x 0.8	92	16	16	25	30°	134
32	Rc1/8	91	16	16	28.5	25°	133
40	Rc1/8	101	16	16	33	20°	153
50	Rc1/4	119	18	18	40.5	20°	179
63	Rc1/4	119	18	18	47.5	20°	179
80	Rc3/8	146	22	22	60.5	20°	220
100	Rc1/2	146	22	22	71	20°	220

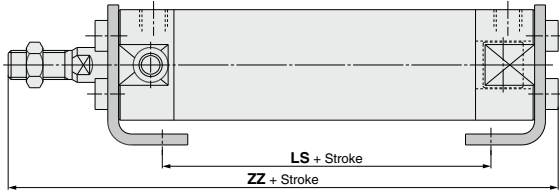
\* For dimensions other than listed above, refer to the dimensions with rubber bumper.

# CBG1 Series

## With Mounting Bracket

(For dimensions other than listed below, refer to pages 435 to 437, 387 to 389.)

### Axial foot: CBG1L□

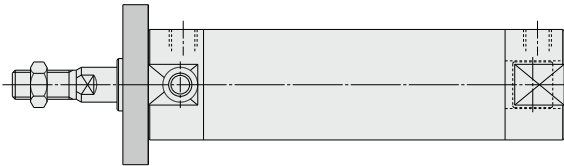


(mm)

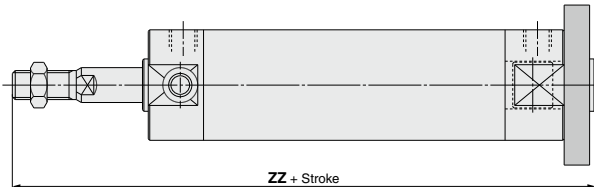
Bore size (mm)	Head end lock: -H□			Rod end lock: -R□			Double end lock: -W□		
	LS	ZZ		LS	ZZ		LS	ZZ	
		Without rod boot	With rod boot		Without rod boot	With rod boot		Without rod boot	With rod boot
20	57	122	142 + ℓ	56 (64)	121 (129)	141 (149) + ℓ	68	133	153 + ℓ
25	57	127.5	149.5 + ℓ	56 (64)	126.5 (134.5)	148.5 (156.5) + ℓ	68	138.5	160.5 + ℓ
32	55	127.5	149.5 + ℓ	55 (63)	127.5 (135.5)	149.5 (157.5) + ℓ	65	137.5	159.5 + ℓ
40	65	149	169 + ℓ	60 (69)	144 (153)	164 (173) + ℓ	74	158	178 + ℓ
50	72	174.5	194.5 + ℓ	67 (79)	169.5 (181.5)	189.5 (201.5) + ℓ	84	186.5	206.5 + ℓ
63	72	174.5	194.5 + ℓ	67 (79)	169.5 (181.5)	189.5 (201.5) + ℓ	84	186.5	206.5 + ℓ
80	82	210.5	219.5 + ℓ	76 (90)	204.5 (218.5)	213.5 (227.5) + ℓ	98	226.5	235.5 + ℓ
100	82	214	223 + ℓ	76 (90)	208 (222)	217 (231) + ℓ	98	230	239 + ℓ

\* (ℓ): Denotes the dimensions for long stroke.

### Rod flange: CBG1F□



### Head flange: CBG1G□



(mm)

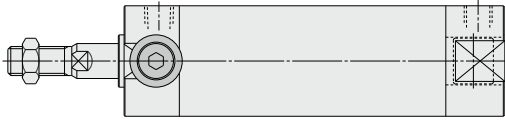
Bore size (mm)	Head end lock: -H□		Rod end lock: -R□		Double end lock: -W□	
	ZZ (Head flange)					
	Without rod boot	With rod boot	Without rod boot	With rod boot	Without rod boot	With rod boot
20	124	144 + ℓ	123 (131)	143 (151) + ℓ	135	155 + ℓ
25	130	152 + ℓ	129 (137)	151 (159) + ℓ	141	163 + ℓ
32	130	152 + ℓ	130 (138)	152 (160) + ℓ	140	162 + ℓ
40	152	172 + ℓ	147 (156)	167 (176) + ℓ	161	181 + ℓ
50	176	196 + ℓ	171 (183)	191 (203) + ℓ	188	208 + ℓ
63	176	196 + ℓ	171 (183)	191 (203) + ℓ	188	208 + ℓ
80	215	224 + ℓ	209 (223)	218 (232) + ℓ	231	240 + ℓ
100	218	227 + ℓ	212 (226)	221 (235) + ℓ	234	243 + ℓ

\* (ℓ): Denotes the dimensions for long stroke.

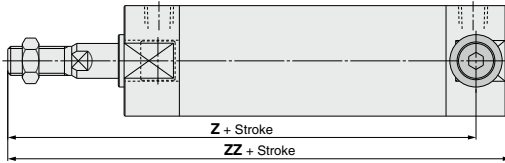


**With Mounting Bracket**

**Rod trunnion: CBG1U□**  
(Head end lock -H□ only)



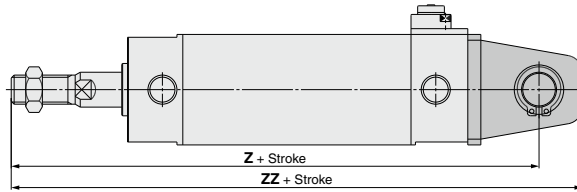
**Head trunnion: CBG1T□**  
(Rod end lock -R□ only)



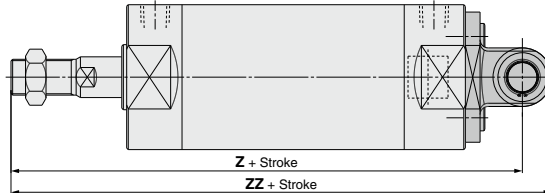
Bore size (mm)	Rod end lock: -R□			
	Z (Head trunnion)		ZZ (Head trunnion)	
	Without rod boot	With rod boot	Without rod boot	With rod boot
20	104 (112)	124 (132) + ℓ	117 (125)	137 (145) + ℓ
25	109 (117)	131 (139) + ℓ	122 (130)	144 (152) + ℓ
32	111 (119)	133 (141) + ℓ	123 (131)	145 (153) + ℓ
40	127 (134)	147 (154) + ℓ	139 (148)	159 (168) + ℓ
50	148 (159)	168 (179) + ℓ	162 (174)	182 (194) + ℓ
63	148 (159)	168 (179) + ℓ	162 (174)	182 (194) + ℓ

\* ( ): Denotes the dimensions for long stroke.

**Clevis: CBG1D□**  
ø20 to ø63



**Clevis: CBG1D□**  
ø80, ø100



Bore size (mm)	Head end lock: -H□				Rod end lock: -R□			
	Z		ZZ		Z		ZZ	
	Without rod boot	With rod boot	Without rod boot	With rod boot	Without rod boot	With rod boot	Without rod boot	With rod boot
20	130	150 + ℓ	141	161 + ℓ	129 (137)	149 (157) + ℓ	140 (148)	160 (168) + ℓ
25	137	159 + ℓ	150	172 + ℓ	136 (144)	158 (166) + ℓ	149 (157)	171 (179) + ℓ
32	141	163 + ℓ	156	178 + ℓ	141 (149)	163 (171) + ℓ	156 (164)	178 (186) + ℓ
40	164	184 + ℓ	182	202 + ℓ	159 (168)	179 (188) + ℓ	177 (186)	197 (206) + ℓ
50	190	210 + ℓ	210	230 + ℓ	185 (197)	205 (217) + ℓ	205 (217)	225 (237) + ℓ
63	195	215 + ℓ	217	237 + ℓ	190 (202)	210 (222) + ℓ	212 (224)	232 (244) + ℓ
80	236	245 + ℓ	254	263 + ℓ	230 (244)	239 (253) + ℓ	248 (262)	257 (277) + ℓ
100	244	253 + ℓ	266	275 + ℓ	238 (252)	247 (261) + ℓ	260 (274)	269 (283) + ℓ

Bore size (mm)	Double end lock: -W□			
	Z		ZZ	
	Without rod boot	With rod boot	Without rod boot	With rod boot
20	141	161 + ℓ	152	172 + ℓ
25	148	170 + ℓ	161	183 + ℓ
32	151	173 + ℓ	166	188 + ℓ
40	173	193 + ℓ	191	211 + ℓ
50	202	222 + ℓ	222	242 + ℓ
63	207	227 + ℓ	229	249 + ℓ
80	252	261 + ℓ	270	279 + ℓ
100	260	269 + ℓ	282	291 + ℓ

\* ( ): Denotes the dimensions for long stroke.

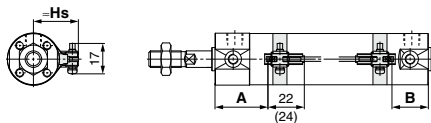
# CG1 Series Auto Switch Mounting

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

### Solid state auto switch

D-M9□/M9□W, D-M9□A

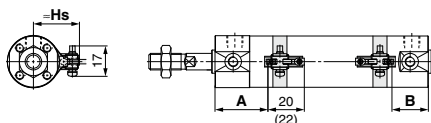
ø20 to ø63



( ): 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

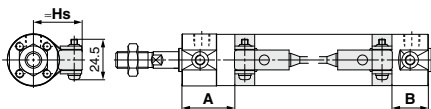


( ): Dimension of the D-M9□AV  
A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.

D-G5/K5/G5□W/G5BA

D-K59W, D-G59F, D-G5NT

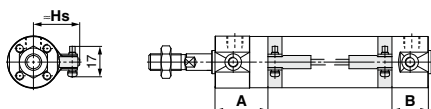
ø20 to ø100



D-H7□/H7□W

D-H7NF/H7BA/D-H7C

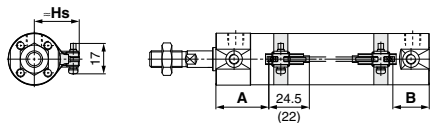
ø20 to ø63



### Reed auto switch

D-A9□

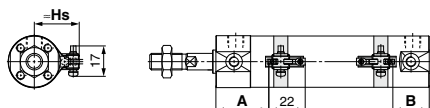
ø20 to ø63



( ): 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

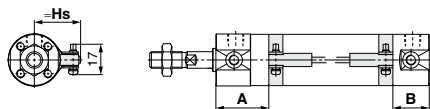
ø20 to ø63



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

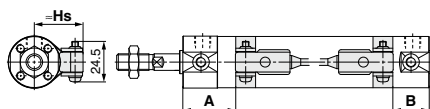
D-C7/C8, D-C73C/C80C

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
	Bore size	Hs	Hs	Hs	Hs
20	26.5	27	27	27.5	27.5
25	29	29.5	29.5	30	30
32	32.5	33	33	33.5	33.5
40	37	37.5	37.5	38	38
50	42.5	43	43	43.5	43.5
63	49.5	50	50	50.5	50.5
80	—	—	—	59	59
100	—	—	—	69.5	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
<b>20</b>	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)
<b>25</b>	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)
<b>32</b>	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)
<b>40</b>	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)
<b>50</b>	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)
<b>63</b>	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)
<b>80</b>	—	—	—	—	—	—	—	—	49.5	30.5 (44.5)	48	29 (43)	51	32 (46)
<b>100</b>	—	—	—	—	—	—	—	—	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.

# CG1 Series

## 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.

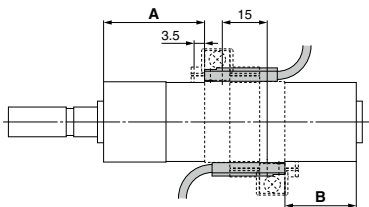
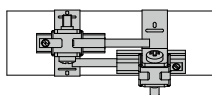
Note 2) Adjust the auto switch after confirming the operating condition in the actual setting.

## 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

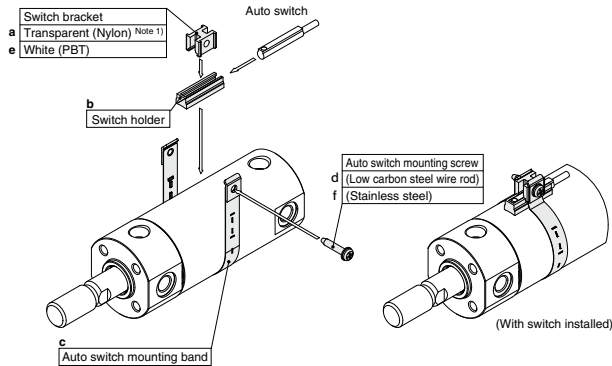
Note 3) When "n" is an odd number, an even number that is one larger than this odd number is used for the calculation.

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)							
	20	25	32	40	50	63	80	100
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) <small>Note 2)</small>	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
<b>BJ4-1</b>	- Switch bracket (White/PBT) (e) - Switch holder (b)
<b>BJ5-1</b>	- 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)