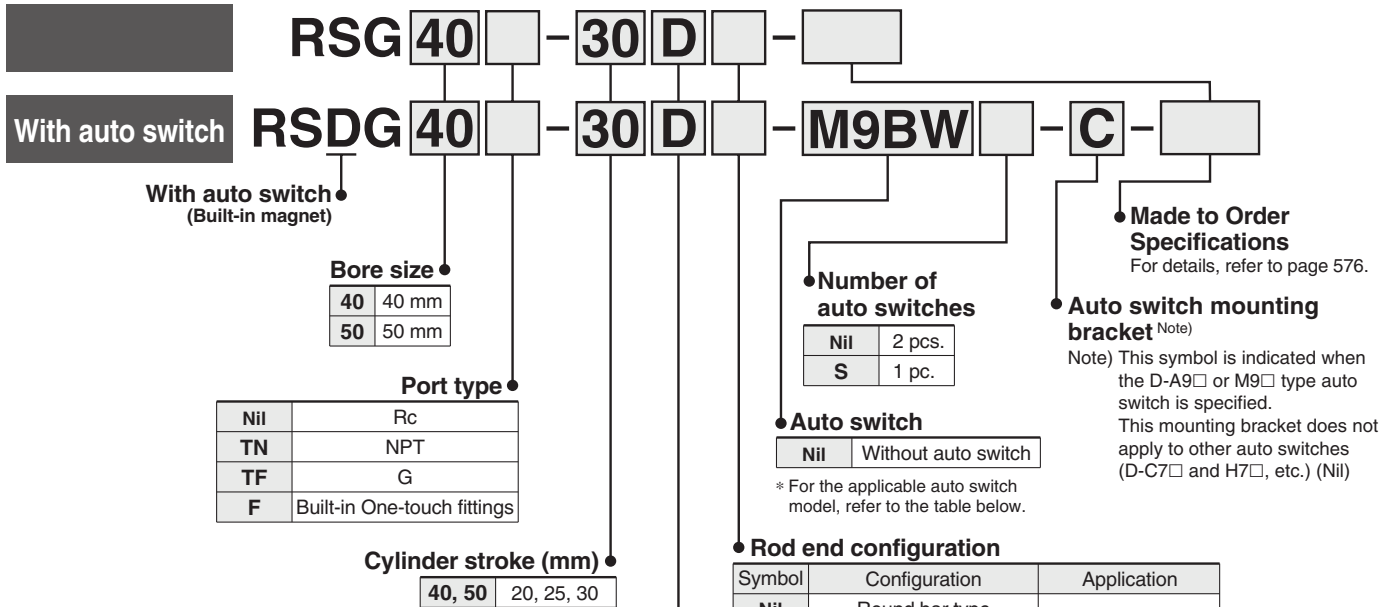


Stopper Cylinder/Adjustable Mounting Height

RSG Series

∅40, ∅50

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) RSDG50-25D

*** Rod end configuration**

Symbol	Configuration	Application
Nil	Round bar type	—
K	Chamfered type	—
R	Roller type	—
L	Lever type (Non-adjustable)	Basic type
B	Lever type (Energy absorbing Adjustable deformation)	—
C		With cancel cap
D		With lock mechanism
E		With lock & cancel

Applicable Auto Switches/Refer to pages 941 to 1067 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	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)		Relay, PLC	IC circuit		
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	—	●	○	—	○			IC circuit	Relay, PLC
				3-wire (PNP)			M9PV	M9P	●	—	●	○	—	○				
		Connector		2-wire	—	M9BV	M9B	●	—	●	○	—	○					
				—	12 V	—	H7C	●	—	●	○	—	○					
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NWV	M9NW	●	●	●	○	—	○	IC circuit	Relay, PLC		
				3-wire (PNP)			M9PWV	M9PW	●	●	●	○	—	○				
		Connector		2-wire	—	M9BWV	M9BW	●	●	●	○	—	○					
				—	12 V	—	—	●	●	●	○	—	○					
Water resistant (2-color indicator)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NAV*1	M9NA*1	○	○	●	○	—	○	IC circuit	Relay, PLC			
			3-wire (PNP)			M9PAV*1	M9PA*1	○	○	●	○	—	○					
	Connector		2-wire	—	M9BAV*1	M9BA*1	○	○	●	○	—	○						
			—	12 V	—	—	○	○	●	○	—	○						
With diagnostic output (2-color indicator)	Grommet	No	4-wire (NPN)	5 V, 12 V	—	—	H7NF	●	—	●	○	—	○	IC circuit	Relay, PLC			
			—			—	●	—	●	○	—	○						
	Connector		3-wire (NPN equivalent)	24 V	12 V	100 V or less	A96V	A96	●	—	●	—	—			—	IC circuit	Relay, PLC
			—				A93V*2	A93	●	●	●	—	—			—		
No	Yes	2-wire	24 V	12 V	24 V or less	A90V	A90	●	—	●	—	—	—	IC circuit	Relay, PLC			
						—	C73C	●	—	●	—	●	—			—		
No	Yes	2-wire	24 V	12 V	24 V or less	—	C80C	●	—	●	—	●	—	IC circuit	Relay, PLC			
						—	—	●	—	●	—	●	—			—		

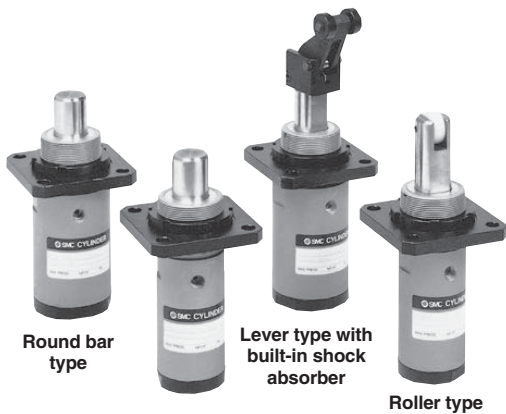
*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.
 *2 1 m type lead wire is only applicable to D-A93.
 * Lead wire length symbols: 0.5 m..... Nil (Example) M9NW
 1 m..... M (Example) M9NWM
 3 m..... L (Example) M9NWL
 5 m..... Z (Example) M9NWZ
 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, refer to page 586 for details.
 * For details about auto switches with pre-wired connector, refer to pages 1014 and 1015.
 * D-A9□/M9□/M9□W auto switches are shipped together (not assembled). (Only auto switch mounting brackets are assembled before shipped.)

RSQ
RSG
RS2H
RSH
MIW
MIS

D-□
-X□

RSG Series



Spring Force (Single acting)

Bore size (mm)	Extended	Compressed
40, 50	13.7	27.5

(N)

* For Round bar type, Chamfered type and Roller type.



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

Symbol	Specifications
-XA□	Change of rod end shape
-XC3	Special port position

Model

Bore size (mm)		40	50
Mounting	Flange	●	●
Built-in magnet		●	●
Piping	Screw-in type	Rc 1/8	
	Built-in One-touch fittings	ø6/4	ø8/6
Action		Double acting, Single acting (Spring extended), Double acting with spring loaded	
Rod end configuration	Round bar type	●	●
	Chamfered type	●	●
	Roller type	●	●
	Lever type	●	●

Specifications

Action	Double acting, Double acting with spring loaded, Single acting (Spring extended)
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Ambient and fluid temperature	Without auto switch: -10 to 70°C * With auto switch: -10 to 60°C
Lubrication	Not required (Non-lube)
Cushion	Rubber bumper
Stroke length tolerance	+1.4 0
Mounting	Flange type

* No freezing (for cylinders with or without an auto switch)

Bore Size/Standard Stroke

Bore size (mm)	Rod end configuration	
	Round bar type, Chamfered type, Roller type, Lever type with shock absorber	
40	20, 25, 30	
50	20, 25, 30	

(mm)

Weight

Action	Bore size (mm)	Rod end configuration	Cylinder stroke (mm)		
			20	25	30
Double acting Single acting, Spring extend	40	Round bar type, Chamfered type, Roller type	1.14	1.17	1.2
		Lever type with built-in shock absorber	1.38	1.41	1.44
Double acting with spring loaded	50	Round bar type, Chamfered type, Roller type	1.34	1.37	1.4
		Lever type with built-in shock absorber	1.56	1.59	1.62

(kg)

Operating Ranges by Rod End Configuration

(Example 1) For roller type with transfer speed of 15 m/min. and the weight of transferred object of 30 kg.

<How to read the graphs>

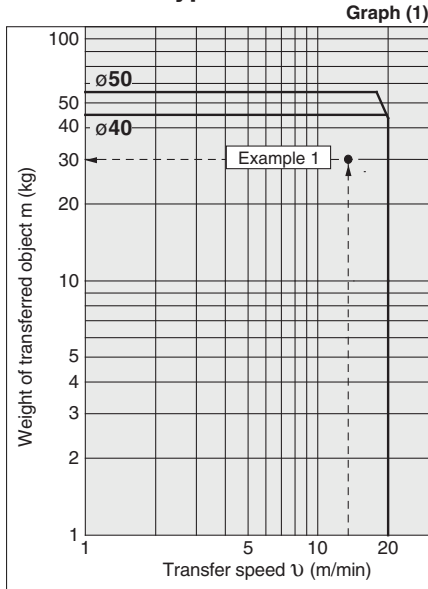
To select a cylinder based on the specifications above, find the intersection of the speed of 15 m/min. on the horizontal axis and the weight of 30 kg on the vertical axis in graph (1) below, and select **RSG□40-□□R** that falls in the cylinder operating range.

(Example 2) Transfer speed of 15 m/min., Weight of transferred object of 60 kg, Friction coefficient $\mu = 0.1$, Lever type (Lever type with lock mechanism)

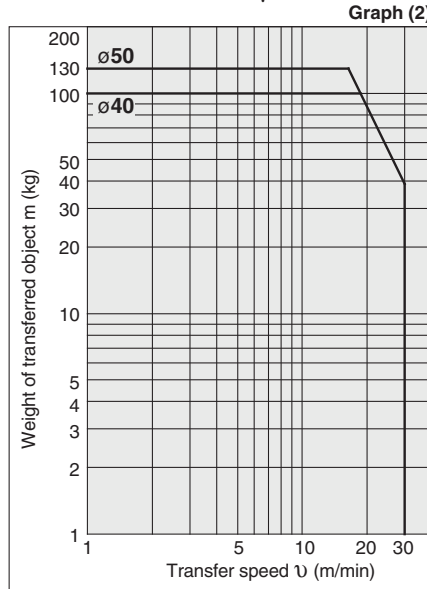
<How to read the graphs>

To select a cylinder based on the specifications above, find the intersection of the speed of 15 m/min. on the horizontal axis and the weight of 60 kg on the vertical axis in graph (3) below, and select **RSG□40-□□D** that falls in the cylinder operating range.

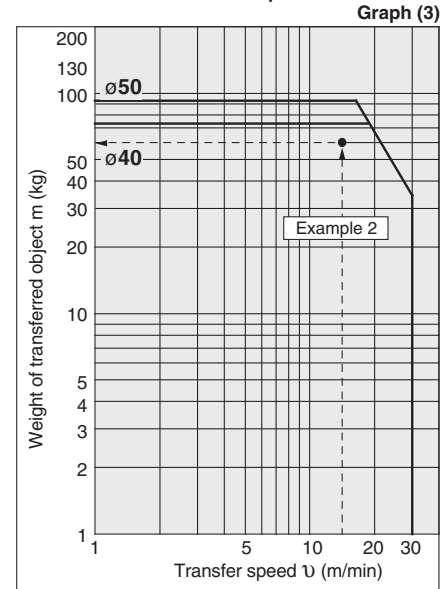
Roller Type/Round Bar Type/ Chamfered Type



Lever Type (With shock absorber) Friction coefficient $\mu = 0$



Lever Type (With shock absorber) Friction coefficient $\mu = 0.1$



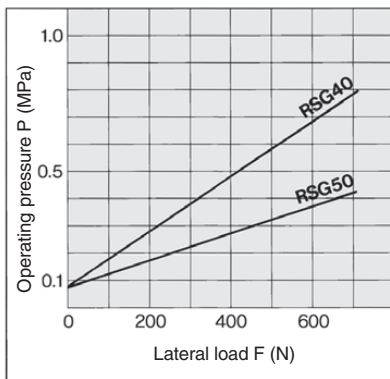
* Lever-type weight of transferred object and transfer speed graphs (graphs (2) and (3)) show the values at room temperature (20 to 25°C).

* When selecting cylinders, confirm the Specific Product Precautions as well.

Lateral Load and Operating Pressure

The larger the lateral load, the higher the operating pressure required for the stopper cylinder. Set the operating pressure using the graphs as a guide.

(Applicable for round bar, roller and chamfered type rod end configurations.)



RSQ

RSG

RS2H

RSH

**MIW
MIS**

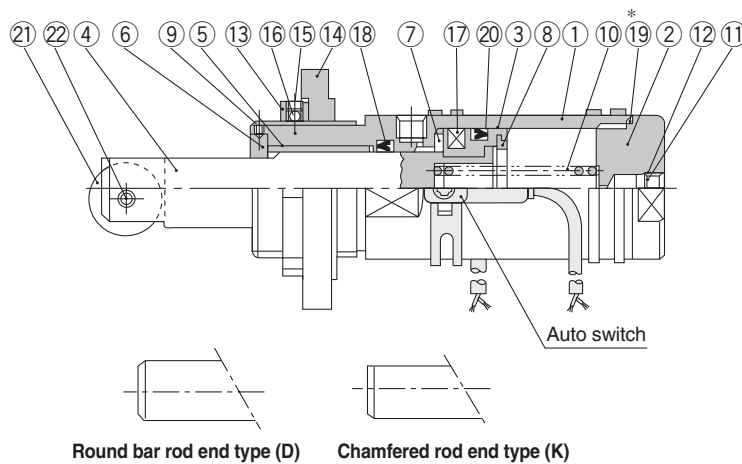
D-□

-X□

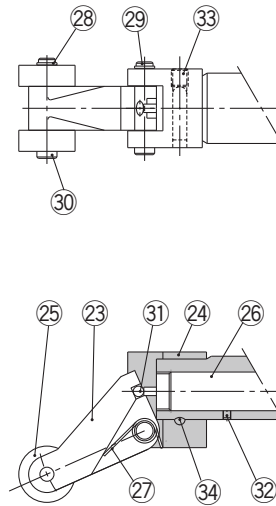
RSG Series

Construction

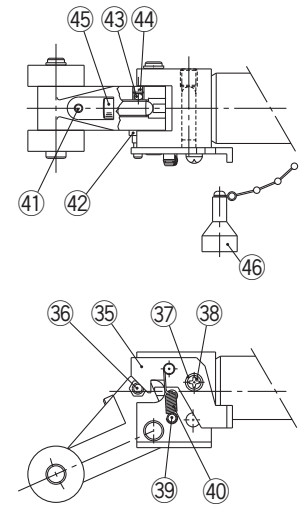
Roller rod end



Lever rod end with shock absorber type (Fixed)



Lever rod end type (With lock mechanism and cancel cap)



Component Parts

No.	Description	Material	Note
1	Tube cover	Aluminum alloy	Hard anodized
2	Head cover	Aluminum alloy	Anodized
3	Piston	Aluminum alloy	Chromated
4	Piston rod	Carbon steel	Hard chrome plated
5	Bushing	Bearing alloy	
6	Non-rotating guide	Rolled steel	Use collar for round bar type.
7	Bumper A	Urethane	
8	Bumper B	Urethane	
9	Hexagon socket head set screw	Chromium molybdenum steel	
10	Return spring	Steel wire	Zinc chromated (Except double acting)
11	Retaining ring	Carbon tool steel	(Single acting only)
12	Element	Sintered metallic BC	(Single acting only)
13	Lock nut	Carbon steel	
14	Flange	Cast iron	
15	Hexagon socket head set screw	Chromium molybdenum steel	
16	Ball	Resin	
17	Magnet	—	
18	Rod seal	NBR	
*19	Gasket	NBR	Used Only for double acting and double acting with spring loaded.
20	Piston seal	NBR	

Replacement Parts/Seal Kit

Bore size (mm)	Kit no.			Contents
	Double acting	Double acting with spring loaded	Single acting	
40	RSG40D-PS	RSG40B-PS	RSG40T-PS	Set of above nos.
50	RSG50D-PS	RSG50B-PS	RSG50T-PS	(18, 19, 20)

* Seal kit includes (18, 19, 20). Order the seal kit, based on each bore size.

* Since the seal kit does not include a grease pack, order it separately.

Grease pack part no.: GR-S-010 (10 g)

Component Parts

No.	Description	Material	Note
Roller type			
21	Roller A	Resin	
22	Spring pin	Carbon tool steel	
Lever type			
23	Lever	Cast iron	
24	Lever holder	Rolled steel	
25	Roller B	Resin	
26	Shock absorber	—	RB1407-X552
27	Lever spring	Stainless steel wire	
28	Type C retaining ring for shaft	Carbon tool steel	
29	Lever pin	Carbon steel	
30	Roller pin	Carbon steel	
31	Steel balls	High carbon chrome bearing steel	
32	Hexagon socket head set screw	Chromium molybdenum steel	
33	Hexagon socket head set screw	Chromium molybdenum steel	
34	One-side tapered pin	Carbon steel	
With lock mechanism			
35	Bracket	Carbon steel	
36	Pin B	Carbon steel	
37	Spacer	Carbon steel	
38	Round head Phillips screw	Rolled steel	
39	Pin A	Rolled steel	
40	Bracket spring	Steel wire	
41	Hexagon socket head cap set screw	Chromium molybdenum steel	
42	Spring washer	Steel wire	
43	Urethane ball	Urethane	
44	Hexagon socket head cap set screw	Chromium molybdenum steel	
45	Adjustment bolt	Bearing steel	
With cancel cap			
46	Cancel cap	Aluminum alloy	

Replacement Parts: Shock Absorber

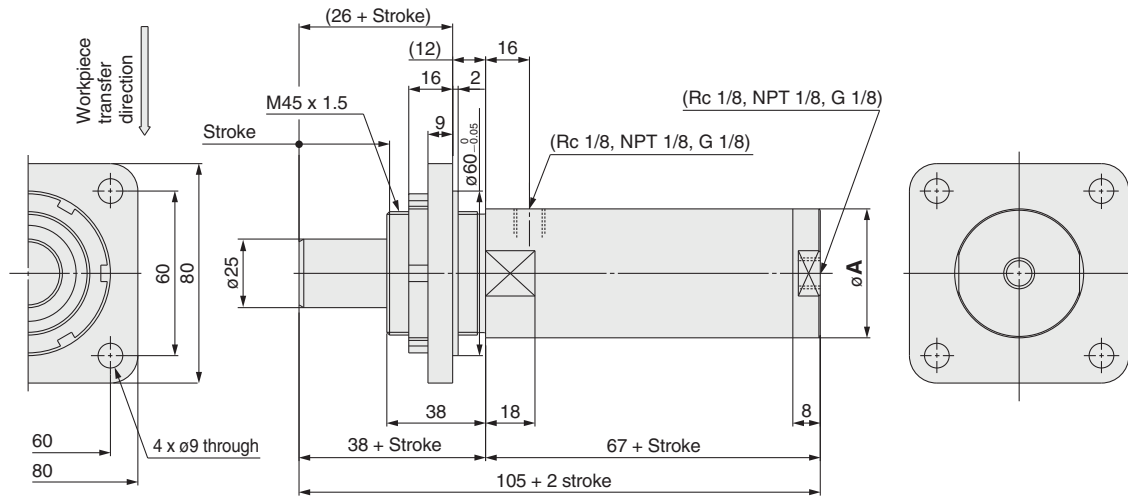
Bore size (mm)	Kit no.
40, 50	RB1407-X552

Rod End Configuration: Round Bar Type

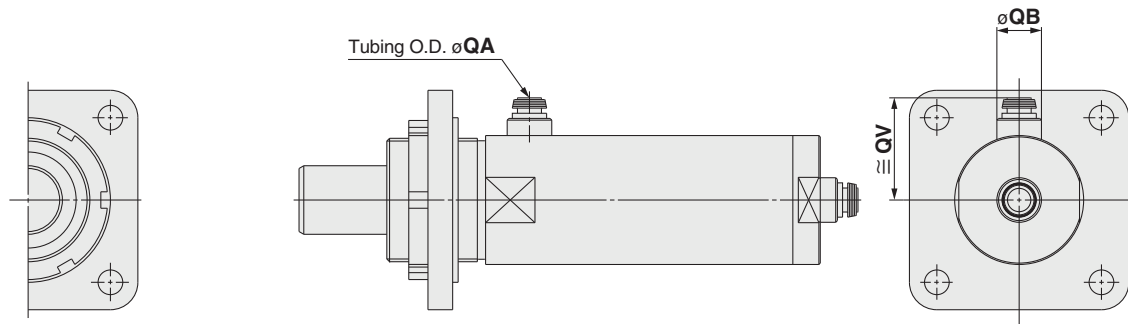
Basic type: Flange mounting

These 2 figures show the piston rod extended.

Bore size: $\varnothing 40, \varnothing 50$ RS□G□-□□



Built-in One-touch fittings



(mm)				
Bore size (mm)	A	QA	QB	QV
40	47	6	13	33
50	58	8	16	38.5

Note 1) In the case of single acting type, a One-touch fitting is on the rod side only.

Note 2) These figures show the piston rod extended.

Note 3) For the auto switch mounting position and its mounting height, refer to page 585.

RSQ

RSG

RS2H

RSH

MIW

MIS

D-□

-X□

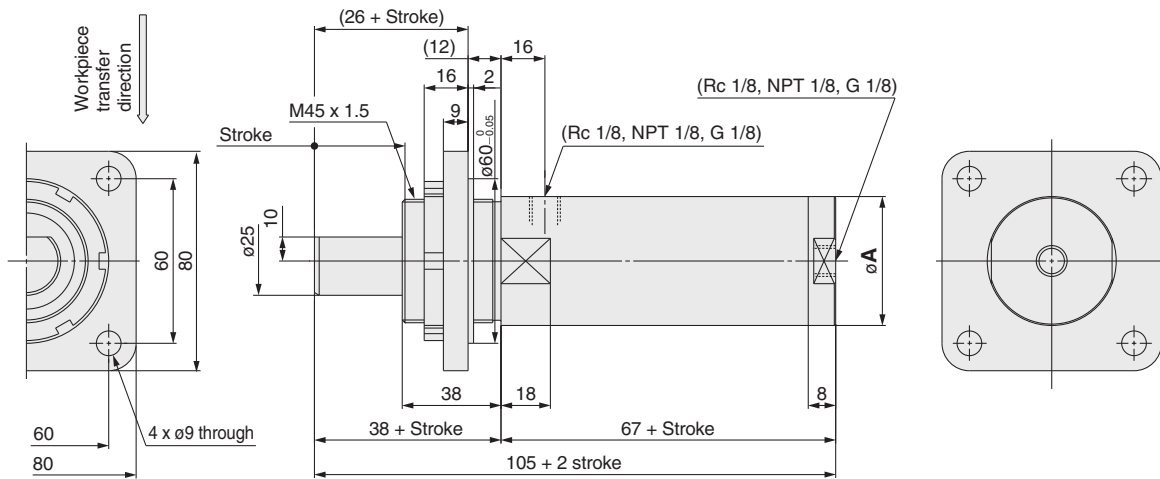
RSG Series

Rod End Configuration: Chamfered Type (Non-rotating piston rod)

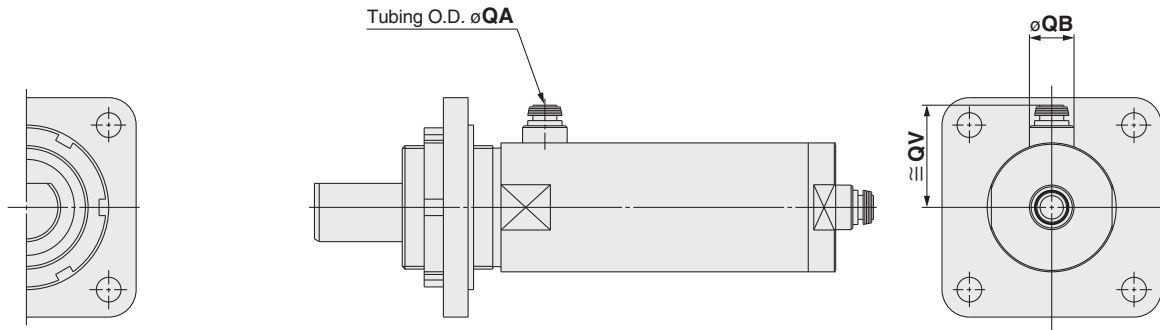
Basic type: Flange mounting

These 2 figures show the piston rod extended.

Bore size: $\varnothing 40, \varnothing 50$ RS□G□-□□K



Built-in One-touch fittings



(mm)				
Bore size (mm)	A	QA	QB	QV
40	47	6	13	33
50	58	8	16	38.5

Note 1) In the case of single acting type, a One-touch fitting is on the rod side only.

Note 2) These figures show the piston rod extended.

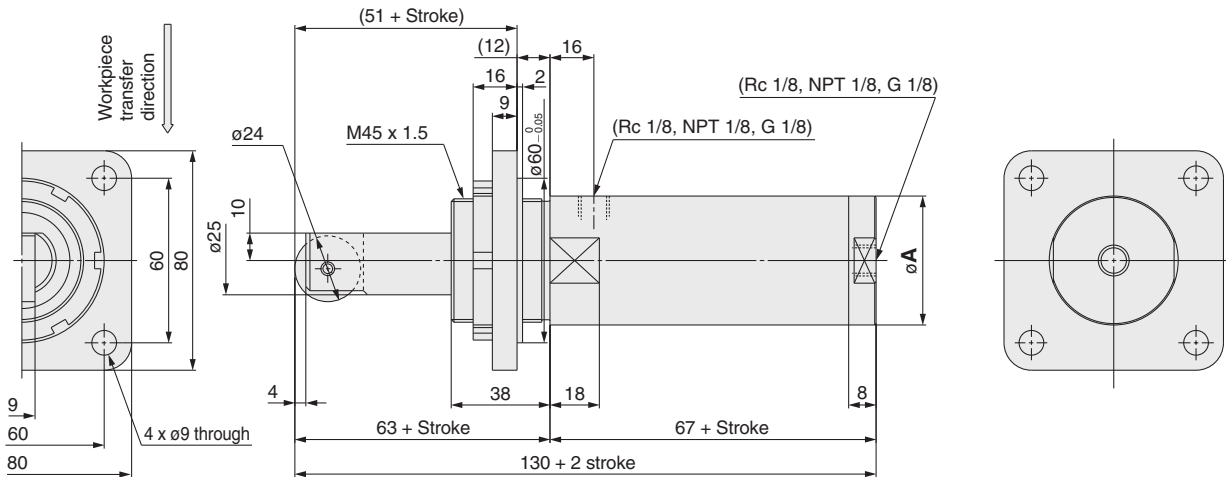
Note 3) For the auto switch mounting position and its mounting height, refer to page 585.

Rod End Configuration: Roller Type

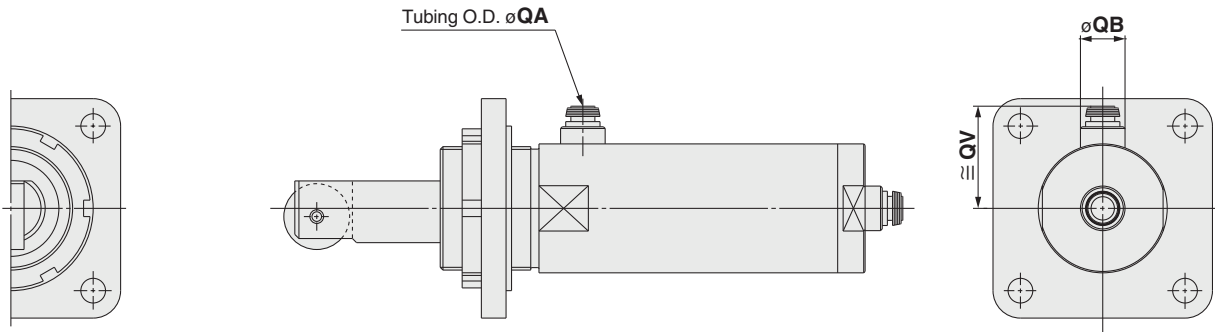
Basic type: Flange mounting

These 2 figures show the piston rod extended.

Bore size: $\varnothing 40, \varnothing 50$ RS□G□-□□R



Built-in One-touch fittings



(mm)				
Bore size (mm)	A	QA	QB	QV
40	47	6	13	33
50	58	8	16	38.5

Note 1) In the case of single acting type, a One-touch fitting is on the rod side only.

Note 2) These figures show the piston rod extended.

Note 3) For the auto switch mounting position and its mounting height, refer to page 585.

RSQ

RSG

RS2H

RSH

MIW

MIS

D-□

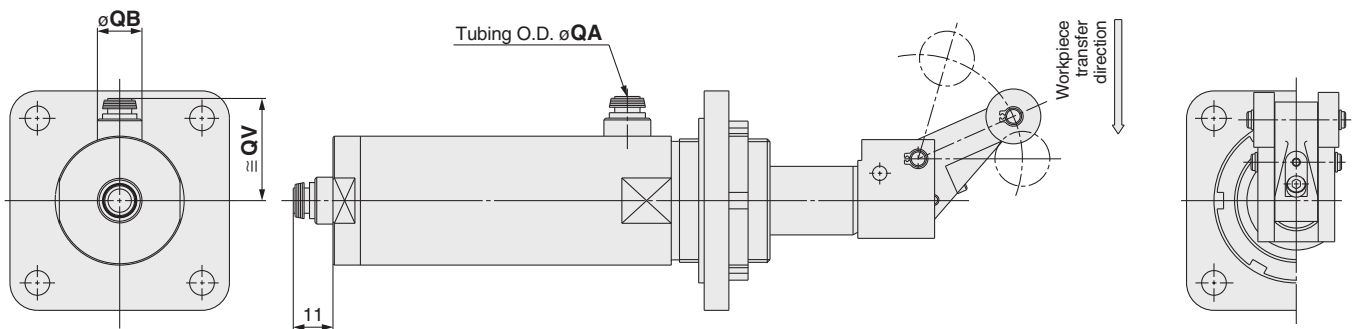
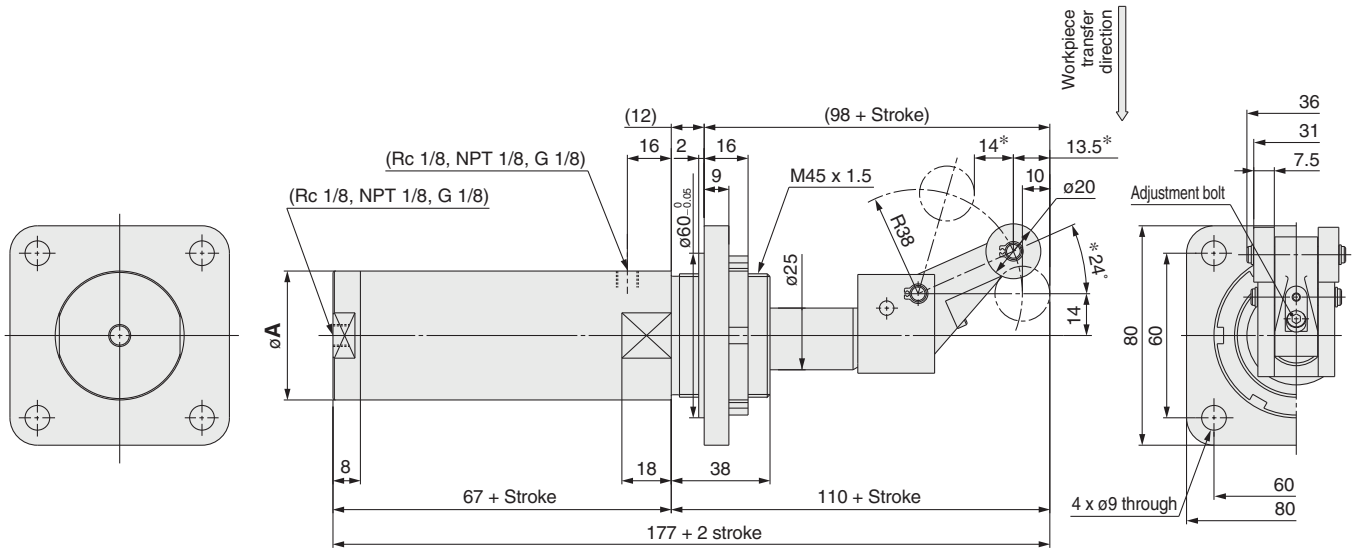
-X□

Rod End Configuration: Lever Type with Shock Absorber

Variable energy absorbing type/Flange mounting type

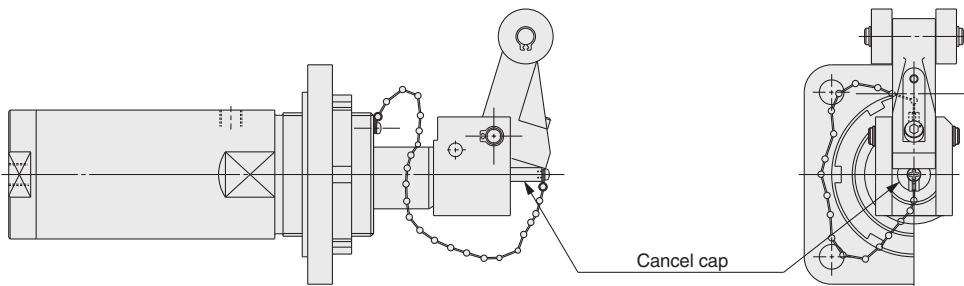
These 2 figures show the piston rod extended.

Adjustable shock absorber stroke **RS□G□-□□B**



With cancel cap **RS□G□-□□C**

*Dimensions when equipped with cancel cap are the same as the drawing above.



(mm)

Bore size (mm)	A	QA	QB	QV
40	47	6	13	33
50	58	8	16	38.5

Note 1) In the case of single acting type, a One-touch fitting is on the rod side only.

Note 2) These figures show the piston rod extended.

Note 3) For the auto switch mounting position and its mounting height, refer to page 585.

Note 4) The figure shows these dimensions when the adjustment bolt is lowered (when energy absorption is at its maximum).

However, these dimensions change within the ranges shown below as the adjusting bolt is raised (energy absorption is reduced).

24°* → 16°*, 13.5°* → 11.5°, 14°* → 16°*

RSQ

RSG

RS2H

RSH

MIW

MIS

D-□

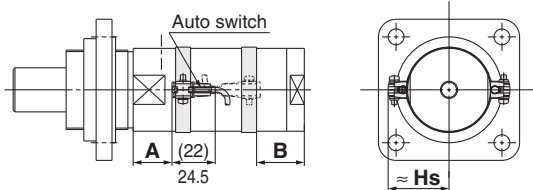
-X□

Auto Switch Mounting 1

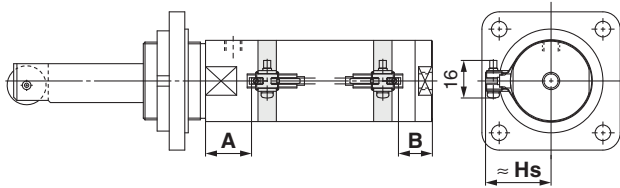
Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

Reed Auto Switch

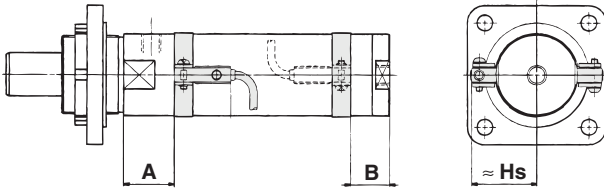
D-A9□



() : For D-A96 type

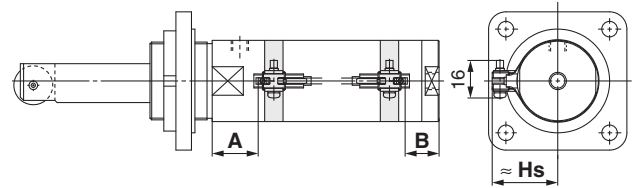
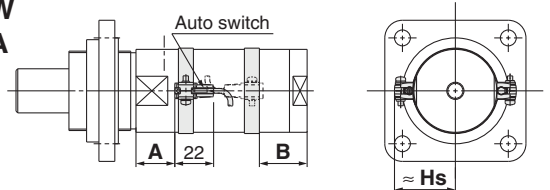


D-C7
D-C8
D-C73C
D-C80C

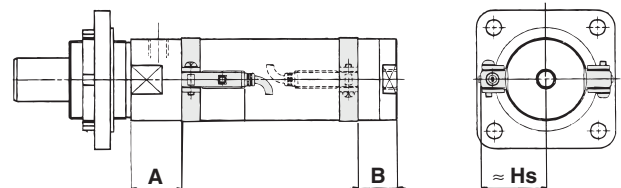


Solid State Auto Switch

D-M9□
D-M9□W
D-M9□A



D-H7
D-H7□W
D-H7NF
D-H7BA
D-H7C



Auto Switch Proper Mounting Position (mm)

Auto switch model	D-A9□ (Note 2)		D-M9□(V) (Note 2)		D-C7□		D-H7BA	
	A	B	A	B	A	B	A	B
Bore size (mm)								
40	21.5	25.5	25.5	29.5	22.0	26.0	21.0	25.0
50	29.5	17.5	33.5	21.5	30.0	18	29.0	17.0

Auto Switch Mounting Height (mm)

Auto switch model	D-M9□V		D-M9□W		D-M9□AV		D-M9□A		D-A9□		D-H7□		D-H7□W		D-H7NF		D-H7BA		D-C7/C8		D-H7C		D-C73C		D-C80C	
	Hs		Hs		Hs		Hs		Hs		Hs		Hs		Hs		Hs		Hs		Hs		Hs		Hs	
Bore size (mm)																										
40	36.0		35.0		38.0		37.5		37.5		38.0		37.5		37.5		37.5		37.5		37.5		37.5		37.5	
50	41.5		40.5		43.5		43.0		43.0		43.5		43.0		43.0		43.0		43.0		43.0		43.0		43.0	

Note 1) Adjust the auto switch after confirming the operating conditions in the actual setting.

Note 2) Auto switch mounting (The adjustment as shown in the figures below is required)

Auto switch model	With 2 auto switches	
	Different surfaces	Same surface
	<p>The proper auto switch mounting position is 6 mm inward from the switch holder edge.</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>

RSQ

RSG

RS2H

RSH

MIW
MIS

D-□

-X□

Auto Switch Mounting 2

Operating Range

Auto switch model	Bore size (mm)	
	40	50
D-A9□(V)	8	8
D-M9□(V) D-M9□W(V) D-M9□A(V)	4.5	5
D-C7□/C80 D-C73C/C80C	10	10
D-H7□/H7□W D-H7BA/H7NF	5	6
D-H7C	10	9.5

* Since this is a guideline including hysteresis, not meant to be guaranteed. (Assuming approximately ±30% dispersion) There may be the case to change substantially depending on an ambient environment.

Auto Switch Mounting Bracket: Part No.

Auto switch model	Bore size (mm)	
	ø40	ø50
D-A9□(V) D-M9□(V) D-M9□W(V)	Note 1) BMA3-040	Note 1) BMA3-050
D-M9□A(V)	Note 2) BMA3-040S	Note 2) BMA3-050S
D-C7□/C80 D-C73C/C80C D-H7□ D-H7□W D-H7BA D-H7NF	BMA2-040A	BMA2-050A

Note 1) Set part number which includes the auto switch mounting band (BMA2-□□□A) and the holder kit (BJ5-1/Switch bracket: Transparent). 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 consult SMC regarding other chemicals.

Note 2) Set part number which includes the auto switch mounting band (BMA2-□□□AS/Stainless steel screw) and the holder kit (BJ4-1/Switch bracket: White).

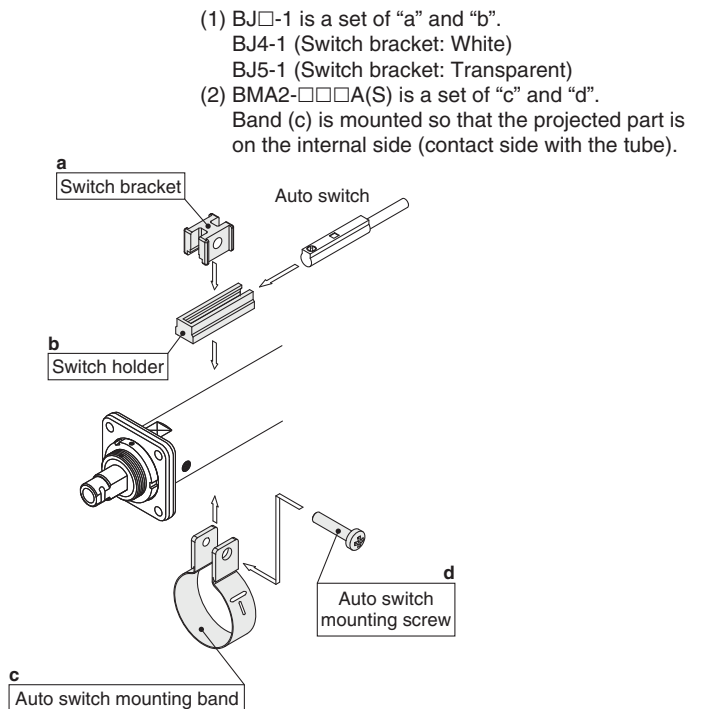
Note 3) For the D-M9 A(V) type auto switch, do not install the switch bracket on the indicator light.

[Mounting screw set made of stainless steel]

The following set of mounting screws made of stainless steel is available. Use it in accordance with the operating environment. (Please order the auto switch mounting bracket separately, since it is not included.)

D-H7BA auto switch is set on the cylinder with the stainless steel screws above when shipped. When an auto switch is shipped independently, BBA4 is attached.

Note 4) Refer to page 1048 for the details of BBA4.



Besides the models listed in How to Order, the following auto switches are applicable. Refer to pages 941 to 1067 for detailed specifications.

Auto switch type	Part no.	Electrical entry (Direction)	Features
Reed	D-C73, C76	Grommet (In-line)	—
	D-C80		Without indicator light
Solid state	D-H7A1, H7A2, H7B		—
	D-H7NW, H7PW, H7BW		Diagnostic indication (2-color)
	D-H7BA		

* For solid state auto switches, auto switches with a pre-wired connector are also available. Refer to pages 1014 and 1015 for details.

* Normally closed (NC = b contact) solid state auto switches (D-F9G/F9H types) are also available. Refer to page 957 for details.