

# Stopper Cylinder

**Series RSQ** (Fixed mounting height)

ø12, ø16, ø20, ø32, ø40, ø50

**Series RSG** (Adjustable mounting height)

ø40, ø50

Realize labor saving and automation of conveyor line

A through-hole style and a both ends tapped style are available.  
Series RSQ (Fixed mounting height type)  
ø12, ø16, ø20, ø32, ø40, ø50

Mounting position can be adjusted arbitrarily by changing the attached flange height.  
Series RSG (Adjustable mounting height type)  
ø40, ø50

## Numerous variations

It is possible to select option for many applications.

Style: Fixed mounting height (RSQ), Adjustable mounting height (RSG)  
Action: Double acting, Single acting (Spring extend), Double acting with spring

Rod end configuration: Round bar type, Chamfered type, Roller type, Lever type

Mounting: Through-hole, Both ends tapped (RSQ)

Flange: (RSG)

## Equipped with an easy-to-maintain shock absorber.

The shock absorber incorporated in the lever type is adjustment-free and easy-to-maintain. (ø32, ø40, ø50)

## Auto switch option available

Compact auto switch mounting to enable miniaturization of machines and designs.

## Lever type selected according to applications

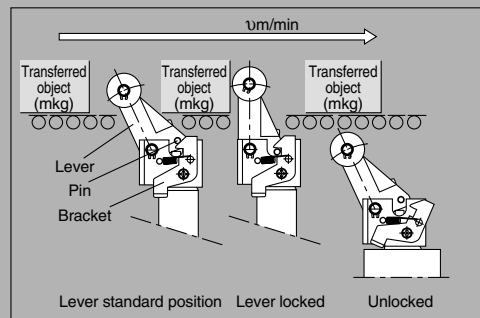
- Prevention of repulsion by light pallets....Locking mechanism
- Partial passing of work.....With cancel



Series RSG

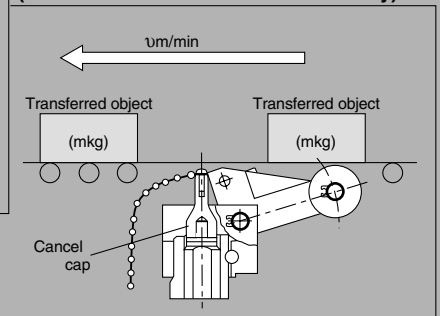
Series RSQ

### Lock Mechanism



### Cancel Cap

(Mechanism to hold lever horizontally)



## Series Variations

Series	Mounting	Action	Rod end configuration	Standard variations				Bore size (mm)	Standard stroke (mm)				
				Built-in magnet	With lock mechanism	With cancel	Built-in One-touch fittings		10	15	20	25	30
RSQ	Through-hole	Double acting	Round bar type	•			•	12	•				
			Roller type	•			•	16	•	•			
			Chamfered type	•			•	20	•	•	•		
		Double acting with spring loaded	Lever type Fixed	•			•	32	•	•	•	•	
			Lever type Adjustable	•	•		•	40			•	•	•
RSG	Flange style	Double acting	Round bar type	•			•	40					
			Roller type	•			•						
			Chamfered type	•			•						
		Double acting with spring loaded	Lever type Fixed	•			•				•	•	•
			Lever type Adjustable	•	•		•				•	•	•
		Single acting	Round bar type	•			•	50					
			Roller type	•			•						
			Chamfered type	•			•						
		Single acting	Lever type Fixed	•			•				•	•	•
			Lever type Adjustable	•	•		•				•	•	•

D-□

-X□

Individual  
-X□

# Stopper Cylinder / Fixed Mounting Height

## Series RSQ

ø12, ø16, ø20, ø32, ø40, ø50

### How to Order

**Standard** RSQ **B** **20** - **15** **D** -

**With auto switch** RSDQ **B** **20** - **15** **D** - **M9BW** -

**Mounting bracket**

**With auto switch**  
(Built-in magnet)

**B** Through-hole (Standard)  
**A** Both ends tapped style

Note 1) Since ø12 uses a common tube for both A and B, only B is used for part no. denotation.

**Bore size**

12	12 mm
16	16 mm
20	20 mm
32	32 mm
40	40 mm
50	50 mm

**Port thread type**

Nil	M thread	ø12, ø16
TN	Rc	ø20 to ø50
TF	NPT	
F	G	
Built-in One-touch fittings (2)		

Note 2) Bore sizes available w/ One-touch fittings are ø20 to ø50.  
Note 3) TF for ø20 indicates M5.

**Cylinder stroke (mm)**

12	10
16	10, 15
20	10, 15, 20
32	10, 15, 20
40	20, 25, 30
50	20, 25, 30

**Auto switch**

**Nil** Without auto switch

\* For the applicable auto switch model, refer to the table below.

**Made to Order Specifications**  
For details, refer to page 1374.

**Number of auto switches**

Nil	2 pcs.
S	1 pc.

**Rod end configuration**

Symbol	Configuration	Application
Nil	Round bar type	—
K	Chamfered type	—
R	Roller type	—
L	Lever type (Non-adjustable) (4)	Basic style
B	Lever type (4) (Energy absorbing Adjustable deformation)	—
C		With cancel cap
D		With lock mechanism
E		With lock & cancel

Note 4) The lever types are applicable only to bore sizes ø32, ø40 and ø50.

**Action**

D	Double acting
B	Double acting with spring loaded
T	Single acting (Spring extend)

### 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) RSDQB32-15D

### Applicable Auto Switch/Refer to pages 1719 to 1827 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)					
							ø12	ø16, ø20, ø32 to ø50	ø12	ø16, ø20, ø32 to ø50										
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV		M9N		●	●	●	○	—	○	IC circuit	Relay, PLC	
		3-wire (PNP)		M9PV		M9P		●	●	●	○	—	○							
	Connector	2-wire		12 V		M9BV		M9B		●	●	●	○	—	○					
		—		J79C		—		●	—	●	●	●	—	—						
	Diagnostic indication (2-color indication)	Grommet		3-wire (NPN)	5 V, 12 V	M9N WV		M9N W		●	●	●	○	—	○	IC circuit				
				3-wire (PNP)	12 V	M9P WV		M9P W		●	●	●	○	—	○					
	2-wire			12 V	M9B WV		M9B W		●	●	●	○	—	○	—					
	3-wire (NPN)			5 V, 12 V	M9N AV		M9N A		○	○	●	○	—	○		IC circuit				
	3-wire (PNP)			12 V	M9P AV		M9P A		○	○	●	○	—	○						
	2-wire			12 V	M9B AV		M9B A		○	○	●	○	—	○	—					
	4-wire			5 V, 12 V	—		F79F		●	—	●	○	—	○			IC circuit			
With diagnostic output (2-color indication)	Grommet		Yes	3-wire (NPN equivalent)	—	5V	—	A96V		A96		●	—	●	—	—	—	IC circuit	—	
		—				200 V	—	A72	—	A72H	●	—	●	—	—	—	—			
Reed switch	—	Grommet	Yes	2-wire	24 V	12 V	100 V	A93V		A93		●	—	●	—	—	—	—		
						5 V, 12 V	100 V or less	A90V		A90		●	—	●	—	—	—		IC circuit	
			Connector			12 V	—	—	A73C	—		●	—	●	●	●	—		—	IC circuit
						5 V, 12 V	24 V or less	—	A80C	—		●	—	●	●	●	—		—	
	Diagnostic indication	Grommet	Yes			—	—	—	A79W	—		●	—	●	—	—	—	—		
						—	—	—	—	—	—	—	—	—	—	—	—			

\* Lead wire length symbols: 0.5 m ..... Nil (Example) M9NV  
1 m ..... M (Example) M9NWM  
3 m ..... L (Example) M9NWL  
5 m ..... Z (Example) M9NWZ  
None ..... N (Example) J79CN

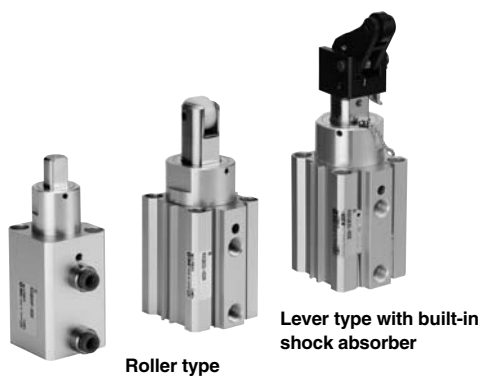
\* Solid state auto switches marked with "○" are produced upon receipt of order.

\* Since there are other applicable auto switches than listed, refer to page 1386 for details.

\* For details about auto switches with pre-wired connector, refer to pages 1784 and 1785.

\* When D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V)L types with ø32 to ø50 are mounted on a side other than the port side, order auto switch mounting brackets separately. Refer to page 1386 for details.

# Series RSQ



**Made to Order Specifications**  
(For details, refer to pages 1836 and 1872.)

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

## Spring Force (Single acting)

Bore size (mm)	Extended	Compressed
12	3.9	9.6
16	4.9	14.9
20	3.4	14.9
32	8.8	18.6
40, 50	13.7	27.5

\* Applicable only to round bar type, chamfered type and roller type end configurations.

## Model

Bore size (mm)		12	16	20	32	40	50
Mounting	Through-hole	● Note1)	●	●	●	●	●
	Both ends tapped style		●	●	●	●	●
Built-in magnet		●	●	●	●	●	●
Piping	Screw-in type	M5 x 0.8		1/8 Note2)			
	Built-in One-touch fittings	—		ø6/4		ø8/6	
Action		Double acting, Single acting (Spring extend), Double acting with spring loaded					
Rod end configuration	Round bar	●			●		
	Chamfered	●			●		
	Roller type	●			●		
	Lever type	—			●		

Note 1) ø12 tubes can have both through-hole and tap mountings in the same tube.

Note 2) TF (G thread) for ø20 indicates M5 x 0.8.

## Specifications

Action	Double acting, Double acting with spring loaded, Single acting (Spring extend)
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	Through-hole/Both ends tapped
Auto switch	Mountable

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

## Bore Size/Standard Stroke

Bore size (mm)	Rod end configuration		
	Round bar, Chamfered type	Roller type	Lever type with shock absorber
12	10	10	—
16	10, 15	10, 15	—
20	10, 15, 20	10, 15, 20	—
32			10, 15, 20
40	20, 25, 30	20, 25, 30	20, 25, 30
50			

## Mass

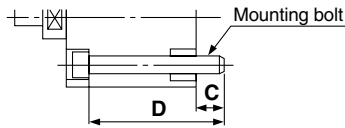
Action	Bore size (mm)	Rod end configuration	Cylinder stroke (mm)				
			10	15	20	25	30
Double acting	12	Round bar, Chamfered, Roller	0.07	—	—	—	—
	16	Round bar, Chamfered, Roller	0.14	0.15	—	—	—
	20	Round bar, Chamfered, Roller	0.23	0.24	0.25	—	—
Single acting, Spring extend	32	Round bar, Chamfered, Roller	0.42	0.44	0.46	—	—
		Lever with built-in shock absorber	0.51	0.53	0.55	—	—
Double acting with spring loaded	40	Round bar, Chamfered, Roller	—	—	0.74	0.80	0.86
		Lever with built-in shock absorber	—	—	0.97	1.01	1.05
	50	Round bar, Chamfered, Roller	—	—	1.03	1.07	1.11
		Lever with built-in shock absorber	—	—	1.26	1.30	1.34

## Mounting Bolt for RSQB

Mounting method: Mounting bolt for through-hole mounting style of RSQB is available as an option.

Ordering: Add the word "Bolt" in front of the bolts to be used.

**Example) Bolt M5 x 65L 4 pcs.**



Cylinder model	C	D	Mounting bolt
RSQB12-10□ <sup>Note)</sup>	5	40	M3 x 45L
RSQB16-10□		48	M3 x 55L
-15□		53	M3 x 60L
RSQB20-10□	7	55	M5 x 55L
-15□		60	M5 x 60L
-20□		65	M5 x 65L
RSQB32-10□		60	M5 x 60L
-15□	9	65	M5 x 65L
-20□		70	M5 x 70L

Cylinder model	C	D	Mounting bolt
RSQB40-20□	9.5	75	M5 x 75L
-25□		80	M5 x 80L
-30□		85	M5 x 85L
RSQB50-20□	9	75	M6 x 75L
-25□		80	M6 x 80L
-30□		85	M6 x 85L

Note) When using the through-hole mounting for a size  $\phi 12$  cylinder, be sure to use the flat washer which is attached.

## Operating Ranges by Rod End Configuration

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

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

<How to read the graphs>

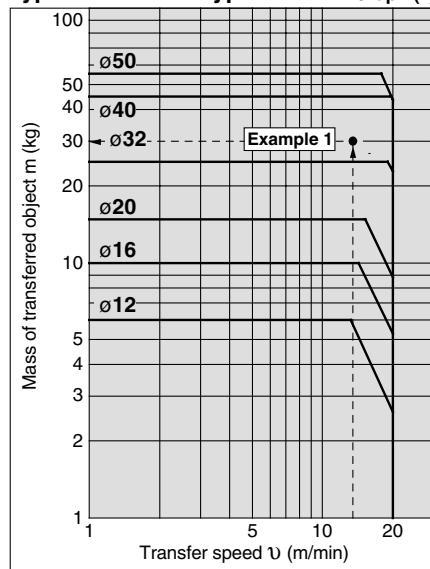
To select a cylinder based on the specifications above, find the intersection of the speed of 15 m/min. on the horizontal axis and the mass of 30 kg on the vertical axis in graph (1) below, and select RSQ□40-□□R that falls in the cylinder operating range.

<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 mass of 60 kg on the vertical axis in graph (3) below, and select RSQ□40-□□D that falls in the cylinder operating range.

### Roller Type/Round Bar Type/Chamfered Type

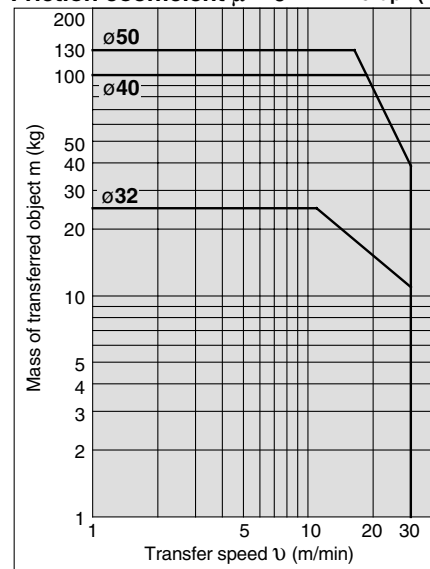
Graph (1)



### Lever Type (With shock absorber)

Friction coefficient  $\mu = 0$

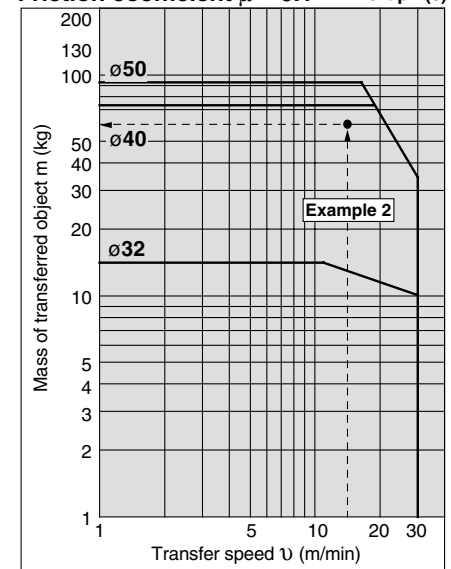
Graph (2)



### Lever Type (With shock absorber)

Friction coefficient  $\mu = 0.1$

Graph (3)



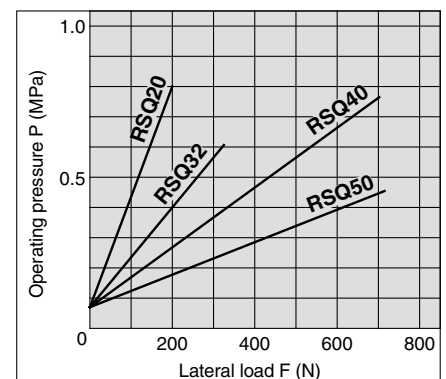
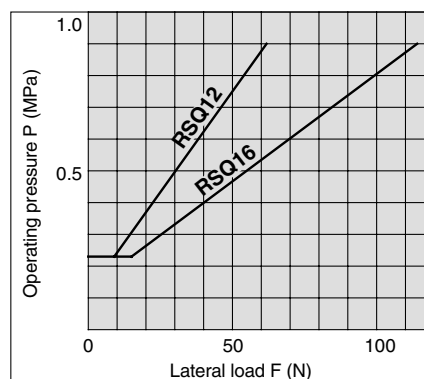
\* Lever-type mass of transferred object and transfer speed graphs (graphs (2) and (3)) show the values at room temperature (20 to 25°C).

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

## Lateral Load and Operating Pressure

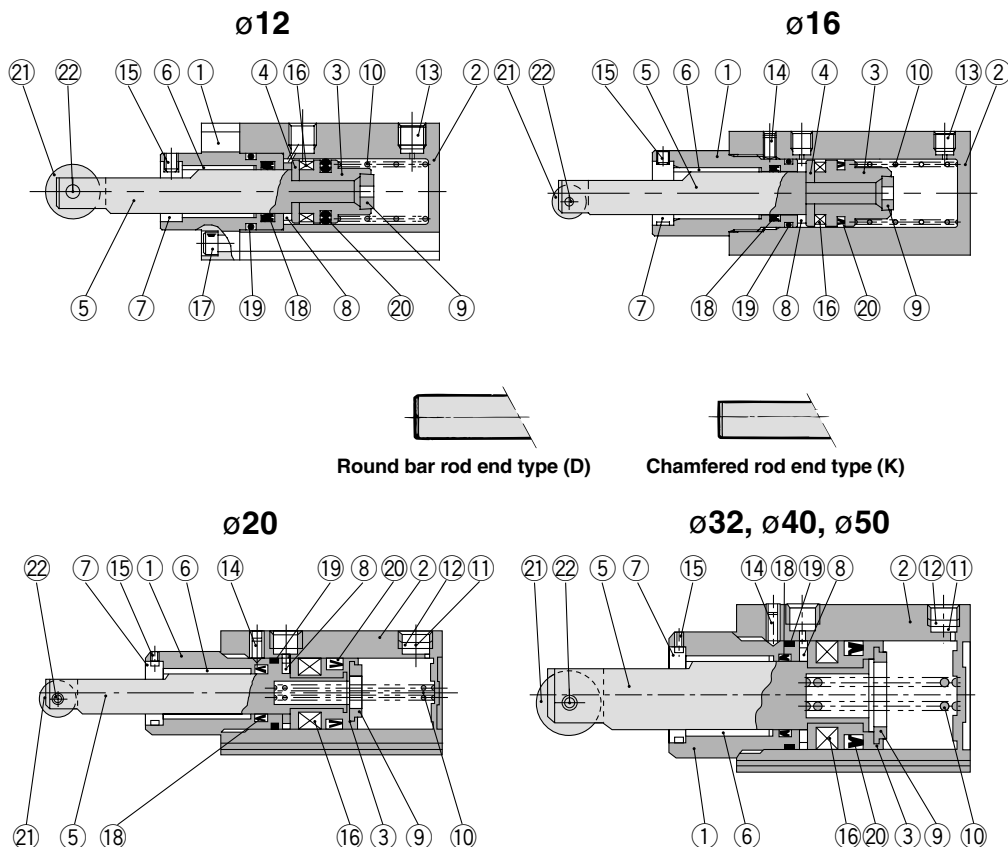
The larger the lateral load, the higher the operating pressure required for the stopper cylinder. Set the operating pressure using the graphs as a guide.

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



## Construction

### Roller rod end



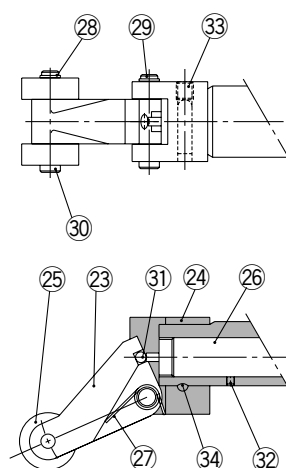
### Component Parts

No.	Description	Material	Note
1	Rod cover	Aluminum alloy	Anodized*
2	Cylinder tube	Aluminum alloy	Hard anodized
3	Piston	Aluminum alloy	Chromated
4	Spacer for switch	Aluminum alloy	ø12, ø16 only
5	Piston rod	ø12, ø16, ø20 Stainless steel ø32, ø40, ø50 Carbon steel	Hard chrome plated
6	Bushing	Copper alloy	
7	Non-rotating guide	Rolled steel	Non-rotating type only
8	Bumper A	Urethane	
9	Bumper B	Urethane	
10	Return spring	Steel wire	Zinc chromated (Except double acting)
11	Element	Sintered metallic BC	ø20 to ø50 (Single acting only)
12	Retaining ring	Carbon tool steel	ø20 to ø50 (Single acting only)
13	Plug with fixed orifice	Alloy steel	ø12, ø16 only
14	Hexagon socket head set screw	Chromium molybdenum steel	Except ø12
15	Hexagon socket head set screw	Chromium molybdenum steel	
16	Magnet	—	
17	Hexagon socket head cap screw	Alloy steel	ø12 only
18	Rod seal	NBR	
19	Gasket	NBR	
20	Piston seal	NBR	

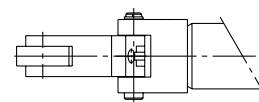
### Roller type

21	Roller A	Resin	
22	Spring pin	Carbon tool steel	

### Built-in shock absorber Lever rod end type (ø32, ø40, ø50 only)



Only one roller is provided for ø32.



### Component Parts (For single acting)

No.	Description	Material	Note
23	Lever	Cast iron	
24	Lever holder	Rolled steel	
25	Roller B	Resin	
26	Shock absorber	—	ø32-RB1007-X225 ø40, 50-RB1407-X552
27	Lever spring	Stainless steel wire	
28	Type C retaining ring for axis	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	

### Replacement Parts/Seal Kit

Bore size (mm)	Kit no.			Contents
	Double acting	Double acting with spring loaded	Single acting	
12	RSQ12D-PS	RSQ12T-PS		Set of above nos. (18, 19, 20)
16	RSQ16D-PS	RSQ16B-PS	RSQ16T-PS	
20	RSQ20D-PS	RSQ20B-PS	RSQ20T-PS	
32	RSQ32D-PS	RSQ32B-PS	RSQ32T-PS	
40	RSQ40D-PS	RSQ40B-PS	RSQ40T-PS	
50	RSQ50D-PS	RSQ50B-PS	RSQ50T-PS	

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

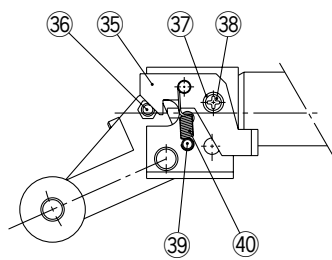
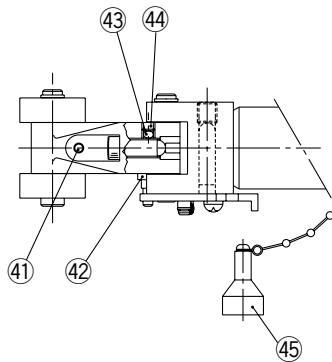
\* Since the seal kit does not include a grease pack, order it separately.

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

### Replacement Parts: Shock Absorber

Bore size (mm)	Kit no.
32	RB1007-X225
40, 50	RB1407-X552

**Lever rod end type (With lock mechanism and cancel cap)**  
(ø32, ø40, ø50)



**Component Parts**

No.	Description	Material	Note
<b>With lock mechanism</b>			
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	
<b>With cancel cap</b>			
45	Cancel cap	Aluminum alloy	

**RSQ**

**RSG**

**RS□**

**MI□**

**D-□**

**-X□**

**Individual  
-X□**

# Series RSQ

## Rod End Configuration: Round Bar Type

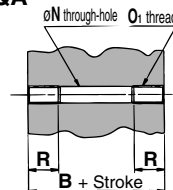
### Basic style: Through-hole mounting, Screw mounting

These 5 figures show the piston rod extended.

Bore size:  $\phi 12$  RS□QB12-10□

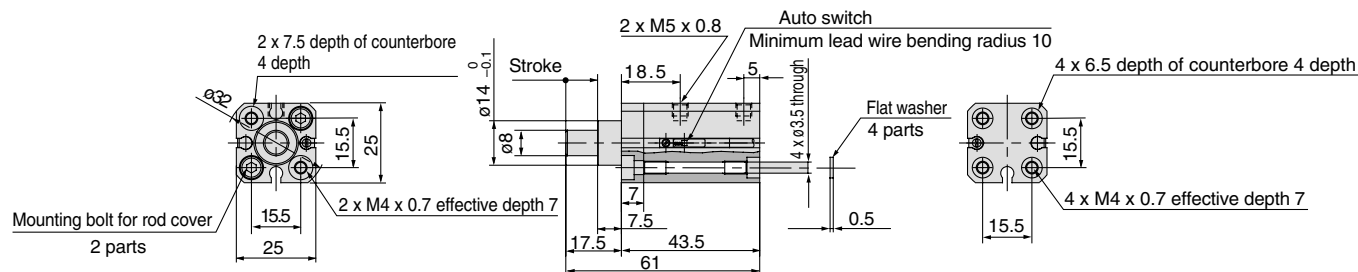
Screw mounting style: Both ends tapped style

RS□QA

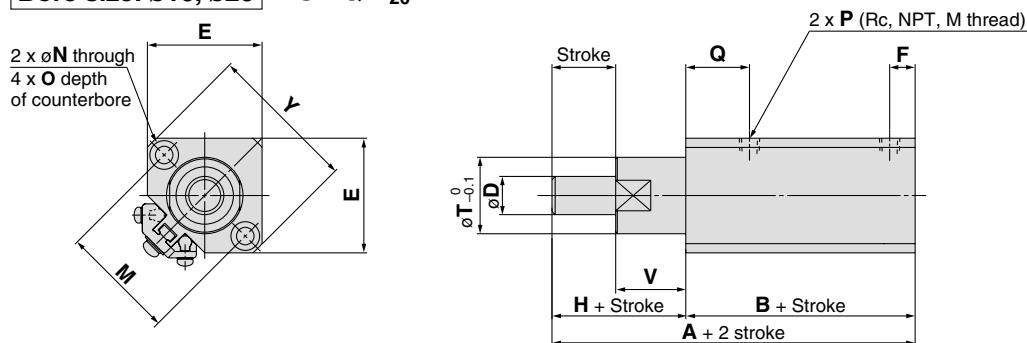


Model	B	N	O <sub>1</sub>	R
RS□QA16	41.5	3.5	M4 x 0.7	7
RS□QA20	45	5.5	M6 x 1	10
RS□QA32	48	5.5	M6 x 1	10
RS□QA40	52.5	5.5	M6 x 1	10
RS□QA50	54	6.6	M8 x 1.25	14

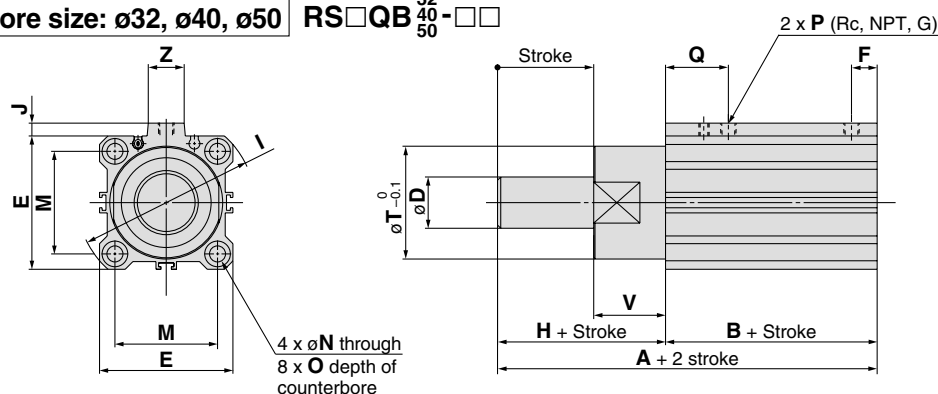
\* Dimensions other than above are the same as below drawings.



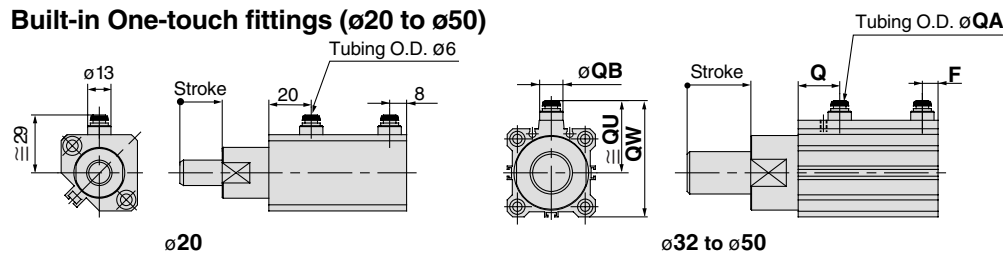
Bore size:  $\phi 16, \phi 20$  RS□QB<sup>16</sup>/<sub>20</sub>-□□



Bore size:  $\phi 32, \phi 40, \phi 50$  RS□QB<sup>32</sup>/<sub>40</sub>/<sub>50</sub>-□□



### Built-in One-touch fittings ( $\phi 20$ to $\phi 50$ )



### Built-in One-touch Fittings (mm)

Bore size (mm)	Applicable tubing O.D. QA	F	Q	QB	QU	QW
32	6	7.5	20	13	38	60.5
40	6	8	24.5	13	42	68
50	8	9.5	26	16	50	82

Bore size (mm)	A	B	D	E	F	H	I	J	M	N	O	P	Q	T	V	Y	Z
16	59.5	41.5	10	29	6	18	—	—	28	3.5	6.5 depth 4	M5 x 0.8	17	20	18	38	—
20	67	45	12	36	8	22	—	—	36	5.5	9 depth 7	1/8	20	24	22	47	—
32	68	48	20	45	7.5	20	60	4.5	34	5.5	9 depth 7	1/8	20	36	20	—	14
40	80.5	52.5	25	52	8	28	69	5	40	5.5	9 depth 7	1/8	24.5	44	28	—	14
50	82	54	25	64	8	28	86	7	50	6.6	11 depth 8	1/8	24.5	56	28	—	19

Note 1) M thread (M5 x 0.8) is applicable for  $\phi 12$  and  $\phi 16$  piping ports.

TF (G thread) for  $\phi 20$  also indicates M5 x 0.8.

Note 2) For the auto switch mounting position and its mounting height, refer to page 1384.

Note 3) These figures show the piston rod extended.

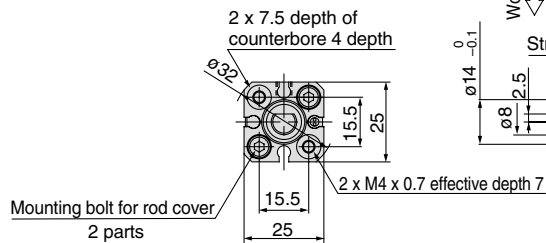
Note 4) In the case of single acting type, a One-touch fitting is on the rod side only.

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

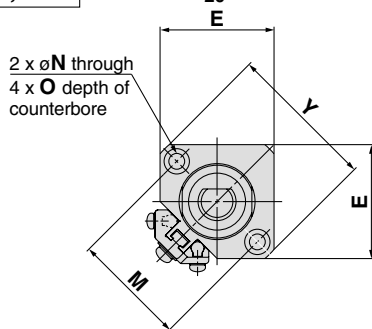
## Basic style: Through-hole mounting, Screw mounting

These 5 figures show the piston rod extended.

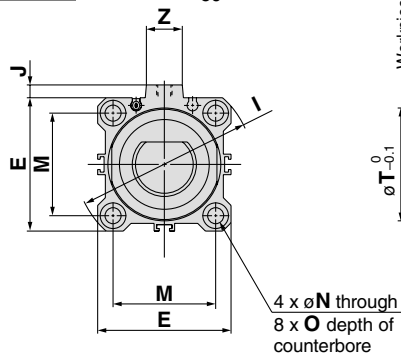
Bore size:  $\phi 12$  RS□QB12-10□K



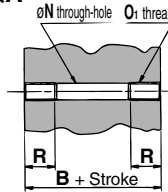
Bore size:  $\phi 16, \phi 20$  RS□QB<sup>16</sup><sub>20</sub>-□□K



Bore size:  $\phi 32, \phi 40, \phi 50$  RS□QB<sup>32</sup><sub>40</sub><sub>50</sub>-□□K

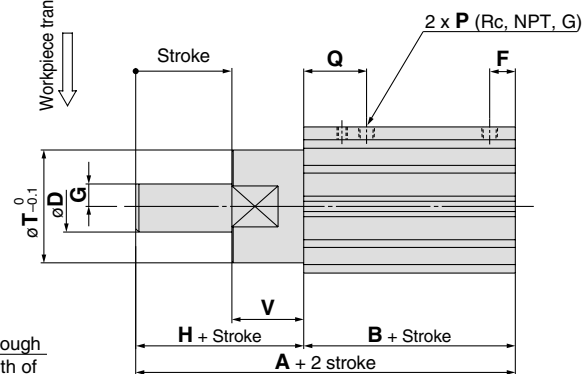
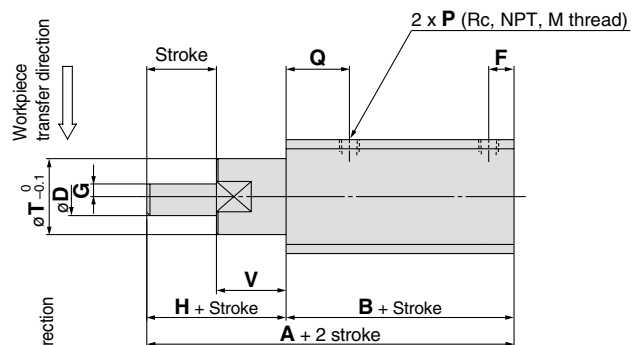
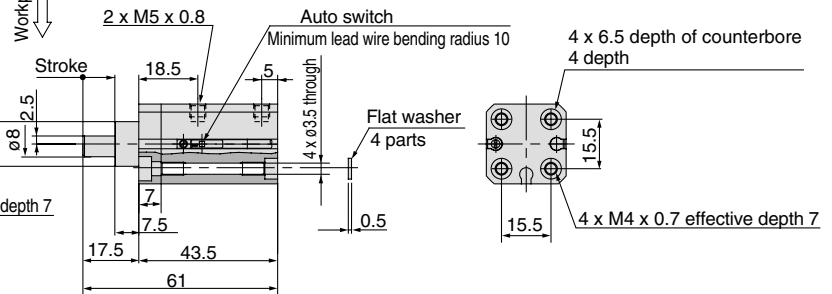


Screw mounting style: Both ends tapped style RS□QA

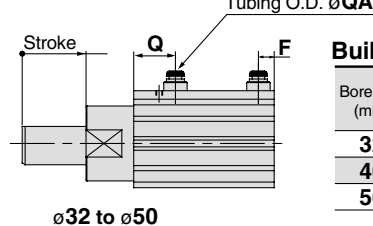
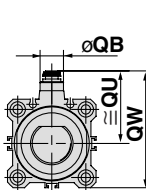
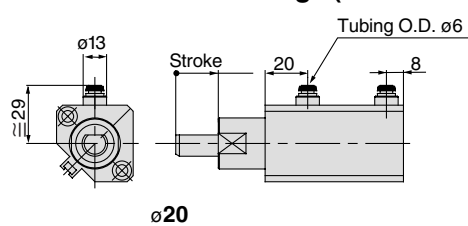


Model	B	N	O <sub>1</sub>	R
RS□QA16	41.5	3.5	M4 x 0.7	7
RS□QA20	45	5.5	M6 x 1	10
RS□QA32	48	5.5	M6 x 1	10
RS□QA40	52.5	5.5	M6 x 1	10
RS□QA50	54	6.6	M8 x 1.25	14

\* Dimensions other than above are the same as below drawings.



## Built-in One-touch fittings ( $\phi 20$ to $\phi 50$ )



Bore size (mm)	Applicable tubing O.D. QA	F	Q	QB	QU	QW
32	6	7.5	20	13	38	60.5
40	6	8	24.5	13	42	68
50	8	9.5	26	16	50	82

Bore size (mm)	A	B	D	E	F	G	H	I	J	M	N	O	P	Q	T	V	Y	Z
16	59.5	41.5	10	29	6	3	18	—	—	28	3.5	6.5 depth 4	M5 x 0.8	17	20	18	38	—
20	67	45	12	36	8	4	22	—	—	36	5.5	9 depth 7	1/8	20	24	22	47	—
32	68	48	20	45	7.5	8	20	60	4.5	34	5.5	9 depth 7	1/8	20	36	20	—	14
40	80.5	52.5	25	52	8	10	28	69	5	40	5.5	9 depth 7	1/8	24.5	44	28	—	14
50	82	54	25	64	8	10	28	86	7	50	6.6	11 depth 8	1/8	24.5	56	28	—	19

Note 1) M thread (M5 x 0.8) is applicable for  $\phi 12$  and  $\phi 16$  piping ports.  
TF (G thread) for  $\phi 20$  also indicates M5 x 0.8.

Note 2) For the auto switch mounting position and its mounting height, refer to page 1384.

Note 3) These figures show the piston rod extended.

Note 4) In the case of single acting type, a One-touch fitting is on the rod side only.



### Rod End Configuration: Roller Type

## Basic style: Through-hole mounting, Screw mounting

These 5 figures show the piston rod extended.

**Bore size: ø12    RS□QB12-10□R**

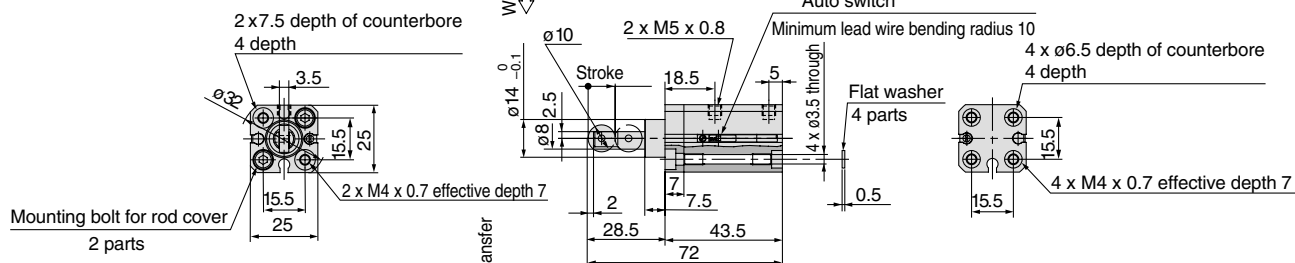
**Screw mounting style: Both ends tapped style**

RS□QA

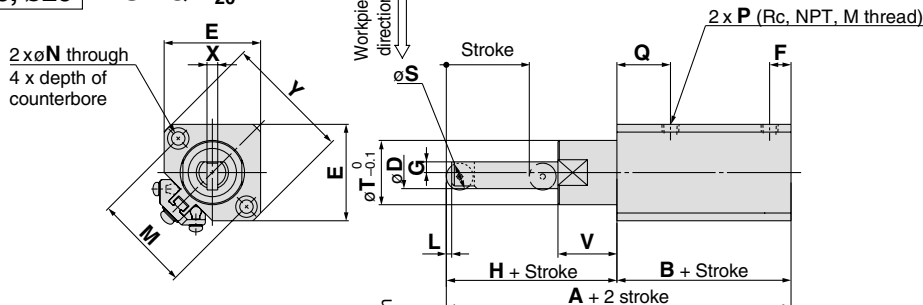
(mm)

Model	B	N	O <sub>1</sub>	R
RS□QA16	41.5	3.5	M4 x 0.7	7
RS□QA20	45	5.5	M6 x 1	10
RS□QA32	48	5.5	M6 x 1	10
RS□QA40	52.5	5.5	M6 x 1	10
RS□QA50	54	6.6	M8 x 1.25	14

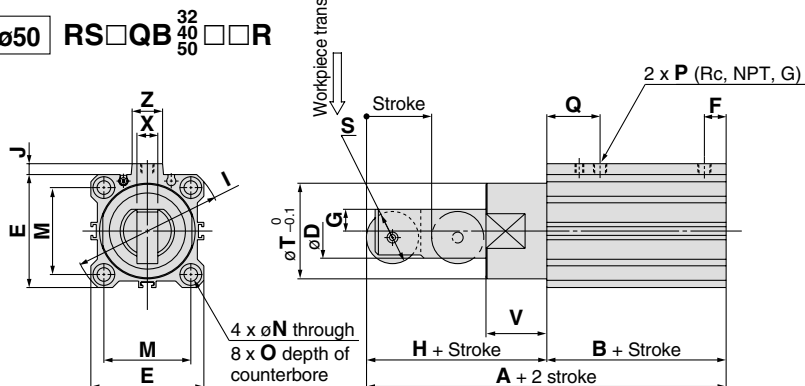
\* Dimensions other than above are the same as below drawings.



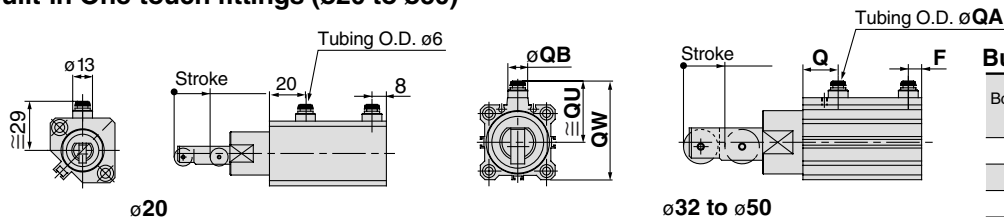
**Bore size: ø16, ø20**     **RS□QB<sup>16</sup><sub>20</sub>-□□R**



**Bore size:** ø32, ø40, ø50    **RS** ☐ **QB** <sup>32</sup><sub>40</sub><sub>50</sub> ☐ ☐ **R**



### Built-in One-touch fittings (ø20 to ø50)



### Built-in One-touch Fittings

(mm)

Bore size (mm)	Applicable tubing O.D. <b>QA</b>	<b>F</b>	<b>Q</b>	<b>QB</b>	<b>QU</b>	<b>QW</b>
<b>32</b>	6	7.5	20	13	38	60.5
<b>40</b>	6	8	24.5	13	42	68
<b>50</b>	8	9.5	26	16	50	82

(mm)

Bore size (mm)	A	B	D	E	F	G	H	I	J	L	M	N	O	P	Q	S	T	V	X	Y	Z
<b>16</b>	68	41.5	10	29	6	3	26.5	—	—	2	28	3.5	6.5 depth 4	M5 x 0.8	17	8	20	18	3.5	38	—
<b>20</b>	78	45	12	36	8	4	33	—	—	2	36	5.5	9 depth 7	1/8	20	10	24	22	4	47	—
<b>32</b>	87	48	20	45	7.5	8	39	60	4.5	3	34	5.5	9 depth 7	1/8	20	18	36	20	8	—	14
<b>40</b>	105.5	52.5	25	52	8	10	53	69	5	4	40	5.5	9 depth 7	1/8	24.5	24	44	28	9	—	14
<b>50</b>	107	54	25	64	8	10	53	86	7	4	50	6.6	11 depth 8	1/8	24.5	24	56	28	9	—	19

Note 1) M thread (M5 x 0.8) is applicable for ø12 and ø16 piping ports.

TF (G thread) for  $\varnothing 20$  also indicates M5 x 0.8.

Note 2) For the auto switch mounting position and its mounting height, refer to page 1384.

Note 3) These figures show the piston rod extended.

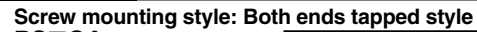
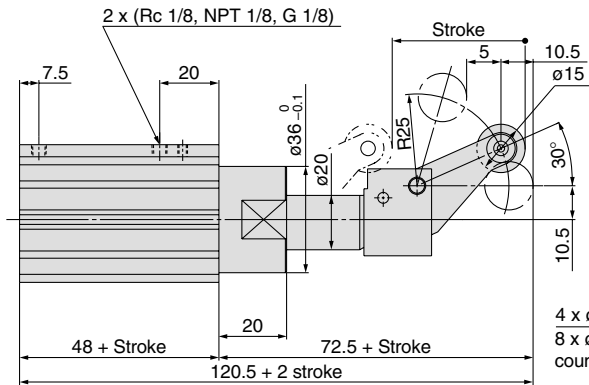
Note 4) In the case of single acting type, a One-touch fitting is on the rod side only.

### Rod End Configuration: Lever Type with Shock Absorber

## Basic style: Through-hole mounting, Screw mounting

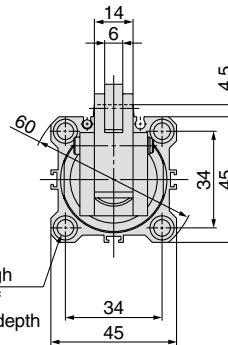
**These 3 figures show the piston rod extended.**

**Bore size: ø32**      **RS□QB32-□□L**

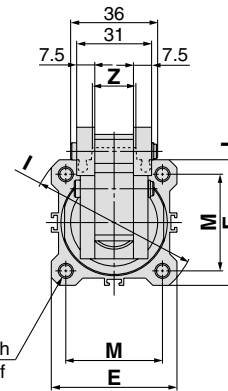
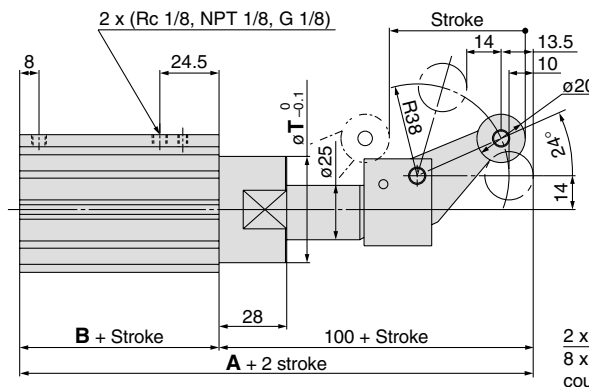


Model	B	N	O <sub>1</sub>	R
RS□QA32	48	5.5	M6 x 1	10
RS□QA40	52.5	5.5	M6 x 1	10
RS□QA50	54	6.6	M8 x 1.25	14

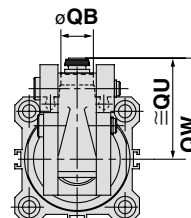
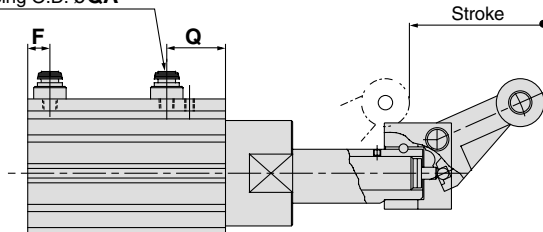
\* Dimensions other than above are the same as below drawings.



**Bore size: ø40, ø50**     **RS□QB<sup>40</sup><sub>50</sub>-□□L**



### Built-in One-touch fittings

Tubing O.D.  $\varnothing$ **QA**

**Built-in One-touch Fittings** (mm)

Bore size (mm)	Applicable tubing O.D. <b>QA</b>	<b>F</b>	<b>Q</b>	<b>QB</b>	<b>QU</b>	<b>QW</b>
<b>32</b>	6	7.5	20	13	38	60.5
<b>40</b>	6	8	24.5	13	42	68
<b>50</b>	8	9.5	26	16	50	82

										(mm)
Bore size (mm)	A	B	E	I	J	M	N	O	T	Z
<b>40</b>	152.5	52.5	52	69	5	40	5.5	9 depth 7	44	14
<b>50</b>	154	54	64	86	7	50	6.6	11 depth 8	56	19

Note 1) For the auto switch mounting position and its mounting height, refer to page 1384.

Note 2) These figures show the piston rod extended.

Note 3) In the case of single acting type, a One-touch fitting is on the rod side only.

# RSQ

# RSG

RS ☐MI ☐

**D-** ☐

**-X** ☐

Individual

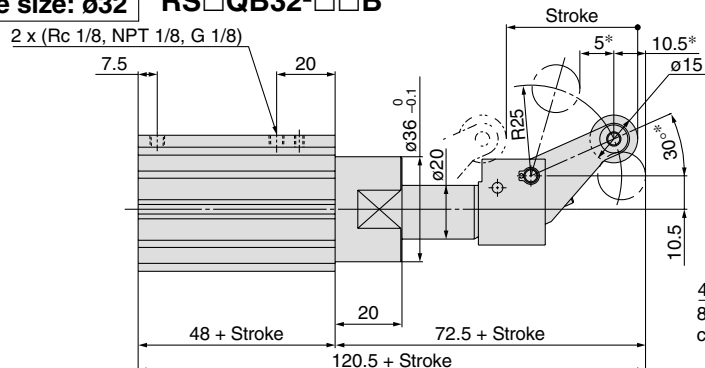
**-X** ☐

### Rod End Configuration: Lever Type with Shock Absorber

**Variable energy absorbing type/  
Through-hole mounting, Screw mounting style  
Adjustable shock absorber stroke**

**These 3 figures show the piston rod extended.**

**Bore size: ø32**      **RS□QB32-□□B**



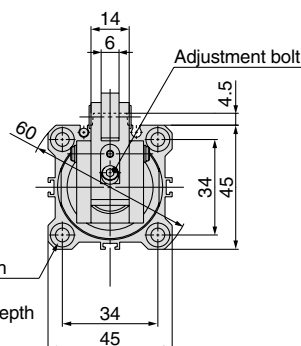
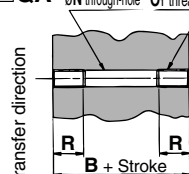
**Screw mounting style: Both ends tapped style**

RS□QA

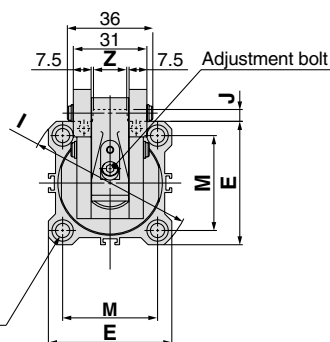
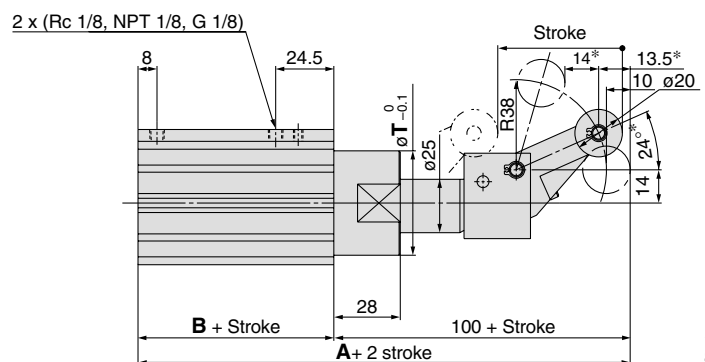
(mm)

Model	B	N	O <sub>1</sub>	R
RS□QA32	48	5.5	M6 x 1	10
RS□QA40	52.5	5.5	M6 x 1	10
RS□QA50	54	6.6	M8 x 1.25	14

\* Dimensions other than above are the same as below drawings.

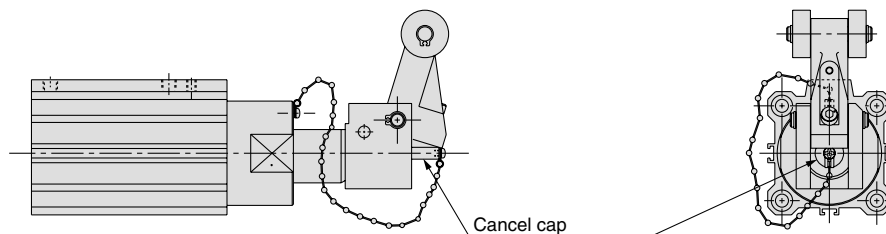


**Bore size: ø40, ø50**      **RS□QB<sup>40</sup><sub>50</sub>-□□B**



**With cancel cap**    **RS□QB□-□□C**

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



\* These figures show dimensions when set for maximum energy absorbing capacity.

(mm)

Bore size (mm)	A	B	E	I	J	M	N	O	T	Z
<b>40</b>	152.5	52.5	52	69	5	40	5.5	9 depth 7	44	14
<b>50</b>	154	54	64	86	7	50	6.6	11 depth 8	56	19

Note 1) For the auto switch mounting position and its mounting height, refer to page 1384.

Note 2) These figures show the piston rod extended.

Note 3) In the case of single acting type, a One-touch fitting is on the rod side only.

Note 4) The figures show the 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 adjustment bolt is raised (energy absorption is reduced).

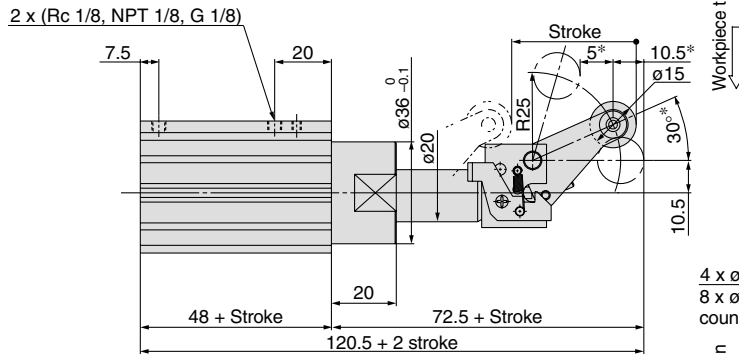
$$\emptyset 32 \dots 30^{\circ*} \rightarrow 20^{\circ*}, 10.5^* \rightarrow 9^*, 5^* \rightarrow 6^*$$
$$\varnothing 40, 50 \dots 24^{\circ*} \rightarrow 16^{\circ*}, 13.5^{\circ*} \rightarrow 11.5^{\circ*}, 14^{\circ*}$$

## Rod End Configuration: Lever Type with Shock Absorber

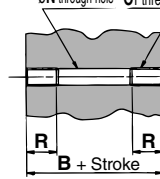
### Variable energy absorbing type/ Through-hole mounting, Screw mounting style With lock mechanism

These 3 figures show the piston rod extended.

**Bore size:  $\phi 32$  RS□QB32-□□D**



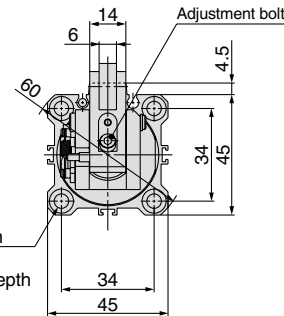
Screw mounting style: Both ends tapped style  
RS□QA



Model	B	N	O <sub>1</sub>	R
RS□QA32	48	5.5	M6 x 1	10
RS□QA40	52.5	5.5	M6 x 1	10
RS□QA50	54	6.6	M8 x 1.25	14

\* Dimensions other than above are the same as below drawings.

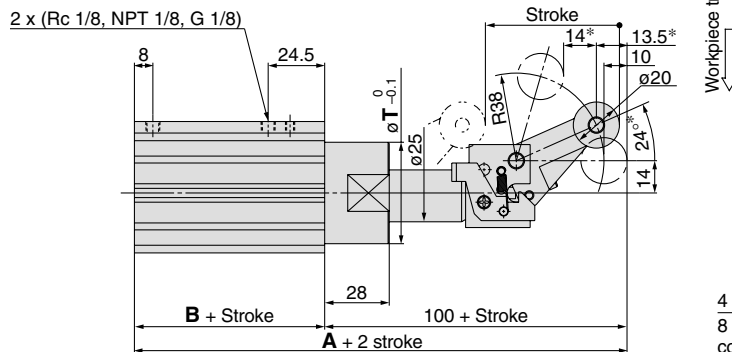
Workpiece transfer direction



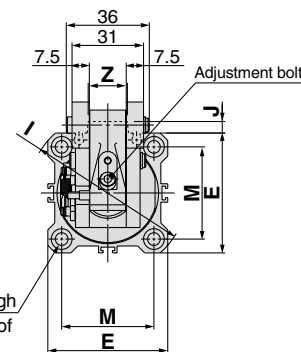
4 x  $\phi 5.5$  through  
8 x  $\phi 9$  depth of  
counterbore 7 depth

Workpiece transfer direction

**Bore size:  $\phi 40, \phi 50$  RS□QB<sup>40</sup><sub>50</sub>-□□D**



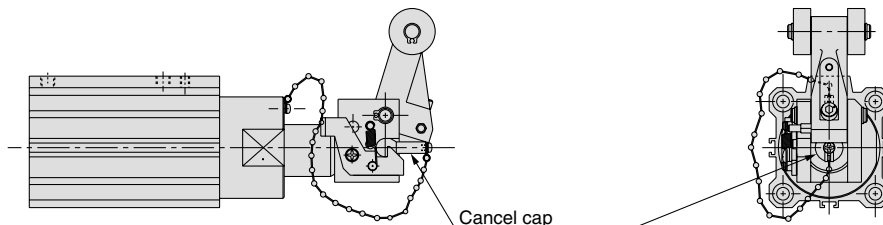
Workpiece transfer direction



4 x  $\phi N$  through  
8 x  $\phi O$  depth of  
counterbore

**With lock mechanism + Cancel cap RS□QB□□-□□E**

\* Dimensions when equipped with lock and cancel cap are the same as the figure drawing.



\* These figures show dimensions when set for maximum energy absorbing capacity. (mm)

Bore size (mm)	A	B	E	I	J	M	N	O	T	Z
40	152.5	52.5	52	69	5	40	5.5	9 depth 7	44	14
50	154	54	64	86	7	50	6.6	11 depth 8	56	19

Note 1) For the auto switch mounting position and its mounting height, refer to page 1384.

Note 2) These figures show the piston rod extended.

Note 3) In the case of single acting type, a One-touch fitting is on the rod side only.

Note 4) The figures shows the 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 adjustment bolt is raised (energy absorption is reduced).

$\phi 32 \dots 30^\circ \rightarrow 20^\circ$ ,  $10.5^\circ \rightarrow 9^\circ$ ,  $5^\circ \rightarrow 6^\circ$

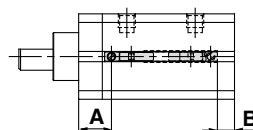
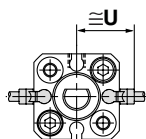
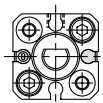
$\phi 40, 50 \dots 24^\circ \rightarrow 16^\circ$ ,  $13.5^\circ \rightarrow 11.5^\circ$ ,  $14^\circ \rightarrow 16^\circ$

# Series RSQ

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

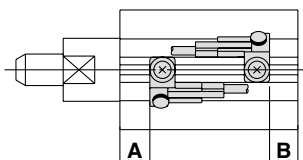
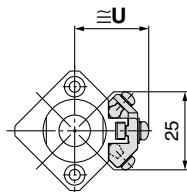
$\phi 12$  D-A9□  
 D-M9□  
 D-M9□W  
 D-M9□AL

D-A9□V  
 D-M9□V  
 D-M9□WV  
 D-M9□AVL



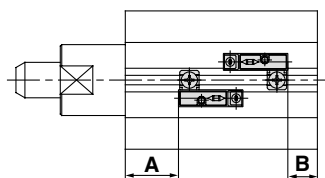
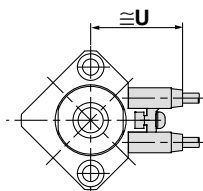
D-A9□  
 D-M9□  
 D-M9□W  
 D-A9□V  
 D-M9□V  
 D-M9□WV  
 D-M9□AL  
 D-M9□AVL

$\phi 16, 20$

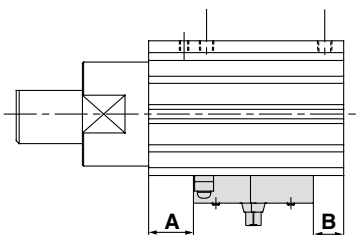
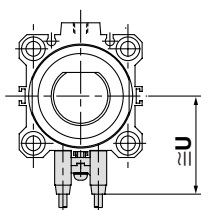


D-A7□  
 D-A80  
 D-A7□H  
 D-A80H  
 D-F7□  
 D-J79  
 D-F7□W  
 D-J79W  
 D-F79F  
 D-F7NTL  
 D-F7BAL  
 D-A73C  
 D-A80C  
 D-J79C  
 D-A79W  
 D-F7□WV  
 D-F7□V  
 D-F7BAVL

$\phi 16, \phi 20$



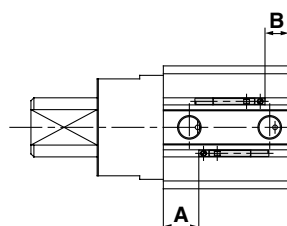
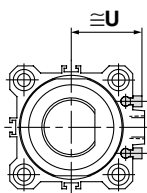
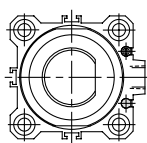
$\phi 32$  to  $\phi 50$



$\phi 32$  to  $\phi 50$

D-A9□  
 D-M9□  
 D-M9□W  
 D-M9□AL

D-A9□V  
 D-M9□V  
 D-M9□WV  
 D-M9□AVL



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

### Auto Switch Proper Mounting Position

(mm)

Auto switch model Bore size (mm)	D-A9□ D-A9□V		D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□AL D-M9□AVL		D-A73 D-A80		D-A72/A7□H/A80H D-A73C/A80C D-F7□/J79 D-F7□V/J79C D-F7BAVL/F7BAL D-F7□W/J79W D-F7□WV/F79F		D-F7NTL		D-A79W	
	A	B	A	B	A	B	A	B	A	B	A	B
12	9	7	13	11	—	—	—	—	—	—	—	—
16	9	9	13	13	11.5	11.5	12	12	17	17	9	9
20	15	7	19	11	17.5	9.5	18	10	23	15	15	7
32	17	11	21	15	18	12	18.5	12.5	23.5	17.5	15.5	9.5
40	21.5	11	25.5	15	22.5	12	23	12.5	28	17.5	20	9.5
50	29.5	4.5	33.5	8.5	30.5	5.5	31	6	36	11	28	3

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

### Auto Switch Mounting Height

(mm)

Auto switch model Bore size (mm)	D-A9□V	D-M9□V D-M9□WV D-M9□AVL	D-A7□ D-A80	D-A7□H D-A80H/F7□ D-J79/F7□W D-F7BAL D-J79W D-F79F D-F7NTL	D-A73C D-A80C	D-F7□V D-F7□WV D-F7BAVL	D-J79C	D-A79W
	U	U	U	U	U	U	U	U
12	17	19.5	—	—	—	—	—	—
16	23.5	23.5	22.5	23.5	29.5	26	29	25
20	25.5	25.5	24.5	25.5	31.5	28	31	27
32	27	29	31.5	32.5	38.5	35	38	34
40	30.5	32.5	35	36	42	38.5	41.5	37.5
50	36.5	38.5	41	42	48	44.5	47.5	43.5

RSQ

RSG

RS□

MI□

## Operating Range

(mm)

Auto switch model	Bore size (mm)					
	12	16	20	32	40	50
D-A9□/A9□V	6	9.5	9	9.5	9.5	9.5
D-M9□/M9□V D-M9□W/M9□WV D-M9□AL/M9□AVL	3	5	5.5	6	6	7
D-A7□/A80 D-A7H/A80H D-A73C/A80C	—	12	12	12	11	10
D-A79W	—	13	13	13	14	14
D-F7□/J79 D-F7□V/J79C D-F7□W/J7□WV D-F7BAL/F7BAVL D-F79F/F7NTL	—	6	5.5	6	6	6

\* 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.

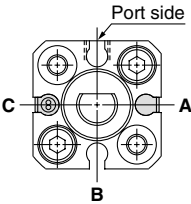
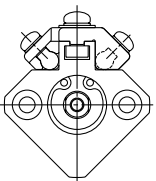
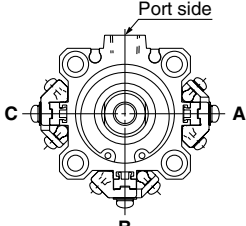
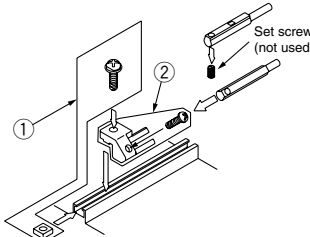
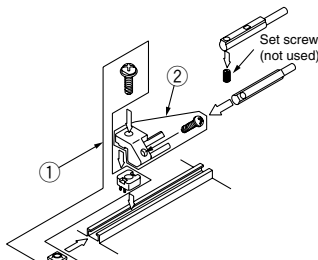
\* The values above for a bore size ø12 and over ø32 of D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V)L types are measured when the conventional switch installation groove is attached without using the auto switch mounting bracket BQ2-012.

D-□

-X□

Individual  
-X□

## Auto Switch Mounting Bracket: Part No.

Auto switch mounting surface	Bore size (mm)			
	ø12	ø16, ø20	ø32, ø40, ø50	
				
Auto switch model	Auto switch mounting surface		Auto switch mounting surface	
	A, B, C side	Only auto switch mounting rail surface	Port side	A, B, C side
<b>D-A9□</b> <b>D-A9□V</b> <b>D-M9□</b> <b>D-M9□V</b> <b>D-M9□W</b> <b>D-M9□WV</b> <b>D-M9□AL</b> <b>D-M9□AVL</b>	Auto switch mounting brackets are not required.		Auto switch mounting brackets are not required.	
	① BQ-1 ② BQ2-012 Two kinds of auto switch mounting brackets are used as a set. 		① BQ-2 ② BQ2-012 Two kinds of auto switch mounting brackets are used as a set. 	

Note 1) For each cylinder series, when a compact auto switch is mounted on the three sides (A, B and C above) other than the port side of bore sizes ø32 to ø50, the auto switch mounting brackets above are required. Order them separately from cylinders.

Ordering example:  
 RSDQB32-20-M9BW.....1 unit  
 BQ-2.....2 pcs.  
 BQ2-012.....2 pcs.

Note 2) Auto switch mounting brackets and auto switches are shipped together with cylinders.

Auto switch model	Bore size (mm)				
	16	20	32	40	50
<b>D-A7□/A80</b> <b>D-A73C/A80C</b> <b>D-A7□H/A80H</b> <b>D-A79W</b> <b>D-F7□/J79</b> <b>D-F7□V</b> <b>D-J79C</b> <b>D-F7□W/J79W</b> <b>D-F7□WV</b> <b>D-F7BAL/F7BAVL</b> <b>D-F79F/F7NTL</b>	BQ-1		BQ-2		

Note 3) Auto switch mounting brackets and auto switches are shipped together with cylinders.

### [Mounting screw set made of stainless steel]

The following set of mounting screws made of stainless steel (including nuts) is available. Use it in accordance with the operating environment. (Please order BQ-2 separately, since auto switch spacers (for BQ-2) are not included.)

BBA2: For D-A7/A8/F7/J7 types

D-F7BAL/F7BAVL auto switches are set on the cylinder with the stainless steel screws above when shipped. When an auto switch is shipped independently, BBA2 is attached.

Note 4) When D-M9□A(V)L type is mounted on a side other than the ø32, ø40 or ø50 port side, order auto switch mounting brackets BQ2-012S or BQ-2, or a stainless steel screw set BBA2 separately.

Note 5) Refer to page 1817 for the details of BBA2.

### Auto Switch Mounting Bracket Mass

Auto switch mounting bracket part no.	Mass (g)
BQ-1	1.5
BQ-2	1.5
BQ2-012	5

Besides the models listed in How to Order, the following auto switches are applicable.

### Other Applicable Auto Switches

Auto switch type	Model	Electrical entry (Fetching direction)	Features
Reed	D-A73	Grommet (Perpendicular)	—
	D-A80		Without indicator light
	D-A73H, A76H	Grommet (In-line)	—
	D-A80H		Without indicator light
Solid state	D-F7NV, F7PV, F7BV	Grommet (Perpendicular)	—
	D-F7NWV, F7BWV		Diagnostic indication (2-color indication)
	D-F7BAVL		Water resistant (2-color indication)
	D-F79, F7P, J79	Grommet (In-line)	—
	D-F79W, F7PW, J79W		Diagnostic indication (2-color indication)
	D-F7BAL		Water resistant (2-color indication)
	D-F7NTL		With timer

\* For solid state auto switches, auto switches with a pre-wired connector are also available. Refer to pages 1784 and 1785 for details.

\* Normally closed (NC = b contact), solid state switch (D-F9G/F9H types) are also available. Refer to page 1746 for details.

\* D-A7/A8/F7/J7 cannot be mounted on ø12.