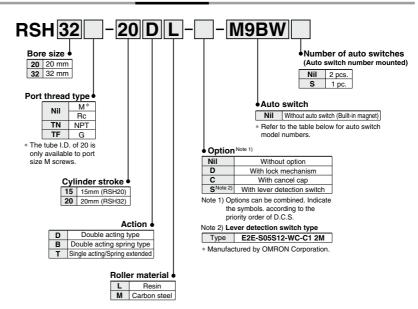
# RSH Series ©20, Ø32

#### **How to Order**



#### Applicable auto switches/Refer to pages 941 to 1067 for detailed auto switch specifications.

		Florendered	igi		L	Load voltag		Auto switch models		Lead wire length (m)			(m)	Day ordered											
Type	Special function	Electrical entry	Indicator	Wiring (output)	D	DC AC F	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applica	ble load										
ڃ				3-wire (NPN)		5 V, 12 V		M9NV	M9N	•	•	•	0	0	IC										
switch	<del></del>			3-wire (PNP)		5 V, 12 V		M9PV	M9P	•	•	•	0	0	circuit										
				2-wire		12 V		M9BV	M9B	•	•	•	0	0											
anto	Diagnostic indication	]		3-wire (NPN)	3-wire (NPN)	3-wire (NPN)	24 V 5 V	24 V	3-wire (PNP) 24 V 2-wire 3-wire (NPN)		24 V		24 V 5		E 1/ 101	5 V. 12 V		M9NW	•	•	•	0	0	IC	Relay,
	(2-color display)	Grommet	Yes	3-wire (PNP)	24 V 5 V, 12 V	24 V								5 V, 12 V	v, 12 v	M9PWV	M9PW	•	•	•	0	0	circuit	PLC	
state	(2-color display)			2-wire	2-wire	2-wire				12 V	1	M9BWV	M9BW	•	•	•	0	0	_	FLC					
	Water resistance	]		3-wire (NPN)	4 I5\	1 15 V ·					5 V 40 V	5 V 40 V	M9NAV**	M9NA**	0	0	•	0	0	IC					
Solid				3-wire (PNP)										٦	3 V, 12 V	3 V, 12 V	M9PAV**	M9PA**	0	0	•	0	0	circuit	
ŭ	(2-color display)			2-wire		12 V	1	M9BAV**	M9BA**	0	0	•	0	0	_										
o switch		Grommet	Yes	3-wire (NPN equiv)	_	5 V	_	-	Z76	•	-	•	_	_	IC circuit	_									
d au to	- I	Gronniet		2-wire	24 V	12 V	100 V	_	Z73	•	_	•	_	_	_	Relay,									
Reed			No	Z-WIIE	24 V	12 0	100 V or less	_	Z80	•	-	•	_	_	IC circuit	PLĆ									

- \*\* 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.
- \* 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
- \* Solid state auto switches marked with a "O" symbol are produced upon receipt of order.
- \* D-A9 A9 V types cannot be mounted.
- \* Refer to page 614 since there are applicable auto switches other than listed.
- \* Refer to pages 1014 and 1015 for the details of auto switches with a pre-wired connector.
- \* Auto switches are shipped together (not assembled).

# Heavy Duty Stopper Cylinder **RSH Series**



### **Specifications**

	RS	SH			
Bore size (mm)	20	32			
Action	Double acting, Double acting sprin	ng, Single acting (Spring extended)			
Type of rod end	Lever with built-in shock absorber type				
Fluid	Air				
Proof pressure	1.5 MPa				
Max. operating pressure	1.0 MPa				
Ambient and fluid temperature	e −10 to 60°C (No freezing)				
Lubrication	Not required (non-lube)				
Cushion	Rubber	bumper			
Stroke length tolerance	+1	1.4			
Mounting	Fla	nge			
	M5 x 0.8	1/8			
Port size Rc, NPT, G	_	1/8			
,,	_	1/8			

#### Bore Size, Standard Stroke

(mm)

Model	Bore size (mm)	Standard stroke
DCII	20	15
RSH	32	20

#### Weight

(kg)

Action	Rod end configuration	Bore size (mm)	Weight
Double acting type  Double acting spring type	Lever with built-in	20	0.41
Single acting spring extended	shock absorber type	32	0.75

RSQ

RSG

RS2H RSH

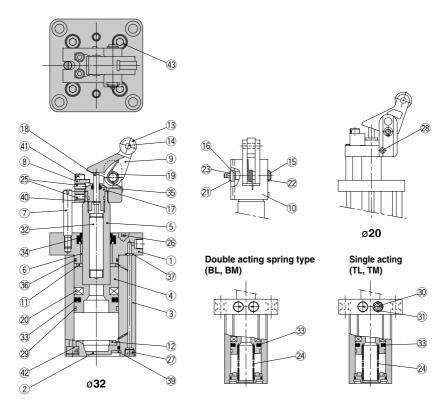
MIW MIS



#### Construction

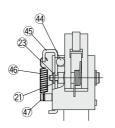
ø20, ø32

Double acting (DL, DM)

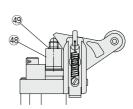


## Options (With lock mechanism, with cancel cap)





With cancel cap (-C)



#### **Parts List**

	3 LI3t		
No.	Description	Material	Note Metallic painted
1	Rod cover		
2	Bottom plate	Aluminum alloy	Chromate
3	Cylinder tube	Aluminum alloy	Hard anodized
4	Piston	Aluminum alloy	Chromate
5	Piston rod	ø20: Stainless steel	Hard chrome plated
э	Piston rod	ø32: Carbon steel	naru crirorne piateu
6	Bushing	Bearing alloy	
7	Guide rod	Carbon steel	Hard chrome plated
8	Stopper screw	Stainless steel	
9	Lever	Carbon steel	Nickel plated
10	Lever holder	Carbon steel	Nickel plated
11	Bumper A	Urethane	
12	Bumper B	Urethane	
	•	Resin	-00L
13	Roller	Carbon steel	-□□M
14	Spring pin	Carbon tool steel	
15	Lever pin	Carbon steel	
16	Ring A	Rolled steel	Nickel plated
17	Adjustment dial	Aluminum alloy	p
18	End rod	Special steel	
19	Lever spring	Steel wire	
20	Magnet	_	
21	Flat washer	Steel wire	Nickel plated
22	Type C retaining ring for shaft	Carbon tool steel	
23	Type E retaining ring for shaft	Carbon tool steel	
24	Return spring	Steel wire	-T□/-B□
25	Hexagon socket head set screw	Chrome molybdenum steel	
26	Parallel pin	Carbon steel	ø20 only
27	Hexagon socket head plug	Chrome molybdenum steel	Nickel plated
28	Spring pin	Carbon tool steel	ø20 only
29	Wear ring	Resin	,
30	Element	Bronze	-T□ only (ø20 is socket set screw
31	Retaining ring	Carbon tool steel	ø32 -T□ only
32	Shock absorber	_	,
33	Piston seal	NBR	
34	Rod seal	NBR	
35	Scraper	NBR	
36	Tube gasket	NBR	
37	O-ring	NBR	
38	Bottom plate gasket	NBR	
39	Type C retaining ring for hole	Carbon tool steel	Phosphate coated
40	Type CE retaining ring for shaft	Carbon tool steel	Phosphate coated
41	Hexagon socket head cap screw		Zinc chromated
42	Hexagon socket head cap screw	Stainless steel	ø20 only
43	Hexagon socket head cap screw	Stainless steel	ø32 only
44	Steel balls	Carbon steel	
45	Bracket	Carbon steel	Chromate
46	Bracket spring	Stainless steel wire	
47	Pin E	Stainless steel	
48	Cancel cap	Aluminum alloy	Clear anodized
49	O-ring	NBR	31041 411041204
	ıg	14511	

Replacement Parts/ Seal Kit						Replacement Parts/ Shock Absorber		
	Bore size		Kit no.		Contents	Bore size	Order no.	
	(mm)	Double acting	ing Double acting spring type   Single acting		Contents	(mm)	Order no.	
	20	RSH20D-PS	RSH20	T-PS	Set of items 33 to 37	20	RSH-R20	
_	32	RSH32D-PS	RSH32T-PS		in above table (excluding 34)	32	RSH-R32	

<sup>\*</sup>Seal kit includes  ${\mathfrak B}$  to  ${\mathfrak B}$  (excluding  ${\mathfrak A}$ ). Order the seal kit based on each bore size.

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

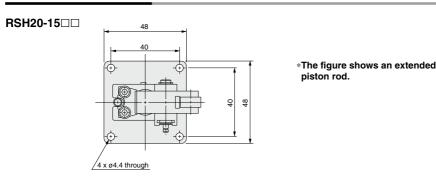
-X□

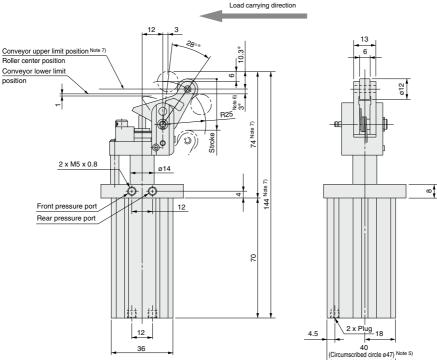
RSQ RSG RS2H



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

#### Dimensions/Bore size: Ø20





Note 1) The figure shows dimensions at the maximum energy absorption capacity.

Note 2) Dimensions with auto switch are identical to the above.

Note 3) The figure shows an extended piston rod.

Note 4) The dimensions marked with "\*" vary according to adjustment of the shock absorber dial.

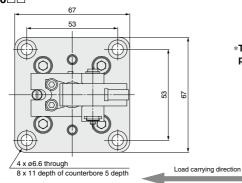
Note 5) Circumscriber circle ø47 means that diameter of the circle circumscribed to the cylinder angles. Mounting hole diameter must be ø48. Be careful of the interference between the lever and the mounting base when mounted from the lever side. Thus, the thickness of the mounting base must be 8 mm or less.

Note 6) It is recommended to set the conveyor height in a range from the lower limit position to the upper limit position of the conveyor (dimension \*3 shown in the figure).

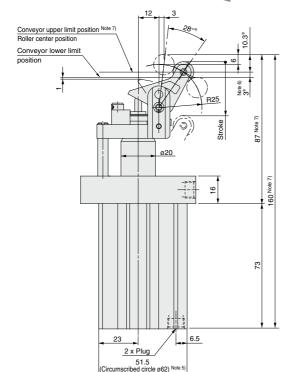
Note 7) The dimensions in the figure do not include the stroke length tolerance (0 to +1.4 mm). When fixing the cylinder (setting the conveyor position), take this into consideration, and be sure to set the cylinder within the range of Note 6) using the upper limit position of the conveyor (roller center position) as a reference.

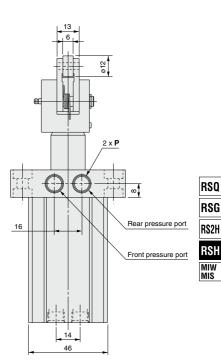
#### Dimensions/Bore size: Ø32

#### RSH32-20□□



\*The figure shows an extended piston rod.





Note 1) The figure shows dimensions at the maximum energy absorption capacity.

Note 2) Dimensions with auto switch are identical to the above.

Note 3) The figure shows an extended piston rod.

Note 4) The dimensions marked with "\*" vary according to adjustment of the shock absorber dial.

Note 5) Circumscriber circle e62 means that diameter of the circle circumscribed to the cylinder angles. Mounting hole diameter must be e63. Be careful of the interference between the lever and the mounting base when mounted from the lever side. Thus, the thickness of the mounting base must be 9 mm or less.

Note 6) It is recommended to set the conveyor height in a range from the lower limit position to the upper limit position of the conveyor (dimension "3 shown in the figure).

Note 7) The dimensions in the figure do not include the stroke length tolerance (0 to +1.4 mm). When fixing the cylinder (setting the conveyor position), take this into consideration, and be sure to set the cylinder within the range of Note 6) using the upper limit position of the conveyor (roller center position) as a reference.



D-□

-X□

TF

G 1/8

P (Piping port)

TN

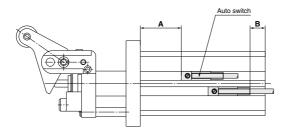
NPT 1/8

Nil

Rc 1/8

# **Auto Switch Mounting**

#### **Auto Switch Proper Mounting Position (Detection at Stroke End)**



Auto switch proper mounting position

(mm

Auto switch models			D-M9 D-M9	□V □WV	D-M9	□A	D-Z7□/Z8 D-Y59□/Y		D-Y69□ D-Y7□¹		D-Y7	'ВА
Bore size	Α	В	Α	В	Α	В	Α	В	Α	В	Α	В
20	23	8.5	23	10.5	23	6.5	18	8(6.5)	18	9.5	18	2
32	18.5	11	18.5	13	18.5	9	13.5	10.5(9)	13.5	12	13.5	4.5

The values inside ( ) are for D-Z73.

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

#### **Operating Range**

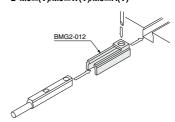
		(mm)
Auto switch models	Bore	size
Auto switch models	20	32
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	5.5	6.0
D-Z7□/Z80	8	10
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV D-Y7BA	5	3.5

Since the operating range is provided as a guideline including hysteresis, it cannot be guaranteed (assuming approximately ±30% dispersion). It may vary substantially depending on an ambient environment.

#### Auto Switch Mounting Bracket/Part No.

Auto switch models	Bore size (mm)
Auto switch models	ø20, ø32
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	BMG2-012

#### $D-M9\square(V)/M9\square W(V)/M9\square A(V)$



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

ricion to paged of 11 to 1007 for detailed openingations.					
Auto switch type	Model	Electrical entry	Features		
	D-Y69A, Y69B, Y7PV	Grommet (Parpendicular)	-		
	D-Y7NWV, Y7PWV, Y7BWV	Grommer (Farpendicular)	Diagnostic indication (2-color display)		
Solid state	D-Y59A, Y59B, Y7P		_		
	D-Y7NW, Y7PW, Y7BW	Grommet (In-line)	Diagnostic indication (2-color display)		
	D-Y7BA		Water resistance (2-color display)		

\*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-M9□E(V)/Y7G/Y7H) are also available. Refer to pages 1592-1 and 961 for details.

# **Lever Detection Switch (Proximity Switch)**

#### Proximity switch specifications/Maker: OMRON Co. Ltd.

Model	E2E-S05S12-WC-C1 2M		
Wiring type	3-wire		
Output system	NPN type		
Output type	Normally open		
Power supply voltage (Operating voltage range)	12 to 24 VDC (10 to 30 VDC), Ripple 10% or less (P-P)		
Current consumption (Leakage current)	10 mA or less		
Response frequency	4 kHz		
Control output (chest)	Open collector maximum 100 mA		
Indicator light	Detection indication (Yellow European Standard EN60947-5-2 complia		
Ambient temperature	-25 to 70°C (No freezing)		
Operating ambient humidity	35 to 95% RH		
Residual voltage Note 1)	2 V or less		
Withstand voltage Note 2)	500 VAC		
Vibration	Endurance 10 to 55 Hz, Duplex amplitude 1.5 mm X,Y,Z direction each 2h		
Impact	Endurance 500 m/s² (approx. 50 G), X, Y, Z direction each 10 times		
Enclosure	IEC standards IP67 (Immersion proof shape and oil proof shape by JEM standards IP67G)		

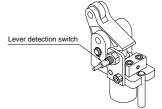
Note 1) At load current 100 mA and cord length of 2 m

Note 2) Between case and whole charging part

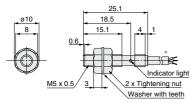
#### **Mounting Position**

#### ●E2E-S05S12-WC-C1 2M

While holding the lever in the detection range of the switch, screw in the switch gradually until the indicator light (red) turns on. Then, screw the switch in further, halfway between the turn-on point and the lever.

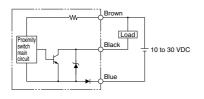


## Dimensions



\* Vinyl insulation round cord ø2.9, 3 cores, (Conductor area: 0.14mm², Insulator O.D.: ø0.8) Standard 2 m

#### **Output Circuit**



RSQ

RSG RS2H

RSH

MIW MIS



