Heavy Duty Stopper Cylinder
RSH Series
ø20, ø32

How to Order

RSH 32 □ – 20 D L – □ – M9BW □

Bore size

20	20 mm
32	32 mm

Port thread type

Nil	M*
	Rc
TN	NPT
TF	G

* The tube I.D. of 20 is only available to port size M screws.

Cylinder stroke

15	15mm (RSH20)
20	20mm (RSH32)

Action

D	Double acting type
B	Double acting spring type
T	Single acting/Spring extended

Roller material

L	Resin
M	Carbon steel

Option Note 1)

Nil	Without option
D	With lock mechanism
C	With cancel cap
S Note 2)	With lever detection switch

Note 1) Options can be combined. Indicate the symbols. according to the priority order of D.C.S.

Note 2) **Lever detection switch type**

Type	**E2E-S05S12-WC-C1 2M**

* Manufactured by OMRON Corporation.

Auto switch

Nil	Without auto switch (Built-in magnet)

* Refer to the table below for auto switch model numbers.

Number of auto switches
(Auto switch number mounted)

Nil	2 pcs.
S	1 pc.

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

Type	Special function	Electrical entry	Indicator light	Wiring (output)	Load voltage DC		Load voltage AC	Auto switch models: Perpendicular	Auto switch models: In-line	Lead wire length (m): 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9NV**	**M9N**	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9PV**	**M9P**	●	●	●	○	○		
				2-wire		12 V		**M9BV**	**M9B**	●	●	●	○	○	—	
	Diagnostic indication (2-color display)			3-wire (NPN)		5 V, 12 V		**M9NWV**	**M9NW**	●	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PWV**	**M9PW**	●	●	●	○	○		
				2-wire		12 V		**M9BWV**	**M9BW**	●	●	●	○	○	—	
	Water resistance (2-color display)			3-wire (NPN)		5 V, 12 V		**M9NAV****	**M9NA****	○	○	●	○	○	IC circuit	
				3-wire (PNP)				**M9PAV****	**M9PA****	○	○	●	○	○		
				2-wire		12 V		**M9BAV****	**M9BA****	○	○	●	○	○	—	
Reed auto switch	—	Grommet	Yes	3-wire (NPN equiv)	—	5 V	—	—	**Z76**	●	—	●	—	—	IC circuit	—
			No	2-wire	24 V	12 V	100 V	—	**Z73**	●	—	●	—	—	—	Relay, PLC
							100 V or less	—	**Z80**	●	—	●	—	—	IC circuit	

** 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 "○" 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).

Specifications

	RSH	
Bore size (mm)	**20**	**32**
Action	Double acting, Double acting spring, 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	–10 to 60°C (No freezing)	
Lubrication	Not required (non-lube)	
Cushion	Rubber bumper	
Stroke length tolerance	$+^{1.4}_{0}$	
Mounting	Flange	
Port size Rc, NPT, G	M5 x 0.8	1/8
	—	1/8
	—	1/8

Bore Size, Standard Stroke

(mm)

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

Weight

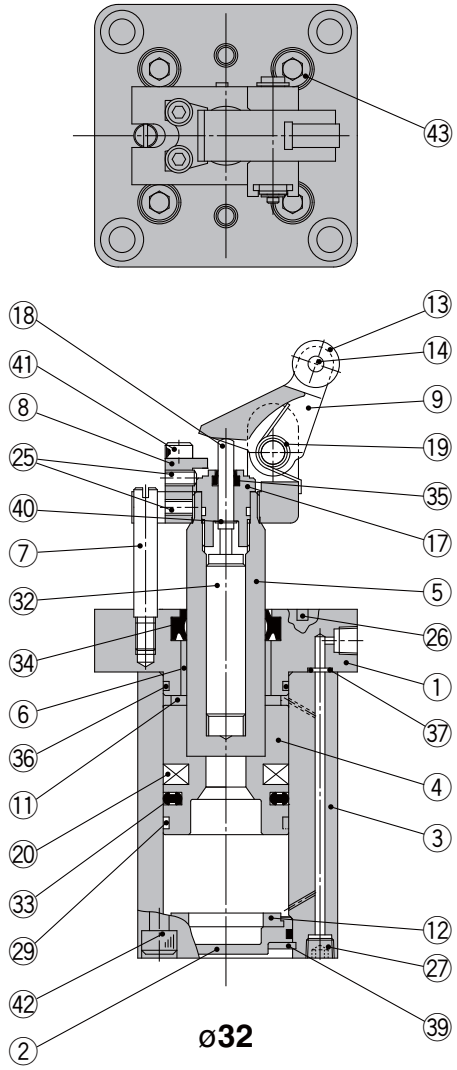
(kg)

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

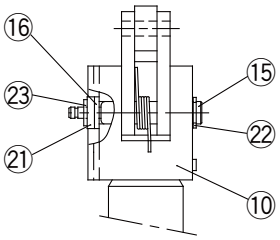
Construction

ø20, ø32

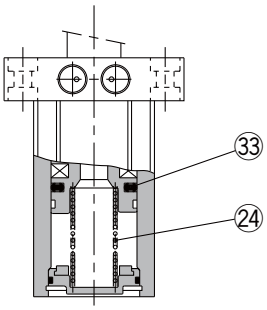
Double acting (DL, DM)

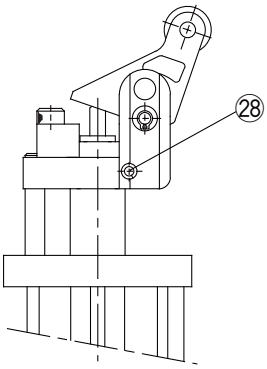


ø32



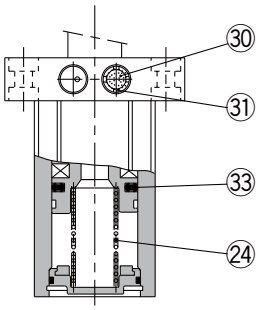
Double acting spring type (BL, BM)





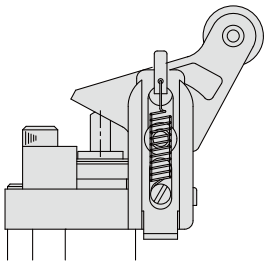
ø20

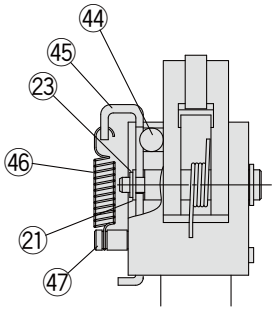
Single acting (TL, TM)



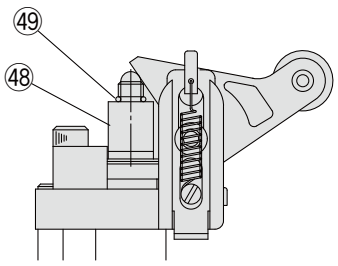
Options (With lock mechanism, with cancel cap)

With lock mechanism (-D)





With cancel cap (-C)



Parts List

No.	Description	Material	Note
1	**Rod cover**	Aluminum alloy	Metallic painted
2	**Bottom plate**	Aluminum alloy	Chromate
3	**Cylinder tube**	Aluminum alloy	Hard anodized
4	**Piston**	Aluminum alloy	Chromate
5	**Piston rod**	ø20: Stainless steel ø32: Carbon steel	Hard chrome plated
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	
13	**Roller**	Resin	-□□L
		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	
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**	Chrome molybdenum steel	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	

Replacement Parts/ Seal Kit

Bore size (mm)	Kit no.			Contents
	Double acting	Double acting spring type	Single acting	
20	RSH20D-PS	RSH20T-PS		Set of items ㉝ to ㊲ in above table (excluding ㉞)
32	RSH32D-PS	RSH32T-PS		

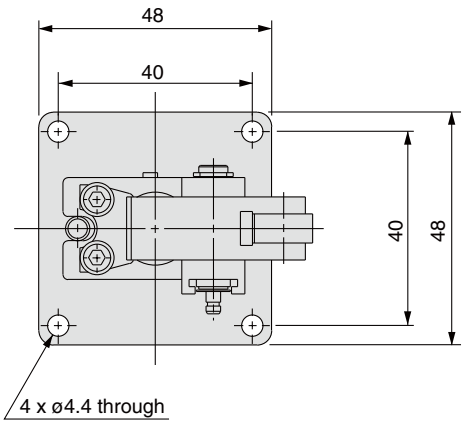
∗Seal kit includes ㉝ to ㊲ (excluding ㉞). Order the seal kit based on each bore size.
∗Since the seal kit does not include a grease pack, order it separately.
Grease pack part no.: GR-S-010 (10 g)

Replacement Parts/ Shock Absorber

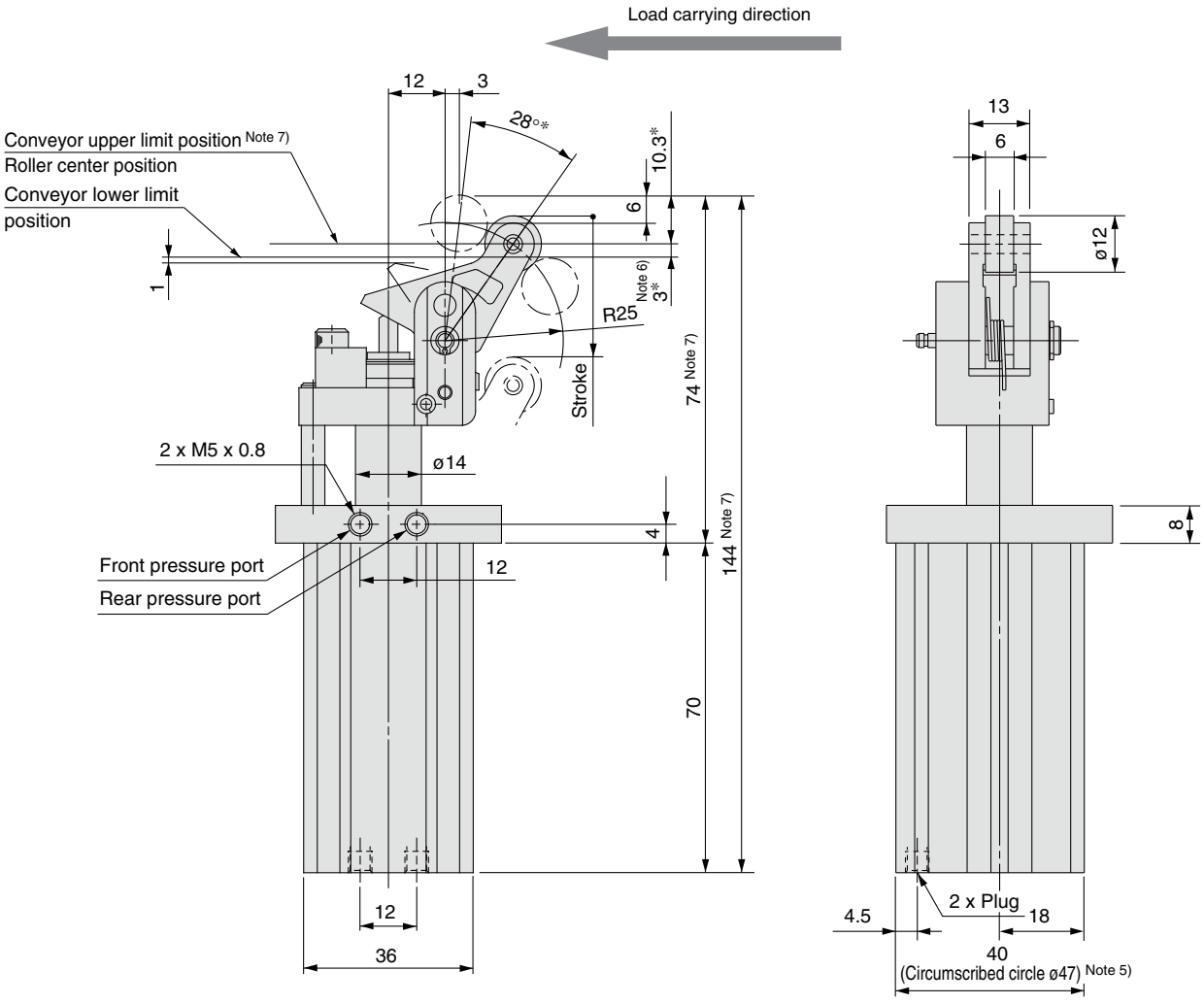
Bore size (mm)	Order no.
20	RSH-R20
32	RSH-R32

Dimensions/Bore size: ø20

RSH20-15□□



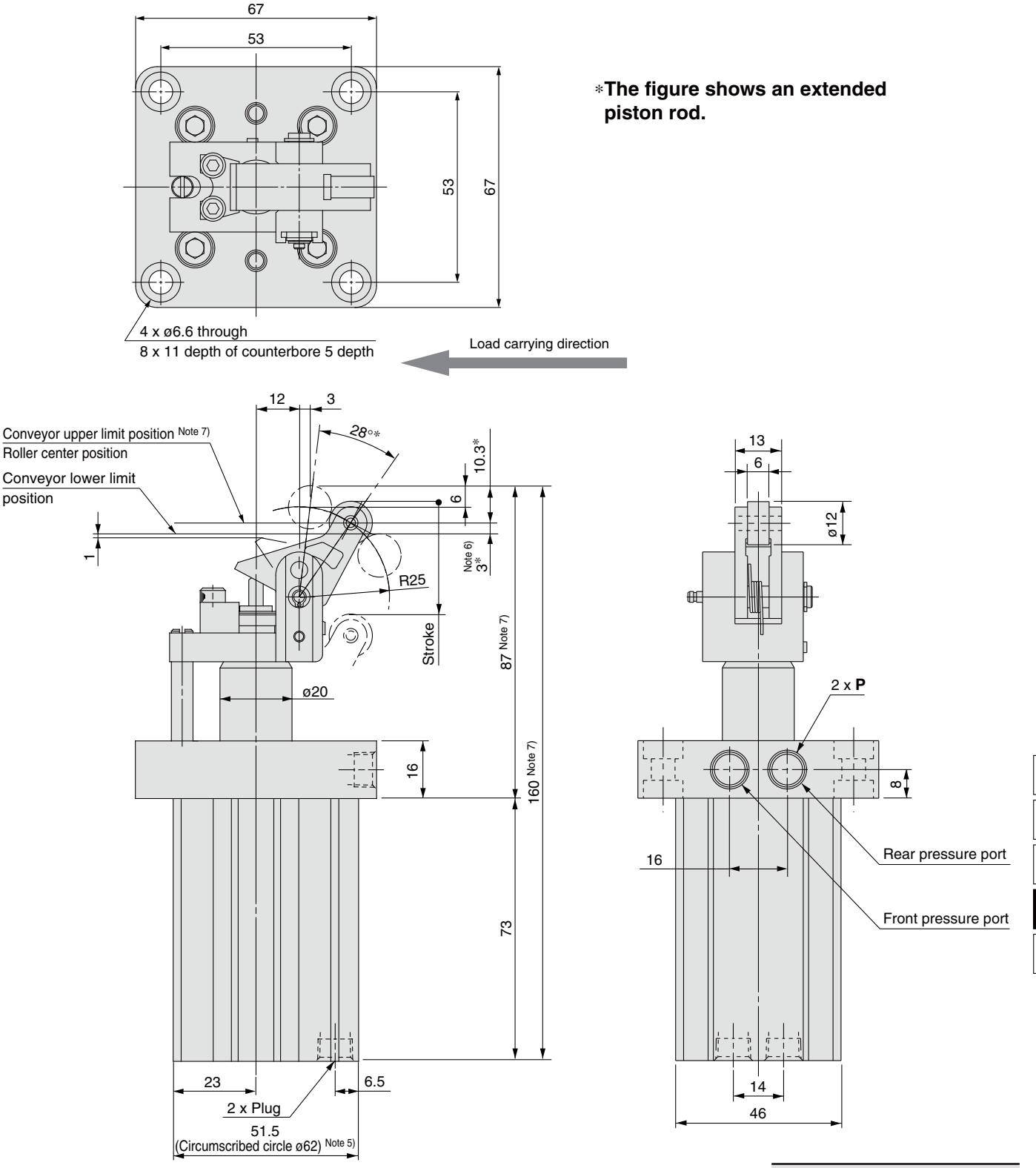
*The figure shows an extended piston rod.



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 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□□

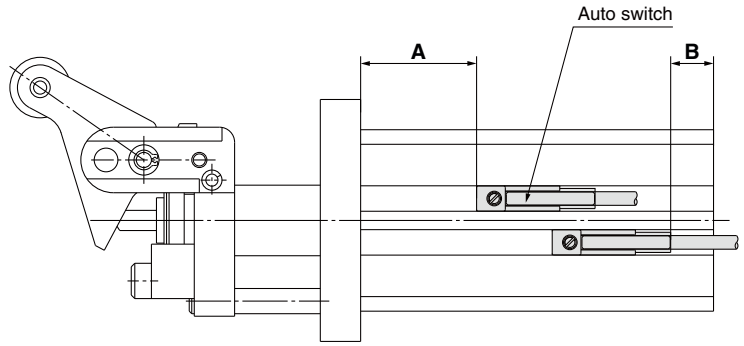


P (Piping port)		
Nil	TN	TF
Rc 1/8	NPT 1/8	G 1/8

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 ø62 means that diameter of the circle circumscribed to the cylinder angles. Mounting hole diameter must be ø63. 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.

Auto Switch Mounting

Auto Switch Proper Mounting Position (Detection at Stroke End)



Auto switch proper mounting position (mm)

Auto switch models / Bore size	D-M9□ D-M9□W D-M9□AV		D-M9□V D-M9□WV		D-M9□A		D-Z7□/Z80 D-Y59□/Y7P/Y7□W		D-Y69□/Y7PV D-Y7□WV		D-Y7BA	
	A	B	A	B	A	B	A	B	A	B	A	B
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)

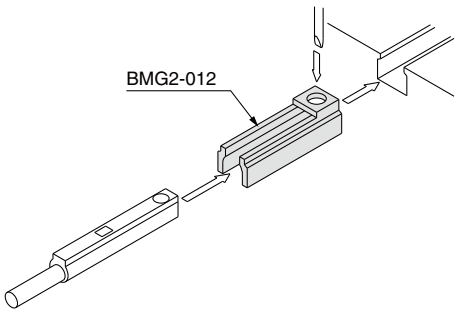
Auto switch models	Bore size	
	20	**32**
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	5.5	6.0
D-Z7□/Z80	8	10
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV D-Y7BA	5	3.5

∗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)
	ø20, ø32
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	BMG2-012

D-M9□(V)/M9□W(V)/M9□A(V)



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	Model	Electrical entry	Features
Solid state	D-Y69A, Y69B, Y7PV	Grommet (Parpendicular)	–
	D-Y7NWV, Y7PWV, Y7BWV		Diagnostic indication (2-color display)
	D-Y59A, Y59B, Y7P	Grommet (In-line)	–
	D-Y7NW, Y7PW, Y7BW		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-F9G/F9H/Y7G/Y7H types) are also available. Refer to pages 959 and 961 for details.

RSH Series
Lever Detection Switch (Proximity Switch)

Proximity switch specifications/Maker: OMRON Co. Ltd.

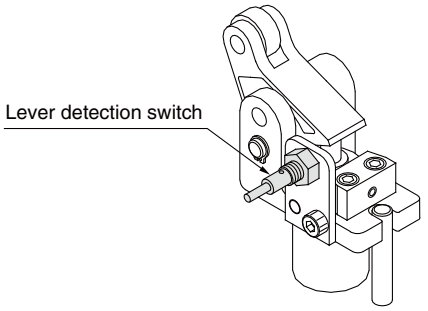
Model	E2E-S05S12-WC-C1 2M
Wiring type	3-wire
Output system	NPN type
Output type	Normally open
Power supply voltage (Operating voltage range)	12 to 24 VDC (10 to 30 VDC), Ripple 10% or less (P-P)
Current consumption (Leakage current)	10 mA or less
Response frequency	4 kHz
Control output (chest)	Open collector maximum 100 mA
Indicator light	Detection indication (Yellow European Standard EN60947-5-2 compliant)
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

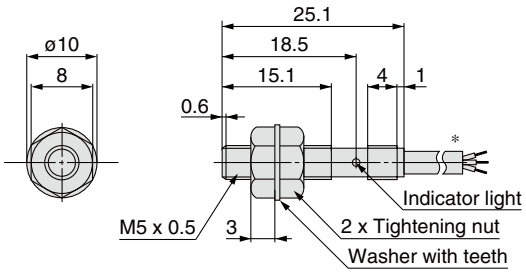
Mounting Position

●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