

Heavy Duty Stopper Cylinder

Series **RSH**

ø20, ø32

Series **RS1H**

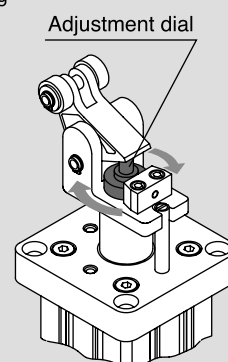
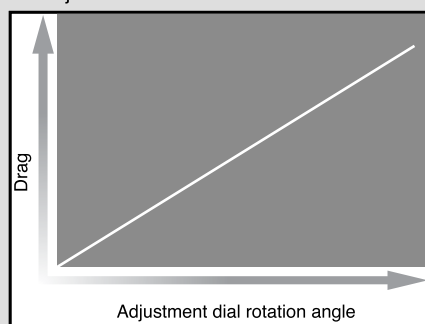
ø50, ø63, ø80

To stop pallets gently
Stopper cylinder with built-in shock absorber

Amount of energy absorption can be adjusted to suit the load.

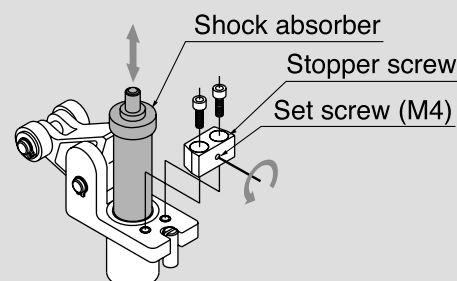
Stops the work piece gently with adjustable built-in shock absorber (ø50 to ø80).

The retardation value can be changed by rotating the adjustment dial.



Easy replacement of shock absorbers

Easy maintenance is possible with a shock absorber that can be removed simply by loosening the bolts and shock absorber fixing screw from the stopper.

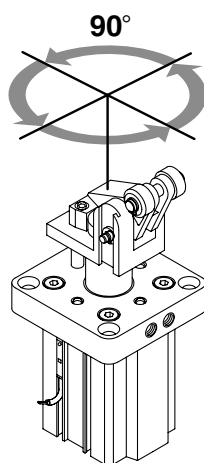
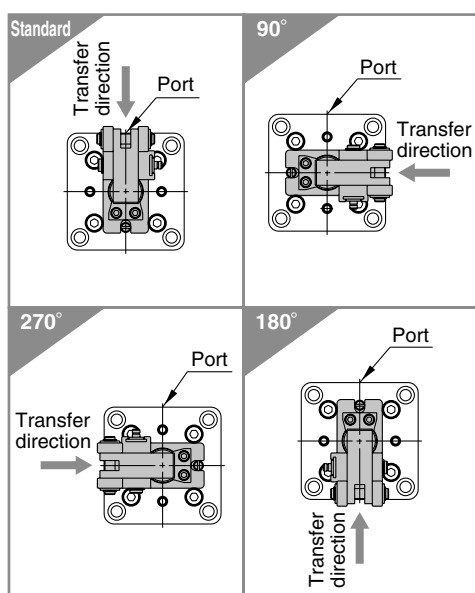


Series Variations

Series	Bore size (mm)	Standard stroke (mm)				Mounting type	Actuation system	Rod end shape	Standard variations	Option			
		15	20	30	40				Built-in magnet	With lock mechanism	With cancel	With proximity sensor	
RSH	20	●				Flange	Double acting	Lever	●	●	●	●	
	32		●				Double acting spring type		●	●	●	●	
RS1H	50			●			Single acting retraction type		Adjustable	●	●	●	●
	63			●						●	●	●	●
	80				●					●	●	●	●

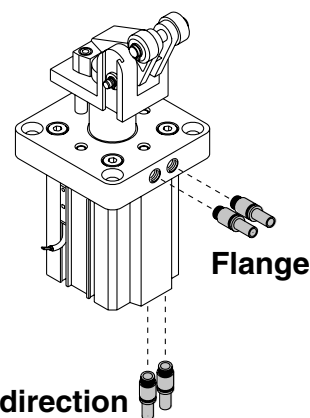
The roller lever direction can be changed in 90° steps.

To adapt the roller lever of the stopper to the work piece direction the roller lever can be positioned in 4 different directions (or 2 in case $\varnothing 20$) in 90° steps around the piston rod (with $\varnothing 50$ to $\varnothing 80$ the direction of the roller lever is selected in the part number).



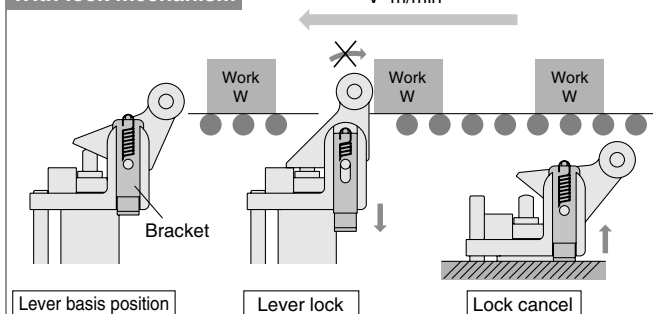
Piping is available from 2 directions.

*With $\varnothing 50$ to $\varnothing 80$, the direction of the roller lever is selected in the part number.



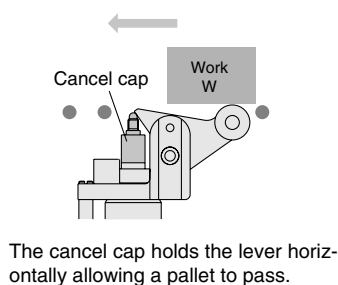
Option

With lock mechanism



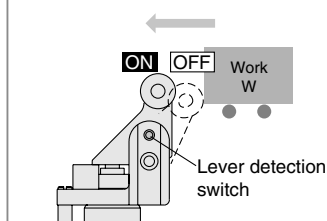
Even in the case of a light pallet, the locking mechanism prevents the pallet from rebounding due to spring.

With cancel cap



The cancel cap holds the lever horizontally allowing a pallet to pass.

With lever detection switch



When the lever stands erect (when the energy is absorbed), the switch turns on a signal that determines the pallet has reached the stop position. (For more information, please refer to page 1412.)

● High power rod

Bore size (mm)	20	32	50	63	80
Rod size (mm)	14	20	32	40	50

● 3 types of operation

1. Single acting
2. Double acting
3. With double acting spring

● Auto switch mounting available

Auto switches can be mounted without protruding from the body surface.

● 2 types of roller materials are available depending on the application. (Resin, Carbon steel)

Series RSH/RS1H

Model Selection

Operating Range

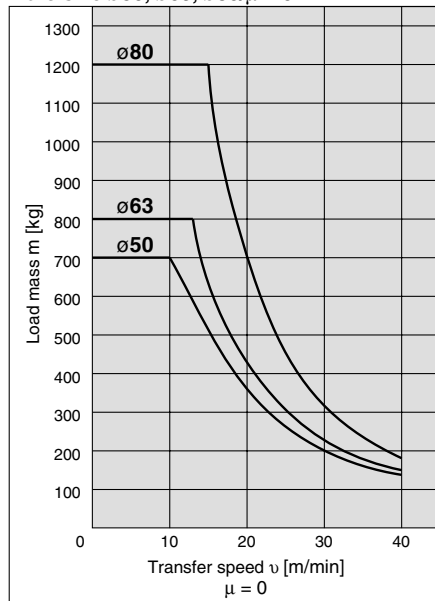
(Example) Load mass 300 kg, Transfer speed 20 m/min, Friction coefficient $\mu = 0.1$

(How to read graph)

In graph [2], find the intersection of the vertical axis representing the mass of 300 kg and the horizontal axis representing the speed of 20 m/min. And select the bore size $\phi 63$ positioned within the operating range of the cylinder.

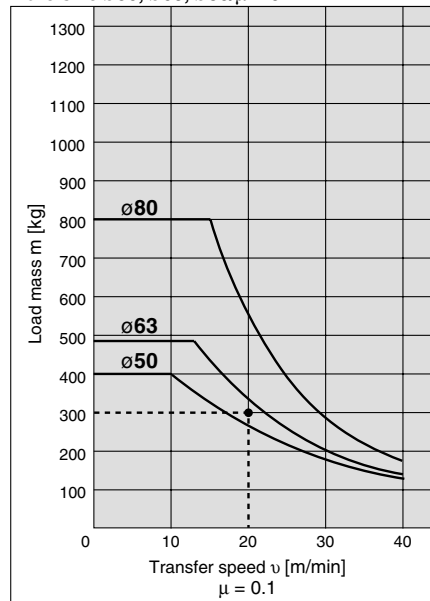
Graph ①

Bore size $\phi 50, \phi 63, \phi 80/\mu = 0$



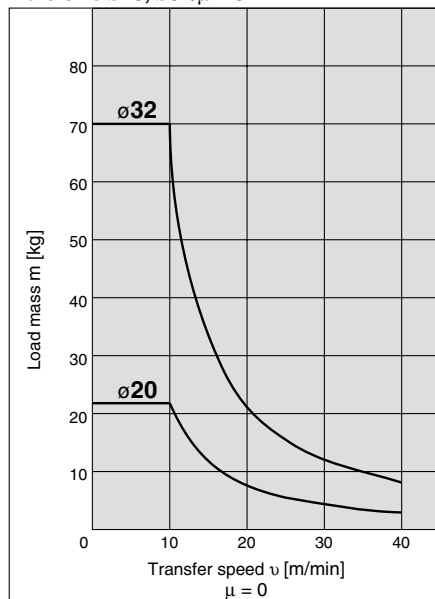
Graph ②

Bore size $\phi 50, \phi 63, \phi 80/\mu = 0.1$



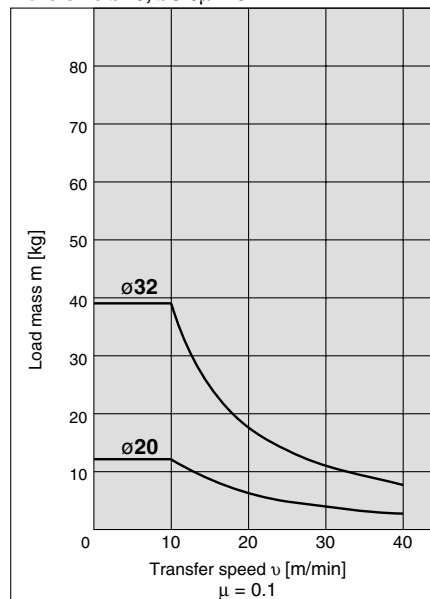
Graph ③

Bore size $\phi 20, \phi 32/\mu = 0$



Graph ④

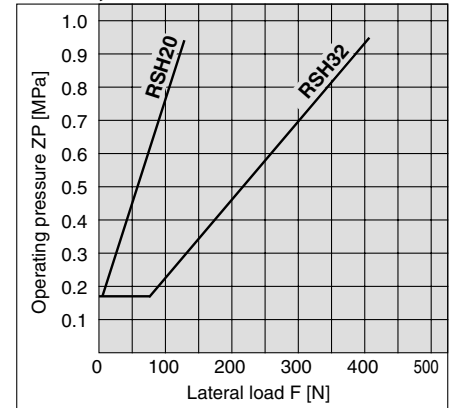
Bore size $\phi 20, \phi 32/\mu = 0.1$



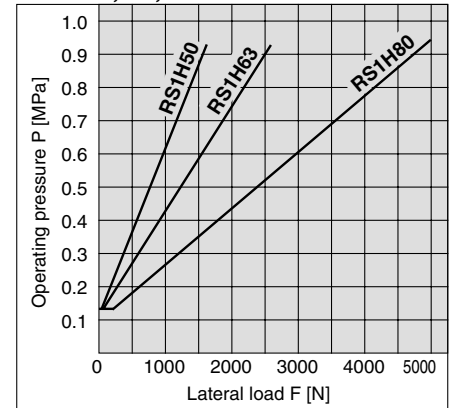
Lateral Load and Operating Pressure

The greater lateral load needs higher cylinder operating pressure. Set the operating pressure by using the graph as a guideline.

RSH20, 32



RS1H50, 63, 80



*The graphs for the load mass and transfer speed show the values measured at room temperature (20 to 25°C).

RSQ

RSG

RS ☐

MI ☐

D- ☐

-X ☐

Individual
-X ☐

Heavy Duty Stopper Cylinder

Series *RSH/RS1H*

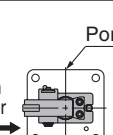
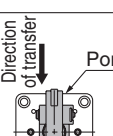
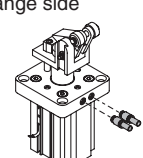
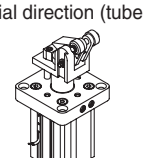
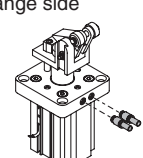
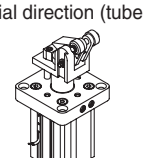
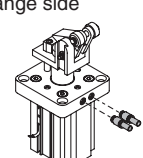
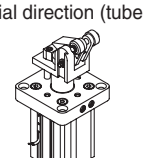
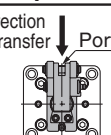
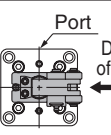
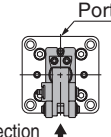
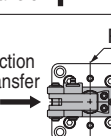
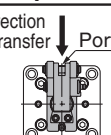
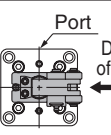
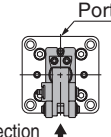
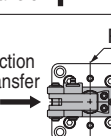
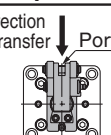
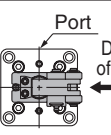
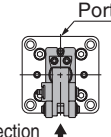
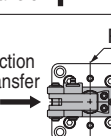
Ø20, Ø32 Ø50, Ø63, Ø80

The RS1H50, 63 and 80 models have been developed into the new **RS2H** series with a reduction in weight and shorter cylinder tubing. Please consider the RS2H series when selecting a model.

How to Order

Heavy Duty Stopper Cylinder Ø20, Ø32

Heavy Duty Stopper Cylinder Ø50, Ø63, Ø80

Bore size	20 20 mm 32 32 mm	Cylinder stroke	15 15 mm (RSH20) 20 20 mm (RSH32)	Positional relationship of lever and port	RSH20  RSH32 																
Heavy Duty Stopper Cylinder Ø20, Ø32 Heavy Duty Stopper Cylinder Ø50, Ø63, Ø80 RSH 32 [] [] - 20 D L - [] [] - M9W []																					
Heavy Duty Stopper Cylinder Ø50, Ø63, Ø80 Heavy Duty Stopper Cylinder Ø50, Ø63, Ø80 RS1H 50 [] [] - 30 D L - [] [] - M9W []																					
Bore size	50 50 mm 63 63 mm 80 80 mm	Port thread type	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Nil</td><td>M*</td></tr> <tr><td></td><td>Rc</td></tr> <tr><td>TN</td><td>NPT</td></tr> <tr><td>TF</td><td>G</td></tr> </table> *The tube I.D. of 20 is only available to port size M screws.	Nil	M*		Rc	TN	NPT	TF	G	Number of auto switches (auto switch number mounted)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Nil</td><td>2 pcs.</td></tr> <tr><td>S</td><td>1 pc.</td></tr> </table>	Nil	2 pcs.	S	1 pc.				
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	Rc																				
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TF	G																				
Nil	2 pcs.																				
S	1 pc.																				
Piping direction	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Nil</td><td>Flange side </td></tr> <tr><td>A</td><td>Axial direction (tube) </td></tr> </table>	Nil	Flange side 	A	Axial direction (tube) 	Cylinder stroke	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>30</td><td>30 mm (RS1H50, 63)</td></tr> <tr><td>40</td><td>40 mm (RS1H80)</td></tr> </table>	30	30 mm (RS1H50, 63)	40	40 mm (RS1H80)	Action	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>D</td><td>Double acting type</td></tr> <tr><td>B</td><td>Double acting spring type</td></tr> <tr><td>T</td><td>Single acting/Spring extended</td></tr> </table>	D	Double acting type	B	Double acting spring type	T	Single acting/Spring extended		
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30	30 mm (RS1H50, 63)																				
40	40 mm (RS1H80)																				
D	Double acting type																				
B	Double acting spring type																				
T	Single acting/Spring extended																				
		Roller material	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>L</td><td>Resin</td></tr> <tr><td>M</td><td>Carbon steel</td></tr> </table>	L	Resin	M	Carbon steel	Auto switch	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Nil</td><td>Without auto switch (Built-in magnet)</td></tr> </table> *Refer to page 1405 for auto switch model numbers.	Nil	Without auto switch (Built-in magnet)										
L	Resin																				
M	Carbon steel																				
Nil	Without auto switch (Built-in magnet)																				
		Option Note 1)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Nil</td><td>Without option</td></tr> <tr><td>D</td><td>With lock mechanism</td></tr> <tr><td>C</td><td>With cancel cap</td></tr> <tr><td>S Note 2)</td><td>With lever detection switch</td></tr> </table>	Nil	Without option	D	With lock mechanism	C	With cancel cap	S Note 2)	With lever detection switch	Positional relationship of lever and port	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Nil</td><td>  </td></tr> <tr><td>P</td><td>  </td></tr> <tr><td>Q</td><td>  </td></tr> <tr><td>R</td><td>  </td></tr> </table>	Nil		P		Q		R	
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Q																					
R																					

Note 1) Options can be combined. Indicate the part No. according to the priority order of D.C.S.

Note 2) **Lever detection switch type**

Type	Applicable model
E2E-X1C1	RSH 20, 30
E2E-X2D1-N	RS1H 50, 63, 80

Heavy Duty Stopper Cylinder *Series RSH/RS1H*

Applicable auto switches/Refer to pages 1719 to 1827 for detailed auto switch specifications.

Type	Special function	Electrical entry	Indicator/light	Wiring (output)	Load voltage			Auto switch models		Lead wire length (m)				Pre-wired connector	Applicable load			
					DC		AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)					
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	●	●	●	○	○					
	2-wire			12 V				M9BV	M9B	●	●	●	○	○				
	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**	○	●	●	○			○
				2-wire					12 V	M9BAV**	M9BA**	○	●	●	○			○
Reed 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	●	—	●	—	—				

** 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 1411 since there are applicable auto switches other than listed.

* Refer to pages 1784 and 1785 for the details of auto switches with a pre-wired connector.

* Auto switches are shipped together (not assembled).

RSQ

RSG

RS□

MI□

Specifications

Model	RSH		RS1H		
Bore size (mm)	20	32	50	63	80
Action	Double acting, Double acting spring, Single acting (Spring extended)				
Style 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	1/4	1/4
	—	1/8	1/8	1/4	1/4
	—	1/8	1/8	1/4	1/4

Bore size, Standard strokes

(mm)

Model	Bore size (mm)	Standard stroke
RSH	20	15
	32	20
RS1H	50	30
	63	30
	80	40

Mass

(kg)

Action	Rod end configuration	Bore size (mm)	Mass
Double acting type Double acting spring type Single acting spring extended	Lever with built-in shock absorber type	20	0.41
		32	0.75
		50	2.03
		63	3.56
		80	6.33

D-□

-X□

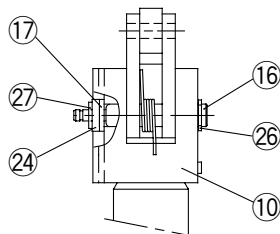
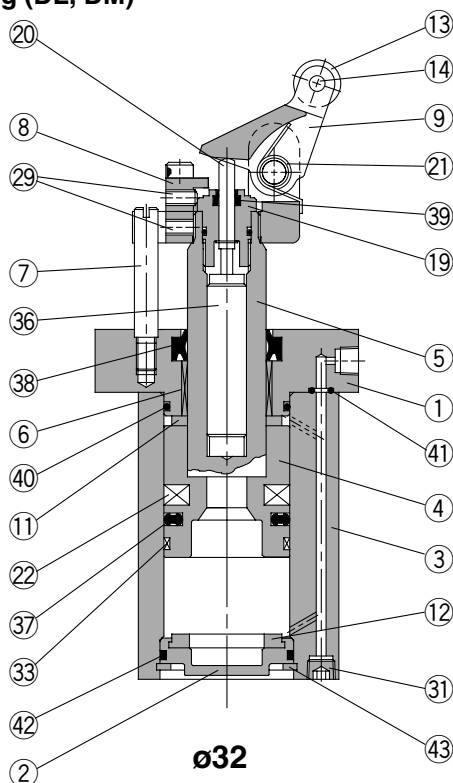
Individual
-X□

Series *RSH/RS1H*

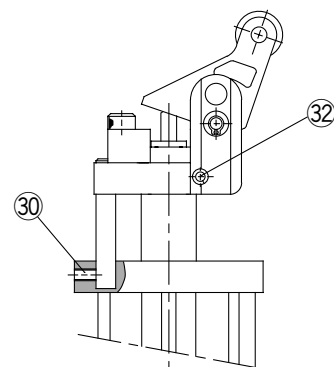
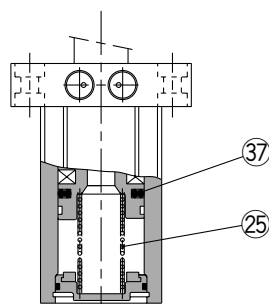
Construction

ø20, ø32

Double acting (DL, DM)

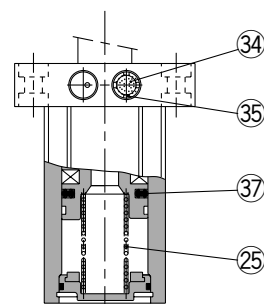


Double acting spring type
(BL, BM)



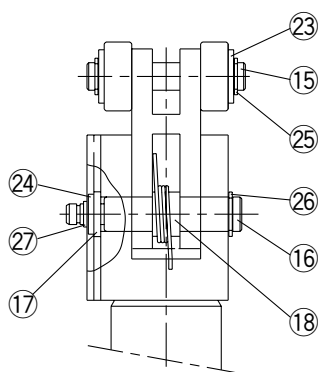
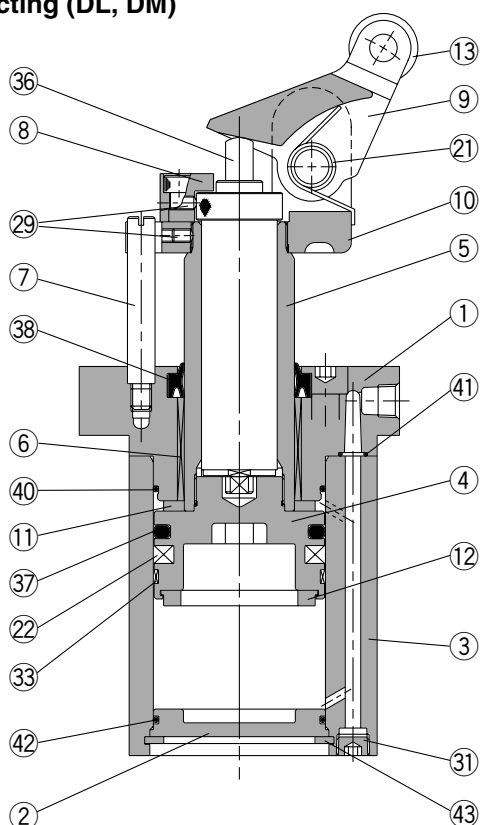
ø20

Single acting
(TL, TM)

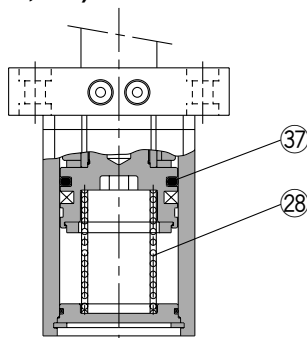


ø50, ø63, ø80

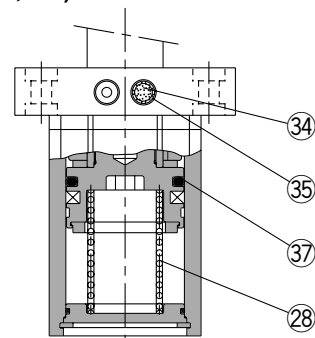
Double acting (DL, DM)



Double acting spring type
(BL, BM)



Single acting spring extended
(TL, TM)



Parts list (Single acting)

No.	Description	Material	Note
1	Rod cover	Aluminium alloy	Metallic painted
2	Bottom plate	Aluminium alloy	Chromate
3	Cylinder tube	Aluminium alloy	Hard anodized
4	Piston	Aluminium alloy	Chromate
5	Piston rod	ø20: Stainless steel ø32, ø50, ø63, ø80: Carbon steel	Hard chromium electro plating
6	Bushing	Bronze alloy	
7	Guide rod	Carbon steel	Hard chromium electro plating
8	Stopper screw	Stainless steel	
9	Lever	Carbon steel	Nickel plated
10	Lever holder	Carbon steel	Nickel plated
11	Bumper A	Urethane rubber	
12	Bumper B	Urethane rubber	
13	Roller	Resin Carbon steel	-□□L -□□M
14	Spring pin	Carbon tool steel	ø20, 32 only
15	Roller pin	Carbon steel	
16	Lever pin	Carbon steel	
17	Ring A	Aluminium alloy	Clear anodized
18	Ring B	Aluminium alloy	Clear anodized
19	Adjustment dial	Aluminium alloy	ø20, 32 only
20	End rod	Special steel	ø20, 32 only
21	Lever spring	Steel wire	
22	Magnet	—	
23	Flat washer	Steel wire	Nickel plated
24	Flat washer	Steel wire	Nickel plated
25	Type C retaining ring for shaft	Carbon tool steel	
26	Type C retaining ring for shaft	Carbon tool steel	
27	Type C retaining ring for shaft	Carbon tool steel	
28	Return spring	Steel wire	
29	Hexagon socket head set screw	Chrome molybdenum steel	
30	Hexagon socket head set screw	Chrome molybdenum steel	ø20 only
31	Hexagon socket head plug	Chrome molybdenum steel	Nickel plated
32	Spring pin	Carbon tool steel	ø20 only
33	Wear ring	Resin	
34	Element	Bronze	ø20 is socket set screw
35	Retaining ring	Carbon tool steel	ø32 to 80 only
36	Shock absorber	—	
37	Piston seal	NBR	
38	Rod seal	NBR	
39	Scraper	NBR	ø20, 32 only
40	Tube gasket	NBR	
41	O-ring	NBR	
42	Bottom plate gasket	NBR	
43	Type C retaining ring for hole	Carbon tool steel	Phosphate coated

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 ③⑦ to ④① in above table (excluding ③⑧)
32	RSH32D-PS		RSH32T-PS	
50	RS1H50D-PS		RS1H50T-PS	Set of items ③⑦ to ④① in above table (excluding ③⑧ and ③⑨)
63	RS1H63D-PS		RS1H63T-PS	
80	RS1H80D-PS		RS1H80T-PS	

*Seal kit includes ③⑦ to ④① (excluding ③⑧) for ø20 to ø32 and ③⑦ to ④① (excluding ③⑧ and ③⑨) for ø50 to ø80. 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
50	RS1H-R50
63	RS1H-R63
80	RS1H-R80

RSQ

RSG

RS□

MI□

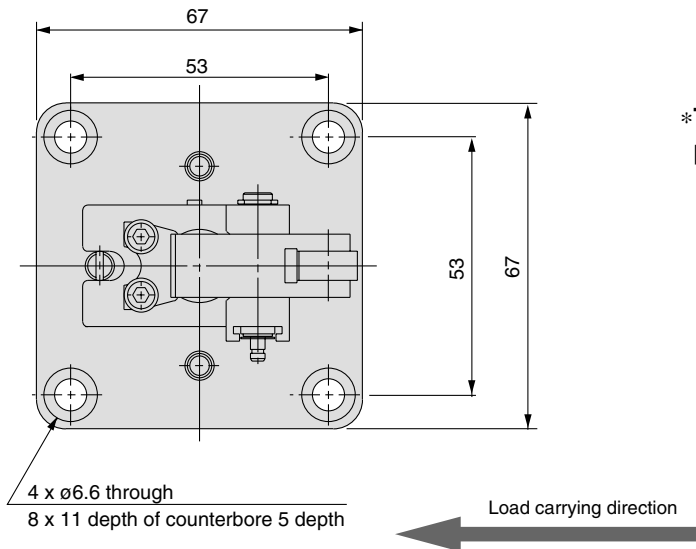
D-□

-X□

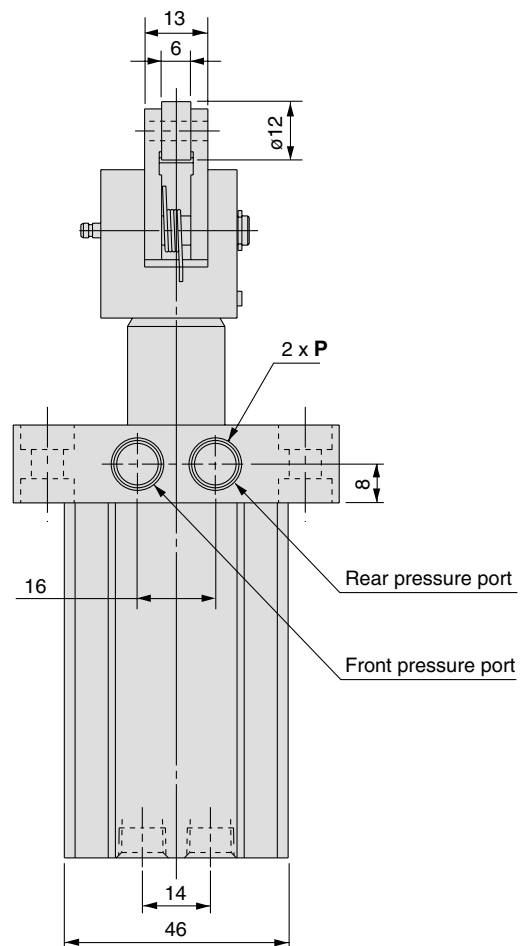
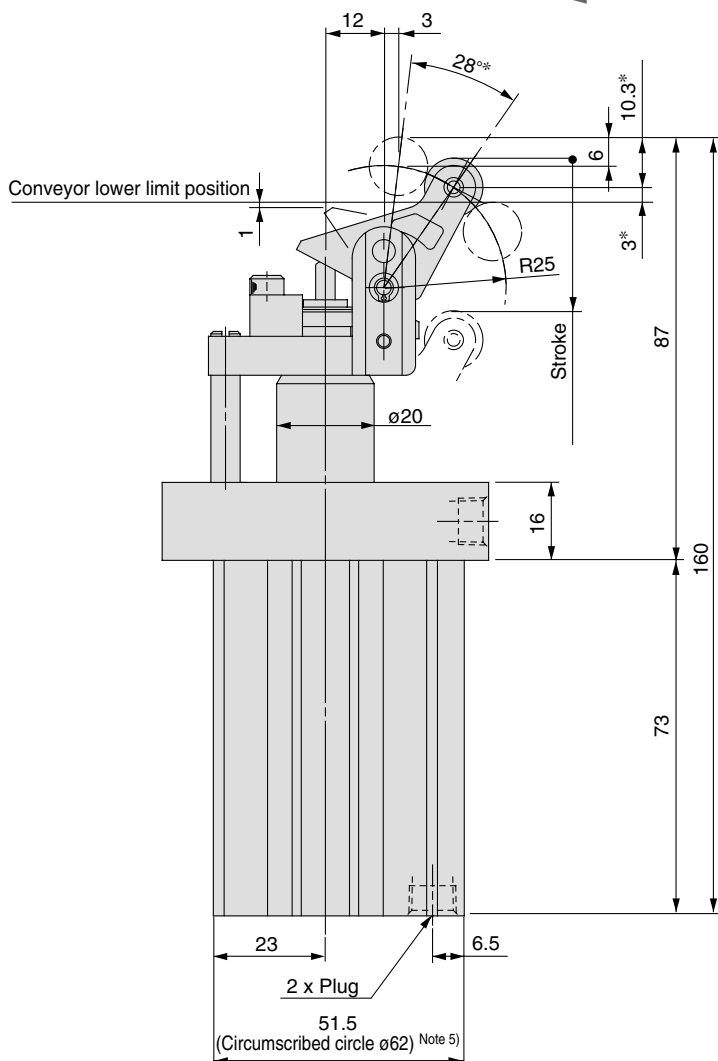
Individual
-X□

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 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.

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

RSQ

RSG

RS□

MI ☐

D- ☐

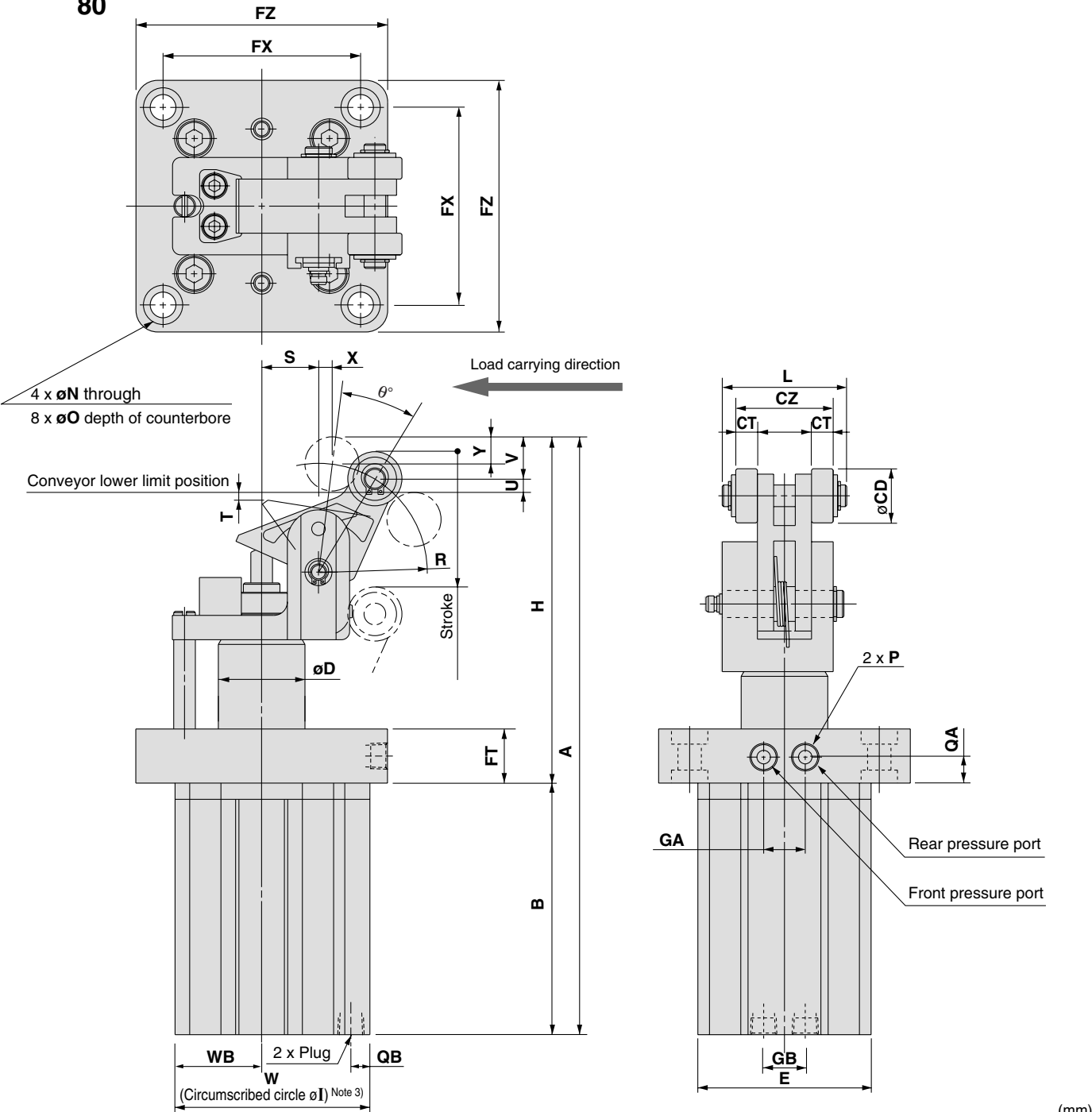
-X ☐

Individual
-X ☐

Series **RSH/RS1H**

Dimensions/Bore size: $\varnothing 50$, $\varnothing 63$, $\varnothing 80$

50
RS1H 63 - ☐☐☐
80



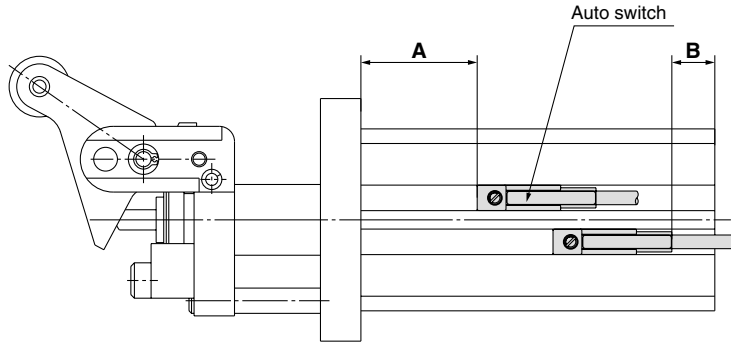
Bore size (mm)	Stroke	A	B	CD	CT	CZ	D	E	FT	FX	FZ	GA	GB	H	Width across corners I	L	N	O	QA	QB
50	30	221	93	20	8	36	32	64	20	73	93	16	16	128	85	45	9	14 depth 5	10	7
63	30	243.5	99	20	10	45	40	77	25	90	114	24	24	144.5	103	54	11	18 depth 6	12.5	8.5
80	40	299.5	128	25	10	45	50	98	25	110	138	24	35	171.5	132	56	13	20 depth 6	12.5	10

Bore size (mm)	Stroke	R	S	T	U	V	W	WB	X	Y	θ°
50	30	40	21	2	5.5	15.5	72	32	5	10	24
63	30	47	24.5	3.5	6.4	16	87.5	38.5	5	10	24
80	40	54	31	3	6.7	19.4	109	49	6	12.5	23

Model	P (Piping port)		
	Nil	TN	TF
RS1H50	Rc 1/8	NPT 1/8	G 1/8
RS1H63	Rc 1/4	NPT 1/4	G 1/4
RS1H80	Rc 1/4	NPT 1/4	G 1/4

Note 1) The figure shows dimensions at the maximum energy absorption capacity.
Note 2) The figure shows an extended piston rod.
Note 3) Circumscriber circle $\varnothing I$ means that diameter of the circle circumscribed to the cylinder angles. Mounting hole diameter must be $\varnothing(I+1)$. 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 the values shown below or less.
(RS1H50 : 10mm RS1H63 : 15mm RS1H80 : 18mm)

Auto Switch Proper Mounting Position (Detection at Stroke End)



Auto switch proper mounting position

Auto switch models	(mm)											
	D-M9□ D-M9□W D-M9□AVL		D-M9□V D-M9□WV		D-M9□AL		D-Z7□/Z80 D-Y59□/Y7P/Y7□W		D-Y69□/Y7PV D-Y7□WV		D-Y7BAL	
Bore size	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
50	27	12.5	27	14.5	27	10.5	22	12(10.5)	22	13.5	22	6
63	29.5	16	29.5	18	29.5	14	24.5	15.5(14)	24.5	17	24.5	9.5
80	42	22.5	42	24.5	42	20.5	37	22(20.5)	37	23.5	37	16

The values inside () are for D-Z73.

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

Operating Range

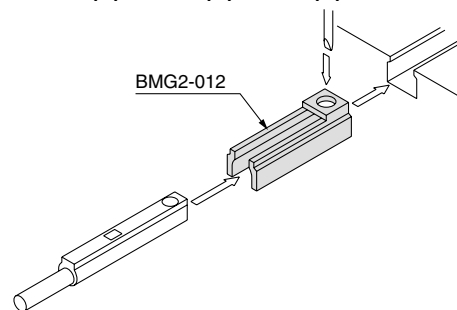
Auto switch models	(mm)				
	20	32	50	63	80
D-M9□/M9□V D-M9□W/M9□WV D-M9□AL/M9□AVL	5.5	6.0	6.5	7.5	7.5
D-Z7□/Z80	8	10	9	10	11
D-Y59□/Y69□ D-Y7P/Y7PV D-Y7□W/Y7□WV D-Y7BAL	5	3.5	5.5	5.5	6.5

*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 to ø80
D-M9□/M9□V D-M9□W/M9□WV D-M9□AL/M9□AVL	BMG2-012

D-M9□(V)/M9□W(V)/M9□A(V)L



Besides the models listed in How to Order, the following auto switches are applicable. Refer to pages 1719 to 1827 for detailed specifications.

Auto switch type	Model	Electrical entry	Features
Solid state	D-Y69A, Y69B, Y7PV	Grommet (Perpendicular)	—
	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-Y7BAL		Water resistance (2-color display)

*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 auto switches (D-F9G/F9H/Y7G/Y7H types) are also available. Refer to pages 1746 and 1748 for details.

Lever Detection Switch (Proximity Switch)

Proximity switch specifications/Maker: OMRON Co. Ltd.

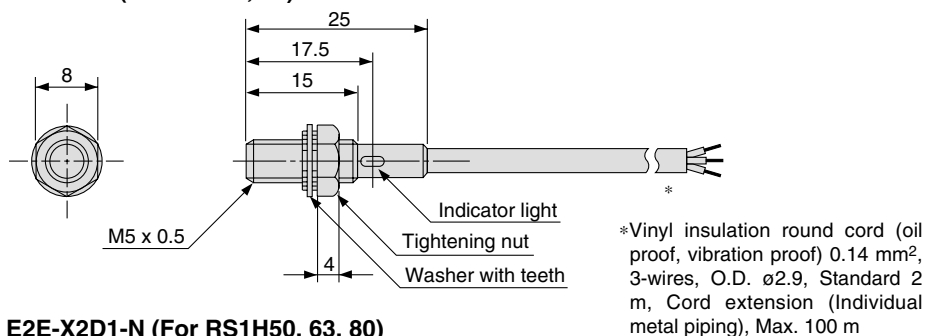
Model	E2E-X1C1	E2E-X2D1-N
Applicable cylinder bore size	RSH20, 32	RS1H50, 63, 80
Output type	Normally open	
Power supply voltage (Operating voltage range)	12 to 24 VDC (10 to 30 VDC), Ripple 10% or less (P-P)	
Current consumption (Leakage current)	17 mA or less	0.8 mA or less
Response frequency	3 kHz	1.5 kHz
Control output (chest)	Open collector maximum 100 mA	3 to 100 mA
Indicator light	Detection indication (Red LED)	Operation indication (Red LED), Set operation indication (Green LED)
Ambient temperature	-25 to 70°C (No freezing)	
Operating ambient humidity	35 to 95% RH	
Residual voltage ^{Note 1)}	2 V or less	3 V or less
Withstand voltage ^{Note 2)}	500 VAC	1000 VAC
Vibration	Endurance 10 to 55 Hz, Duplex amplitude 1.5 mm X,Y,Z direction each 2h	
Impact	Endurance 500 m/s ² (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

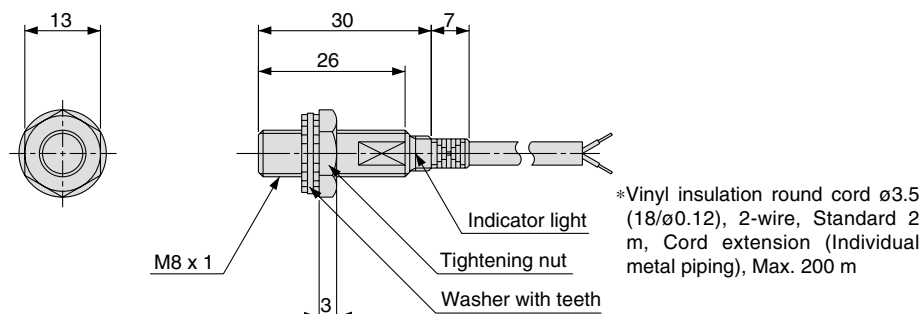
Note 2) Between case and whole charging part

Dimensions

E2E-X1C1 (For RSH20, 32)

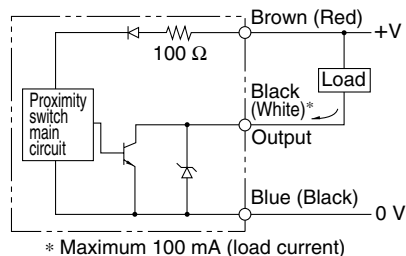


E2E-X2D1-N (For RS1H50, 63, 80)

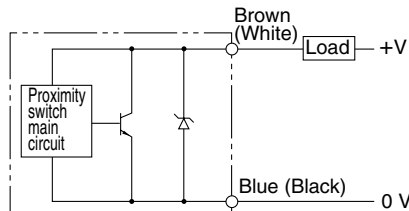


Output Circuit

E2E-X1C1/3-wire



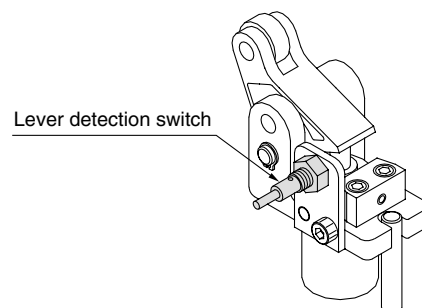
E2E-X2D1-N/2-wire



Mounting Position

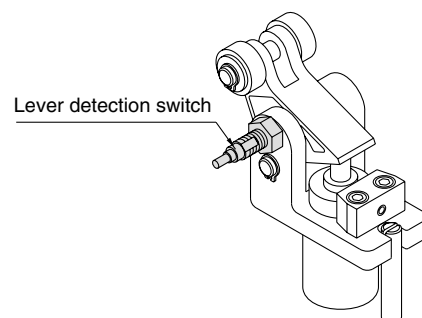
●E2E-X1C1 (For RSH20, 32)

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.



●E2E-X2D1-N (For RS1H50, 63, 80)

While holding the lever in the detection range of the switch, screw in the switch until the indicator light (green) turns on. Then, give an additional half rotation of screw. After that, incline the lever by 90° and confirm that the indicator light is not on and does not show either red or green.





Series RSH/RS1H Specific Product Precautions

Be sure to read before handling.

Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

Instructions

⚠ Caution

1. Shock absorber capacity variable adjustment method (ø50 to ø80)

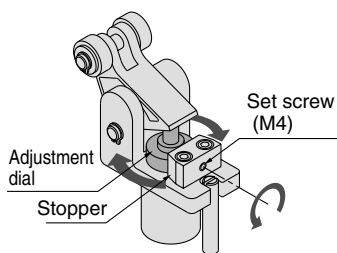
To stop the work gently, loosen the fixing screw (M4) on the stopper and turn the shock absorber dial according to the energy value of the transferred object to select the optimum absorption position (retardation value). After adjustment, tighten the fixing screw firmly to secure the shock absorber dial.

Note 1) Cautions for adjustment

When adjusting the shock absorber retardation value, first try the maximum value and then proceed to smaller values. If the energy value of the transferred work piece is larger than the retardation value of the shock absorber, an excessive load will be applied to the lever and may cause damage.

Note 2) Although it is not possible to change the shock absorber drag value of ø20 and ø32 types, the shock absorber stroke can be changed by adjusting the height of the adjustment dial (6st to 4st.)

Note 3) Please consult SMC if shock absorption is not soft, even after adjusting the shock absorber with the above method.

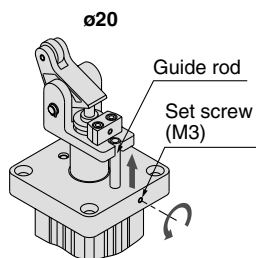


2. How to change the positional relationship between the transfer and piping directions

The positional relationship between the transfer and piping directions can be changed in 90° increments (or 180° increments in case of ø20).

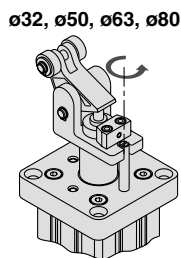
●ø20

Loosen the fixing screw (M3) beside the rod cover and pull up the guide rod. The lever is released to allow 180° rotations.



●ø32 to ø80

Fit a driver (—) into the notch on the guide rod end surface and loosen the guide rod. The lever is released to allow rotations in 90° increments.

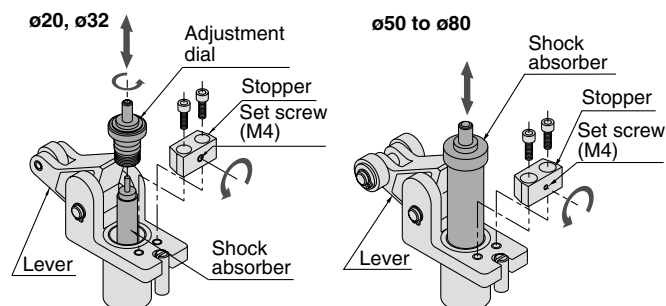


3. How to replace shock absorber during maintenance

Loosen the hexagon socket head bolts and shock absorber fixing screw (M4) on the stopper to remove the stopper from the lever holder. Incline the lever by 90° and pull out the shock absorber. (In case of ø20 and ø32, remove the stopper, loosen the adjustment dial and then pull out the shock absorber.)

*Cautions for assembly

After replacing the shock absorber, tighten the bolts and fixing screw firmly and apply grease to the shock absorber rod end surface.



Selection

⚠ Danger

1. Use the equipment only within the specified operating range.

If the condition exceeds the specified operating range, it will cause excessive impact or vibration to the stopper cylinder, leading to possible damages.

⚠ Caution

1. Do not collide the pallet while the lever is standing erect.

In case of a lever with built-in shock absorber type, do not collide the next pallet while the lever is standing erect. Otherwise, all energy will be applied to the cylinder body.

2. When a load directly connected to the cylinder is stopped at an intermediate position:

Apply the operating range in the catalog only in these cases where the stopper cylinder is used to stop pallets on a conveyor belt. When using the stopper cylinder to stop loads directly connected to a cylinder or some other equipment, a lateral load is applied as the cylinder thrust. Consult SMC in such cases.

Mounting

⚠ Caution

1. Do not apply rotational torque to the cylinder rod.

Align the cylinder parallel to the working face of the pallet working when installing in order to prevent rotational torque working on the cylinder rod.

2. Do not scratch or gouge the sliding part of the piston rod or guide rod.

Scratches and gouges may damage the packing, causing air leakage or malfunction.

Operation

⚠ Caution

1. In case of cylinders with locking mechanism, do not apply an external force from the opposite side when the lever is locked.

Lower the cylinder before adjusting the conveyor or moving the pallet.

2. In case of cylinders with locking mechanism, do not collide the pallet and roller when the lever is locked.

If the pallet collides with the roller in the locked state, it may cause lever malfunction. (The lever is released when the cylinder is fully retracted.)

3. Do not let your hand become caught when operating the cylinder.

The lever holder goes up and down while the cylinder is in operation. Pay sufficient attention not to let your hand or fingers become caught between the rod cover and lever holder.

4. Do not let water, cutting oil or dust splash on the equipment.

It can cause oil leakage and malfunction of the shock absorber.

RSQ

RSQ

RS□

MI□

D-□

-X□

Individual
-X□