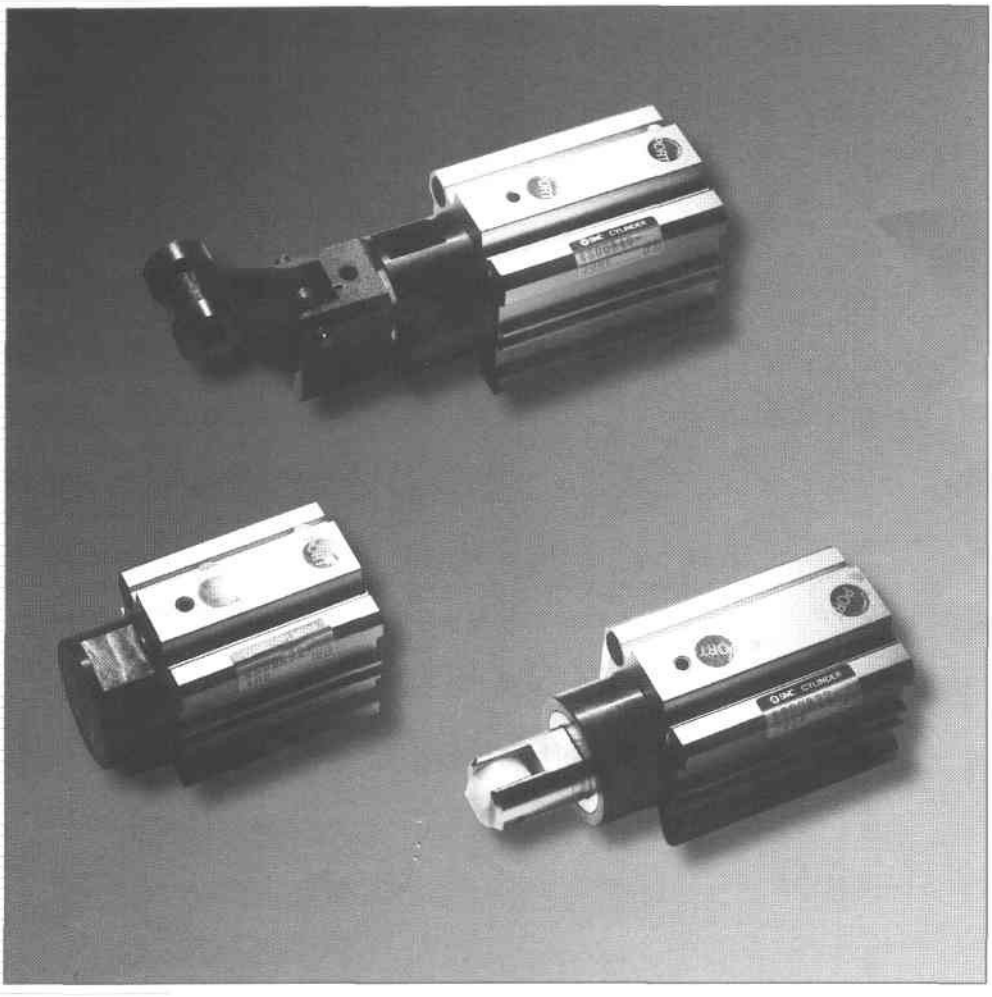
SMC

Air Cylinder

RSQ Series

Stopper Cylinder



4 Different Rod End Configurations
Can be Mounted Directly on a Conveyor
Through Hole or Tapped End Mounting
Fixed Mounting Height
Auto Switch Capable

Labor Saving Automation for Conveyor Lines

A through hole mount is standard; tapped ends are optional.

Series RSQ (Fixed mounting height)

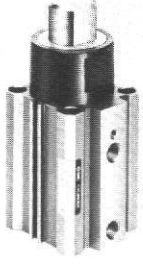
ϕ20, ϕ32, ϕ40, ϕ50

Available Models

Select options for many applications.
Type: Fixed mounting height
Action: Double acting, single acting (spring extended), double acting with spring.
Rod end configuration: Round bar, non-rotating, roller, lever
Mounting: Through hole; both ends tapped.

The ϕ32 is equipped with an easy to maintain shock absorber.

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



Auto Switch Option Available

Compact auto switch mounting enables miniaturization of machines and designs.

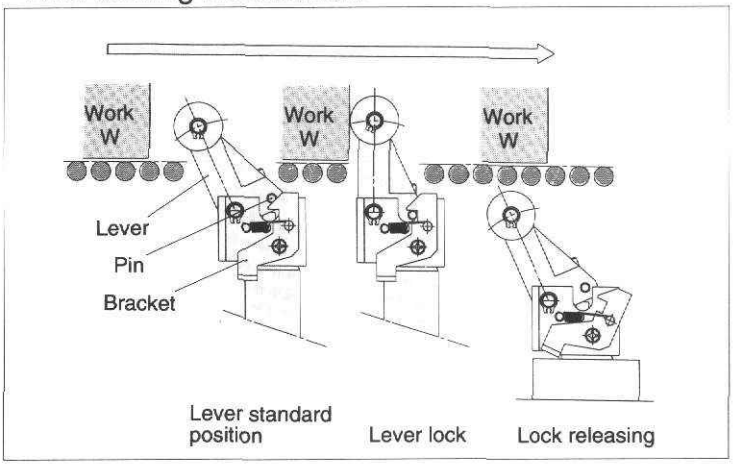
Optional Setting for Roller Direction and Roller Lever

Stopper Cylinder
Series RSQ

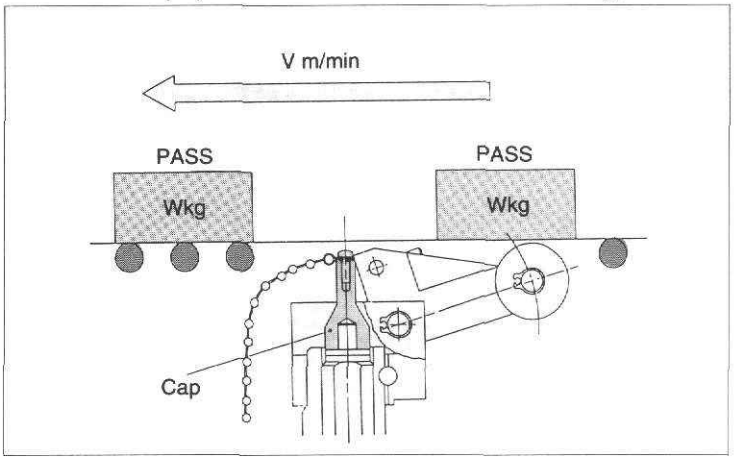
Lever selected according to applications

- Prevent repulsion due to light pallet ····· Locking mechanism
- Partial passing of work ····· With cancel cap

• With locking mechanism



• Cancel cap (mechanism to hold lever horizontally)



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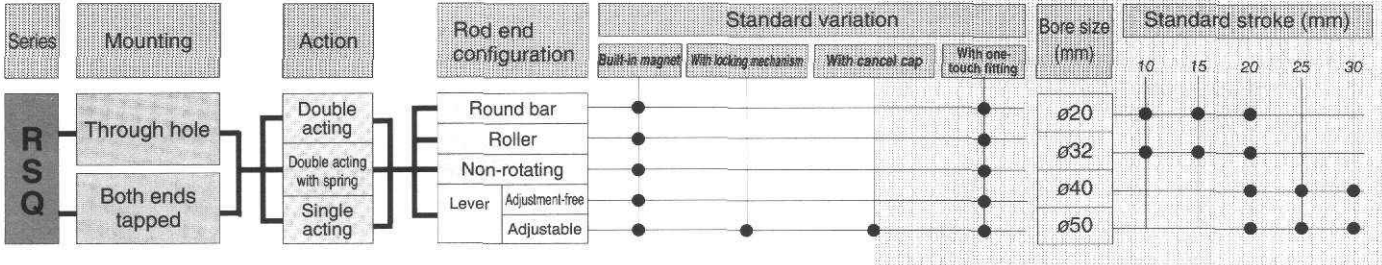
Series RSQ / fixed mounting height

Series Variation



Stopper Cylinder / Fixed Mounting Height

Series RSQ

Bore Size : ø20, ø32, ø40, ø50

How to Order

Standard Model RSQ B 20 F 15 D R XC18

With Auto Switch RSDQ B 20 F 15 D R A73 S XC18

With auto switch •

Mounting •

A	Both ends tapped
B	Through hole

Bore size •

20	20mm
32	32mm
40	40mm
50	50mm

Piping •

–	Threaded ports
F	Built-in one-touch fitting

Cylinder stroke (mm) •

ø20	10, 15, 20
ø32	10, 15, 20
ø40, ø50	20, 25, 30

Action •

D	Double acting
B	Double acting with spring
T	Single acting/spring extended

Rod end configuration •

Code	Rod end configuration	Application
–	Round bar	—
K	Non-rotating	—
R	Roller	—
*L	Lever (adjustment-free)	Basic type (only ø32, ø40, ø50)
B	Lever (Energy absorbent, adjustable)	—
C		With cancel cap
D		With locking mechanism
E		With locking mechanism and cancel cap

* The lever model is applied only to bore sizes ø32, ø40, and ø50.

Port type •

—	PT
XC18	Air port:NPT

Number of switches •

–	2 pcs.
S	1 pc.

Type of auto switch (Rail mounted) •

–	Without auto switch

Reed switch (See P.11 for details.)

No.	Auto switch	Lead wire entry	Indicator lamp
A72	D-A72	Grommet (Vertical cable access)	Provided (One color)
A73	D-A73		
A80	D-A80		Not provided
A72H	D-A72H	Grommet (Horizontal cable access)	Provided (One color)
A73H	D-A73H		
A76H	D-A76H		
A80H	D-A80H		Not provided
A73C	D-A73C	Connector	Provided (One color)
A80C	D-A80C		Not provided
A79W	D-A79W	Grommet	Provided (Two colors)

Solid state switch (See P.11 for details.)

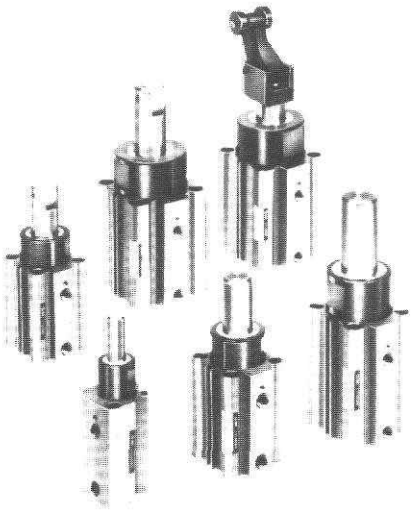
No.	Auto switch type	Lead wire entry	Features of indicator lamp
F79	D-F79	Grommet (Horizontal cable access)	One color
F7P	D-F7P		
J79	D-J79		
F7NV	D-F7NV	Grommet (Vertical cable access)	One color
F7PV	D-F7PV		
F7BV	D-F7BV		
F7NWV	D-F7NWV		Two colors
F7BWV	D-F7BWV		
F79W	D-F79W	Grommet (Horizontal cable access)	
F7PW	D-F7PW		
J79W	D-J79W		
F79F	D-F79F		Two colors, with diagnostic output
F7LF	D-F7LF		Two colors, holding type with diagnostic output
F7BA	D-F7BA		Two colors, waterproof
J79C	D-J79C	Connector	One color

* The standard lead wire length is 0.5m. "L" is added for 3m long lead wire. (Applicable to all models)
(Ex.)A73L D-A73L
Consult your Local SMC representative for 5m lead wire.

Auto switch mounting bracket

Bore size (mm)	Mounting bracket	Note	Applicable auto switch
20	BQ-1	• Switch mounting screw (M3 x 0.5 x 8l) • Square nut	D-A7, A8 D-A7□H A80H A-7□C A80C D-F79 D-J79 D-J79C
32 40 50	BQ-2	• Switch mounting nut • Switch mounting screw (M3 x 0.5 x 10l) • Switch spacer	

Note: Shaded areas in bold type—Special Order; Unshaded areas—Made to Order



Model

Construction	Mounting	Action	Bore size (mm)	Rod end configuration	Applicable auto switch	
					Reed switch	Solid state
Fixed mounting height	• Both ends tapped (RSQA) • Through hole (RSQB)	Double acting, Double acting with spring, Single acting/retraction	ø20, ø32 ø40, ø50	Round bar, non-rotating, roller, lever	D-A7, D-A8	D-F7, D-J7

Specifications

Action	Double acting, double acting with spring, single acting/spring extended
Fluid	Air
Proof pressure	1.5MPa {15.3kgf/cm², 220PSI}
Max. operating pressure	1.0MPa {10.2kgf/cm², 150 PSI}
Ambient and fluid temperature	w/out auto switch: -10°C ~ 70°C {14-150°F} w/auto switch: -10°C~60°C {14-140°F}
Lubrication	Non lube
Cushion	Both sides rubber cushion
Stroke length tolerance	$^{+1.4}_{0}$
Mounting	Through hole; Both ends tapped
Auto switch	Available

Rod end configuration

Round bar, non-rotating, roller, lever with built-in shock absorber (only ø32, ø40, ø50)

Bore/standard stroke

(mm)

Bore size (mm)	Rod end configuration		
	Round bar, non-rotating	Roller	Lever with built-in shock absorber
ø20	10, 15, 20	10, 15, 20	—
ø32			10, 15, 20
ø40	20, 25, 30	20, 25, 30	20, 25, 30
ø50			

Weight

(kg)

Action	Bore size (mm)	Rod end configuration	Cylinder stroke (mm)				
			10	15	20	25	30
Double acting Single acting Double acting with spring	ø20	Round bar, non-rotating, roller	0.23	0.24	0.25	–	–
	ø32	Round bar, non-rotating, roller	0.42	0.44	0.46	–	–
		Lever with built-in shock absorber	0.51	0.53	0.55	–	–
	ø40	Round bar, non-rotating, roller	–	–	0.74	0.80	0.86
		Lever with built-in shock absorber	–	–	0.97	1.01	1.05
	ø50	Round bar, non-rotating, roller	–	–	1.03	1.07	1.11
		Lever with built-in shock absorber	–	–	1.26	1.30	1.34

1 Kg = 2.2 Lbs.

Spring force (Roller, Round Bar, and Chamfered Types)

Bore size (mm)	ø20	ø32	ø40, ø50
Installed Load	0.35kg	0.9kg	1.4kg
Maximum Operating Load	1.5kg	1.9kg	2.8kg

Spring force (Lever Type with Shock Absorber)

Bore size (mm)	ø32	ø40,ø50
Installed Load	2.2kg	1.7kg
Maximum Operating Load	4.5kg	4.9kg

Series RSQ

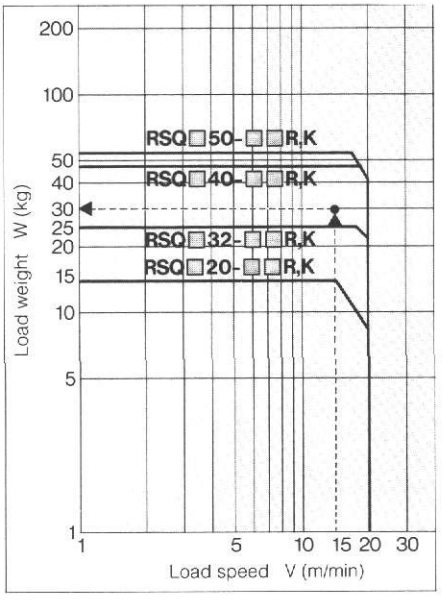
Operating range for each rod end configuration

Example The roller with a load speed of 15m/min and load weight of 30kg

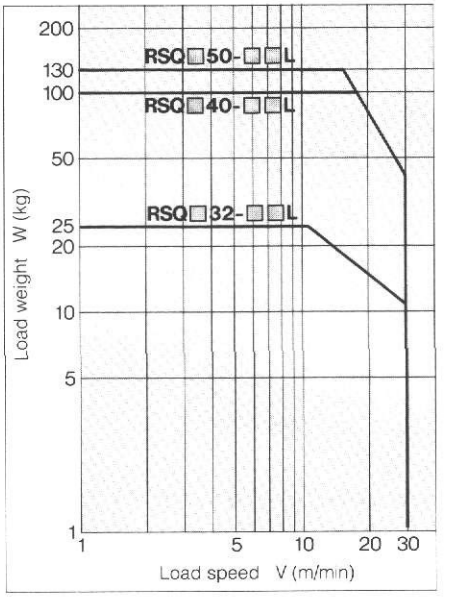
How to understand the diagram

To select a cylinder for the above specifications, find the intersection of the horizontal axis representing the speed of 15m/min and the vertical axis representing the weight of 30kg in the diagram shown below and select the model **RSQ □ 40** positioned within the operating range of the cylinder.

Roller/round bar/non-rotating Diagram **1**

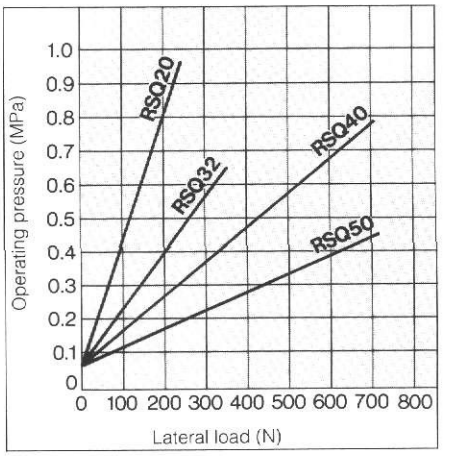


Lever (with shock absorber) Diagram 2



Lateral load and operating pressure

The greater lateral load needs higher cylinder operation pressure. Set the operation pressure by using the diagram as a guideline.
(Applicable to the round bar, roller, and non-rotating)



Built-in one-touch fitting / RSQ$^{A}_{B}$ □F

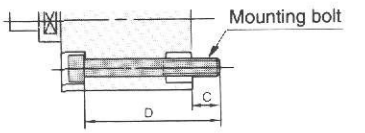
Cylinder bore size	ø20	ø32	ø40	ø50
Applicable tube O.D./I.D.	ø6/4			ø8/6
Applicable tube material	Nylon tube, soft nylon tube, and polyurethane tube			

Mounting bolts for RSQB

Mounting : Bolts for through hole model RSQB are as shown in table.

How to order : State "Bolt" followed by dimensions and quantity as shown.

Example) Bolt M5 x 65L *(long)* 4 bolts



mm

Model	C	D	Mounting bolt
RSQB20-10□	7	55	M5 x 55L
-15□		60	M5 x 60L
-20□		65	M5 x 65L
RSQB32-10□	9	60	M5 x 60L
-15□		65	M5 x 65L
-20□		70	M5 x 70L
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

Precautions

1. Flush piping thoroughly before connection in order to prevent dust or chips from entering the cylinder.
2. Do not mark or damage the piston rod. This could cause damage to packing and result in fluid leakage.
3. Do not apply oil to the sliding section of the piston rod.
4. Do not apply rotary torque.
5. Do not apply large-load energy to the model with a shock absorber when the shock absorber is absorbing energy (when the lever is upright).

Maintenance

1. When the shock absorber is replaced, securely tighten the locking screw so that it touches the threaded section of the new shock absorber. 0.3J (3kgf•cm)
2. When changing the direction of the roller-stop, loosen the locking screws (in 2 places) on the rod cover. After changing their positions, tighten them firmly again.

Seal Kit—How to Order

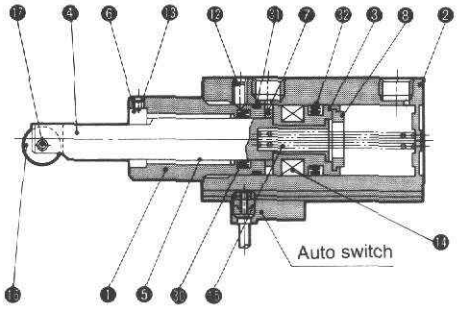
RSQ [32] — [D] PS

- [D]: D—Double Acting; S—Single Acting; DS—Double Acting/w/sprin
- [32]: Bore size 20, 32, 40, 50

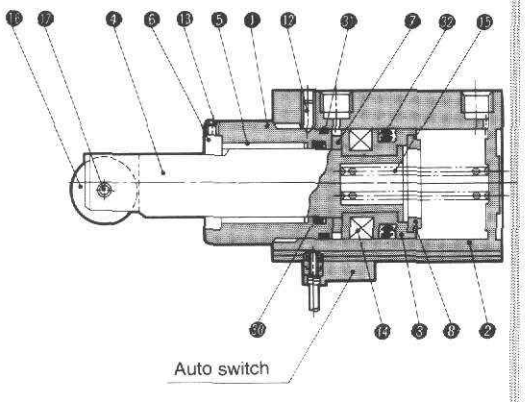
Construction/parts list

Double acting • double acting with spring • roller rod end

ϕ20



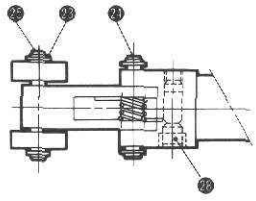
ϕ32 • ϕ40 • ϕ50

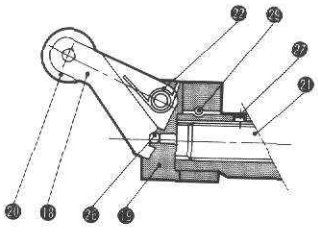


Round bar rod end type (D)

Non rotating rod end type (K)

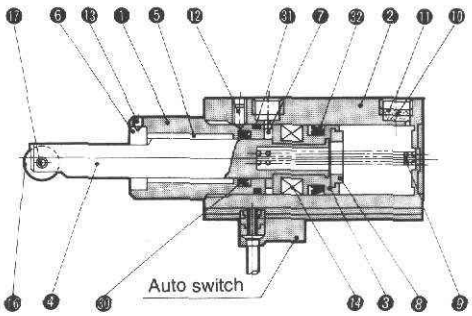
Lever rod end with built-in shock absorber
(only ϕ32, ϕ40, ϕ50)



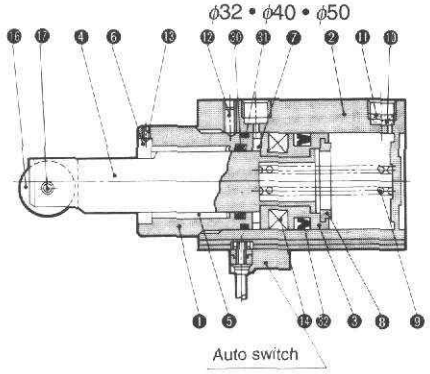


Single acting/roller rod end

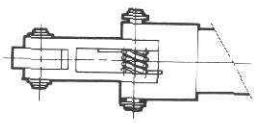
ϕ20



ϕ32 • ϕ40 • ϕ50



Only 1 roller is provided for ϕ32



Parts List

No.	Description	Material	Remarks
1	Rod cover	Aluminum alloy	Hard black alumite
2	Cylinder tube	Aluminum alloy	Hard alumite
3	Piston	Aluminum alloy	Chromate
4	Piston rod	ø20 – Stainless steel ø32,ø40,ø50 – Carbonsteel	Hard chrome plating
5	Bush	Lead bronze casting	–
6	Non-rotating guide	Rolled plate	Use collar for round bar
7	*Damper A*	*Urethane*	–
8	Damper B	Urethane	–
9	Extend spring	Steel wire	Zinc chromate
10	Element	Sintered metallic BC	–
11	Retaining ring	Steel wire	–
12	Hexagon socket set screw	Chrome-molybdenum steel	–
13	Hexagon socket *set screw*	Chrome-molybdenum *steel*	–
14	Rubber magnet	Synthetic rubber	–
*15	Extend spring E	Steel wire	–

Parts List

No.	Description	Material	Remarks
Roller type			
16	Roller A	Resin	–
17	Spring pin	Carbon tool steel	–
Lever type			
18	Lever	Cast iron	Perkoryubrite
19	Lever holder	Carbon steel	Black zinc chromate
20	Roller B	Resin	
21	Shock absorber	–	
22	*Lever spring*	*Stainless wire*	
23	C type retaining ring for shaft	Carbon tool steel	–
24	Lever pin	Carbon steel	–
25	*Roller pin*	*Carbon steel*	–
26	Steel ball	High carbon chromium bearing steels	–
27	Hexagon socket set screw	Chrome-molybdenum steel	–
28	Hexagon socket set screw	Chrome-molybdenum steel	–
29	One-side tapered pin	Carbon steel	–

Spare Parts/Packing List (Renewal Part No.)

No.	Description	Material	Double acting, double acting with spring				Single acting			
			ø20	ø32	ø40	ø50	ø20	ø32	ø40	ø50
30	Rod packing	NBR	DYR-12	DYR-20	PNY-25	PNY-25	DYR-12	DYR-20	PNY-25	PNY-25
31	*Gasket*	NBR	C-18	C-29	C-36	C-46	C-18	C-29	C-36	C-46
32	Piston packing	NBR	NLP-20A *NLP-20L	NLP-32A *NLP-32L	NLP-40A *NLP-40L	NLP-50A *NLP-50L	PPY-20	PPY-32	SPY-40	SPY-50

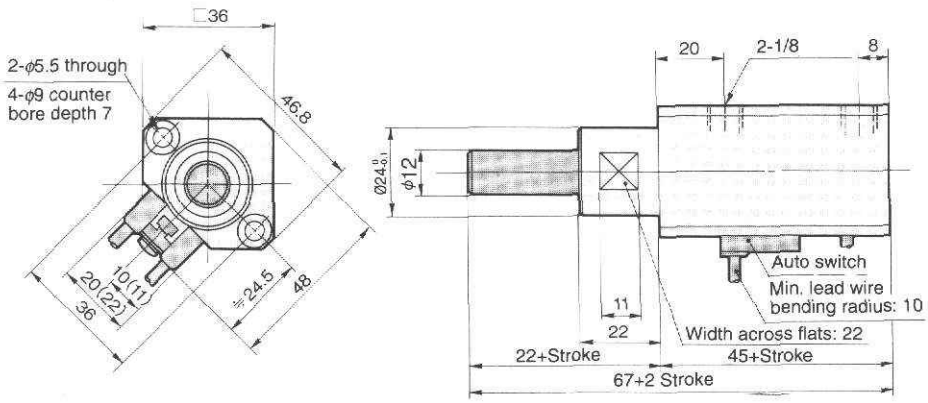
Parts with a * mark are used only for the double acting model with spring.

Rod end configuration

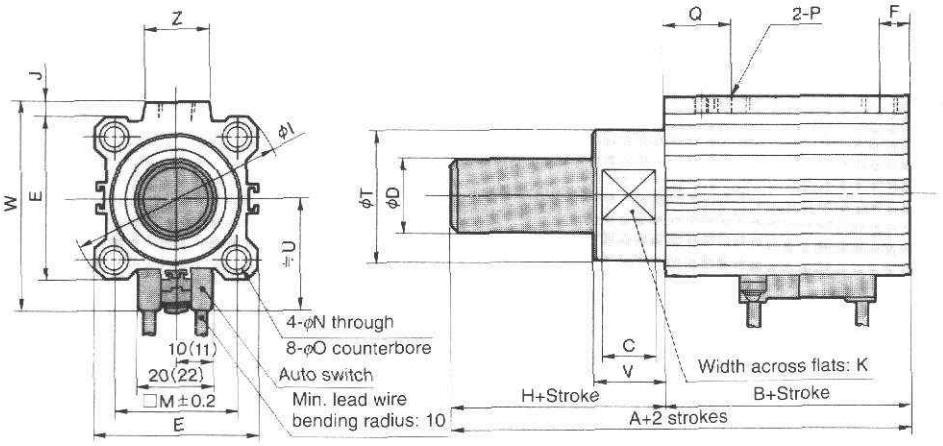
Round bar

Basic/through hole mounting, thread mounting

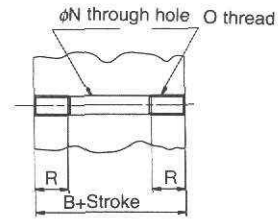
Bore size ϕ20/RS□QB20



Bore size ϕ32, ϕ40, ϕ50/RS□QB32, 40, 50



Thread mounting/both ends tapped



mm

Model	B	N	O	R
RS□QA20	45	5.5	M6x1	10
RS□QA32	48	5.5	M6x1	10
RS□QA40	52.5	5.5	M6x1	10
RS□QA50	54	6.6	M8x1.25	14

* Dimensions other than the above are the same as those of the basic type (at the left).

mm

Bore size (mm)	A	B	C	D	E	F	H	I	J	K	M	N	O counterbore	O thread	P	Q	R	T	U	V	W	Z
32	68	48	15	20	45	7.5	20	60	4.5	32	34	5.5	9 depth 7	M6 x 1	1/8	20	10	$36.2^{0}_{0.1}$	31.5	20	58.5	18
40	80.5	52.5	18	25	52	8	28	69	5	41	40	5.5	9 depth 7	M6 x 1	1/8	24.5	10	$44.2^{0}_{0.1}$	35	28	66	18
50	82	54	21	25	64	8	28	86	7	50	50	6.6	11 depth 8	M8 x 1.25	1/8	24.5	14	$56.2^{0}_{0.1}$	41	28	80	22

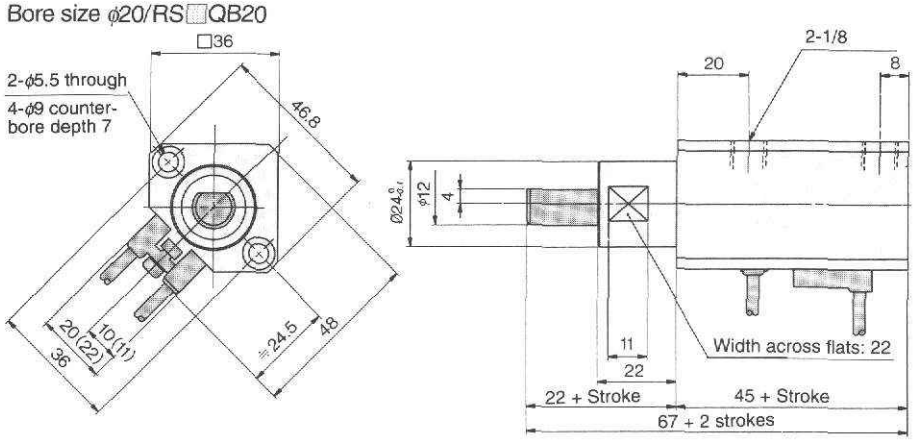
(Note 1) Dimensions for models without an auto switch are the same as the above.
(Note 2) The figures show the dimensions of auto switches D-A7 and D-A8.
(Note 3) Numbers in parenthesis indicate the dimensions of D-A7□H, A80H, F79, and J79.
(Note 4) The figure shows an extended piston rod.
(Note 5) For single acting, one-touch fittings are provided only on the rod side.

Rod end configuration

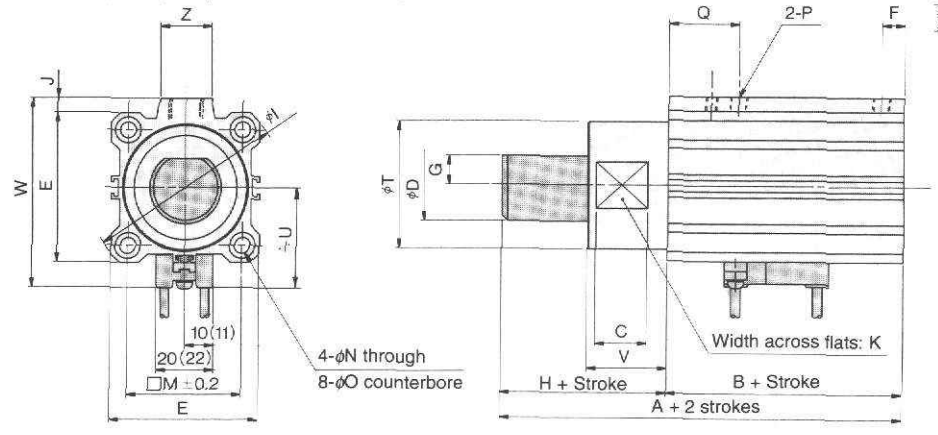
Non-rotating

Basic/through hole mounting, thread mounting

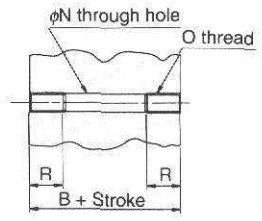
Bore size ϕ20/RS□QB20



Bore size ϕ32, ϕ40, ϕ50/RS□QB32, 40, 50



Thread mount/both ends tapped



mm

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RS□QA50	54	6.6	M8x1.25	14

* Dimensions other than the above are the same as those of the basic type (at the left).

mm

Bore size (mm)	A	B	C	D	E	F	G	H	I	J	K	M	N	O counterbore	O thread	P	Q	R	T	U	V	W	Z
32	68	48	15	20	45	7.5	8	20	60	4.5	32	34	5.5	9 depth 7	M6 x 1	1/8	20	10	36^{+1}_{-1}	31.5	20	58.5	18
40	80.5	52.5	18	25	52	8	10	28	69	5	41	40	5.5	9 depth 7	M6 x 1	1/8	24.5	10	44^{+1}_{-1}	35	28	66	18
50	82	54	21	25	64	8	10	28	86	7	50	50	6.6	11 depth 8	M8 x 1.25	1/8	24.5	14	56^{+1}_{-1}	41	28	80	22

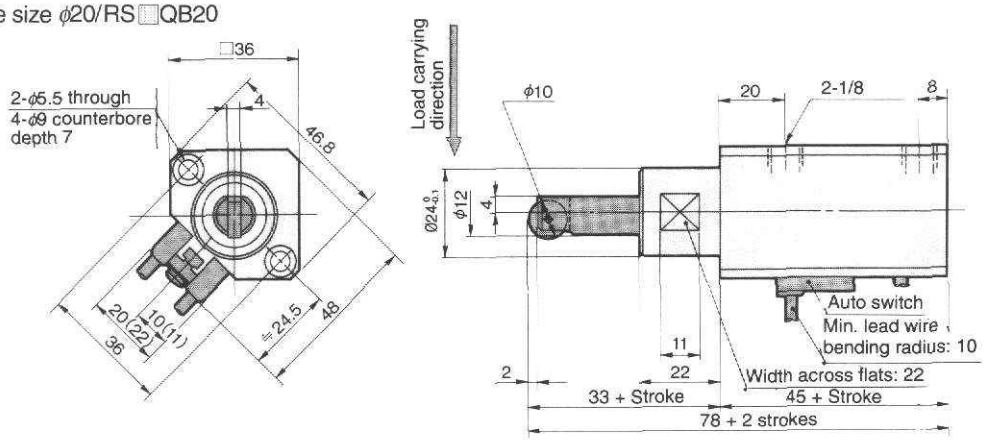
(Note 1) Dimensions for models without an auto switch are the same as the above.
(Note 2) The figures show the dimensions of auto switches D-A7 and D-A8.
(Note 3) Numbers in parenthesis indicate the dimensions of D-A7□H, A80H, F79, and J79.
(Note 4) The figure shows an extended piston rod.
(Note 5) For single acting, one-touch fittings are provided only on the rod side.

Rod end configuration

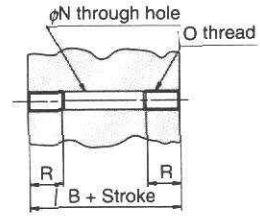
Roller

Basic/through hole mounting, thread mounting

Bore size ϕ20/RS□QB20



Thread mounting/both ends tapped

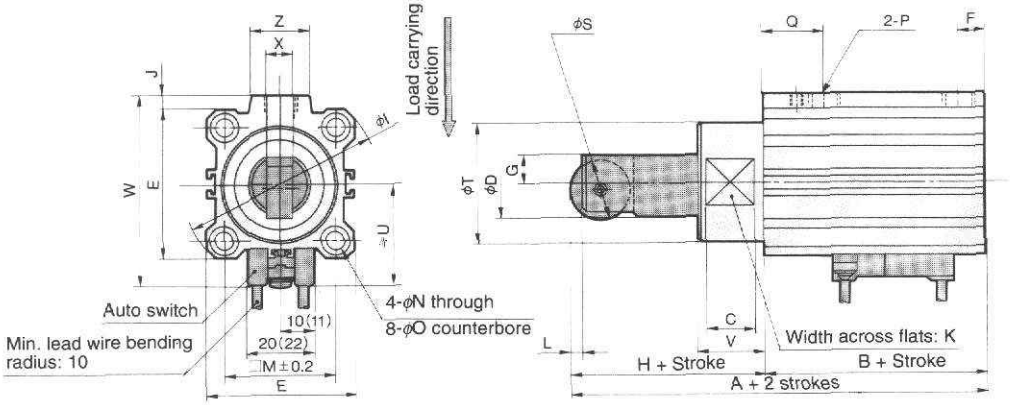


mm

Model	B	N	O	R
RS□QA20	45	5.5	M6x1	10
RS□QA32	48	5.5	M6x1	10
RS□QA40	52.5	5.5	M6x1	10
RS□QA50	54	6.6	M8x1.25	14

* Dimensions other than the above are the same as those of the basic (at the left).

Bore size ϕ32, ϕ40, ϕ50/RS□QB32, 40, 50

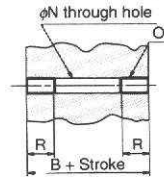


mm

Bore size (mm)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O counterbore	O thread	P	Q	R	S	T	U	V	W	X	Z
32	87	48	15	20	45	7.5	8	39	60	4.5	32	3	34	5.5	9 depth 7	M6 x 1	1/8	20	10	18	$36^{0}_{-0.1}$	31.5	20	58.5	8	18
40	105.5	52.5	18	25	52	8	10	53	69	5	41	4	40	5.5	9 depth 7	M6 x 1	1/8	24.5	10	24	$44^{0}_{-0.1}$	35	28	66	9	18
50	107	54	21	25	64	8	10	53	86	7	50	4	50	6.6	11 depth 8	M8 x 1.25	1/8	24.5	14	24	$56^{0}_{-0.1}$	41	28	80	9	22

(Note 1) Dimensions for models without an auto switch are the same as the above.
(Note 2) The figures show the dimensions of auto switches D-A7 and D-A8.
(Note 3) Numbers in parenthesis indicate the dimensions of D-A7□H, A80H, F79, and J79.
(Note 4) The figure shows an extended piston rod.
(Note 5) For single acting, one-touch fittings are provided only on the rod side.

Thread mounting/both ends tapped

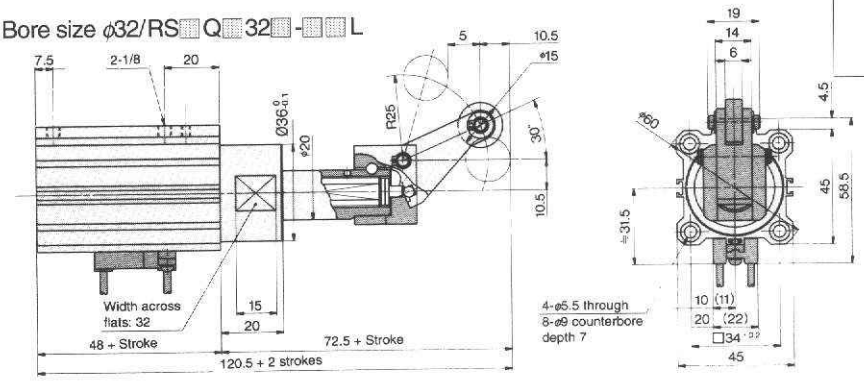


* Dimensions other than those shown in the table below are the same as the drawings below.

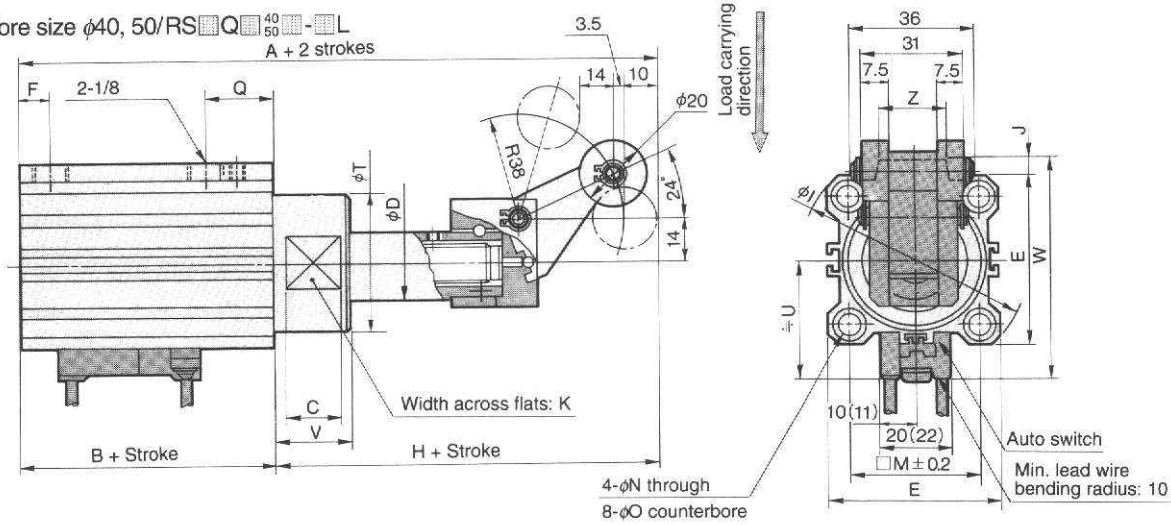
mm

Model	B	N	O	R
RS□QA32	48	5.5	M6x1	10
RS□QA40	52.5	5.5	M6x1	10
RS□QA50	54	6.6	M8x1.25	14

Bore size ϕ32/RS□Q□32□-□□L



Bore size ϕ40, 50/RS□Q□ 40/50 □-□L



mm

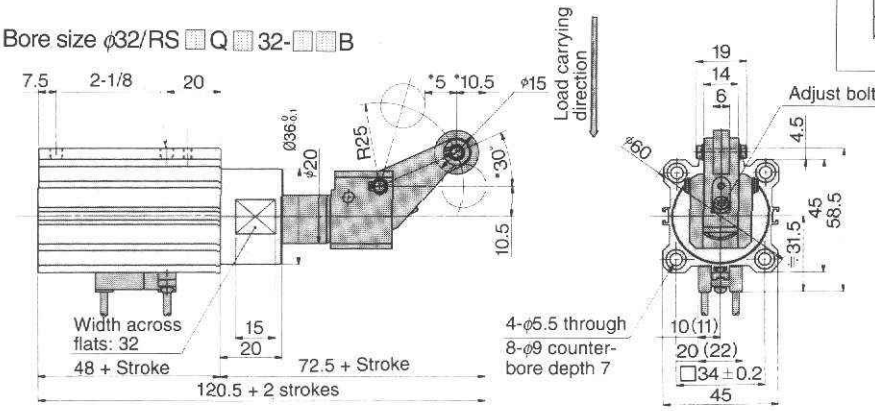
Bore size (mm)	A	B	C	D	E	F	H	I	J	K	M	N	O counterbore	O thread	Q	R	T	U	V	W	Z
40	152.5	52.5	18	25	52	8	100	69	5	41	40	5.5	9 depth 7	M6 x 1	24.5	10	$44.3^{0.3}_{0}$	35	28	66	18
50	154	54	21	25	64	8	100	86	7	50	50	6.6	11 depth 8	M8 x 1.25	24.5	14	$56.3^{0.3}_{0}$	41	28	80	22

(Note 1) Dimensions for models without an auto switch are the same as the above.
(Note 2) The figures show the dimensions of auto switches D-A7 and D-A8.
(Note 3) Numbers in parenthesis indicate the dimensions of D-A7□H, A80H, F79, and J79.
(Note 4) The figure shows an extended piston rod.
(Note 5) For single acting, one-touch fittings are provided only on the rod side.

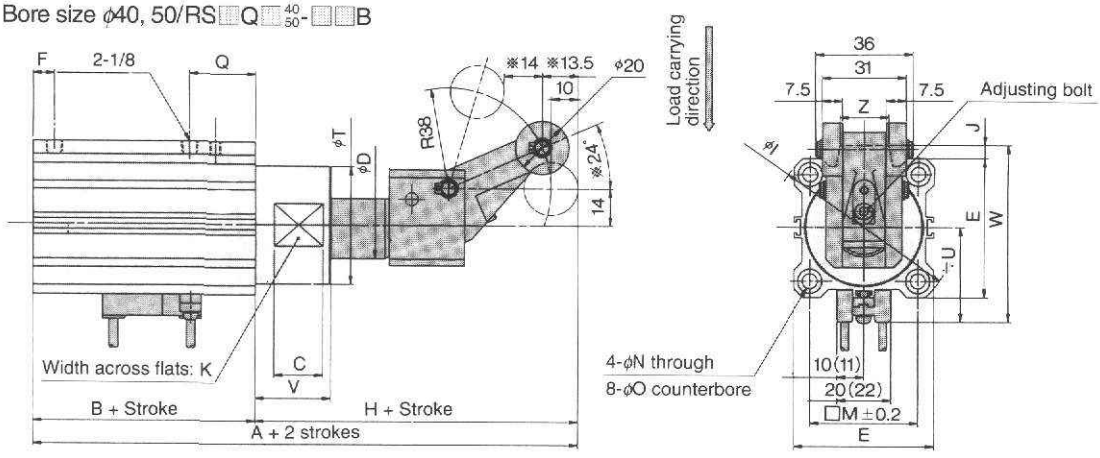
Bore	Shock Absorber Part Numbers
Ø32	RB1007-x225
Ø40	RB1407-x225
Ø50	RB1407-x225

Stroke adjusting shock absorber

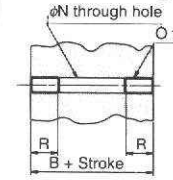
Bore size ϕ32/RS□Q□32-□□B



Bore size ϕ40, 50/RS□Q□$^{40}_{50}$-□□B



Thread mounting/both ends tapped



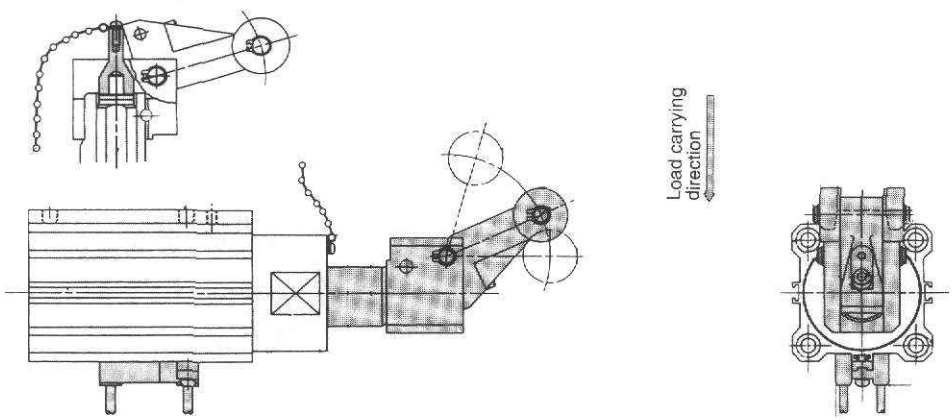
* Dimensions other than those shown in the table below are the same as the drawings below.

mm

Model	B	N	O	R
RS□QA32	48	5.5	M6x1	10
RS□QA40	52.5	5.5	M6x1	10
RS□QA50	54	6.6	M8x1.25	14

With cancel cap/RS□Q□□-□□C

* Dimensions of the model with a cancel cap are the same as those shown in the above drawings.



* Dimensions for the maximum energy absorption

mm

Bore size (mm)	A	B	C	D	E	F	H	I	J	K	M	N	O counterbore	Q	R	T	U	V	W	Z
40	152.5	52.5	18	25	52	8	100	69	5	41	40	5.5	9 depth 7	24.5	10	$44^{0}_{-0.1}$	35	28	66	18
50	154	54	21	25	64	8	100	86	7	50	50	6.6	11 depth 8	24.5	14	$56^{0}_{-0.1}$	41	28	80	22

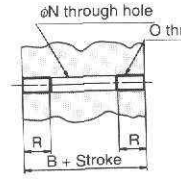
(Note 1) Dimensions for models without an auto switch are the same as the above.
(Note 2) The figures show the dimensions of auto switches D-A7 and D-A8.
(Note 3) Numbers in parenthesis indicate the dimensions of D-A7□H, A80H, F79, and J79.
(Note 4) The figure shows an extended piston rod.
(Note 5) For single acting, one-touch fittings are provided only on the rod side.
(Note 6) The * section is subject to the adjusting bolt adjustment.

Rod end configuration

Lever with built-in shock absorber

Variable energy absorption/through hole mounting, thread mounting

Thread mounting/both ends tapped



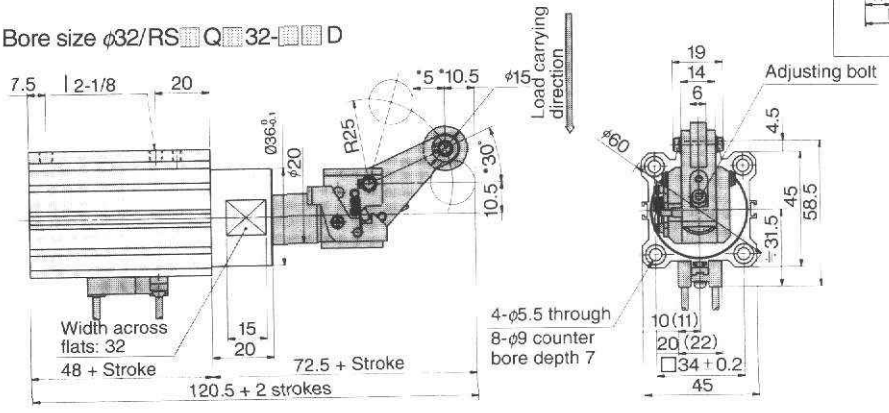
* Dimensions other than those shown in the table below are the same as the drawings below.

mm

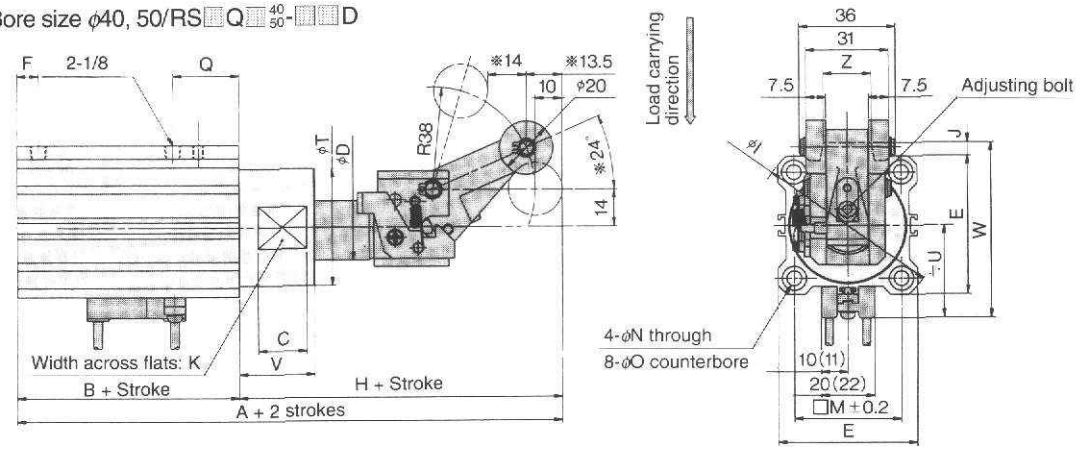
Model	B	N	O	R
RS□QA32	48	5.5	M6x1	10
RS□QA40	52.5	5.5	M6x1	10
RS□QA50	54	6.6	M8x1.25	14

With locking mechanism

Bore size ϕ32/RS□Q□32-□□D

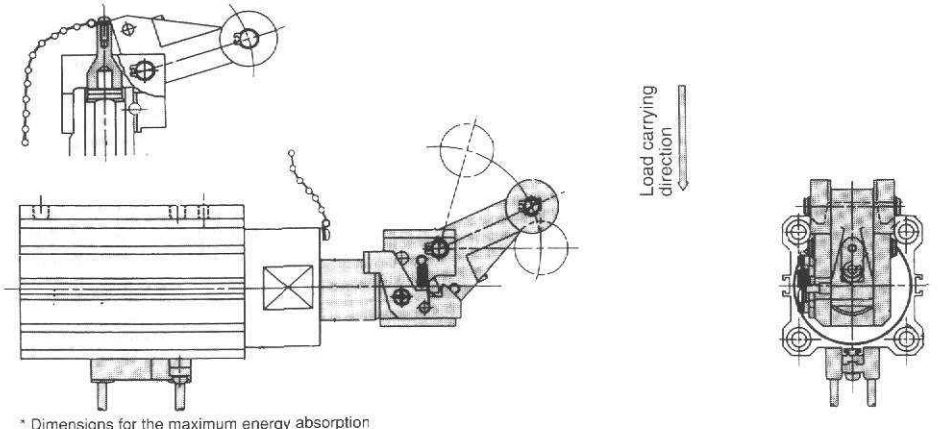


Bore size ϕ40, 50/RS□Q□$^{40}_{50}$-□□D



With locking mechanism + cancel cap/RS□Q□□-□□E

* Dimensions of the model with a cancel cap are the same as those shown in the above drawings.



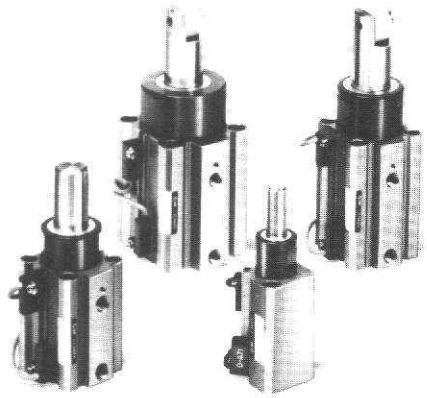
* Dimensions for the maximum energy absorption

mm

Bore size (mm)	A	B	C	D	E	F	H	I	J	K	M	N	O counterbore	Q	R	T	U	V	W	Z
40	152.5	52.5	18	25	52	8	100	69	5	41	40	5.5	9 depth 7	24.5	10	$44^{0}_{-0.1}$	35	28	66	18
50	154	54	21	25	64	8	100	86	7	50	50	6.6	11 depth 8	24.5	14	$56^{0}_{-0.1}$	41	28	80	22

(Note 1) Dimensions for models without an auto switch are the same as the above.
(Note 2) The figures show the dimensions of auto switches D-A7 and D-A8.
(Note 3) Numbers in parenthesis indicate the dimensions of D-A7□H, A80H, F79, and J79.
(Note 4) The figure shows an extended piston rod.
(Note 5) For single acting, one-touch fittings are provided only on the rod side.
(Note 6) The * section is subject to the adjusting bolt adjustment.

Series RSDQ
Auto Switch Specifications



Applicable auto switch model

Auto switch model		Lead wire entry (feature)
Reed switch	D-A7, A8	Grommet (Vertical cable access)
	D-A7□H, A80H	Grommet (Horizontal cable access)
	D-A73C, A80C	Connector
	D-A79W	Grommet (two colors)
Solid state switch	D-F7, J7	Grommet (Horizontal cable access)
	D-F7□V	Grommet (Vertical cable access)
	D-J79C	Connector
	D-F7□W, J79W	Grommet (two colors/horizontal cable access)
	D-F7□WV	Grommet (two colors/vertical cable access)
	D-F7□F	Grommet (two colors/with diagnostic output/horizontal cable access)
	D-F7BA	Grommet (two colors/waterproof/horizontal cable access)

Reed Switch Specifications / Rail Mounted

Autoswitch model	D-A72 D-A72H	D-A73 D-A73H		D-A76H	D-A80 D-A80H			D-A73C	D-A80C	D-A79W
Application	Relay Sequence controller			IC	Relay, Sequence controller, IC			Relay, Sequence controller	Relay, Sequence controller, IC	Relay, Sequence controller
Load voltage	200VAC	24VDC	100VAC	4~8VDC	Max.24V AC,DC	48VAC,DC	100VAC,DC	24VDC	Max.24VAC,DC	24VDC
Max. load current and load current range	5~10mA	5~40mA	5~20mA	20mA	50mA	40mA	20mA	5~40mA	50mA	5~40mA
Internal voltage drop	Max. 2.4V			Max. 0.8V	0			Max. 2.4V	0	Max. 4V
Indicator lamp	ON: Red light emitting diode			–	–			ON: Red light emitting diode	–	Two colors Response position – Red light emitting diode Best response position – Green light emitting diode
Protection circuit for contact breaker point	–									

- Leak current — None
- Response time —1.2ms
- Lead wire — Oil proof vinyl, ø3.4, 0.2mm², 2-wire (red, black), 0.5m *
- Impact resistance —300m/s² {30.6G}
- Insulation resistance —50MΩ or more under test voltage 500VDC (between case and cable)
- Withstand voltage — 1500VAC 1 min (between case and cable)
- Ambient temperature — 50-140°F (10~60°C)
- Protection structure — IEC529 spec.IP67, waterproof (JIS C 0920), oilproof

* Suffix L for the model with a 3m-long lead wire.
(Example) D-A73L

Solid State Switch Specifications/Rail Mounted Type

Auto switch model	D-F79 D-F7NV	D-F7P D-F7PV	D-J79 D-F7BV	D-J79C	D-F79W D-F7NWV	D-F7PW	D-J79W	D-F7BWV	D-F79F (With diagnostic output)	D-F7LF (Holding/with diagnostic output)
Wiring	3-wire		2-wire		3-wire		2-wire		4-wire	
Output	NPN	PNP	–		NPN	PNP	–		NPN	
Application	Relay, IC, Sequence controller		24VDC relay, Sequence controller		Relay, Sequence controller	Relay, IC, Sequence controller	24VDC relay, Sequence controller		Relay, IC, Sequence controller	Relay, Sequence controller
Power voltage	5~24VDC	5~24VDC	–		12~24VDC	5~24VDC	–		5~24VDC	24VDC
Current consumption	Max. 12mA	Max. 15mA	–		Max. 10mA	Max. 12mA	–		Max. 10mA	Max. 20mA
Load voltage	Max. 28VDC	–	10~28VDC		Max. 28VDC	–	10~28VDC		Max. 28VDC	
Load current	Max. 150mA	Max. 100mA	5~100mA		Max. 80mA	Max. 40mA	5~40mA	6~40mA	Max. 40mA	
Internal voltage drop (When load voltage is 10mA)	Max. 0.8V		Max. 3V		Max. 0.8V		Max. 4V		Max. 0.8V	
Leak current	Max. 10μA		Max. 1mA		Max. 10μA		Max. 1mA		Max. 10μA	
Indicator lamp	ON: Red light emitting diode				Response position - Red light emitting diode Best response position - Green light emitting diode					

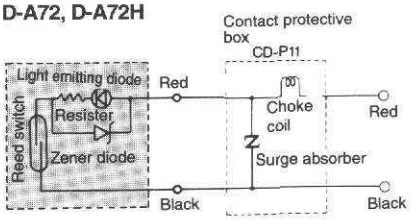
- Response time —1.2ms
- Lead wire — Oil proof vinyl, ø3.4, 0.2mm², 2-wire (red, black), 3-wire (red, white, black), 0.5m *
- Impact resistance —300m/s² {30.6G}, 1000m/s² {102G}
- Insulation resistance —50MΩ or more under test voltage 500VDC (between case and cable)
- Withstand voltage — 1500VAC 1 min (between case and cable)
- Ambient temperature —50-140°F (10~60°C)
- Protection structure — IEC529 spec.IP67, waterproof (JISC0920), oilproof

* Suffix L for the model with a 3m-long lead wire.
(Example) D-F79L

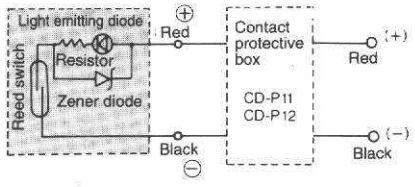
Auto switch internal circuit

Reed switch

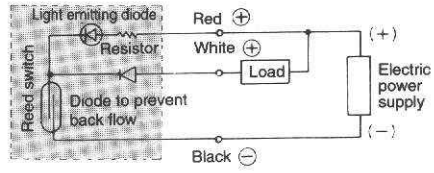
D-A72, D-A72H



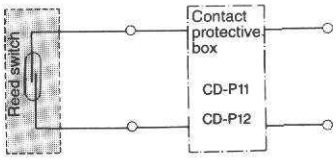
D-A73, D-A73H



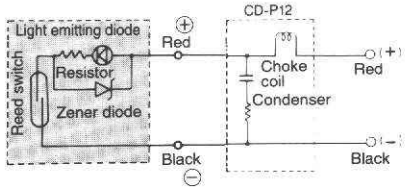
D-A76H



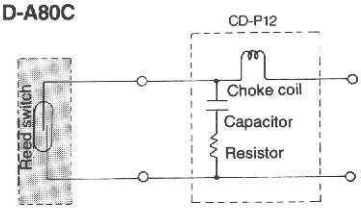
D-A80, D-A80H



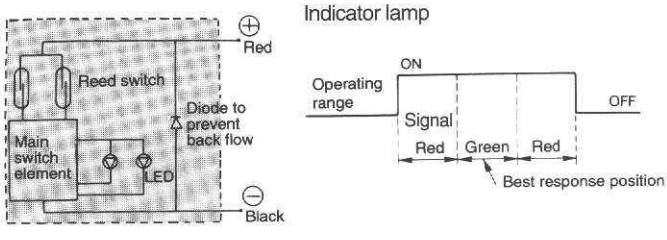
D-A73C



D-A80C

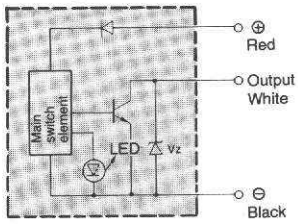


D-A79W / two colors

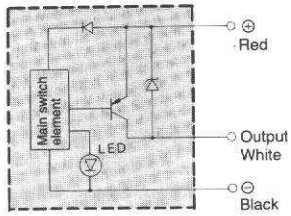


Solid state switch

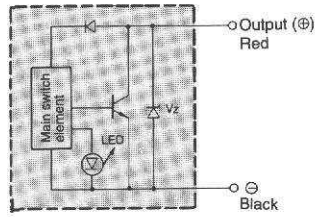
D-F79, D-F7NV



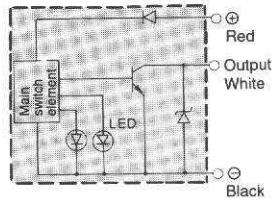
D-F7P, D-F7PV



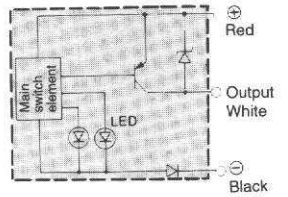
D-J79, D-J79C, D-F7BV



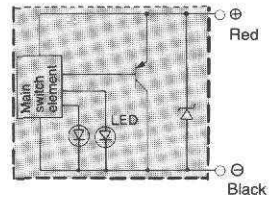
D-F79W, D-F7NWV



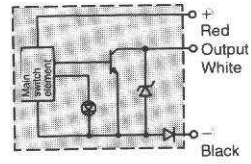
D-F7PW



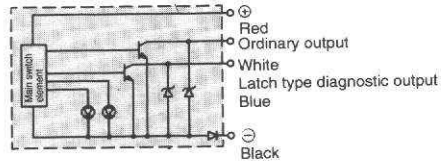
D-J79W, D-F7BWV



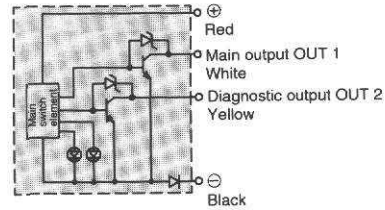
D-F7NTL



D-F7LF



D-F79F



Solid state and Reed switches are interchangeable.

{Solid state switch} {Reed switch}

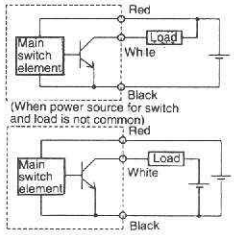
D-F79
D-J79 ⟷ D-A7
D-J79C

Series RSDQ

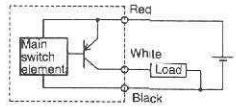
Solid State Switch/Connection Method and Connection Example

Basic wiring

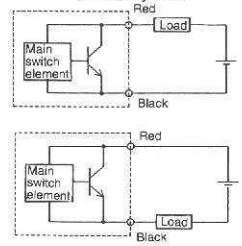
3 wire system NPN



3 wire system PNP

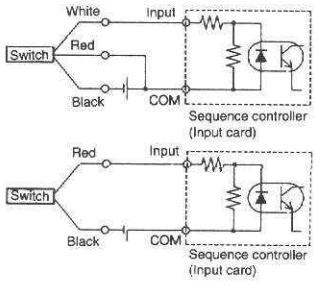


2 wire system

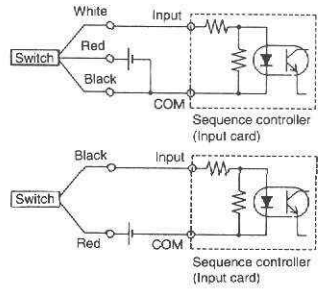


Typical sequence controller connection circuits

3 wire system NPN



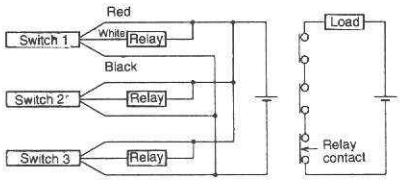
3 wire system PNP



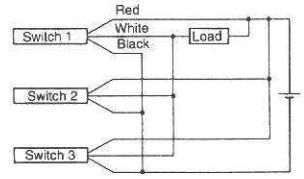
The connection method varies with the input specifications of the sequence controller. Therefore, connect according to the input specifications.

AND (Serial), OR (Parallel) connection example

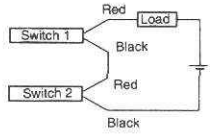
AND connection for 3-wire system NPN output



OR connection for 3-wire system NPN output

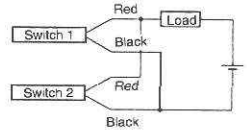


2 AND connections for 2-wire system



When two switches are AND-connected, load malfunction may result because of the load voltage drop when the switches are *turned ON. The pilot lamp lights* when two switches are turned ON.

2 OR connections for 2-wire system



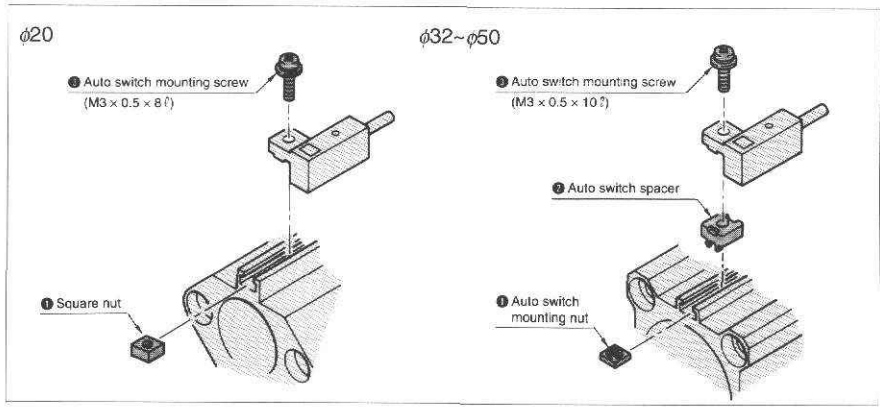
When two switches are OR-connected, load voltage becomes great as a switch is turned OFF, and malfunction may result.

Example: Power voltage is 24VDC and residual switch voltage is 4V.
Load voltage when switch is ON = Power voltage – Residual voltage x 2pcs
= 24V – 4A x 2pcs
= 16V

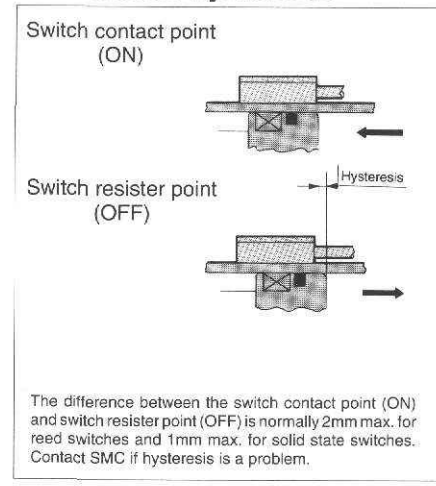
Example: Load impedance is 3kΩ and switch leakage current is 1mA.
Load voltage when switch is OFF = Leakage current x 2pcs x Load impedance
= 1mA x 2pcs x 3kΩ
= 6V

How to Install Auto Switch

Install auto switch in the following manner.



Auto switch hysteresis



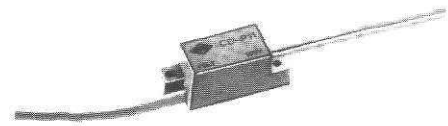
The difference between the switch contact point (ON) and switch resister point (OFF) is normally 2mm max. for reed switches and 1mm max. for solid state switches. Contact SMC if hysteresis is a problem.

Contact Protective Box

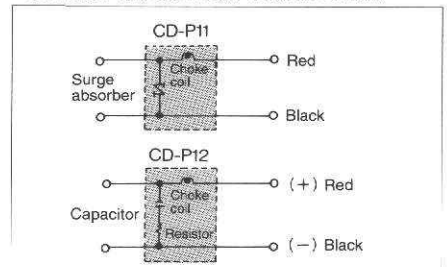
D-A7 and D-A8 switches have no built-in contact protection circuit. Use this box for inductive loads, 5 meters or more of lead wires, or 100, 200VAC applications.

Model	Voltage	Lead wire length
CD-P11	100, 200VAC	0.5m
CD-P12	24VDC	

* D-A8 switch is used for 100VAC or less. Since there is no voltage limitation, you can select a suitable model for your needs.



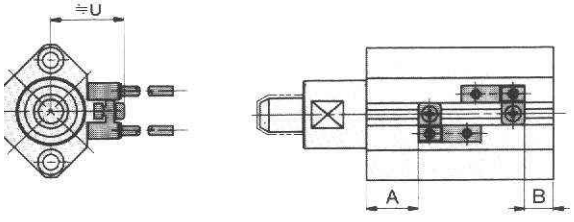
Contact Protection Box Internal Circuit



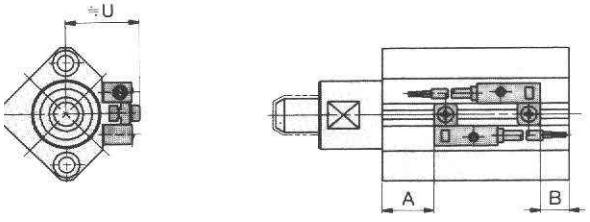
Auto Switch Mounting Position (Stroke End) / Mounting Height

ϕ20

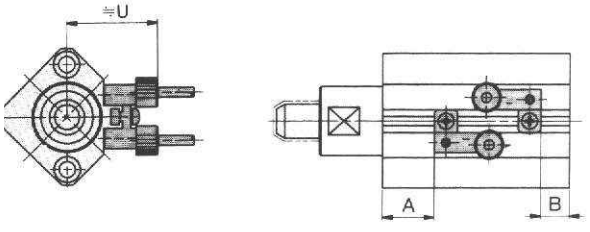
D-A7, D-A8



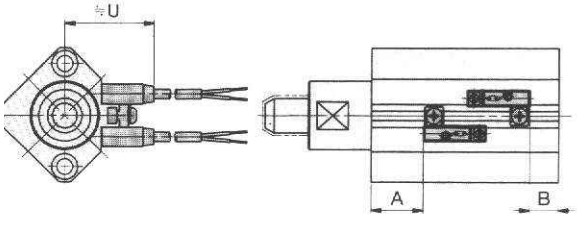
D-A7H, D-A80H
D-F7, D-J79
D-F79W, D-J79W



Connector type
D-A73C, D-A80C
D-J79C

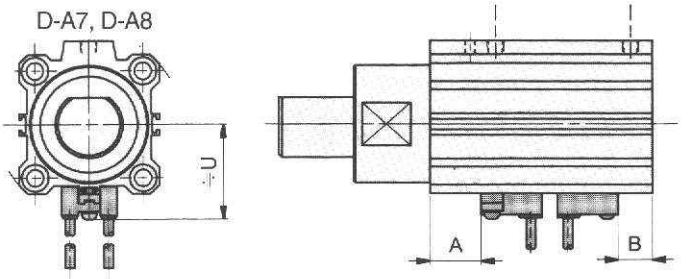


D-A79W, D-F7□WV
D-F7□V

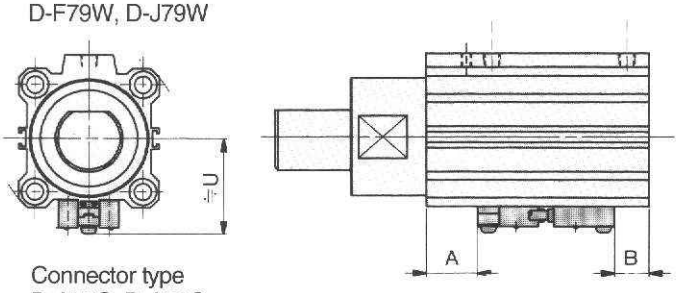


ϕ32 ~ ϕ50

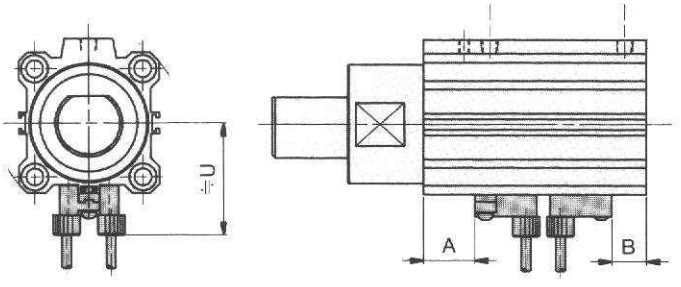
D-A7, D-A8



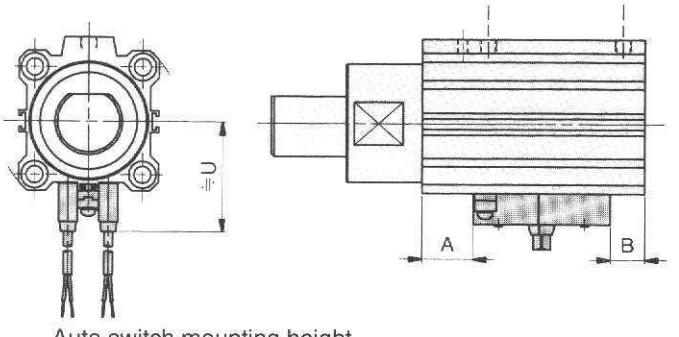
D-A7H, D-A80H
D-F7, D-J79
D-F79W, D-J79W



Connector type
D-A73C, D-A80C
D-J79C



D-A79W, D-F7□WV
D-F7□V



Auto switch mounting position

Auto switch mounting height

mm

Auto switch model / Bore size	D-A7, D-A8, D-A7□H, D-A80H, D-A73C, D-A80C, D-F7, D-J7, D-F7□V, D-J79C		D-A79W		D-F7BAL, D-F7PW, D-F7□F, D-J79W		D-F79W, D-F7□WV		D-A7, D-A8	D-A7□H, D-A80H, D-F7, D-J79, D-F79W, D-J79W, D-F7BAL, D-F7PW, D-F7□F	D-A73C, D-A80C, D-F7□WV	D-F7□V	D-J79C	D-A79W
	A	B	A	B	A	B	A	B	U	U	U	U	U	U
20	18.0	10.0	15.0	7.0	22.0	14.0	18.5	10.5	24.5	25.5	31.5	28.0	31.0	27.0
32	18.5	12.5	15.5	9.5	22.5	16.5	19.0	13.0	31.5	32.5	38.5	35.0	38.0	34.0
40	23.0	12.5	20.0	9.5	27.0	16.5	23.5	13.0	35.0	36.0	42.0	38.5	41.5	37.5
50	31.0	6.0	28.0	3.0	35.0	10.0	31.5	6.5	41.0	42.0	48.0	44.5	47.5	43.5

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