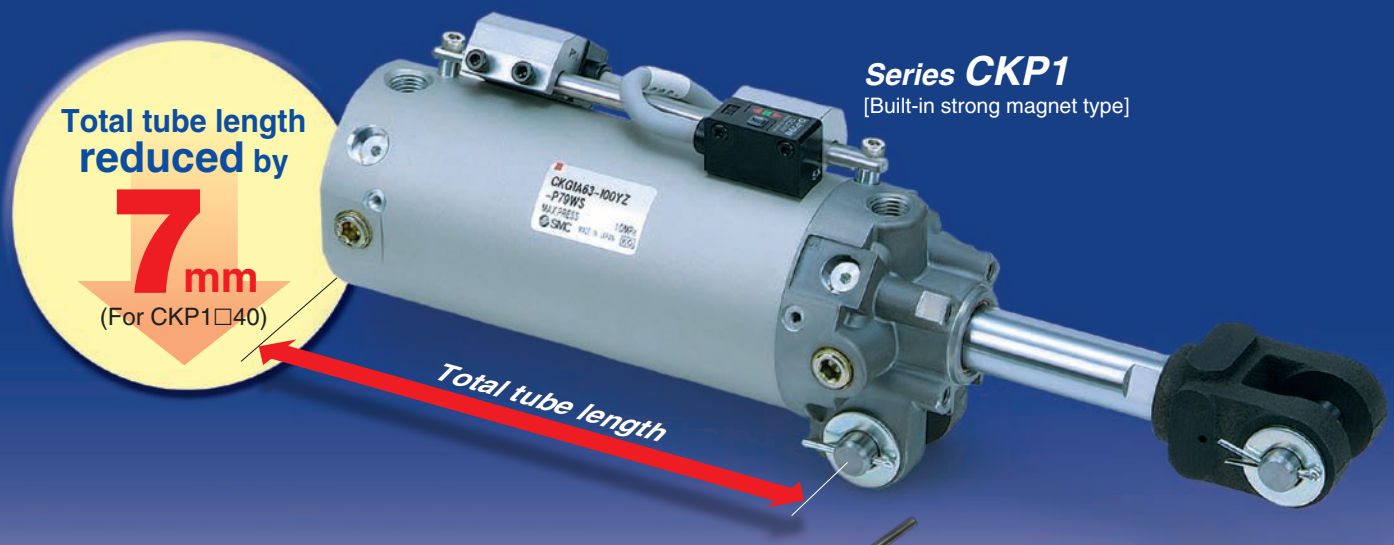
Clamp Cylinder

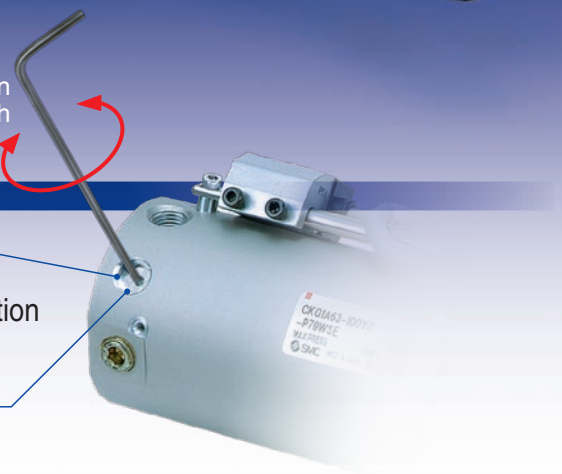
ø40, ø50, ø63

New

RoHS

Total tube length reduced





Easy speed adjustment

Speed controller valve

Easy fine speed adjustment with screw adjustment construction

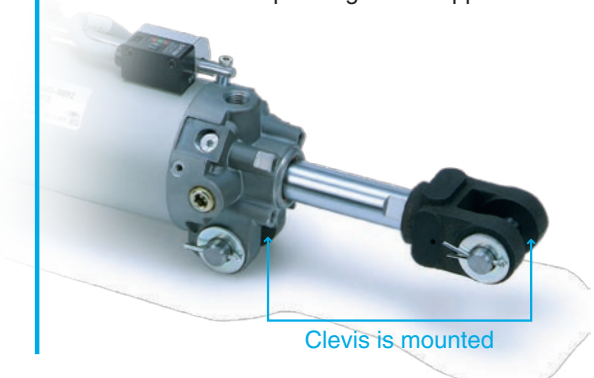
No projection from the tube external surface

Retaining construction with crimping

Clevis width

16.5mm/19.5mm

Possible to select depending on the application



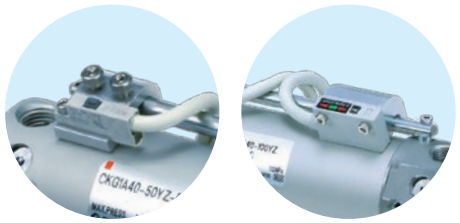
Cylinder stroke	Max.**200** mm (ø50, ø63 only)

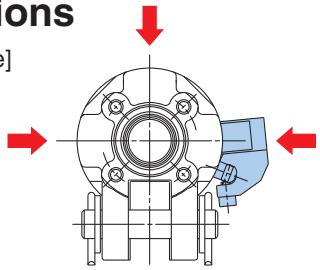
Magnetic field resistant auto switch

Mountable from 3 directions

[Series CKG1/Built-in standard magnet type]

D-P3DW type, D-P4DW type





[Series CKP1/Built-in strong magnet type]

D-P79WSE type,
D-P74L/Z type

Series CK□1

SMC

CAT.ES20-225A Ⓐ

Total tube length reduced

The total length has been reduced by modifying the internal design.

Series CKP1 (mm)

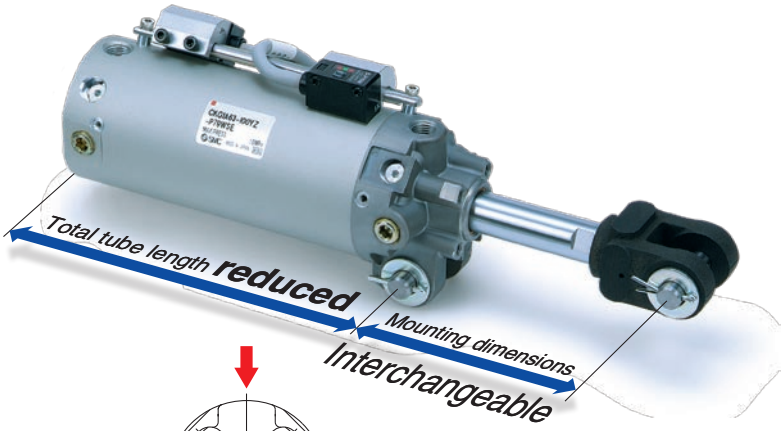
Bore size (mm)	New CKP1	Shortened dimensions	Existing model
40	58	7	65
50	56	2	58
63	56	2	58

Series CKG1 (mm)

Bore size (mm)	New CKG1	Shortened dimensions	Existing model
40	53	2	55
50	56	2	58
63	56	2	58

Mounting dimensions are the same as the existing product.

The dimension from the body to the work piece is the same as the existing product.

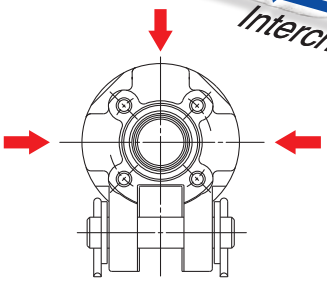


With air cushion

(Unclamped, head end)

Piping ports are located on three surfaces.

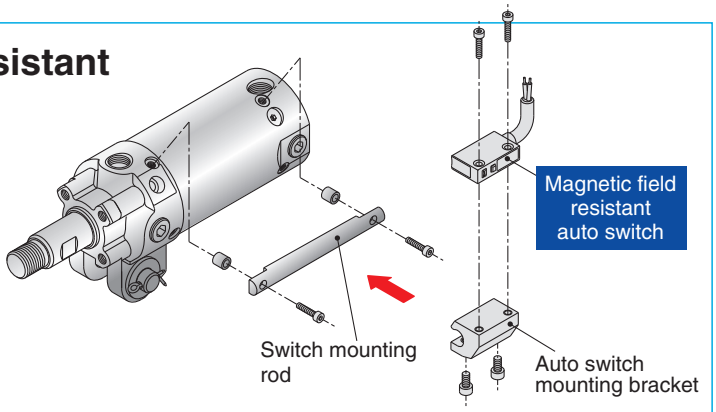
Piping arrangement is more flexible corresponding to the installed environment.



Possible to mount magnetic field resistant auto switch using the mounting rod

[Series CKG1/Built-in standard magnet type]
D-P3DWSC, D-P3DWSE, D-P3DW/L/Z (AC magnetic field)
D-P4DWSC, D-P4DWSE, D-P4DWL/Z (AC magnetic field)

[Series CKP1/Built-in strong magnet type]
D-P79WSE, D-P74L/Z (DC/AC magnetic fields)



Series CK1 Variations

Series			Bore size (mm) 25	32	40	50	63	Stroke (mm)	Clevis width (mm)	Page
New Clamp cylinder	Basic	CK1			●	●	●	50, 75, 100, 125, 150, 200* *Except ø40	16.5, 19.5	CAT.ES20-225 P.1
Clamp cylinder New	Built-in standard magnet type	CKG1□			●	●	●			
	Built-in strong magnet type	CKP1□			●	●	●			
Clamp cylinder/ Slim style	Built-in standard magnet type	CKG□-X2095	●	●	●			50, 75, 100, 125, 150	9, 12.5	Information 09-555
	Built-in strong magnet type	CKP□-X2095	●	●	●					
Clamp cylinder with lock/Slim style	Built-in standard magnet type	CLKG□-X2095			●	●				
	Built-in strong magnet type	CLKP□-X2095			●	●				
Clamp cylinder with lock	Built-in standard magnet type	CLK2G□			●	●	●	50, 75, 100, 125, 150	12, 16.5, 19.5	Best Pneumatics P.1344
	Built-in strong magnet type	CLK2P□			●	●	●		16.5, 19.5	

Clamp Cylinder with Magnetic Field Resistant Auto Switch (Rod Mounting Style)

Series CKG1/CKP1

ø40, ø50, ø63

RoHS

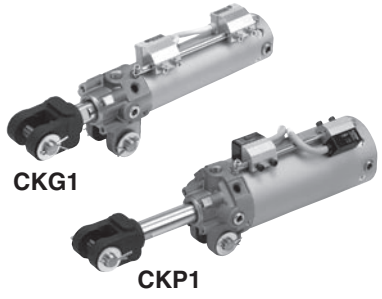
How to Order

Built-in standard magnet type with magnetic field resistant auto switch

Built-in strong magnet type with magnetic field resistant auto switch

CKG1 **A** **50** **□** – **100** **Y** **□** **Z** – **P3DWSC** **□**

CKP1 **A** **50** **□** – **100** **Y** **□** **Z** – **P79WSE** **□**



Clevis width

A	16.5 mm
B	19.5 mm

Bore size

40	40 mm
50	50 mm
63	63 mm

Thread type

Nil	Rc1/4
TN	NPT1/4
TF	G1/4

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Cylinder stroke (mm)

40	50, 75, 100, 125, 150
50	50, 75, 100, 125, 150, 200
63	50, 75, 100, 125, 150, 200

Auto switch

Nil	Without auto switch (built-in magnet) Without switch mounting rod
P	Without auto switch (built-in magnet) With switch mounting rod

∗ Select applicable auto switch models from the table below.

End bracket

Nil	None
I	Single knuckle joint (M6 without tap)
IA	Single knuckle joint (M6 with tap)
Y	Double knuckle joint (M6 without tap)
YA	Double knuckle joint (M6 with tap)

Note 1) IA and YA are equivalent to the conventional models.
Note 2) Knuckle pin, cotter pin and flat washer are provided as a standard for Y and YA.

Option

Nil	None
B	Limit switch mounting base
D	Dog fitting Note 1)
L	Foot
K Note 2)	Pedestal (for 75, 100, 150 strokes only)

Note 1) When the dog bracket is selected, choose the rod end bracket IA or YA (M6 with tap).
Note 2) Clevis width B (19.5 mm) is not available with pedestal K.

Built-in Standard (Strong) Magnet Cylinder Part No.

1) Built-in standard (strong) magnet type without auto switch and switch mounting rod

Symbol for the auto switch type is "Nil" as shown below.
CKG1: (Example) CKG1A50-50YZ
CKP1: (Example) CKP1A50-50YZ

2) Built-in standard (strong) magnet type without auto switch, with switch mounting rod

Symbol for the auto switch type is "P" as shown
CKG1: (Example) CKG1A50-50YZ-P
CKP1: (Example) CKP1A50-50YZ-P
∗ The auto switch mounting bracket is not included.

Applicable Magnetic Field Resistant Auto Switches (Refer to pages 1719 to 1827 in Best Pneumatics No.3 for detailed auto switch specifications.)

Applicable cylinder series	Type	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no in use)	Load voltage	Lead wire length	Applicable load
Series CKG1	Solid state auto switch	D-P3DWSC	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color display	2-wire (3–4)	24 VDC	0.3 m	Relay, PLC Note 1)
		D-P4DWSC							
		D-P3DWSE				2-wire (1–4)			
		D-P4DWSE							
		D-P3DW		Grommet		2-wire		0.5 m	
		D-P3DWL						3 m	
		D-P4DWL							
		D-P3DWZ						5 m	
		D-P4DWZ							
Series CKP1	Reed auto switch	D-P79WSE	DC/AC magnetic field	Pre-wired connector	2-color display	2-wire (1–4)	24 VDC	0.3 m	
		D-P74L		Grommet	1-color display	2-wire	24 VDC 100 VAC	3 m	
		D-P74Z						5 m	

Note 1) PLC: Programmable Logic Controller
Note 2) There are other applicable auto switches other than the listed above. For details, refer to page 10.
Note 3) Refer to page 11 when ordering the auto switch mouting bracket assembly or switch mounting rod assembly.
Note 4) For D-P3DW□, the auto switch and auto switch mounting bracket are packed together (not assembled).

Refer to pages 10 to 13 for cylinders with auto switches.

- Minimum stroke for auto switch mounting
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Switch mounting bracket part no.

Specifications

Bore size (mm)	40	50	63
Fluid	Air		
Proof pressure	1.5 MPa		
Maximum operating pressure	1.0 MPa		
Minimum operating pressure	0.05 MPa		
Ambient and fluid temperature	–10°C to 60°C		
Piston speed	50 to 500 mm/s		
Cushion	Unclamped side (head end): With air cushion		
Speed controller	Equipped on both ends		
Lubrication	Non-lube		
Stroke length tolerance	$^{+1.0}_{0}$		
Mounting Note)	Double clevis		

Note) Clevis pin, cotter pin, flat washer are equipped as a standard.

Clevis width	16.5 mm	Series CKG1A/CKP1A
	19.5 mm	Series CKG1B/CKP1B

Standard Stroke

Bore size (mm)	Standard stroke (mm)
40	50, 75, 100, 125, 150
50, 63	50, 75, 100, 125, 150, 200

End Bracket/Options

Symbol	Description		Parts no.	
			Series CKG1A/CKP1A	Series CKG1B/CKP1B
I	Single knuckle joint	M6 without tap	CKB-I04	
IA		M6 with tap	CKB-IA04	
Y	Double knuckle joint (Knuckle pin, cotter pin, flat washer are equipped as a standard.)	M6 without tap	CKA-Y04	CKB-Y04
YA		M6 with tap	CKA-YA04	CKB-YA04

Weight (Basic weight includes the switch mounting rod. At 0 stroke)

Unit: kg

Bore size (mm)		40	50	63
CKG1□ Cylinder	Basic weight	0.70	0.92	1.12
	Additional weight per 25 mm stroke	0.11	0.12	0.14
CKP1□ Cylinder	Basic weight	0.72	0.98	1.28
	Additional weight per 25 mm stroke	0.11	0.12	0.14
Single knuckle joint		0.20		
Double knuckle joint (Knuckle pin, cotter pin, flat washer are equipped as a standard.)		0.34		

Calculation
Example) **CKG1□50-100YZ-P**

- Basic weight ·····0.92 (ø50)
- Additional weight ·····0.12/25 mm
- Cylinder stroke ·····100 mm
- Double knuckle joint ···0.34 (Y)

0.92 + 0.12 x 100/25 + 0.34 = 1.74 kg

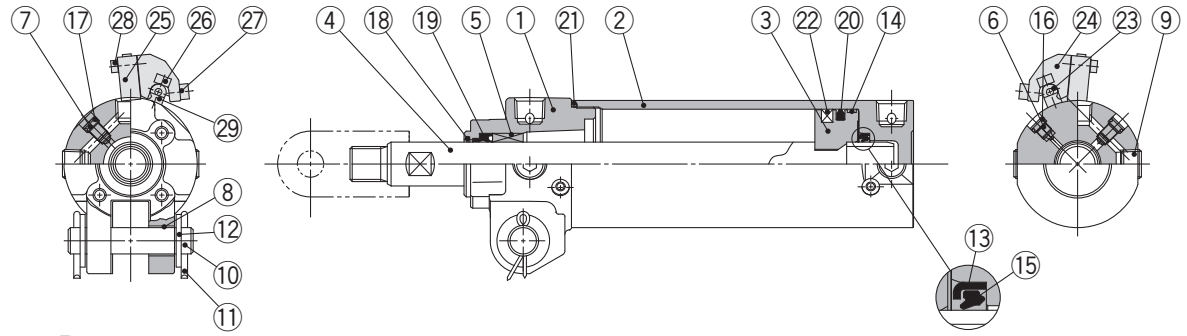
Theoretical Output

Unit: N

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm^2)	Operating pressure (MPa)			
				0.3	0.4	0.5	0.6
40	20	OUT	1260	378	504	630	756
		IN	943	283	377	472	566
50	20	OUT	1960	588	784	980	1180
		IN	1650	495	660	825	990
63	20	OUT	3120	934	1250	1560	1870
		IN	2800	840	1120	1400	1680

Construction

CKG1□40, 50, 63 Built-in standard magnet type/With magnetic field resistant auto switch

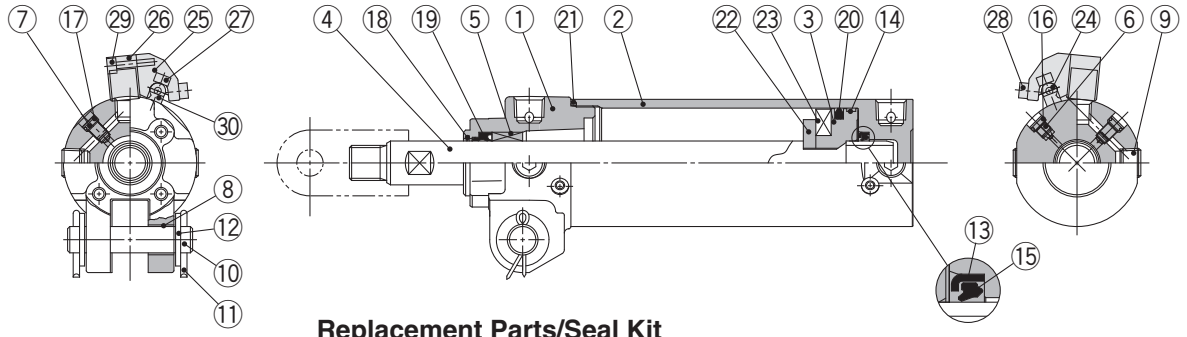


Component Parts

No.	Description	Material	Qty	Note
1	**Rod cover**	Aluminum alloy	1	Chromated
2	**Tube cover**	Aluminum alloy	1	Hard anodized
3	**Piston**	Aluminum alloy	1	Chromated
4	**Piston rod**	Carbon steel	1	Hard chrome plated
5	**Bushing**	Bearing alloy	1	
6	**Cushion valve**	Steel wire	1	Black zinc chromated
7	**Speed controller valve**	Steel wire	2	Nickel plating
8	**Clevis bushing**	Oil-impregnated sintered alloy	2	
9	**Hexagon socket head plug**	Carbon steel	4	Rc 1/4
10	**Pin**	Carbon steel	1	
11	**Cotter pin**	Low carbon steel wire rod	2	
12	**Flat washer**	Rolled steel	2	
13	**Cushion seal retainer**	Rolled steel	1	Zinc chromated
14	**Wear ring**	Resin	1	
15	**Cushion seal**	Urethane	1	
16	**Cushion valve seal**	NBR	1	

No.	Description	Material	Qty	Note
17	**Speed controller valve seal**	NBR	2	
18	**Coil scraper**	Phosphor bronze	1	
19	**Rod seal**	NBR	1	
20	**Piston seal**	NBR	1	
21	**Tube gasket**	NBR	1	
22	**Magnet**	—	1	
23	**Switch mounting rod**	Carbon steel	1	Zinc chromated
24	**Auto switch mounting bracket**	Aluminum alloy	—	
25	**Magnetic field resistant auto switch**	—	—	
26	**Hexagon socket head cap screw**	Steel wire	2	M4 x 0.7 x 14 L
27	**Hexagon socket head cap screw**	Steel wire	2 pcs. per switch	M4 x 0.7 x 8 L
28	**Hexagon socket head cap screw**	Steel wire	2 pcs. per switch	M3 x 0.5 x 14 L
29	**Switch mounting spacer**	Aluminum alloy	2	

CKP1□40, 50, 63 Built-in strong magnet type/With magnetic field resistant auto switch



Replacement Parts/Seal Kit

Bore size (mm)	Order no.	Contents
40	CK1A40-PS	Set of nos. above ⑲, ⑳, ㉑.
50	CK1A50-PS	
63	CK1A63-PS	

Note 1) Seal kits are the same as the CKG1□/CKP1□.
Note 2) The seal kit does not come with a grease pack, so please order it separately.
Grease pack part no.: GR-S-010
(compatible with all sizes)

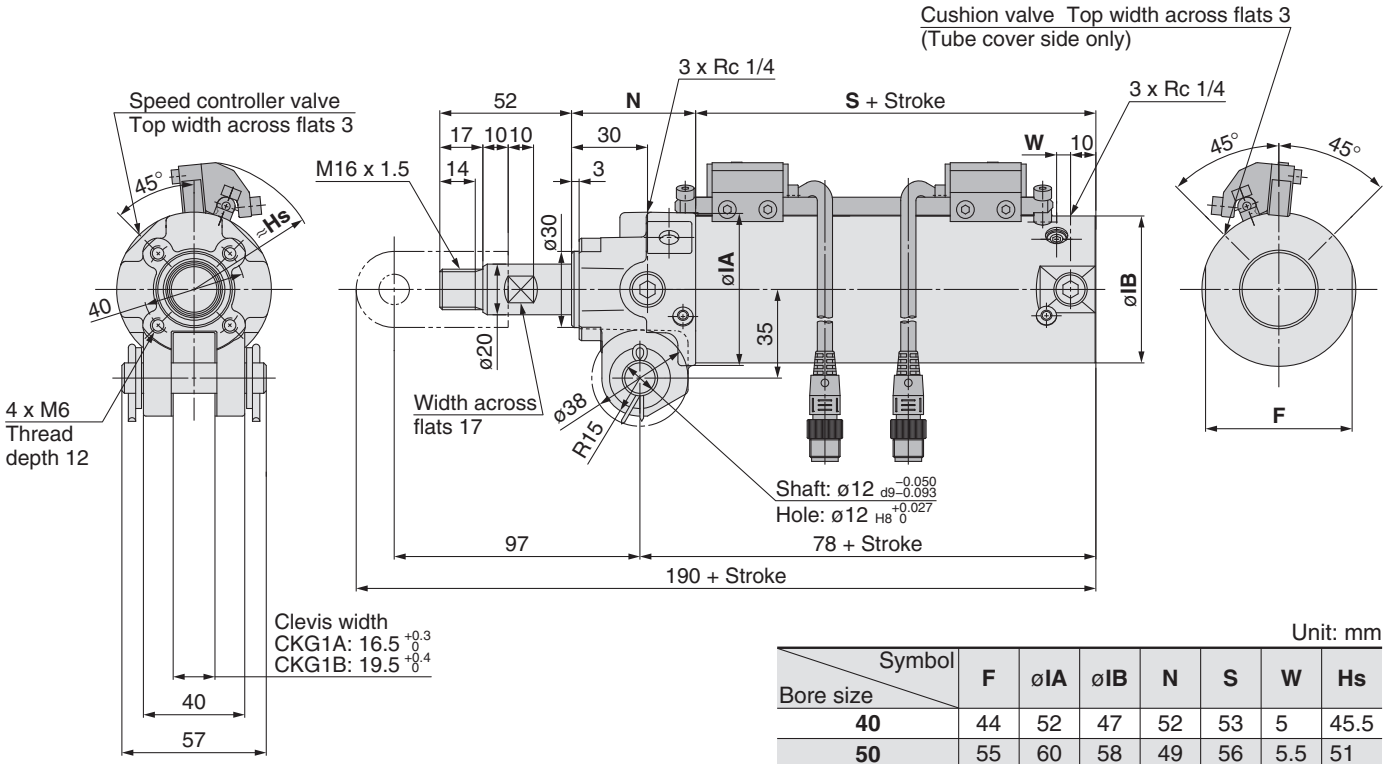
Component Parts

No.	Description	Material	Qty	Note
1	**Rod cover**	Aluminum alloy	1	Chromated
2	**Tube cover**	Aluminum alloy	1	Hard anodized
3	**Piston**	Aluminum alloy	1	Chromated
4	**Piston rod**	Carbon steel	1	Hard chrome plated
5	**Bushing**	Bearing alloy	1	
6	**Cushion valve**	Steel wire	1	Black zinc chromated
7	**Speed controller valve**	Steel wire	2	Nickel plating
8	**Clevis bushing**	Oil-impregnated sintered alloy	2	
9	**Hexagon socket head plug**	Carbon steel	4	Rc 1/4
10	**Pin**	Carbon steel	1	
11	**Cotter pin**	Low carbon steel wire rod	2	
12	**Flat washer**	Rolled steel	2	
13	**Cushion seal retainer**	Rolled steel	1	Zinc chromated
14	**Wear ring**	Resin	1	
15	**Cushion seal**	Urethane	1	
16	**Cushion valve seal**	NBR	1	

No.	Description	Material	Qty	Note
17	**Speed controller valve seal**	NBR	2	
18	**Coil scraper**	Phosphor bronze	1	
19	**Rod seal**	NBR	1	
20	**Piston seal**	NBR	1	
21	**Tube gasket**	NBR	1	
22	**Magnet holder**	Aluminum alloy	1	
23	**Magnet**	—	1	
24	**Switch mounting rod**	Carbon steel	1	Zinc chromated
25	**Auto switch mounting bracket**	Aluminum alloy	—	
26	**Magnetic field resistant auto switch**	—	—	
27	**Hexagon socket head cap screw**	Steel wire	2	M4 x 0.7 x 14 L
28	**Hexagon socket head cap screw**	Steel wire	2 pcs. per switch	M4 x 0.7 x 8 L
29	**Hexagon socket head cap screw**	Steel wire	2 pcs. per switch	M3 x 0.5 x 16 L
30	**Switch mounting spacer**	Aluminum alloy	2	

Dimensions

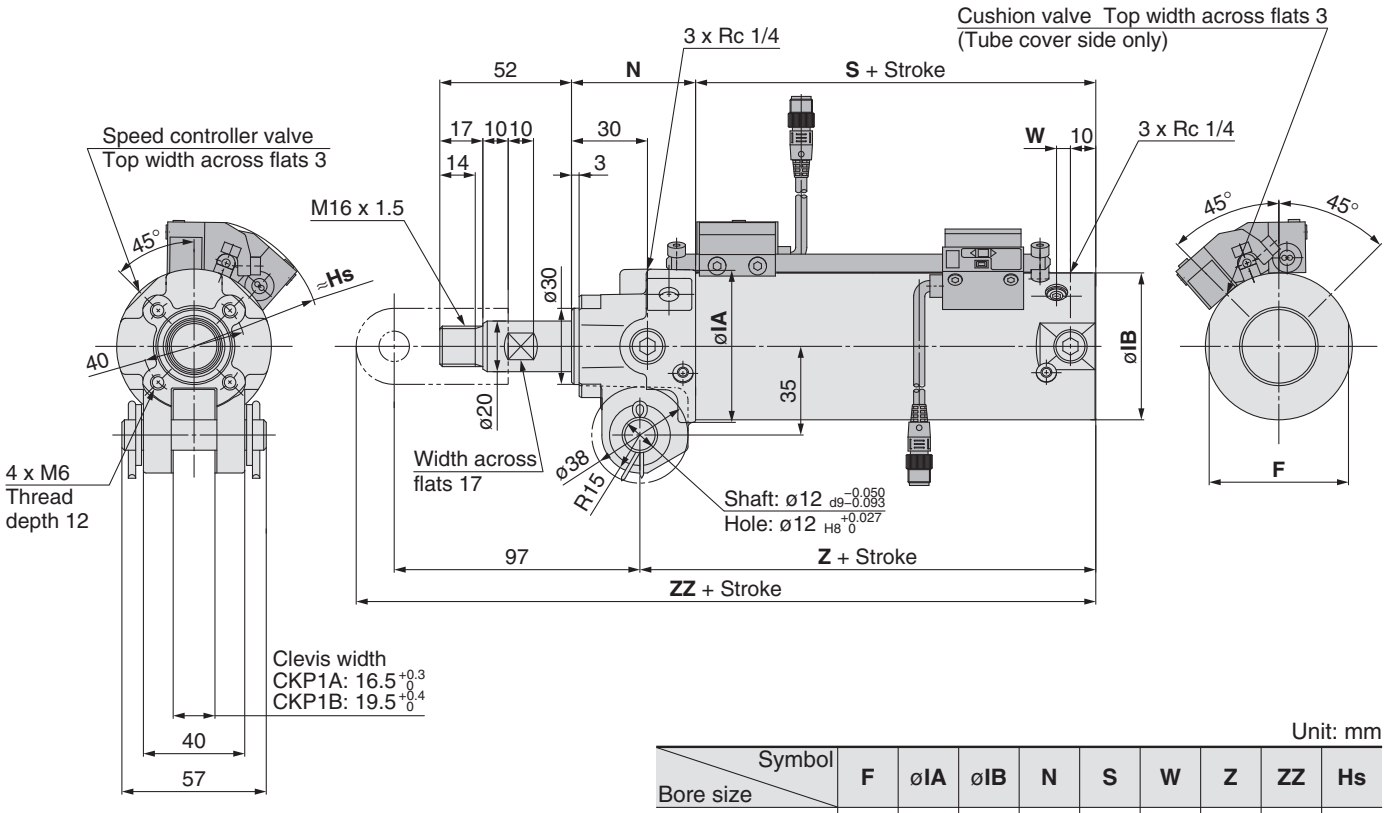
CKG1□40, 50, 63 Built-in standard magnet type/With magnetic field resistant auto switch (D-P4DWS□ type)



Unit: mm

Bore size \ Symbol	F	øIA	øIB	N	S	W	Hs
40	44	52	47	52	53	5	45.5
50	55	60	58	49	56	5.5	51
63	69	74	72	49	56	5.5	58.5

CKP1□40, 50, 63 Built-in strong magnet type/With magnetic field resistant auto switch (D-P79WSE type)



Unit: mm

Bore size \ Symbol	F	øIA	øIB	N	S	W	Z	ZZ	Hs
40	44	52	47	52	58	5	83	195	47.5
50	55	60	58	49	56	5.5	78	190	51
63	69	74	72	49	56	5.5	78	190	57.5

Clamp Cylinder
Magnetic Field Resistant Auto Switch (Band Mounting Style)
Series CK1/CKG1
ø40, ø50, ø63

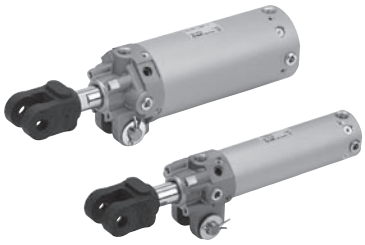
RoHS

How to Order

Without magnet CK1 A 50 □ – 100 Y □ Z

Built-in standard magnet type CKG1 A 50 □ – 100 Y □ Z

For how to order auto switch/switch mounting bracket, refer to below.



Clevis width

A	16.5 mm
B	19.5 mm

Bore size

40	40 mm
50	50 mm
63	63 mm

Thread type

Nil	Rc1/4
TN	NPT1/4
TF	G1/4

Cylinder stroke (mm)

40	50, 75, 100, 125, 150
50	50, 75, 100, 125, 150, 200
63	50, 75, 100, 125, 150, 200

Option

Nil	None
B	Limit switch mounting base
D	Dog fitting Note 1)
L	Foot
K Note 2)	Pedestal (for 75, 100, 150 strokes only)

Note 1) When the dog fitting is selected, choose the rod end bracket IA or YA (M6 with tap).
Note 2) Clevis width B (19.5 mm) is not available with pedestal K.

End bracket

Nil	None
I	Single knuckle joint (M6 without tap)
IA	Single knuckle joint (M6 with tap)
Y	Double knuckle joint (M6 without tap)
YA	Double knuckle joint (M6 with tap)

Note 1) IA and YA are equivalent to the conventional models.
Note 2) Knuckle pin, cotter pin and flat washer are provided as a standard for Y and YA.

Magnetic Field Resistant Auto Switch D-P4DW□□ Type/Band Mounting Compliant

Band mounting of the magnetic field resistant auto switch (D-P4DW□□ type) to the built-in standard magnet clamp cylinder (the CKG1□ series) is possible by ordering the switch mounting bracket and the auto switch individually.

⚠ Caution

Standard type auto switch is mountable for the built-in standard magnet type.
For details, please refer to "Made to Order" on page 12. Also, please note that the standard type auto switch cannot be used under the magnetic field resistant environment.

How to Order

Please order the switch mounting bracket, auto switch and built-in standard magnet clamp cylinder individually. Refer to the table below for auto switch mounting bracket part numbers.

Part no.	Applicable auto switch	Applicable clamp cylinder
BA8-040	D-P4DWSC	**CKG1□40**
BA8-050	D-P4DWSE	**CKG1□50**
BA8-063	D-P4DWL/Z	**CKG1□63**

Ordering Example

Example case ① Built-in standard magnet cylinder:
CKG1A50-50YZ ····· 1
Example case ② Magnetic field resistant auto switch:
D-P4DWSC ····· 2
Example case ③ Switch mounting bracket: BA8-050 ···· 2

Note 1) Please order the same quantity for the switch mounting bracket and the magnetic field resistant auto switch respectively.
Note 2) Band mounting for the magnetic field resistant auto switch D-P79WS□ type, D-P74□ type is not applicable.

Applicable Magnetic Field Resistant Auto Switches

Applicable cylinder series	Type	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no in use)	Load voltage	Lead wire length	Applicable load
Series CKG1	**Solid state auto switch**	**P4DWSC**	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color display	2-wire (3–4)	24 VDC	0.3 m	Relay, PLC Note 1)
		P4DWSE				2-wire (1–4)			
		P4DWL		Grommet		2-wire		3 m	
		P4DWZ						5 m	

Note 1) PLC: Programmable Logic Controller
Note 2) There are other applicable auto switches other than the listed above. For details, refer to page 10.

Refer to pages 10 to 13 for cylinders with auto switches.

- Minimum stroke for auto switch mounting
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Switch mounting bracket part no.

Specifications

Bore size (mm)	40	50	63
Fluid	Air		
Proof pressure	1.5 MPa		
Maximum operating pressure	1.0 MPa		
Minimum operating pressure	0.05 MPa		
Ambient and fluid temperature	Without auto switch: −10°C to 70°C With auto switch: −10°C to 60°C		
Piston speed	50 to 500 mm/s		
Cushion	Unclamped side (head end): With air cushion		
Speed controller	Equipped on both ends		
Lubrication	Non-lube		
Stroke length tolerance	$^{+1.0}_{0}$		
Mounting Note)	Double clevis		

Note) Clevis pin, cotter pin, flat washer are equipped as a standard.

Clevis width	16.5 mm	Series CK1A/CKG1A
	19.5 mm	Series CK1B/CKG1B

Standard Stroke

Bore size (mm)	Standard stroke (mm)
40	50, 75, 100, 125, 150
50, 63	50, 75, 100, 125, 150, 200

End Bracket/Options

Symbol	Description		Part no.	
			Series CK1A/CKG1A	Series CK1B/CKG1B
I	Single knuckle joint	M6 without tap	CKB-I04	
IA		M6 with tap	CKB-IA04	
Y	Double knuckle joint (Knuckle pin, cotter pin, flat washer are equipped as a standard.)	M6 without tap	CKA-Y04	CKB-Y04
YA		M6 with tap	CKA-YA04	CKB-YA04

Weight

Unit: kg

Bore size (mm)		40	50	63
Cylinder	Basic weight	0.68	0.90	1.10
	Additional weight per 25 mm stroke	0.10	0.11	0.13
Single knuckle joint		0.20		
Double knuckle joint (Knuckle pin, cotter pin, flat washer are equipped as a standard.)		0.34		

Calculation
Example) **CK1G□50-100YZ**

- Basic weight····· 0.90 (ø50)
- Additional weight····· 0.11/25 mm
- Cylinder stroke····· 100 mm
- Double knuckle joint··· 0.34 (Y)

0.90 + 0.11 x 100/25 + 0.34 = 1.68 kg

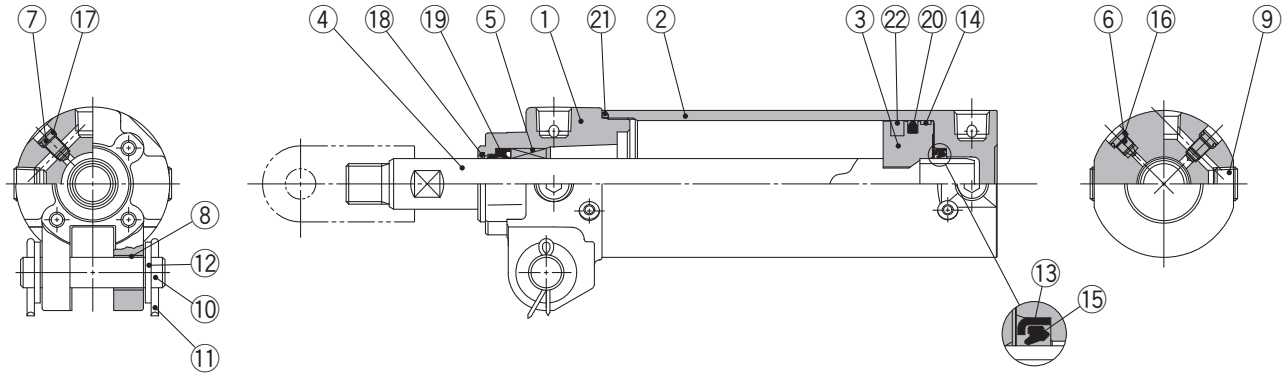
Theoretical Output

Unit: N

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm^2)	Operating pressure (MPa)			
				0.3	0.4	0.5	0.6
40	20	OUT	1260	378	504	630	756
		IN	943	283	377	472	566
50	20	OUT	1960	588	784	980	1180
		IN	1650	495	660	825	990
63	20	OUT	3120	934	1250	1560	1870
		IN	2800	840	1120	1400	1680

Construction

CK1□40, 50, 63 Basic type/CKG1□40, 50, 63 Built-in standard magnet type



Component Parts

No.	Description	Material	Qty	Note
1	**Rod cover**	Aluminum alloy	1	Chromated
2	**Tube cover**	Aluminum alloy	1	Hard anodized
3	**Piston**	Aluminum alloy	1	Chromated
4	**Piston rod**	Carbon steel	1	Hard chrome plated
5	**Bushing**	Bearing alloy	1	
6	**Cushion valve**	Steel wire	1	Black zinc chromated
7	**Speed controller valve**	Steel wire	2	Nickel plating
8	**Clevis bushing**	Oil-impregnated sintered alloy	2	
9	**Hexagon socket head plug**	Carbon steel	4	Rc 1/4
10	**Pin**	Carbon steel	1	
11	**Cotter pin**	Low carbon steel wire rod	2	
12	**Flat washer**	Rolled steel	2	
13	**Cushion seal retainer**	Rolled steel	1	Zinc chromated
14	**Wear ring**	Resin	1	
15	**Cushion seal**	Urethane	1	
16	**Cushion valve seal**	NBR	1	
17	**Speed controller valve seal**	NBR	2	
18	**Coil scraper**	Phosphor bronze	1	
19	**Rod seal**	NBR	1	
20	**Piston seal**	NBR	1	
21	**Tube gasket**	NBR	1	
22	**Magnet**	—	—	For CKG1

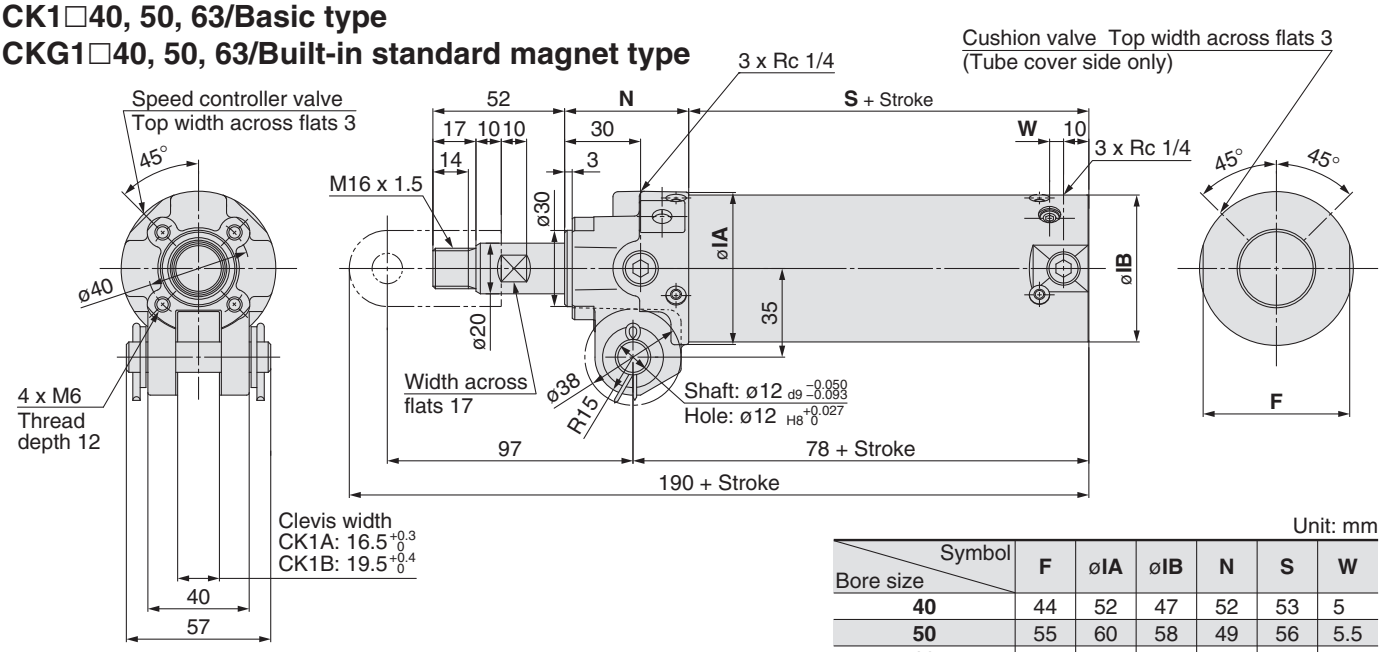
Replacement Parts/Seal Kit

Bore size (mm)	Order no.	Contents
40	CK1A40-PS	Set of nos. above ⑲, ⑳, ㉑.
50	CK1A50-PS	
63	CK1A63-PS	

Note) The seal kit does not come with a grease pack, so please order it separately.
Grease pack part no.: GR-S-010 (compatible with all sizes)

Dimensions

CK1□40, 50, 63/Basic type
CKG1□40, 50, 63/Built-in standard magnet type

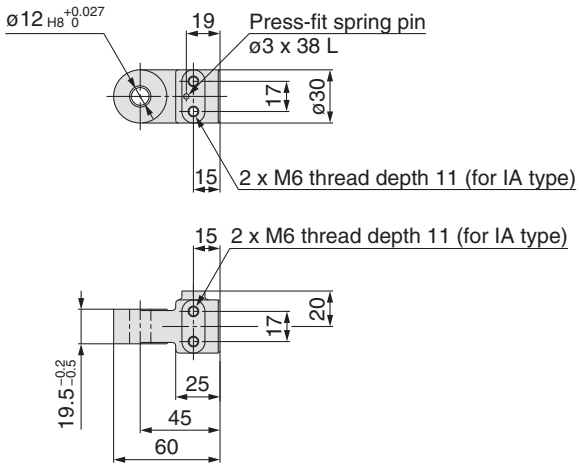


Unit: mm

Bore size \ Symbol	F	øIA	øIB	N	S	W
40	44	52	47	52	53	5
50	55	60	58	49	56	5.5
63	69	74	72	49	56	5.5

End Bracket

Single Knuckle Joint

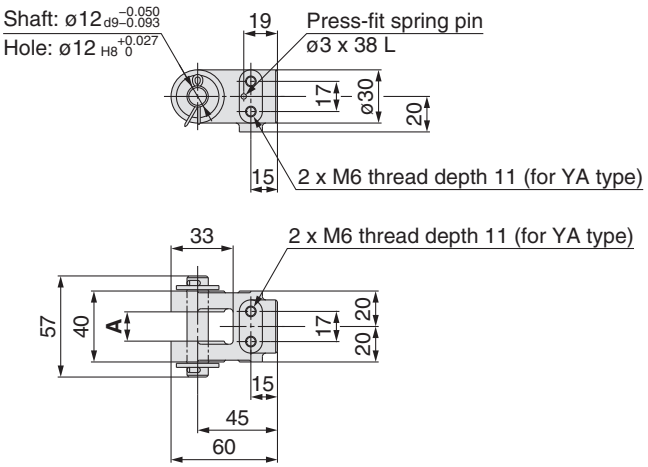


Material: Cast iron

Part no.	Rod end bracket symbol	Applicable clamp cylinder
CKB-I04	I (M6 without tap)	Series CK□1A Series CK□1B
CKB-IA04	IA (M6 with tap)	

Note 1) Spring pin is attached to the single knuckle joint as a standard.
Note 2) The existing model is equivelant to the component part no. CKB-IA04 (rod end bracket symbol IA).

Double Knuckle Joint



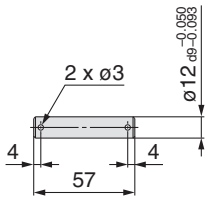
Material: Cast iron

Unit: mm

Part no.	Rod end bracket symbol	A	Applicable clamp cylinder
CKA-Y04	Y (M6 without tap)	16.5 +0.3 0	Series CK□1A
CKA-YA04	YA (M6 with tap)		
CKB-Y04	Y (M6 without tap)	19.5 +0.4 0	Series CK□1B
CKB-YA04	YA (M6 with tap)		

Note 1) Knuckle pin, cotter pin, flat washer and spring pin are attached to the double knuckle joint as a standard.
Note 2) The existing model is equivelant to the component part no. CKA-YA04, CKB-YA04 (rod end bracket symbol YA).

Pin



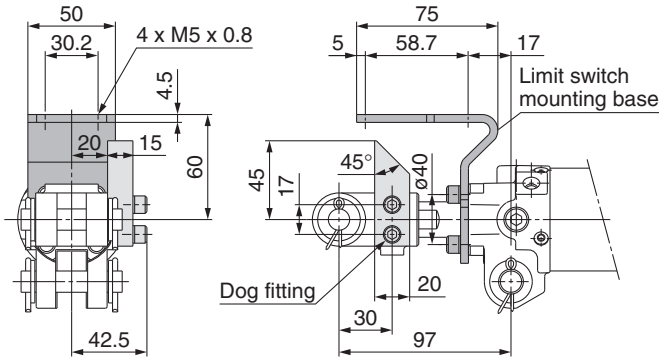
Material: Carbon steel

Part no.	Application
CK-P04	Knuckle pin Clevis pin

Note) Cotter pin and flat washer are attached to the pin as a standard.

Option

Limit Switch Mounting Base/Dog Fitting



Material: Rolled steel

Part no.	Option symbol	Name	Applicable clamp cylinder
CK-B04	**B**	Limit switch mounting base	Series CK□1A
CK-D04	**D**	Dog fitting	Series CK□1B

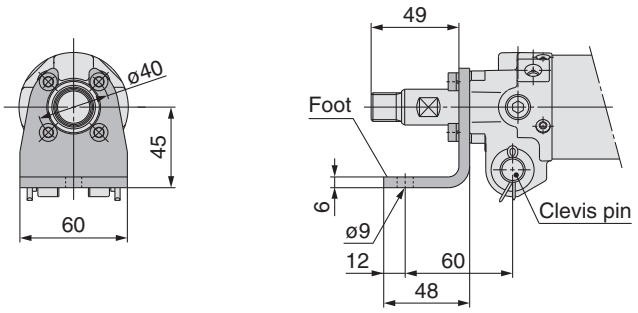
Note 1) Limit switch mounting base and dog fitting can be repositioned by removing the hexagon socket head cap screw.

Note 2) When ordering the limit switch mounting base and the dog fitting individually, a spring washer for the mounting bolt (hexagon socket head cap screw) will be attached as a standard.

⚠

When you attach a dog fitting, be sure to use a knuckle joint, M6 with tap (rod end bracket symbol IA or YA). The dog fitting cannot be attached to the knuckle joint, M6 without tap (rod end bracket symbol I or Y).

Foot



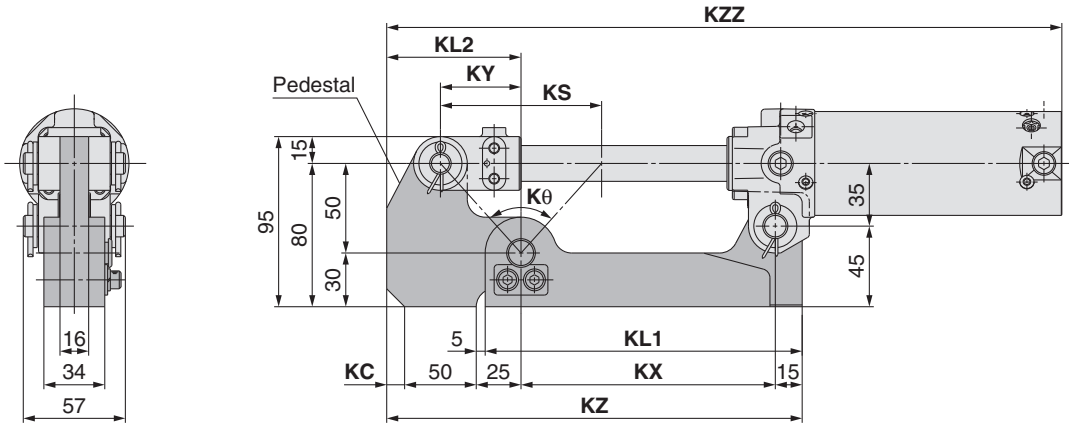
Material: Rolled steel

Part no.	Option symbol	Applicable clamp cylinder
CK-L04	**L**	Series CK□1A Series CK□1B

Note 1) A spring washer for the mounting bolt (hexagon socket head cap screw) will be attached as a standard for the foot bracket.

Note 2) When mounting the cylinder, use both the foot and clevis pin. Please avoid using the foot by itself as this may result in damage.

Pedestal



Material: Rolled steel

Unit: mm

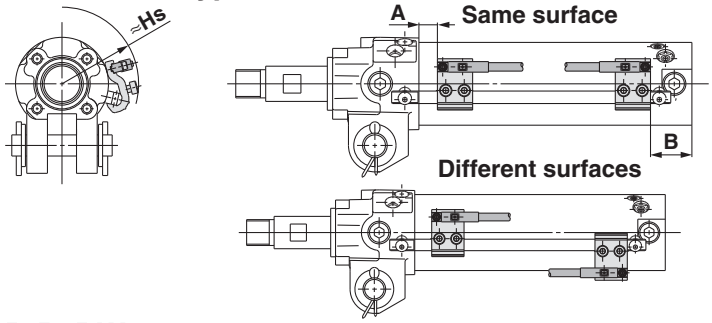
Part no.	Option symbol	KL1	KL2	KS	KX	KY	KZ	Kθ	KC	KZZ				Applicable clamp cylinder
										CKG□40	CKP□40	CKG□50 CKP□50	CKG□63 CKP□63	
CKA-K075	**K**	167	75	70	132	35	222	69° 59′	0	360	365	360		CK□1A40-75YZ CK□1A50-75YZ CK□1A63-75YZ
CKA-K100		177	75	90	142	45	232	83° 58′	0	395				CK□1A40-100YZ CK□1A50-100YZ CK□1A63-100YZ
CKA-K150		202	85	140	167	70	267	108° 55′	10	480				CK□1A40-150YZ CK□1A50-150YZ CK□1A63-150YZ

Note) The CK□1B series (clevis width 19.5 mm) is not available with pedestal.

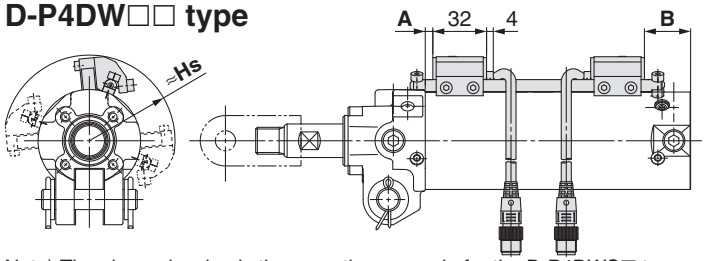
Auto Switch Mounting

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

Rod mounting
D-P3DW□□ type

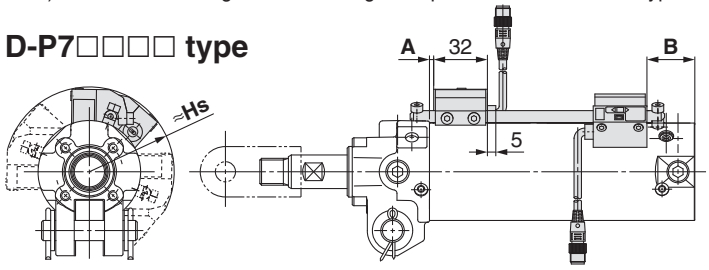


D-P4DW□□ type



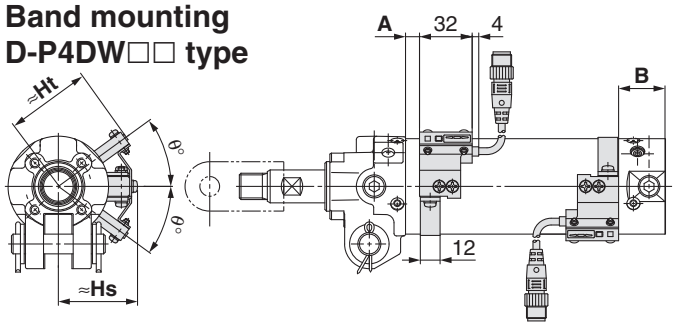
Note) The above drawing is the mounting example for the D-P4DWS□ type.

D-P7□□□□ type



Note) The above drawing is the mounting example for the D-P79WSE type.

Band mounting
D-P4DW□□ type



Note) The above drawing is the switch band mounting example for the D-P4DWS□ type.

Auto Switch Mounting Position and Its Height: Rod Mounting Style

Unit: mm

Auto switch model	Symbol	Auto switch set value and its height		
		ø40	ø50	ø63
D-P3DW□□	A	8.5	6	6
	B	24	29	29
	Hs	44.5	48.5	56
D-P4DW□□	A	6	3.5	3.5
	B	21	26.5	26.5
	Hs	45.5	51	58.5
D-P79WSE D-P74□	A	3.5	0	0
	B	22.5	25	25
	Hs	47.5	51	57.5

Note 1) The mounting position should be referred for reference only for the auto switch mounting position at the stroke end detection. Adjust the auto switch after confirming the operation to set actually.
Note 2) The auto switch mounting position is temporarily set at the time of shipping from our factory. Change it to the desired position in accordance to your facility.
Note 3) For 2-color display, mount the switch in the middle of the green indication.

Auto Switch Mounting Position and Its Height: Band Mounting Style/D-P4DW□□ Type

Unit: mm

Auto switch model	Symbol	Auto switch set value and its height		
		ø40	ø50	ø63
D-P4DW□□	A	8	4.5	4.5
	B	20.5	27.5	27.5
	Hs	43	48	55
	Ht	46	51.5	58.5
	θ	45°	36°	33°

Note 1) The mounting position should be referred for reference only for the auto switch mounting position at the stroke end detection. Adjust the auto switch after confirming the operation to set actually.
Note 2) As for D-P4DW□□ type, band mounting style, the switch mounting bracket and the auto switch have to be ordered separately. For details, refer to page 5.
Note 3) For 2-color display, mount the switch in the middle of the green indication.

Minimum Stroke for Auto Switch Mounting

Unit: mm

Auto switch model	1 pc.	2 pcs.	
		Different surfaces	Same surface
D-P3DW□□	15	30	75
D-P4DW□□	50	50	
D-P79WSE			
D-P74□			

Note) When two D-P3DW□□ are mounted to the cylinder with stroke 50 mm, mount them on different surfaces.

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

∗ For magnetic field resistant 2-color indication solid state auto switches, auto switches with pre-wired connector (D-P4DW□DPC type) are also available. Refer to pages 1784 and 1785 in Best Pneumatics No.3.

Operating Range

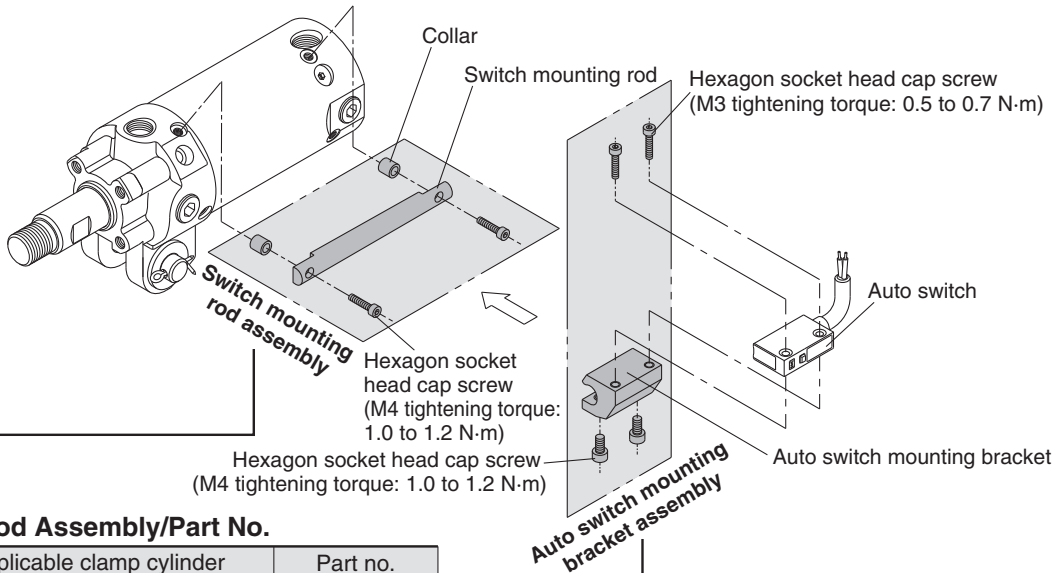
Unit: mm

Auto switch model		Bore size		
		40	50	63
D-P3DW□□	Rod mounting	4	5	6
D-P4DW□□	Rod mounting	4	4	4.5
	Band mounting	5	5	5.5
D-P79WSE	Rod mounting	8	9	9.5
D-P74□				

∗ 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.

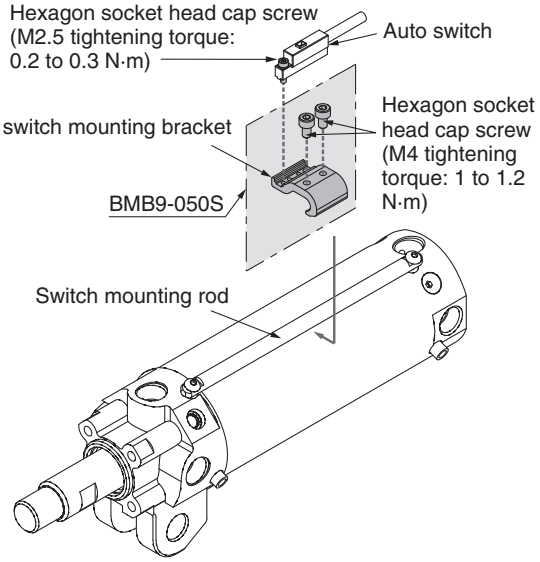
Auto Switch Mounting Bracket/Part No.

Switch mounting rod assembly/Auto switch mounting bracket assembly

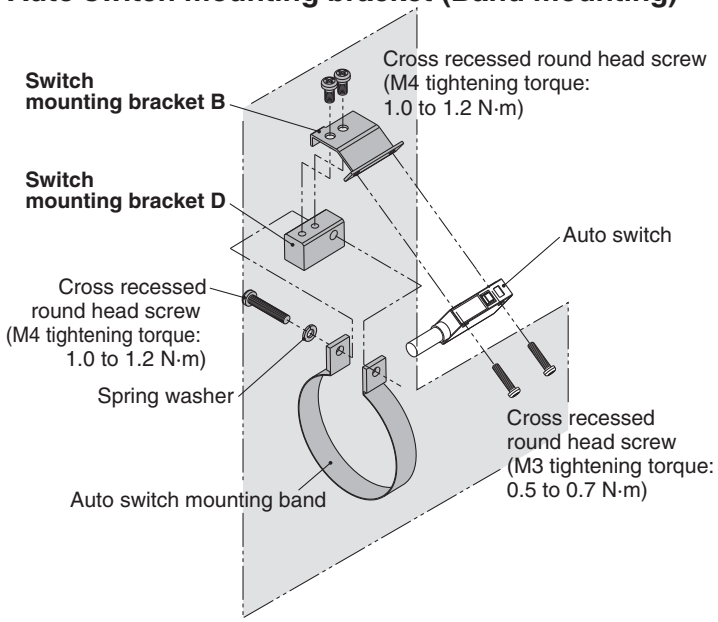


•Switch Mounting Rod Assembly/Part No.

Applicable series	Applicable clamp cylinder	Part no.
Dedicated to Series CKP1□40	CKP1□40-50Z	CKP40-RZ050
	CKP1□40-75Z	CKP40-RZ075
	CKP1□40-100Z	CKP40-RZ100
	CKP1□40-125Z	CKP40-RZ125
	CKP1□40-150Z	CKP40-RZ150
Series CKG1□40/50/63 **Series CKP1□50/63** **Common**	CKG1□40-50Z CKG1□50-50Z/CKP1□50-50Z CKG1□63-50Z/CKP1□63-50Z	CKG40-RZ050
	CKG1□40-75Z CKG1□50-75Z/CKP1□50-75Z CKG1□63-75Z/CKP1□63-75Z	CKG40-RZ075
	CKG1□40-100Z CKG1□50-100Z/CKP1□50-100Z CKG1□63-100Z/CKP1□63-100Z	CKG40-RZ100
	CKG1□40-125Z CKG1□50-125Z/CKP1□50-125Z CKG1□63-125Z/CKP1□63-125Z	CKG40-RZ125
	CKG1□40-150Z CKG1□50-150Z/CKP1□50-150Z CKG1□63-150Z/CKP1□63-150Z	CKG40-RZ150
	CKG1□50-200Z/CKP1□50-200Z CKG1□63-200Z/CKP1□63-200Z	CKG40-RZ200



Auto switch mounting bracket (Band mounting)



•Auto Switch Mounting Bracket Assembly/Part No.

Applicable cylinder series	Applicable auto switch	Auto switch mounting bracket part no.		
		40	50	63
Series CKG1	D-P3DWSC D-P3DWSE D-P3DW/L/Z	BMB9-050S		
	D-P4DWSC D-P4DWSE D-P4DWL/Z	BK1T-040		
Series CKP1	D-P79WSE D-P74L/Z	BAP1T-040		

Auto Switch Mounting Bracket (Band Mounting)/ Part No.

Auto switch mounting bracket part no.	Applicable auto switch	Applicable clamp cylinder
BA8-040	D-P4DWSC D-P4DWSE D-P4DWL/Z	**CKG1□40**
BA8-050		**CKG1□50**
BA8-063		**CKG1□63**

Series CK□1
Standard Auto Switch Mounting

Band Mounting Style/Standard Auto Switch

The built-in standard magnet clamp cylinder/the CKG1□ series can be attached to the band mounting style/ standard auto switch as shown below.

⚠ Caution

The standard auto switch cannot be used in a magnetic field environment.
For information on our cylinders that can be fitted with a magnetic field resistant auto switch, please refer to page 1.

Built-in standard magnet **CK G 1** **Enter the standard model no.** **– M9BW** □

Built-in standard magnet

Auto switch type: Band mounting style/Standard auto switch

Nil	Without auto switch

Note) Select applicable auto switch models from the table below.

Number of auto switches

Nil	2 pcs.
S	1 pc.

Mounting Allowable Auto Switch: Band Mounting/Standard Auto Switch/Refer to pages 1719 to 1827 in Best Pneumatics No.3. for auto switch specifications.

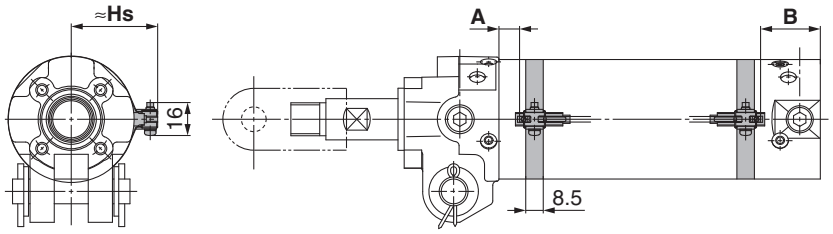
Applicable cylinder series	Type	Electrical entry	Indicator light	Wiring Load voltage (Output)	Load voltage DC	Load voltage DC	Load voltage AC	Auto switch model Band mounting	Lead wire length (m) 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	Applicable load	
Series CKG1	Solid state auto switch	Grommet	Yes	2-wire	24 V	5 V, 12 V	—	**M9B**	●	●	●	○	—	Relay, PLC
								M9BW	●	●	●	○		
	Reed auto switch	Grommet	Yes	2-wire	24 V	12 V	100 V	**A93**	●	—	●	●		
							100 V, 200 V	**B54**	●	—	●	●		

Note 1) Lead wire length symbol: 0.5 m····· Nil (Example) M9BW
1 m····· M (Example) M9BWM
3 m····· L (Example) M9BWL
5 m····· Z (Example) M9BWZ

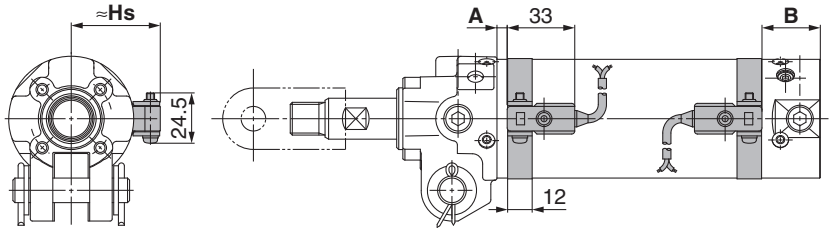
Note 2) Auto switches marked with "○" are produced upon receipt of order.
Note 3) PLC: Programmable Logic Controller

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

D-M9B (W)/A93



D-B54



Minimum Stroke for Auto Switch Mounting Unit : mm

Auto switch	1 pc.	2 pcs. (Different surfaces)	2 pcs. (Same surface)
D-M9B **D-M9BW** **D-A93**	50	50	50
D-B54	50	50	75

Auto Switch Mounting Position and Its Height Unit : mm

Auto switch	Symbol	Auto switch set value and its height ø40	ø50	ø63
D-M9B **D-M9BW**	**A**	13	10.5	10.5
	B	28	33.5	33.5
	Hs	35	40.5	47.5
D-A93	**A**	10	7.5	7.5
	B	25	30.5	30.5
	Hs	35	40.5	47.5
D-B54	**A**	4.5	1	1
	B	18	24	24
	Hs	38	43.5	50.5

Note 1) The mounting position should be referred for reference only for the auto switch mounting position at the stroke end detection. Adjust the auto switch after confirming the operation to set actually.
Note 2) The auto switch mounting position is temporarily set at the time of shipping from our factory. Change it to the desired position in accordance to your facility.
Note 3) For 2-color display, mount the switch in the middle of the green indication.

⚠ Caution

As for the precautions on the auto switches, product specifications, refer to pages 15 to 17.

Auto Switch Mounting Bracket Assembly/Part No.

Auto switch	Auto switch mounting bracket part no. 40	50	63
D-M9B **D-M9BW** **D-A93**	Note) BMA3-040	Note) BMA3-050	Note) BMA3-063
D-B54	BA-04	BA-05	BA-06

Note) This is the set part number for the auto switch mounting band (BMA2-□□□A) and holder set (BJ5-1/switch bracket: transparent). The switch bracket (nylon) cannot be used in environments exposed to alcohol, chloroform, methylamines, hydrochloric acid and sulfuric acid, as this part will deteriorate. Please consult SMC regarding other chemicals.

Operating Range

Unit: mm

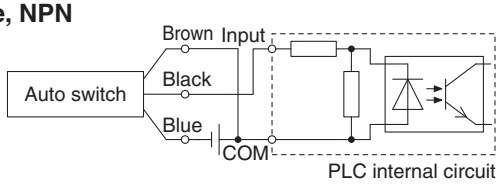
Auto switch	Bore size 40	50	63
D-M9B	3.5	4	4
D-M9BW	5.5	6.5	7
D-A93	8	8	9
D-B54	10	10	11

∗ Since this is a guideline including hysteresis, not meant to be guaranteed.(Assuming approximately ±30% dispersion.) There may be the case it will vary substantially depending on an ambient environment.

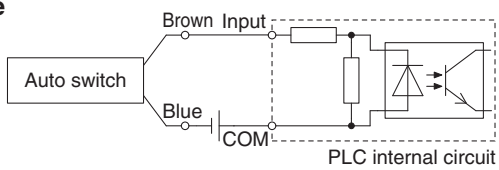
Prior to Use
Auto Switches Connection and Example

Sink Input Specifications

3-wire, NPN

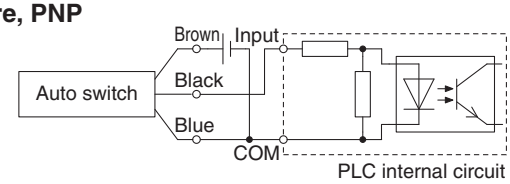


2-wire

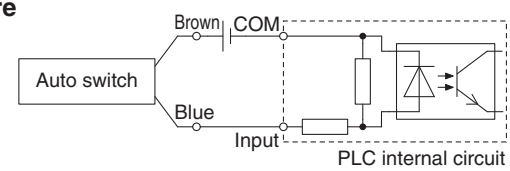


Source Input Specifications

3-wire, PNP



2-wire

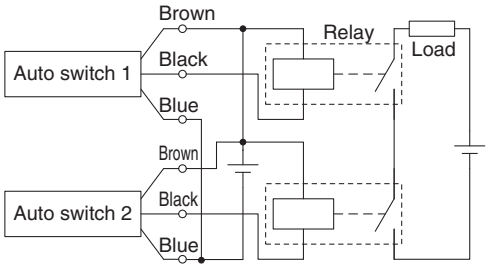


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

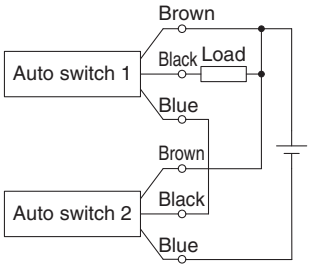
Example of AND (Series) and OR (Parallel) Connection

3-wire, AND connection for NPN output

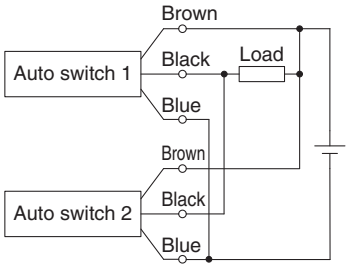
(Using relays)



(Performed with auto switches only)

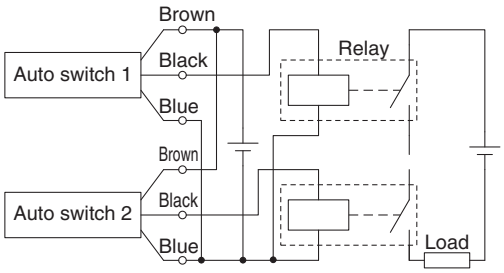


3-wire, OR connection for NPN output

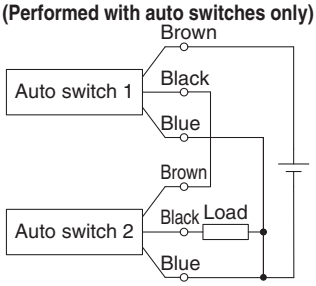


3-wire, AND connection for PNP output

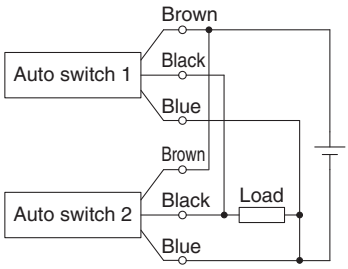
(Using relays)



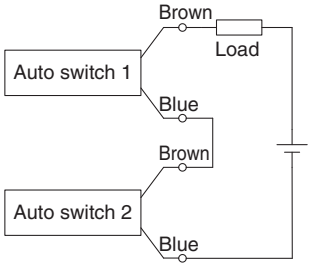
(Performed with auto switches only)



3-wire, OR connection for PNP output



AND connection for 2-wire

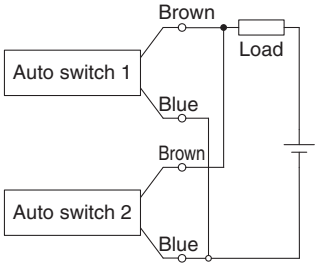


When two auto switches are connected in series, malfunction may occur because the load voltage will decrease in the ON state. The indicator lights will light up when both of the auto switches are in the ON state.

Load voltage at ON = Power supply voltage – Residual voltage x 2 pcs.
= 24 V – 4 V x 2 pcs.
= 16 V

Example: Power supply is 24 VDC
Internal voltage drop in auto switch is 4 V.

OR connection for 2-wire



(Solid state auto switch)
When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase in the OFF state.

Load voltage at OFF = Leakage current x 2 pcs. x Load impedance
= 1 mA x 2 pcs. x 3 kΩ
= 6 V

Example: Load impedance is 3 kΩ.
Leakage current from auto switch is 1 mA.

(Reed auto switch)
Because there is no leakage current, the load voltage will not increase in the OFF state. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

Series CK□1/Specific Product Precautions 1

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for Actuator and Auto Switch Precautions. Please download it via our website, http://www.smcworld.com

Cushion/Speed Controller Adjustment

⚠ Danger

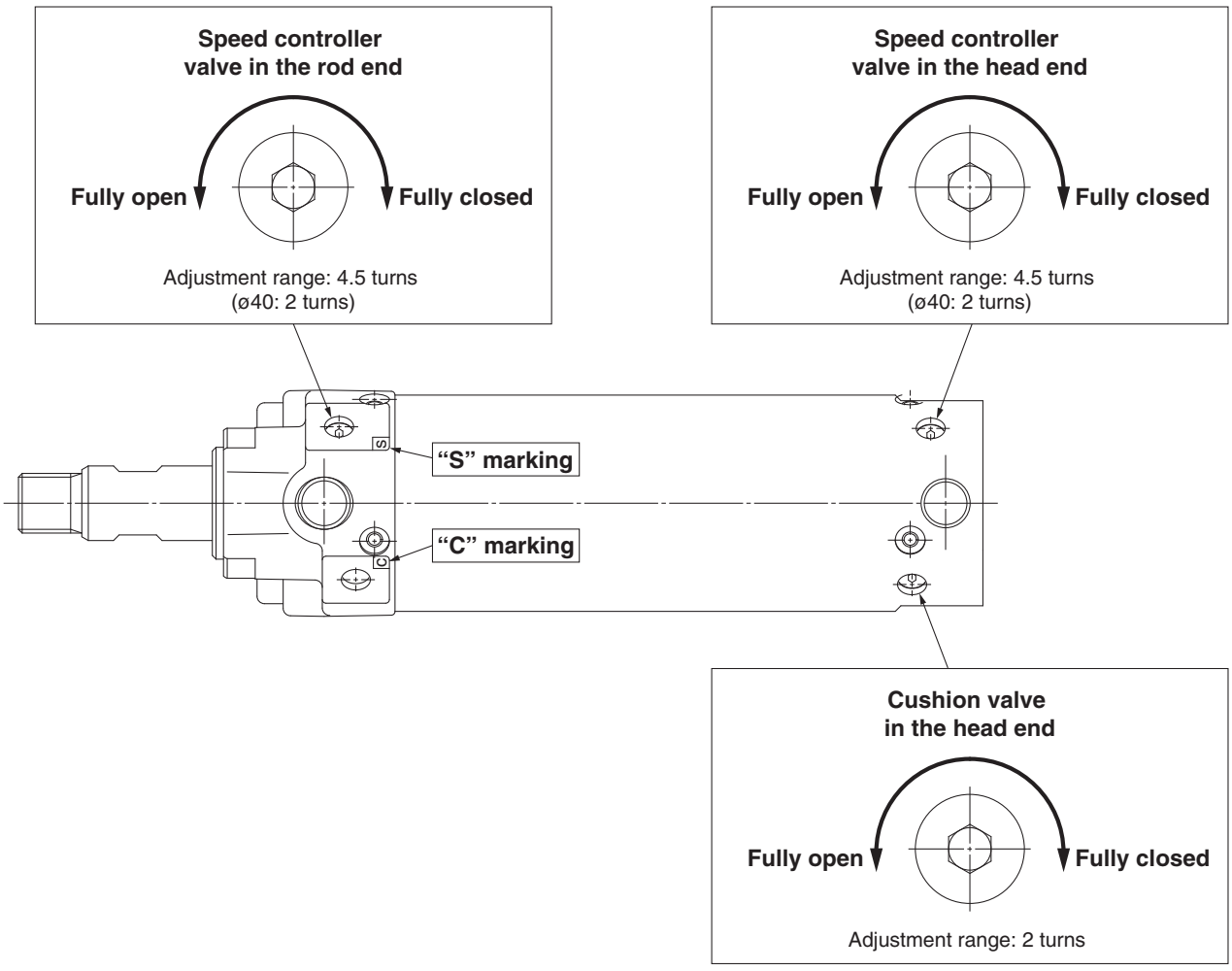
1. Retaining construction with crimping is integrated in the speed controller valve and cushion valve. Do no rotate the cushion valve more than two turns, and do not rotate the speed controller valve more than four and half turns (ø40: maximum two turns).
If 0.6 Nm or more of torque is applied, the valve may be come loose. The valve may jump out depending on the amount of air pressure.

Cushion Adjustment

The CK1 series has an integrated air cushion in the head end. The cushion is pre-adjusted at the time of shipping. However, please re-adjust the cushion valve in the tube cover, depending on an operating speed and a load before use.
The diameter of throttle will be smaller when the cushion valve is turned clockwise, resulting in stronger cushion reaction.

Speed Controller Adjustment

The CK1 series integrates the speed controller (exhaust restrictor) in the rod and head end. The cushion is pre-adjusted at the time of shipping. However, please re-adjust the speed controller valve (marked "S" on the rod cover) in each cover, depending on an operating speed and load before using.
When rotating the speed controller valve clockwise, the orifice becomes smaller, which reduces the speed.



Piping Port/Switch Mounting Rod Location Change

Piping Port Location Change

Piping is possible from 3 directions. When the piping port location is changed, carefully follow the instructions as detailed below.

⚠ Warning

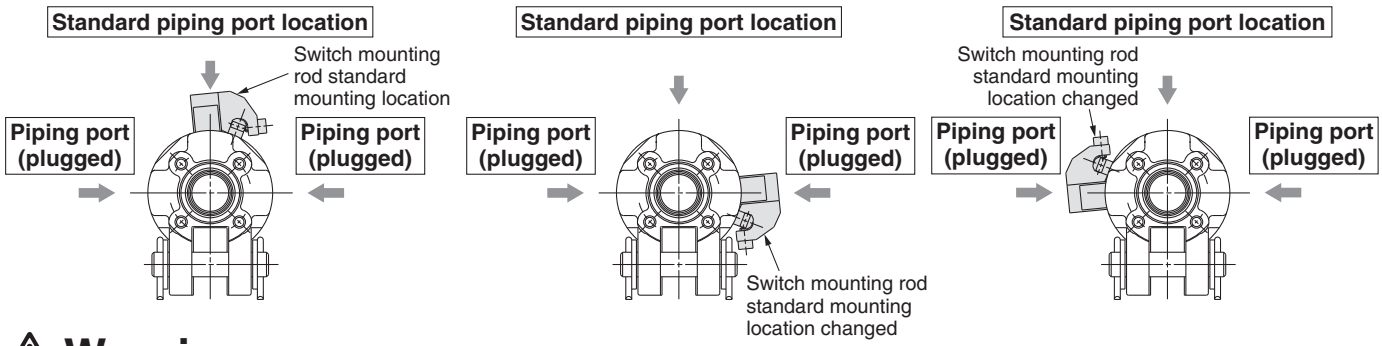
1. Do not leave out the component parts when the piping port location is changed.

Even if one of the component parts is not replaced, malfunction may occur, resulting in dangerous operation.

2. To prevent air leakage, re-wind the pipe tape and fit into the changed location when the piping port location is changed.

Switch Mounting Rod Location Change

The switch mounting rod is mountable in 3-way directions. Please be careful to the following things when the switch mounting rod is changed.

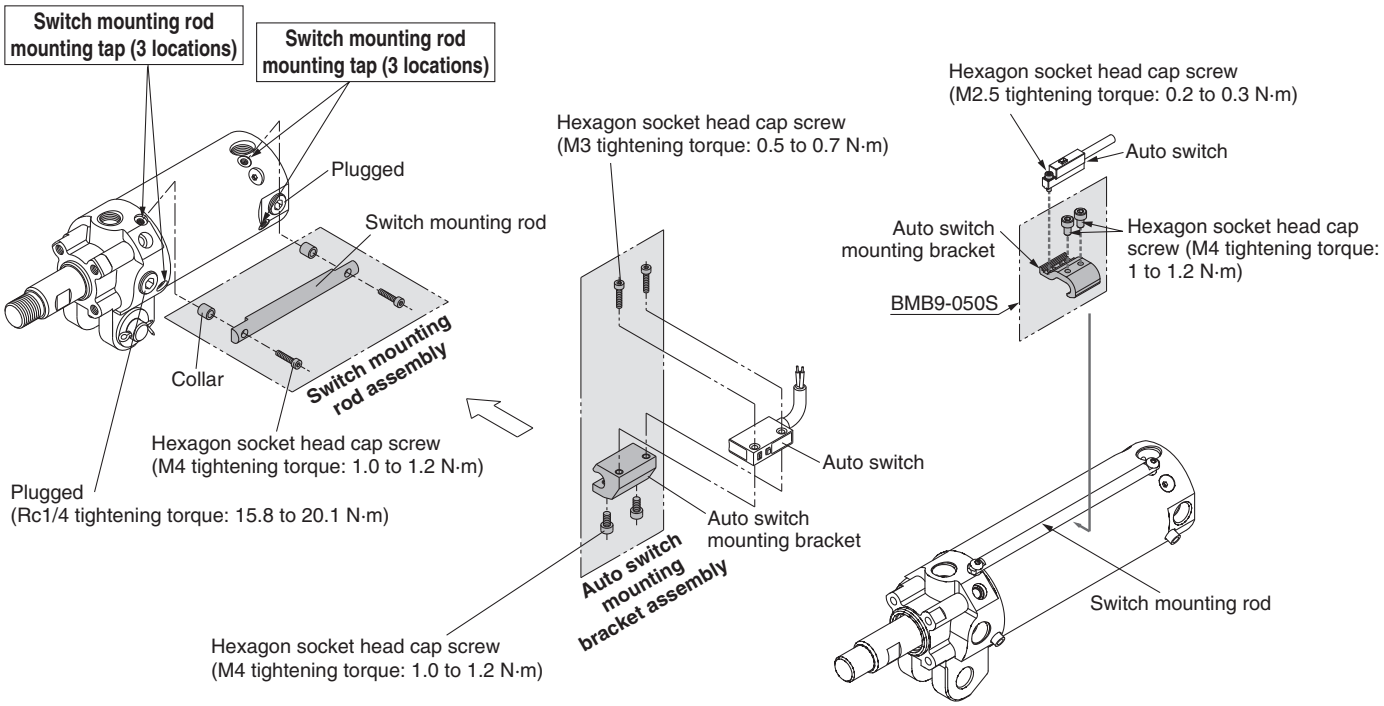


⚠ Warning

1. Mount all the component parts to the changed location.

Even if one of the component parts is kept away, the switch detection error, etc. may occur. (Switch mounting rod, switch mounting spacer, hexagon socket head cap screw)

2. After the switch mounting rod location is changed, please be sure to check there is no interference with other parts before using.



Series CK□1/Specific Product Precautions 3

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for Actuator and Auto Switch Precautions. Please download it via our website, http://www.smcworld.com

Handling

Magnetic field resistant auto switches D-P79WSE/ D-P74□ type are specifically for use with magnetic field resistant cylinders and are not compatible with general auto switches or cylinders. Magnetic field resistant cylinders are labeled as follows.

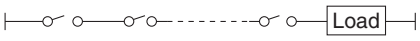
Magnetic field resistant cylinder with built-in magnet
(For use with auto switch D-P7 type)

Mounting

1. **The minimum stroke for mounting magnetic field resistant auto switches is 50 mm.**
2. **In order to fully use the capacity of magnetic field resistant auto switches, strictly observe the following precautions.**
   1) Do not allow the magnetic field to occur when the cylinder piston is moving.
   2) When a welding cable or welding gun electrodes are near the cylinder, change the auto switch position to fall within the operational ranges shown in the graphs on page 17, or move the welding cable away from the cylinder.
   3) Cannot be used in an environment where welding cables surround the cylinder.
   4) Please consult with SMC when a welding cable and welding gun electrodes (something energized with secondary current) are near multiple switches.
3. **In an environment where spatter directly hits the lead wire, cover the lead wire with protective tubing.**
   Use protective tubing with a bore size of ø8 or more that has excellent heat resistance and flexibility.
4. **Be careful not to drop objects, make dents, or apply excessive impact force when handling.**
5. **When operating two or more parallel and closely positioned cylinders with magnetic field resistant auto switches, separate the auto switches from other cylinder tubes by an additional 30 mm or more.**
6. **Avoid wiring in a manner in which repeated bending stress or tension is applied to lead wires.**
7. **Please consult with SMC regarding use in an environment with constant water and coolant splashing.**
8. **Please be careful of the mounting direction of the magnetic field resistant auto switch D-P79WSE type.**
   Be sure to face the molded surface with soft-resin to the switch mounting bracket side for mounting.
   (Please refer to page 10 for mounting example and the Best Pneumatics No.3 page 1804 for soft-resin mold surface.)

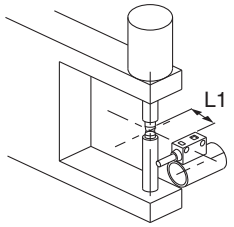
Wiring/Current and Voltage

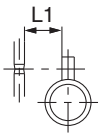
1. **Always connect the auto switch to the power supply after the load has been connected.**
2. **Series connection**
   When auto switches are connected in series as shown below:
   Note that the voltage drop due to the internal resistance of the LED increases.

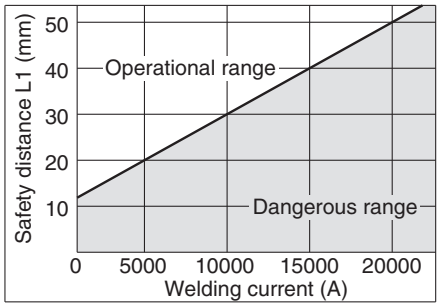


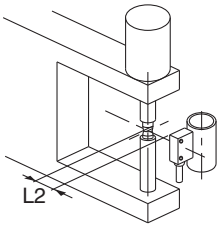
Data: Magnetic Field Resistant Reed Auto Switch (D-P79WSE type, D-P74□ type) Safety Distance

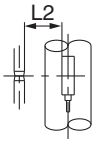
Safety Distance from Side of Auto Switch

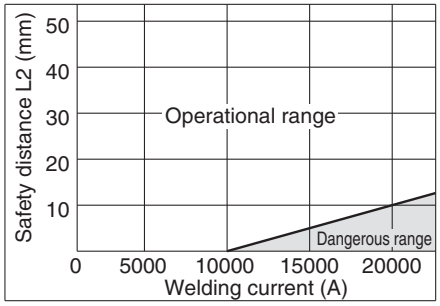




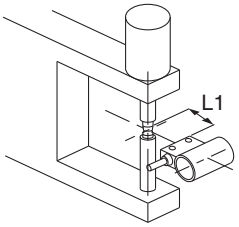


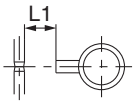


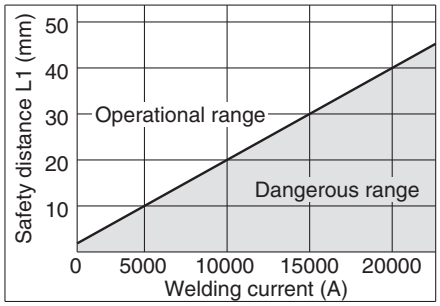


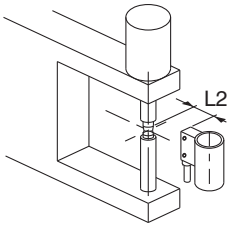


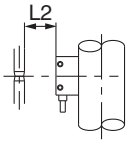
Safety Distance from Top of Auto Switch

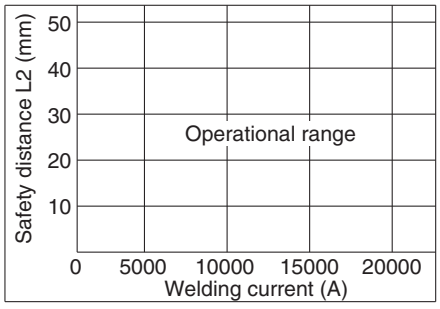












Related Products

Please contact SMC for detailed dimensions, specifications and lead times.

Made to Order

1 Series CKGA32/With Magnetic Field Resistant Auto Switch D-P4DW□□ Type (Band Mounting Style)

Band mounting of the magnetic field resistant auto switch (D-P4DW□□ type) to the built-in standard magnet clamp cylinder (the CKGA32 series) is possible by ordering the auto switch mounting bracket and the auto switch separately.

Built-in standard magnet type with magnetic field resistant auto switch

CK G A 32 – 100 Y

- **Built-in standard magnet**
- **Clevis width: 12 mm**
- **Bore size: 32 mm**
- **Cylinder stroke (mm)**: 50, 75, 100, 125, 150
- **End bracket**

Nil	None
I	Single knuckle joint (without tap)
Y	Double knuckle joint (without tap)

Note) Knuckle pin, cotter pin and flat washer are provided as a standard for Y.

Specifications

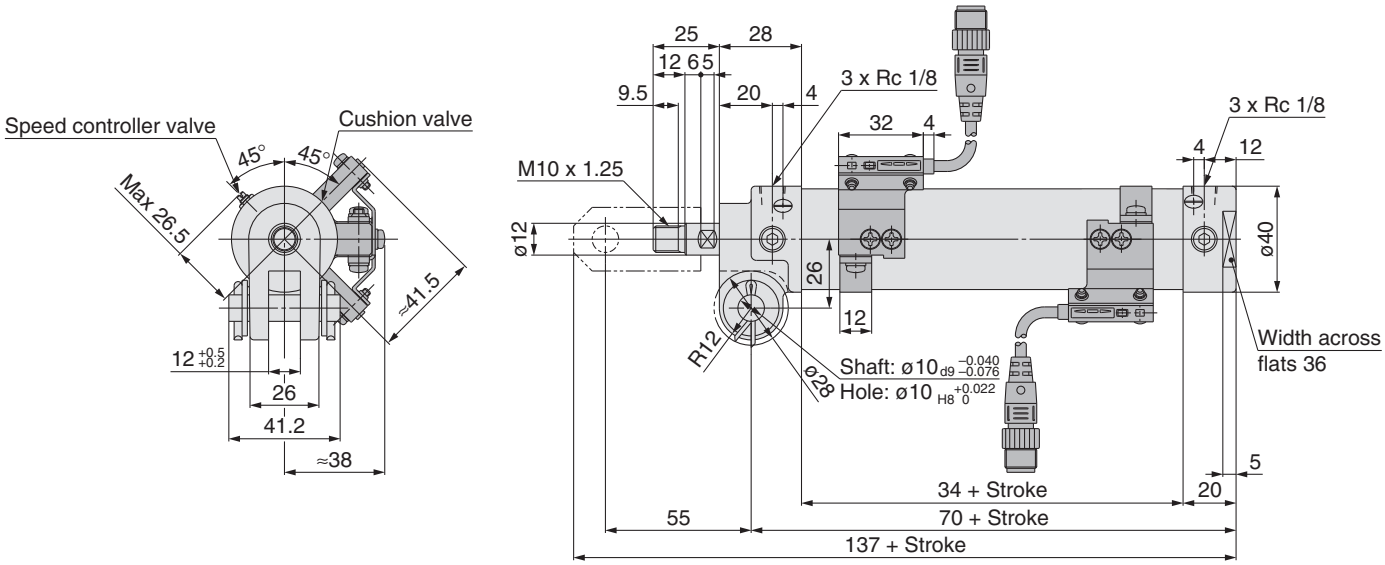
Clevis width	12 mm	Series CKGA32

Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa
Ambient and fluid temperature	–10°C to 60°C
Piston speed	50 to 500 mm/s
Cushion	With air cushion on both ends
Lubrication	Non-lube
Stroke length tolerance	$^{+1.0}_{0}$
Mounting Note)	Double clevis

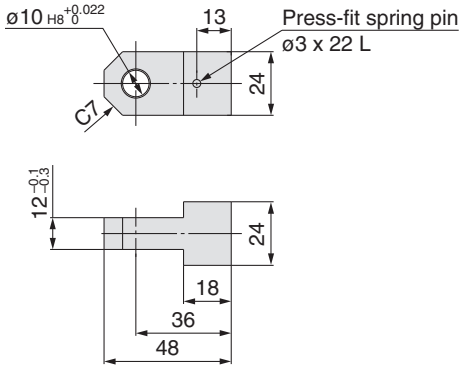
Note) Clevis pin, cotter pin and flat washer are provided as a standard.

Applicable auto switch	Auto switch mounting bracket part no.
D-P4DWSC	BA8-032
D-P4DWSE	
D-P4DWL	
D-P4DWZ	

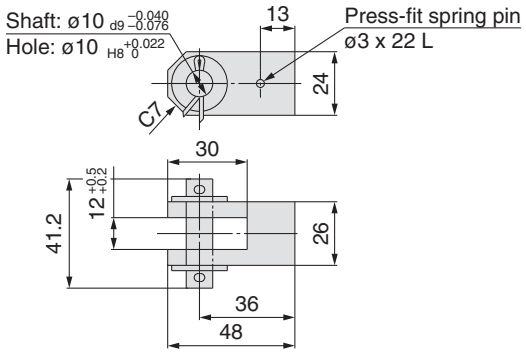
Dimensions



Single knuckle joint



Double knuckle joint



∗ Please contact SMC for details of the CKGA32 series.

2 Series CKGA80, 100/CKPA80, 100/With Magnet Field Resistant Auto Switch (Rod Mounting Style)

Built-in standard magnet type with magnetic field resistant auto switch

Built-in strong magnet type with magnetic field resistant auto switch

CK**G**A**80**-**100****Y**-**P4DWSC** □

CK**P**A**80**-**100****Y**-**P79WSE** □

Built-in standard magnet

Built-in strong magnet

Clevis width: 28 mm

Bore size

80	80 mm
100	100 mm

Cylinder stroke (mm)

80	50, 75, 100, 125, 150, 175, 200
100	50, 75, 100, 125, 150, 175, 200

End bracket

Nil	None
Y	Double knuckle joint (with tap)

Note) Knuckle pin, cotter pin and flat washer are provided as a standard for Y.

Number of auto switches

Nil	2 pcs.
S	1 pc.

Auto switch

Nil	Without auto switch (Built-in magnet) Without switch mounting rod	
P	Without auto switch (Built-in magnet) With switch mounting rod	
P4DWSC	D-P4DWSC	Series CKGA
P4DWSE	D-P4DWSE	
P4DWL	D-P4DWL	
P4DWZ	D-P4DWZ	
P79WSE	D-P79WSE	Series CKPA
P74L	D-P74L	
P74Z	D-P74Z	

Specifications

Clevis width	28 mm	Series CKGA/CKPA

Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa
Ambient and fluid temperature	–10°C to 60°C
Piston speed	50 to 500 mm/s
Cushion	With air cushion on both ends
Speed controller	Equipped on both ends
Lubrication	Non-lube
Stroke length tolerance	$^{+1.0}_{0}$
Mounting Note)	Double clevis

Note) Clevis pin, cotter pin and flat washer are provided as a standard.

Auto Switch Mounting Bracket Assembly/Part No.

Applicable auto switch	Auto switch mounting bracket part no.	
	80	100
D-P4DWSC	BAP2-063	
D-P4DWSE		
D-P4DWL		
D-P4DWZ		
D-P79WSE	BAP1-063	
D-P74L		
D-P74Z		

Built-in Standard (Strong) Magnet Cylinder Part No.

1) Built-in standard (strong) magnet type without auto switch and switch mounting rod

Symbol for the auto switch type is "Nil" as shown below.
CKGA: (Example) CKGA80-50Y
CKPA: (Example) CKPA80-50Y

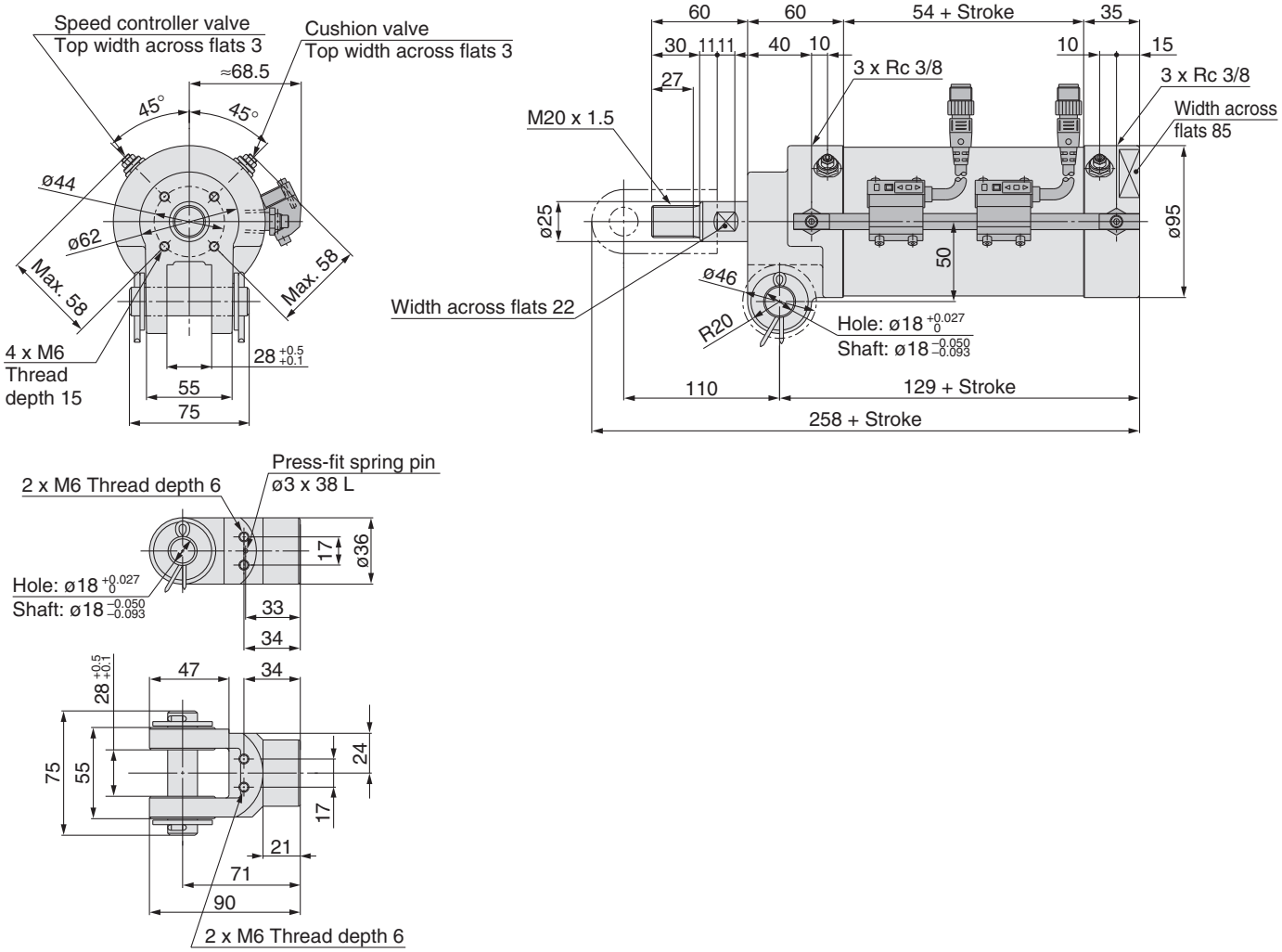
2) Built-in standard (strong) magnet type without auto switch, with switch mounting rod

Symbol for the auto switch type is "P" as shown below.
CKGA: (Example) CKGA80-50Y-P
CKPA: (Example) CKPA80-50Y-P

2 Series CKGA80, 100/CKPA80, 100/With Magnetic Field Resistant Auto Switch (Rod Mounting Style)

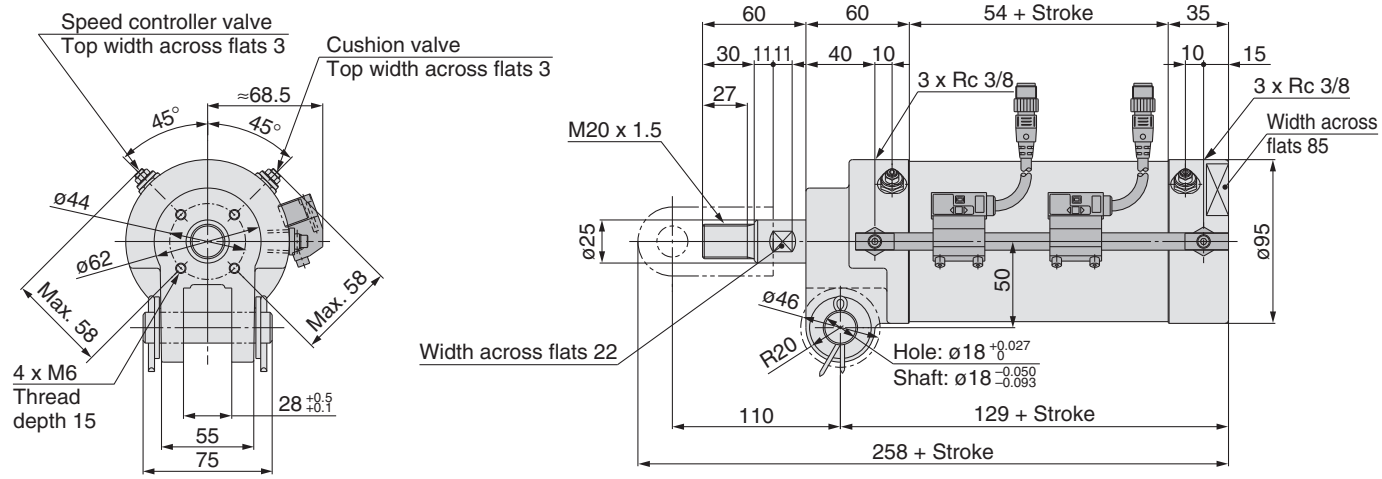
Dimensions

CKGA80 Built-in standard magnet type/with magnetic field resistant auto switch (D-P4DWS□ type)



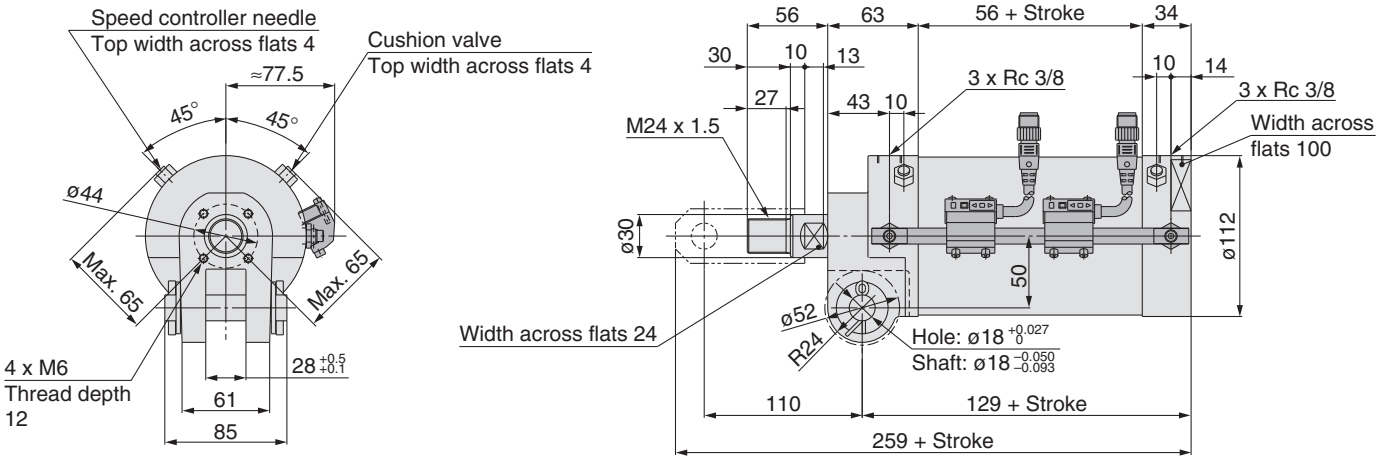
Double knuckle joint

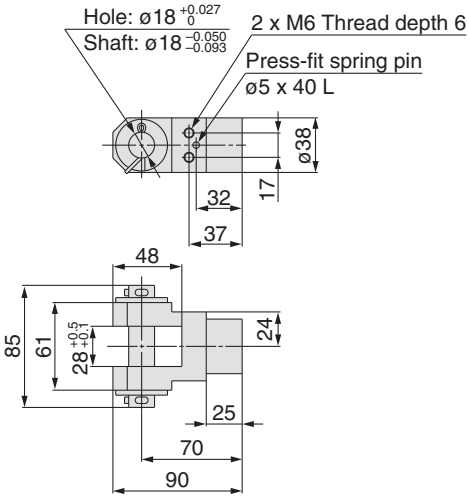
CKPA80 Built-in strong magnet type/with magnetic field resistant auto switch (D-P79WSE type)



Dimensions

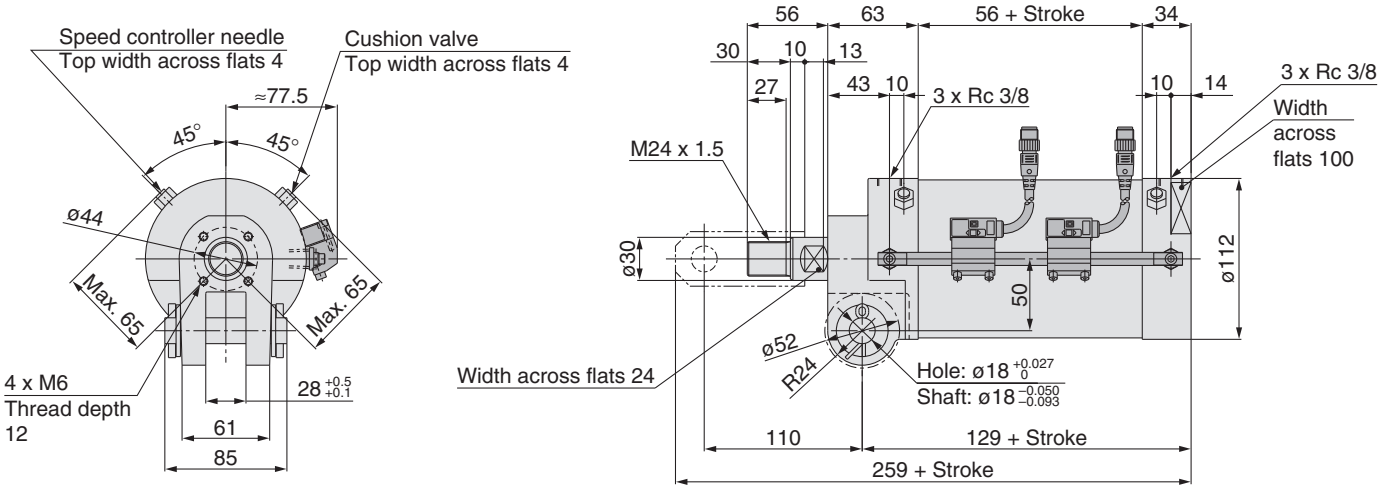
CKGA100 Built-in standard magnet type/with magnetic field resistant auto switch (D-P4DWS□ type)





Double knuckle joint

CKPA100 Built-in strong magnet type/with magnetic field resistant auto switch (D-P79WSE type)



∗ Please contact SMC for details of the CKGA□/CKPA□ series.

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots – Safety.
etc.

⚠ Warning

1. **The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
   Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
2. **Only personnel with appropriate training should operate machinery and equipment.**
   The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
3. **Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
4. **Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. **The product is provided for use in manufacturing industries.**
   The product herein described is basically provided for peaceful use in manufacturing industries.
   If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
   If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) **Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

⚠ Safety Instructions | Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

SMC Corporation
Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 Fax: 03-5298-5362
http://www.smcworld.com

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.
D-G
1st printing QV printing QV 8150SZ Printed in Japan.