

# Clamp Cylinder

ø40, ø50, ø63

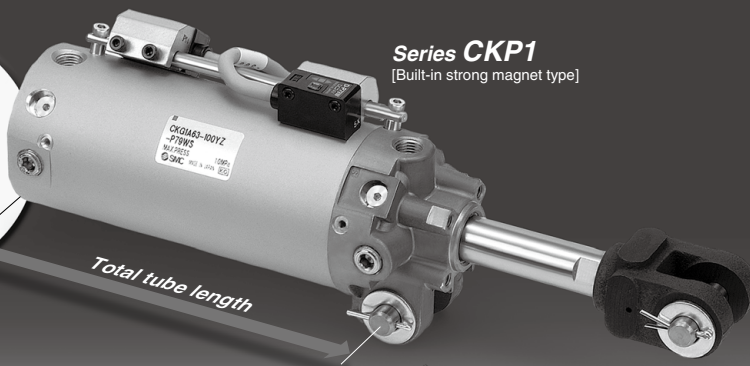
New

RoHS

## Total tube length reduced

Total tube length  
reduced by

**7 mm**  
(CKP1□40)



**Series CKP1**

[Built-in strong magnet type]

## Easy speed adjustment

Speed controller valve

Easy fine speed adjustment with screw adjustment construction

Retaining construction with crimping

Hexagon  
wrench



## Clevis width

12.5 mm is now available.

16.5 mm/19.5 mm

Possible to select depending on the application



Made to Order

With air cushion on both ends (-X1515) is added.

## Magnetic field resistant auto switches

### Mountable in 3 directions

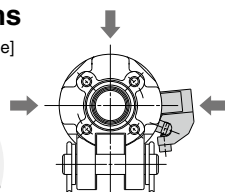
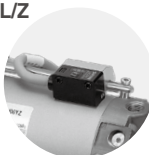
[Series CKG1/Built-in standard magnet type]

D-P3DW, D-P4DW



[Series CKP1/Built-in strong magnet type]

D-P79WE, D-P74L/Z



Air Cylinders

CJ2

CM2

CG1

MB

CA2

CQ2

CQS

Lube-  
retainer

JA

MXH

MXQ

MGP

C□Y

C□X

CK□1

C(L)□

C(L)□U

CKQ

CKZ2N

WRF

**Series CK□1**

## Total tube length reduced

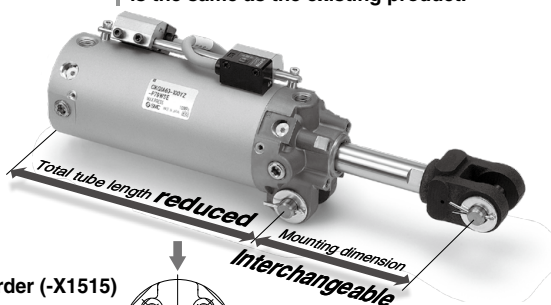
The total length has been reduced by modifying the internal design.

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.

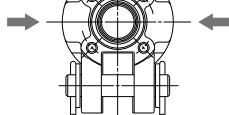


## With air cushion

Unclamped side (Head end)...Standard

Air cushion on both ends.....Made to Order (-X1515)

## Piping ports are located on three surfaces.



## Possible to mount magnetic field resistant auto switch in 3 directions

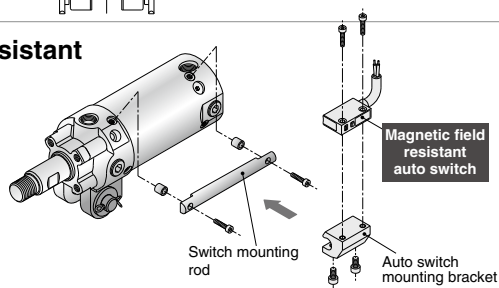
[Series CKG1/Built-in standard magnet type]

D-P3DWSC, D-P3DWSE, D-P3DWL/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 field)



## CK1 Series Variations

Series			Bore size (mm)					Stroke (mm)	Clevis width (mm)	Page
			25	32	40	50	63			
Clamp cylinder (Rod mounting style)	Built-in standard magnet type	CKG1						50		P.1270
	Built-in strong magnet type	CKP1						75		
Clamp cylinder (Band mounting style)	Without magnet	CK1						100	12.5	P.1275
	Built-in standard magnet type	CKG1						125	16.5	
								150	19.5	
Clamp cylinder/ Slim style (Rod mounting style)	Built-in standard magnet type	CKG□-X2095						200*		Information 09-E555
	Built-in strong magnet type	CKP□-X2095						50		
Clamp cylinder with lock/Slim style (Rod mounting style)	Built-in standard magnet type	CLKG□-X2095						75	9, 12.5	
	Built-in strong magnet type	CLKP□-X2095						100		
								125		
Clamp cylinder with lock	Built-in standard magnet type	CLK2G□						150		
	Built-in strong magnet type	CLK2P□						50, 75	12, 16.5, 19.5	
								100, 125		Best Pneumatics P.1481
								150	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

<b>A</b>	16.5 mm
<b>B</b>	19.5 mm
<b>C</b>	12.5 mm

Bore size

<b>40</b>	40 mm
<b>50</b>	50 mm
<b>63</b>	63 mm

Thread type

<b>Nil</b>	Rc1/4
<b>TN</b>	NPT1/4
<b>TF</b>	G1/4

Cylinder stroke (mm)

<b>40</b>	50, 75, 100, 125, 150
<b>50</b>	50, 75, 100, 125, 150, 200
<b>63</b>	50, 75, 100, 125, 150, 200

Number of auto switches

<b>Nil</b>	2 pcs.
<b>S</b>	1 pc.
<b>n</b>	"n" pcs.

Made to Order  
Refer to page 1271 for details.

#### Auto switch

<b>Nil</b>	Without auto switch (built-in magnet) Without switch mounting rod
<b>P</b>	Without auto switch (built-in magnet) With switch mounting rod

\* Select applicable auto switch models from the table below.

#### Option

<b>Nil</b>	None
<b>B</b>	Limit switch mounting base
<b>D</b>	Dog fitting <sup>Note 1)</sup>
<b>L</b>	Foot
<b>K</b> <sup>Note 2)</sup>	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) Only available for clevis width A (16.5 mm)

#### End bracket

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

Note 1) IA and YA are equivalent to the conventional models.

Note 2) A knuckle pin, cotter pins and flat washers are provided as a standard for Y and YA.

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

1) Built-in standard (strong) magnet type without auto switch, without 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 below.

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 the WEB catalog or the 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
CKG1	Solid state auto switch	D-P3DWSC	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color indication	2-wire (3-4)	24 VDC	0.3 m	Relay, PLC <small>Note 1)</small>
		D-P4DWSC				2-wire (1-4)		0.5 m	
		D-P3DWSE							
		D-P4DWSE				Grommet		2-wire	
		D-P3DW		5 m					
		D-P3DWL							
		D-P4DWL							
		D-P3DWZ							
D-P4DWZ									
CKP1	Reed auto switch	D-P79WSE	DC/AC magnetic field	Pre-wired connector	2-color indication	2-wire (1-4)	24 VDC	0.3 m	
		D-P74L		Grommet	1-color indication	2-wire	24 VDC	3 m	
		D-P74Z					100 VAC	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 1281.

Note 3) Refer to page 1282 when ordering the auto switch mounting bracket assembly or switch mounting rod assembly.

Note 4) For the D-P3DW□, the auto switch and auto switch mounting bracket are packed together, (but not assembled).



## 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 <sup>Note)</sup>	Double clevis		

Note) A clevis pin, cotter pins, flat washers are equipped as a standard.

Clevis width	16.5 mm	CKG1A/CKP1A
	19.5 mm	CKG1B/CKP1B
	12.5 mm	CKG1C/CKP1C

## 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.		
		CKG1A/CKP1A	CKG1B/CKP1B	CKG1C/CKP1C
I	Single knuckle joint	M6 without tap	CKB-I04	
IA		M6 with tap	CKB-IA04	
Y	Double knuckle joint (A knuckle pin, cotter pins, flat washers 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)

Bore size (mm)		40	50	63
CKG□ cylinder	Basic weight	0.70	0.92	1.12
	Additional weight per 25 mm of stroke	0.11	0.12	0.14
CKP□ cylinder	Basic weight	0.72	0.98	1.28
	Additional weight per 25 mm of stroke	0.11	0.12	0.14
Single knuckle joint		0.20		
Double knuckle joint (A knuckle pin, cotter pins, flat washers 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)
- $$0.92 + 0.12 \times 100/25 + 0.34 = 1.74 \text{ kg}$$

## Theoretical Output

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm <sup>2</sup> )	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

Refer to pages 1281 to 1283 for cylinders with auto switches.

- Minimum stroke for auto switch mounting
- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Operating range
- Auto switch mounting bracket/Part no.

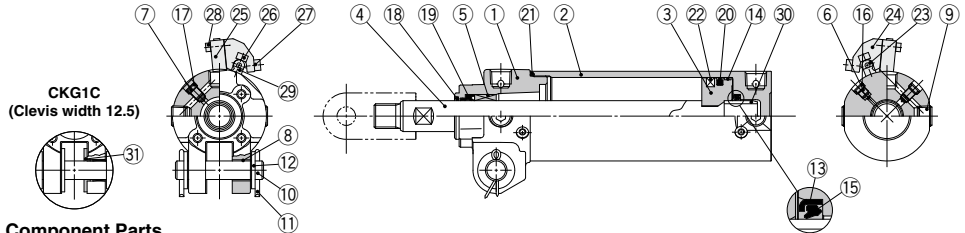


**Made to Order**  
(Refer to page 1285 for details.)

Symbol	Specifications
-X1515	With air cushion on both ends

## Construction

### CKG1□40, 50, 63 Rod mounting style

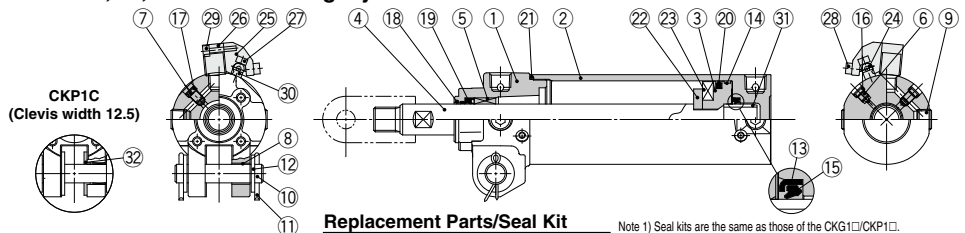


#### Component Parts

No.	Description	Material	Q'ty	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 plating
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	Rc1/4
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	

No.	Description	Material	Q'ty	Note
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	
30	Cushion ring	Aluminum alloy	1	Anodized
31	Spacer	Bearing alloy	2	CKG1C only

### CKP1□40, 50, 63 Rod mounting style



#### Replacement Parts/Seal Kit

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

Note 1) Seal kits are the same as those of the CKG1□/CKP1□.

Note 2) Seal kit does not come with a grease pack, so please order it separately.

Grease pack part number: GR-S-010  
(compatible with all sizes)

Note 3) Cylinders with ø50 or larger bore sizes are tightened with a large tightening torque and cannot be disassembled. Please contact SMC when disassembly is required.

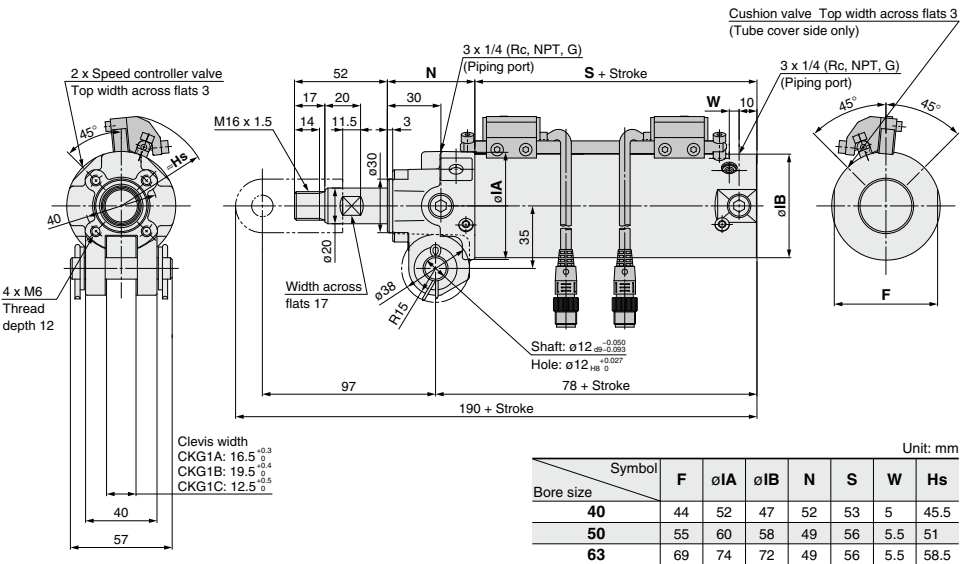
#### Component Parts

No.	Description	Material	Q'ty	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 plating
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	Rc1/4
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	

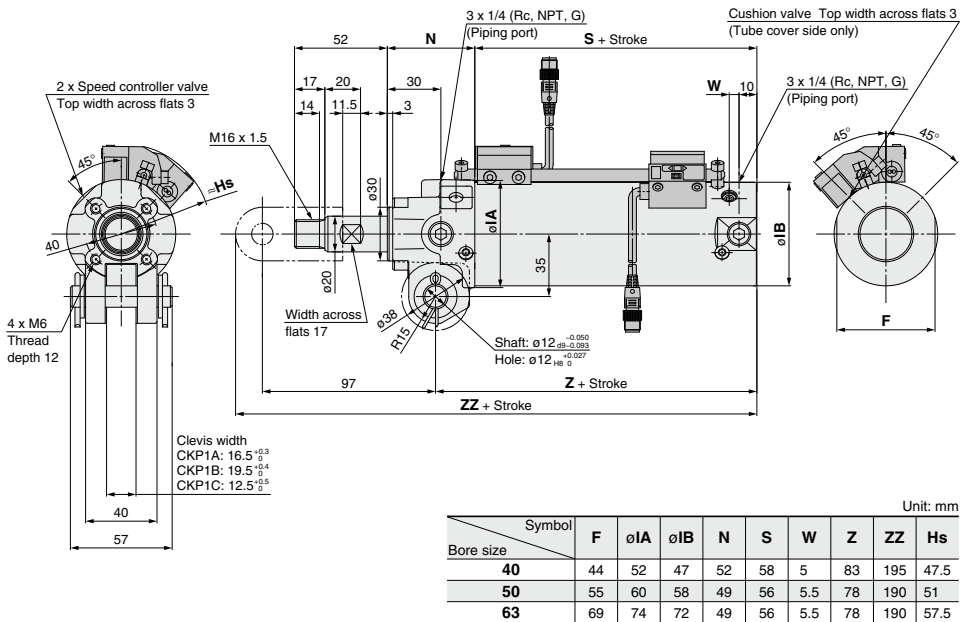
No.	Description	Material	Q'ty	Note
18	Coil scraper	Phosphor bronze	1	
19	Rod seal	NBR	1	
20	Piston seal	NBR	1	
21	Tube gasket	NBR	1	
22	Magnet holder	Aluminum alloy	1	
23	Magnet	—	1	
24	Switch mounting rod	Carbon steel	1	Zinc chromated
25	Auto switch mounting bracket	Aluminum alloy	—	
26	Magnetic field 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	
31	Cushion ring	Aluminum alloy	1	Anodized
32	Spacer	Bearing alloy	2	CKP1C only

Dimensions

CKG1□40, 50, 63 Rod mounting style



CKP1□40, 50, 63 Rod mounting style



Air Cylinders
<b>CJ2</b>
<b>CM2</b>
<b>CG1</b>
<b>MB</b>
<b>CA2</b>
<b>CQ2</b> <b>CQS</b>
Lube- retainer
<b>JA</b>
<b>MXH</b>
<b>MXQ</b>
<b>MGP</b>
<b>C□Y</b> <b>C□X</b>
<b>CK□1</b>
<b>C(L)K□</b>
<b>C(L)KU</b>
<b>CKQ</b>
<b>CKZ2N</b>
<b>WRF</b>

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

## Series CK1/CKG1

ø40, ø50, ø63

RoHS

### How to Order

Without magnet

Built-in standard magnet type

CK1 A 50 - 100 Y Z -

CKG1 A 50 - 100 Y Z

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

**Made to Order**  
Refer to page 1277 for details.

<b>Clevis width</b>	
A	16.5 mm
B	19.5 mm
C	12.5 mm

<b>Bore size</b>	
40	40 mm
50	50 mm
63	63 mm

<b>Thread type</b>	
NII	Rc1/4
TN	NPT1/4
TF	G1/4

<b>Cylinder stroke (mm)</b>	
40	50, 75, 100, 125, 150
50	50, 75, 100, 125, 150, 200
63	50, 75, 100, 125, 150, 200

<b>Option</b>	
NII	None
B	Limit switch mounting base
D	Dog fitting <sup>Note 1)</sup>
L	Foot
K <sup>Note 2)</sup>	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) Only available for clevis width A (16.5 mm)

#### End bracket

<b>End bracket</b>	
NII	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) A knuckle pin, cotter pins and flat washers are provided as a standard for Y and YA.

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

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



#### 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 model	Applicable clamp cylinder
BA8-040	D-P4DWSC	CKG1□40
BA8-050	D-P4DWSE	CKG1□50
BA8-063	D-P4DWLZ	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 switches D-P79WS□, D-P74□ is not applicable.

#### Applicable Magnetic Field Resistant Auto Switches (Refer to the WEB catalog or the 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		
CKG1	Solid state auto switch	P4DWSC	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color indication	2-wire (3-4)	24 VDC	0.3 m	Relay, PLC <sup>Note 1)</sup>		
		P4DWSE				2-wire (1-4)		3 m			
		P4DWL		Grommet		2-wire		5 m			
		P4DWZ									

Note 1) PLC: Programmable Logic Controller

Note 2) There are other applicable auto switches other than the listed above. For details, refer to page 1281.



# Clamp Cylinder with Standard Auto Switch (Band Mounting Style)

## Series **CKG1**

ø40, ø50, ø63

RoHS

### How to Order

Built-in standard magnet type

**CKG1** **A** **50** **-** **100** **Y** **Z** **-** **M9BW**

#### Clevis width

<b>A</b>	16.5 mm
<b>B</b>	19.5 mm
<b>C</b>	12.5 mm

#### Bore size

<b>40</b>	40 mm
<b>50</b>	50 mm
<b>63</b>	63 mm

#### Thread type

<b>Nil</b>	Rc1/4
<b>TN</b>	NPT1/4
<b>TF</b>	G1/4

#### Cylinder stroke (mm)

<b>40</b>	50, 75, 100, 125, 150
<b>50</b>	50, 75, 100, 125, 150, 200
<b>63</b>	50, 75, 100, 125, 150, 200

#### Number of auto switches

<b>Nil</b>	2 pcs.
<b>S</b>	1 pc.

#### Auto switch

<b>Nil</b>	Without auto switch (Built-in magnet)
------------	---------------------------------------

\* For applicable auto switches, refer to the table below.  
\* Auto switches are shipped together, (but not assembled).

#### Option

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

Note 1) When the dog fitting is selected, choose the rod end bracket 1A or YA (M6 with tap).

Note 2) Only available for clevis width A (16.5 mm)

#### End bracket

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

Note 1) IA and YA are equivalent to the conventional models.

Note 2) A knuckle pin, cotter pins and flat washers are provided as a standard for Y and YA.

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, refer to page 1270.

### Standard Auto Switches (Refer to the WEB catalog or the Best Pneumatics No.3 for detailed auto switch specifications.)

Applicable cylinder series		Type	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length (m)					Applicable load	
						DC	AC	Band mounting	0.5(Nil)	1(M)	3(L)	5(Z)			
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 100 V 200 V	A93	●	●	●	●			
								B54	●	—	●	●			

Note 1) Lead wire length symbol: 0.5 m..... Nil

1 m..... M  
3 m..... L  
5 m..... Z

M9BW

M9BWM

M9BWL

M9BWZ

Note 2) Auto switches marked with "○" are produced upon receipt of order.

Note 3) PLC: Programmable Logic Controller

Note 4) Refer to page 1282 when ordering the auto switch mounting bracket assembly or switch mounting rod assembly.



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 <sup>Note)</sup>	Double clevis		

Note) A clevis pin, cotter pins, flat washers are equipped as a standard.

Clevis width	16.5 mm	CK1A/CKG1A
	19.5 mm	CK1B/CKG1B
	12.5 mm	CK1C/CKG1C

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.			
		CK1A/CKG1A	CK1B/CKG1B	CK1C/CKG1C	
I	Single knuckle joint	M6 without tap	CKB-I04		
IA		M6 with tap	CKB-IA04		
Y	Double knuckle joint (A knuckle pin, cotter pins, flat washers are equipped as a standard.)	M6 without tap	CKA-Y04	CKB-Y04	CKC-Y04
YA		M6 with tap	CKA-YA04	CKB-YA04	CKC-YA04

Weight

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

Calculation

Example) CKG1□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 × 100/25 + 0.34 = 1.68 kg

Theoretical Output

Unit: N							
Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm <sup>2</sup> )	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

Refer to pages 1281 to 1283 for cylinders with auto switches.

- Minimum stroke for auto switch mounting
- Auto switch proper mounting position (detection at stroke end) and its mounting height
- Operating range
- Auto switch mounting bracket/Part no.

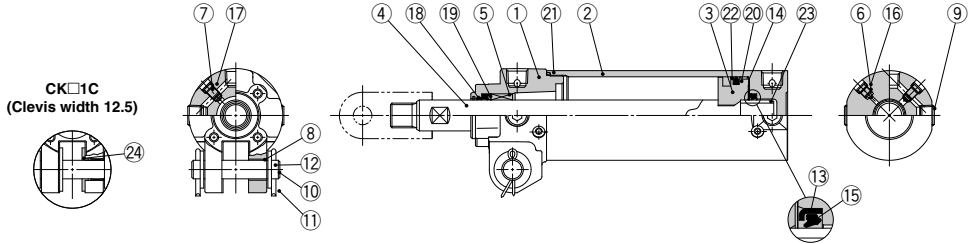
Made to Order

Made to Order  
(Refer to page 1285 for details.)

Symbol	Specifications
-X1515	With air cushion on both ends

## Construction

### CK□1□40, 50, 63 Band mounting style



## 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 plating
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	Rc1/4
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 the CKG1
23	Cushion ring	Aluminum alloy	1	Anodized
24	Spacer	Bearing alloy	2	CK□1C only

## Replacement Parts/Seal Kit

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

Note 1) Seal kit does not come with a grease pack, so please order it separately.

**Grease pack part number: GR-S-010** (compatible with all sizes)

Note 2) Cylinders with ø50 or larger bore sizes are tightened with a large tightening torque and cannot be disassembled. Please contact SMC when disassemble is required.

Air Cylinders

**CJ2**
**CM2**
**CG1**
**MB**
**CA2**
**CQ2**
**CQS**

Lube-  
retainer

**JA**
**MXH**
**MXQ**
**MGP**

C□Y  
C□X

**CK□1**

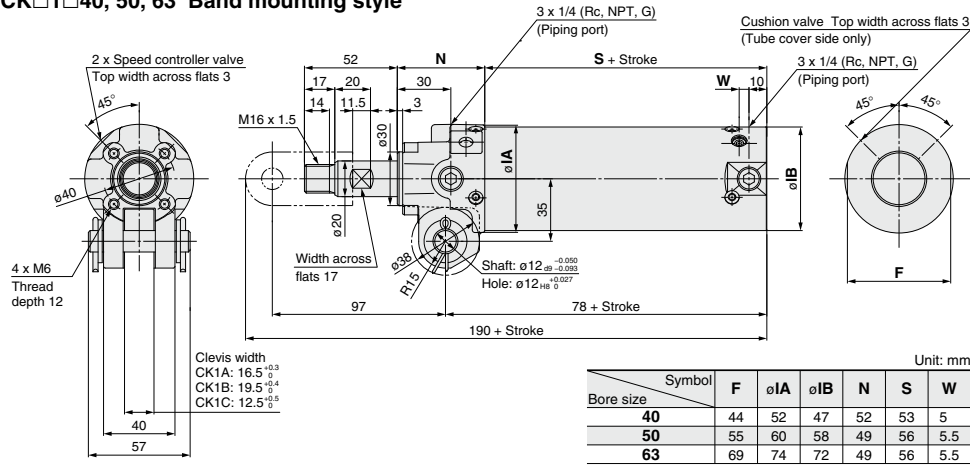
C(L)K□

C(L)KU

**CKQ**
**CKZ2N**
**WRF**

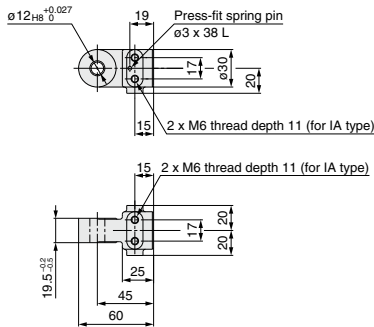
Dimensions

CK□1□40, 50, 63 Band mounting style



End Bracket

Single Knuckle Joint

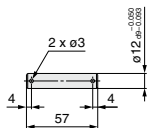


Material: Cast iron

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

Note 1) A spring pin is attached to the single knuckle joint as a standard.  
Note 2) The existing model is equivalent to the component part number CKB-IA04 (end bracket symbol IA).

Pin

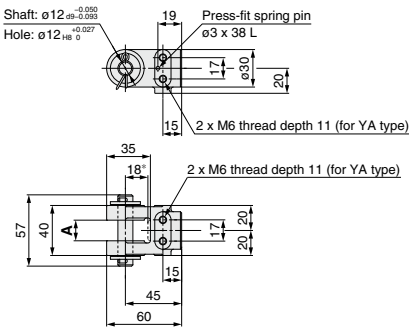


Material: Carbon steel

Part no.	Usage
CK-P04	Knuckle pin Clevis pin

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

Double Knuckle Joint



Material: Cast iron

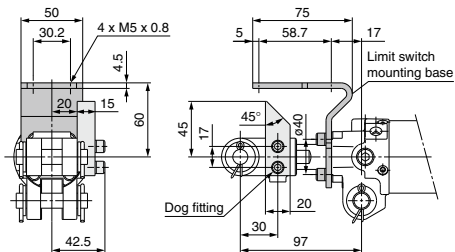
Unit: mm

Part no.	End bracket symbol	A	Applicable clamp cylinder
CKA-Y04	Y (M6 without tap)	16.5 <sup>+0.3</sup> <sub>0</sub>	CK□1A series
CKA-YA04	YA (M6 with tap)		
CKB-Y04	Y (M6 without tap)	19.5 <sup>+0.4</sup> <sub>0</sub>	CK□1B series
CKB-YA04	YA (M6 with tap)		
CKC-Y04	Y (M6 without tap)	12.5 <sup>+0.3</sup> <sub>0</sub>	CK□1C series
CKC-YA04	YA (M6 with tap)		

Note 1) A knuckle pin, cotter pins, flat washers and a spring pin are attached to the double knuckle joint as a standard.  
Note 2) The existing model is equivalent to the component part number CKA-YA04, CKB-YA04 (end bracket symbol YA).  
Note 3) The dimension with \* shows the value when mounted on the piston rod.

## Series CK□1 Options

### Limit Switch Mounting Base/Dog Fitting



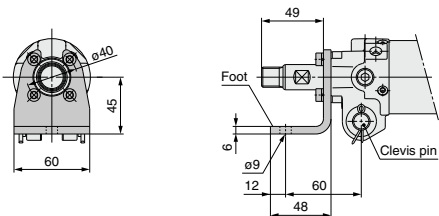
Part no.	Option symbol	Name	Applicable clamp cylinder
<b>CK-B04</b>	<b>B</b>	Limit switch mounting base	CK□1A series
<b>CK-D04</b>	<b>D</b>	Dog fitting	CK□1B series

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



The dog fitting cannot be attached to the knuckle joint, M6 without tap (end bracket symbol I or Y).

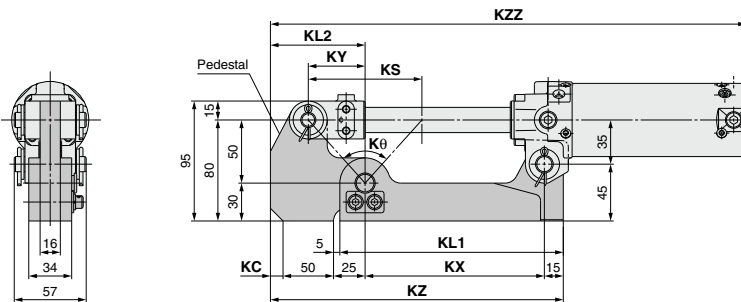
## Foot



Part no.	Option symbol	Applicable clamp cylinder
<b>CK-L04</b>	<b>L</b>	CK□1A series CK□1B series

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



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	
<b>CKA-K075</b>	<b>K</b>	167	75	70	132	35	222	69° 59'	0	360	365	360	CK□1A40-75YZ CK□1A50-75YZ CK□1A63-75YZ	
<b>CKA-K100</b>		177	75	90	142	45	232	83° 58'	0	395			CK□1A40-100YZ CK□1A50-100YZ CK□1A63-100YZ	
<b>CKA-K150</b>		202	85	140	167	70	267	108° 55'	10	480			CK□1A40-150YZ CK□1A50-150YZ CK□1A63-150YZ	

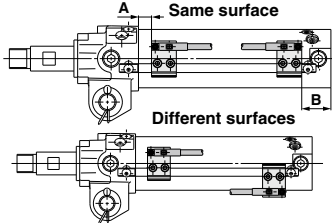
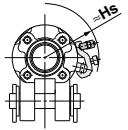
INDEX

# Auto Switch Mounting

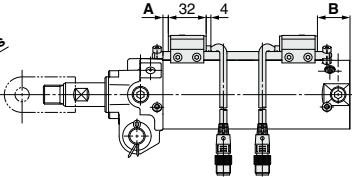
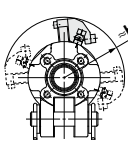
## Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

### Rod mounting

#### D-P3DW□□

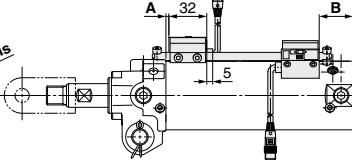
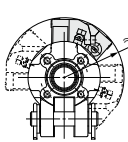


#### D-P4DW□□



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

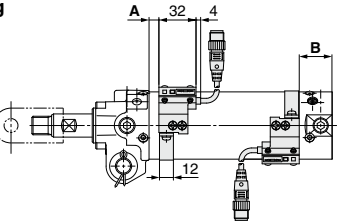
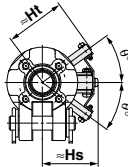
#### D-P7□□□□



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

### Band mounting

#### D-P4DW□□



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

## Minimum Stroke for Auto Switch Mounting

Unit: mm

Auto switch model	With 1 pc.	With 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.

**Other than the applicable auto switches listed in "How to Order," the following auto switches are mountable.**

\* For magnetic field resistant 2-color indication solid state auto switches, auto switches with pre-wired connector (D-P4DW□DPC) are also available. Refer to the Best Pneumatics No.3 for details.

### 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 indication, mount the switch in the middle of the green indication.

### Auto Switch Mounting Position and Its Height:

#### Band Mounting Style/D-P4DW□□

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 the D-P4DW□□, band mounting style, the switch mounting bracket and the auto switch have to be ordered separately. For details, refer to page 1275.

Note 3) For 2-color indication, mount the switch in the middle of the green indication.

## Operating Range

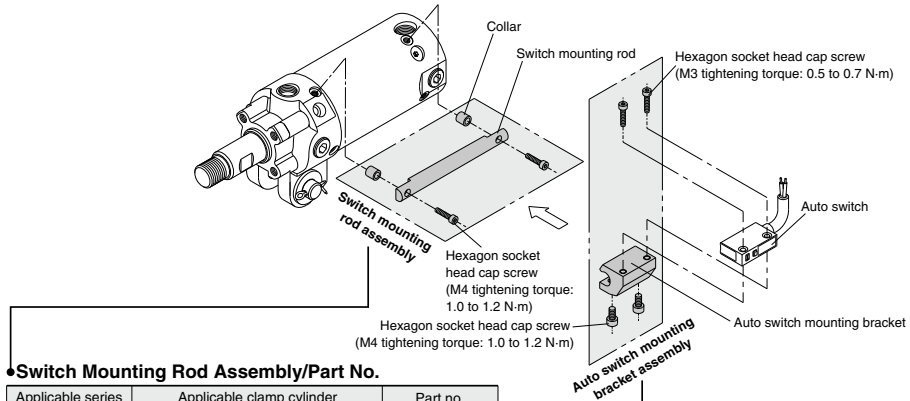
Unit: mm

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□				

\* Values which include hysteresis are for guideline purpose only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

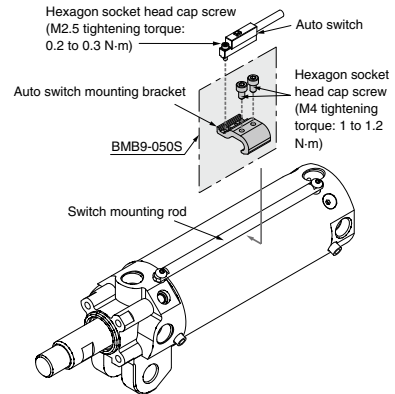
## Auto Switch Mounting Bracket/Part No.

### Switch mounting rod assembly/Auto switch mounting bracket assembly

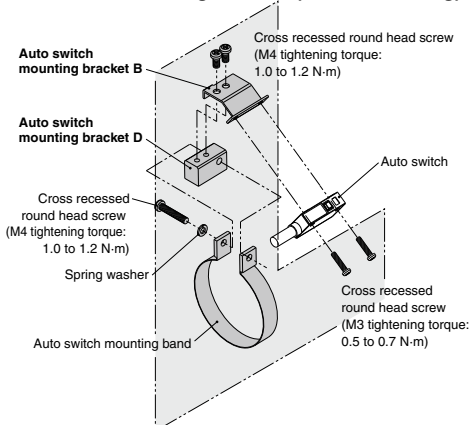


#### •Switch Mounting Rod Assembly/Part No.

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



### Auto switch mounting bracket (Band mounting)



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

Applicable cylinder series	Applicable auto switch model	Auto switch mounting bracket part no.		
		40	50	63
<b>CKG1</b>	D-P3DWSC	BMB9-050S		
	D-P3DWSE			
	D-P3DWL/Z			
	D-P4DWSC	BK1T-040		
	D-P4DWSE			
	D-P4DWL/Z			
<b>CKP1</b>	D-P79WSE	BAP1T-040		
	D-P74L/Z			

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

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

Air Cylinders

CJ2

CM2

CG1

MB

CA2

CQ2

CQS

Lube-retainer

JA

MXH

MXQ

MGP

□Y

□X

CK□1

□L□□

□L□□U

CKQ

CK2ZN

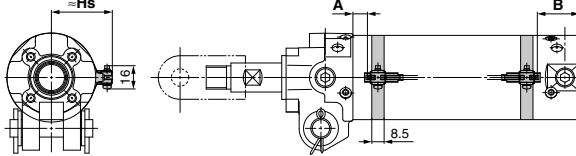
WRF

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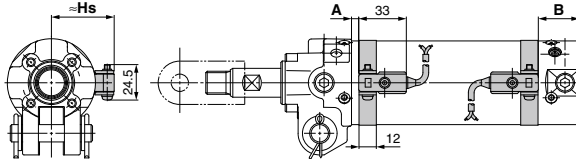
# Standard Auto Switch Mounting

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

### D-M9B(W)/A93



### D-B54



## Caution

As for the precautions on the auto switches, product specifications, refer to pages 1287 to 1289.

### Minimum Stroke for Auto Switch Mounting Unit : mm

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

### Auto Switch Mounting Position and Its Height Unit : mm

Auto switch model	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 indication, mount the switch in the middle of the green indication.

## Auto Switch Mounting Bracket Assembly/Part No.

Auto switch model	Auto switch mounting bracket part no.		
	40	50	63
D-M9B	Note) BMA3-040	Note) BMA3-050	Note) BMA3-063
D-M9BW			
D-A93			
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 with SMC regarding other chemicals.

## Operating Range

Auto switch model	Bore size Unit: mm		
	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

\* Values which include hysteresis are for guideline purpose only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

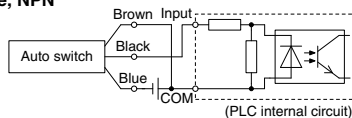


# Prior to Use

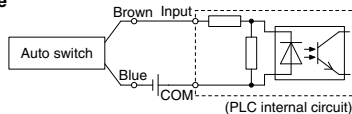
## Auto Switch Connection and Example

### Sink Input Specifications

#### 3-wire, NPN



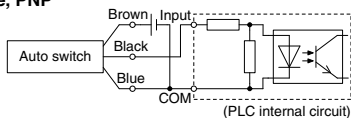
#### 2-wire



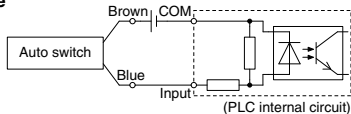
Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

### Source Input Specifications

#### 3-wire, PNP



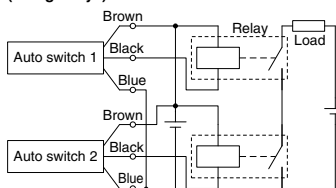
#### 2-wire



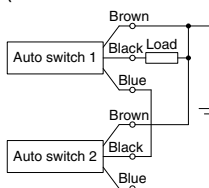
### Example of AND (Series) and OR (Parallel) Connection

\* When using solid state auto switches, ensure the application is setup so the signals for the first 50 ms are invalid.

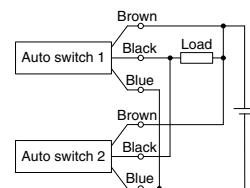
#### 3-wire AND connection for NPN output (Using relays)



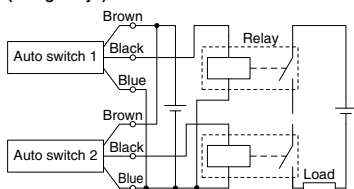
#### (Performed with auto switches only)



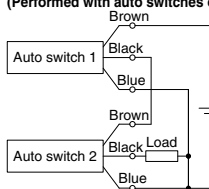
#### 3-wire OR connection for NPN output



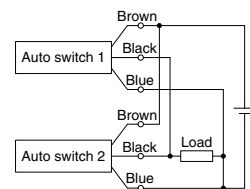
#### 3-wire AND connection for PNP output (Using relays)



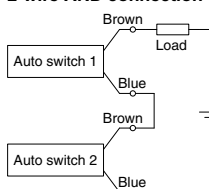
#### (Performed with auto switches only)



#### 3-wire OR connection for PNP output



#### 2-wire AND connection

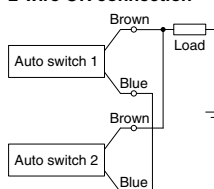


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state. The indicator lights will light up when both of the auto switches are in the ON state. Auto switches with load voltage less than 20 V cannot be used.

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.

#### 2-wire OR connection



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

(Reed)  
Because there is no current leakage, the load voltage will not increase when turned OFF. 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.

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.

# Series CK□1

## Made to Order

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



### 1 CK□1□40, 50, 63/With Air Cushion on Both Ends

Symbol

**-X1515**

Clamp cylinder with air cushion on both ends (with cushion in the clamped/unclamped side)

#### ⚠ Caution

The air cushion is integrated in the unclamped side (head end) only for the standard type CK1/CKG1/CKP1 series, bore size 40, 50 and 63. When an air cushion is required on both ends, it is available as a made-to-order -X1515.

#### Basic type

CK1  -

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

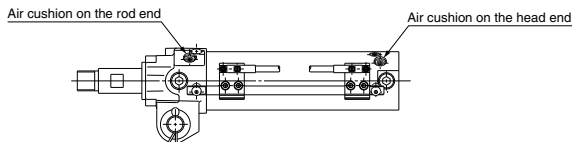
CKG1  -

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

CKP1  -

With air cushion on both ends •

Dimensions: Same as standard type



Specifications: Same as standard type

#### Specifications

Thread type	Rc1/4 only
Specifications other than above	Same as standard type



## Series CK□1

# Specific Product Precautions 1

Be sure to read before handling. Refer to page 1574 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. However, do not rotate the cushion valve exceeding two turns, and do not rotate the speed controller valve exceeding four and half turns (ø40: maximum two turns). If 0.6 N·m or more of torque is applied, the valve may become loose and may jump out depending on the amount of air pressure.

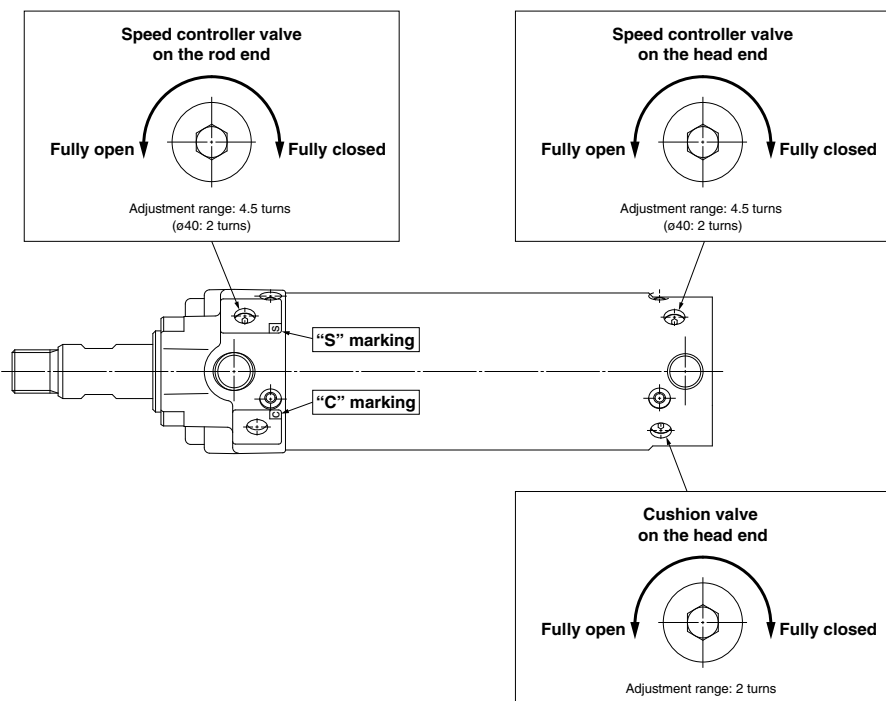
### Cushion Adjustment

The air cushion is built in on the head end for the CK1 series. The cushion is pre-adjusted at the time of shipping. However, re-adjust the cushion valve on the tube cover depending on the operating speed and load before use. When rotating the cushion valve clockwise, the orifice becomes smaller, resulting in stronger cushion reaction.

### Speed Controller Adjustment

The speed controller (exhaust restrictor) is built in on the rod and head end for the CK1 series. The cushion is pre-adjusted at the time of shipping. However, re-adjust the speed controller valve ("S" marking on the rod cover) on each cover depending on the operating speed and load before use.

When rotating the speed controller valve clockwise, the orifice becomes smaller, which reduces the speed.



Air Cylinders

CJ2

CM2

CG1

MB

CA2

CQ2  
CQS

Lube-  
retainer

JA

MXH

MXQ

MGP

□Y  
□X

CK□1

C(L)□

C(L)KU

CKQ

CKZ2N

WRF

INDEX



## Series CK□1

# Specific Product Precautions 2

Be sure to read before handling. Refer to page 1574 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>

### Piping Port/Switch Mounting Rod Location Change

#### Piping Port Location Change

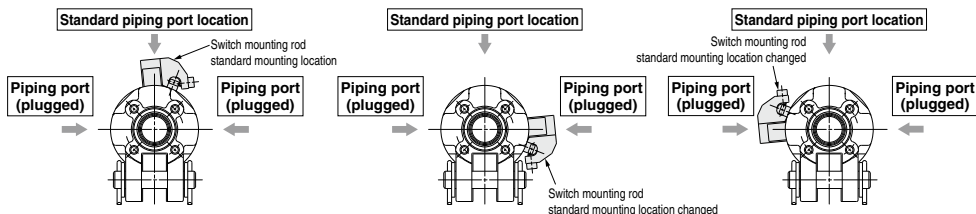
Piping is possible from 3 directions. When the piping port location is changed, carefully follow the instructions as detailed below.

#### ⚠ Warning

1. Do not leave out the component parts when the piping port location is changed.  
Even if one of the component parts is kept away, 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.

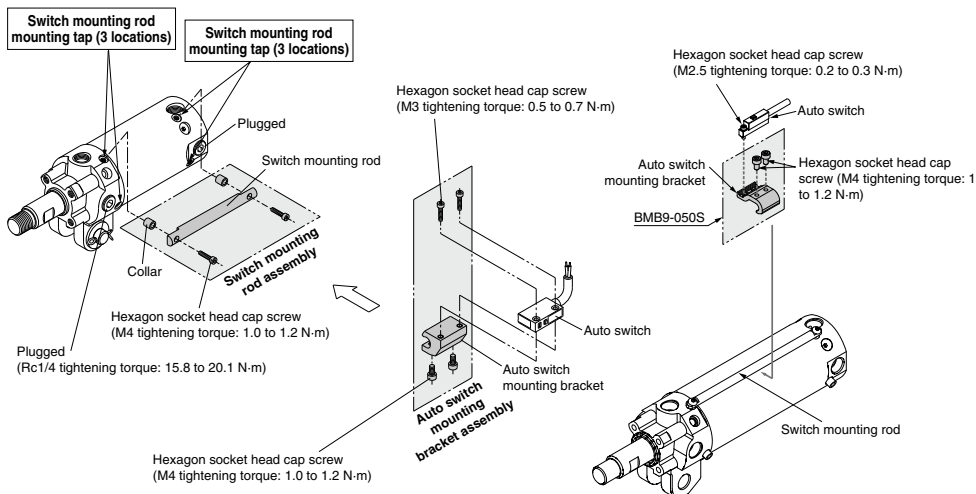
#### Switch Mounting Rod Location Change

The switch mounting rod is mountable from 3 directions. When the switch mounting rod is changed, carefully follow the instruction as detailed below.



#### ⚠ 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, confirm that there is no interference with other parts before use.





## Series CK□1

# Specific Product Precautions 3

Be sure to read before handling. Refer to page 1574 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□ are specifically for use with built-in strong magnet type cylinders and are not compatible with general auto switches or cylinders. Built-in strong magnet type cylinders are labeled as follows.

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

### 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 1289, 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 auto switches.

3. In an environment where spatter directly hits the lead wire, cover the lead wire with protective tubing.

Use protective tubing with inside diameter of  $\phi 8$  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 cylinders with magnetic field resistant auto switches in parallel and proximity, 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. Be careful of the mounting direction of the magnetic field resistant auto switch D-P79WSE.

Be sure to face the soft-resin mold surface to the switch mounting bracket side for mounting.

(Refer to page 1281 for mounting example and the Best Pneumatics No.3 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.



Air Cylinders

CJ2

CM2

CG1

MB

CA2

CQ2  
CQS

Lube-  
retainer

JA

MXH

MXQ

MGP

C□Y  
C□X

CK□1

C(L)K□

C(L)KU

CKQ

CKZ2N

WRF

INDEX



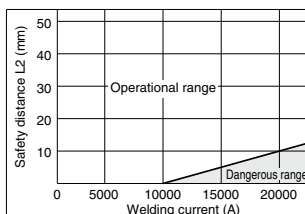
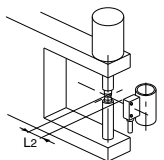
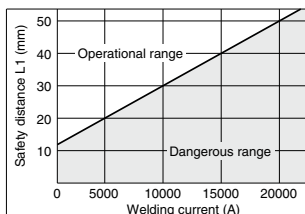
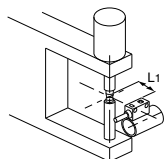
## Series CK□1

# Specific Product Precautions 4

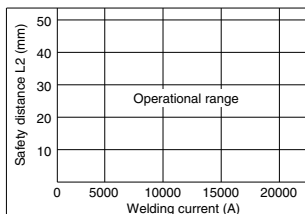
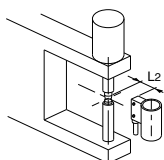
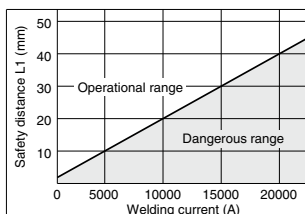
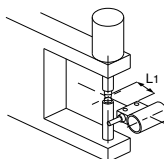
Be sure to read before handling. Refer to page 1574 for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for Actuator and Auto Switch Precautions. Please download it via our website, <http://www.smcworld.com>

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

#### Safety Distance from Side of Auto Switch



#### Safety Distance from Top of Auto Switch



# Series CK□1

## Related Products

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

### 1 C(L)KG/C(L)KP25, 32, 40/Clamp Cylinder Slim Style

Symbol

-X2095

The smallest class of clamp cylinder in the world

■  $\phi 25$  is available.

Weight 380 g Length 186.7 mm

( $\phi 25$ , 50 stroke without speed controller or auto switch)

■ Comparison with existing model

Weight reduced by up to 48%, total length reduced by 18%

	Weight (kg)	Length (mm)
Clamp cylinder CKG-X2095	0.67 (1.31)	146.7 + Stroke (192 + Stroke)
Clamp cylinder with lock CLKP-F-X2095	0.97 (1.70)	182.2 + Stroke (236 + Stroke)

Comparison with  $\phi 40$ , 50 stroke with double knuckle joint and speed controller.  
The values in the ( ) are for conventional model.

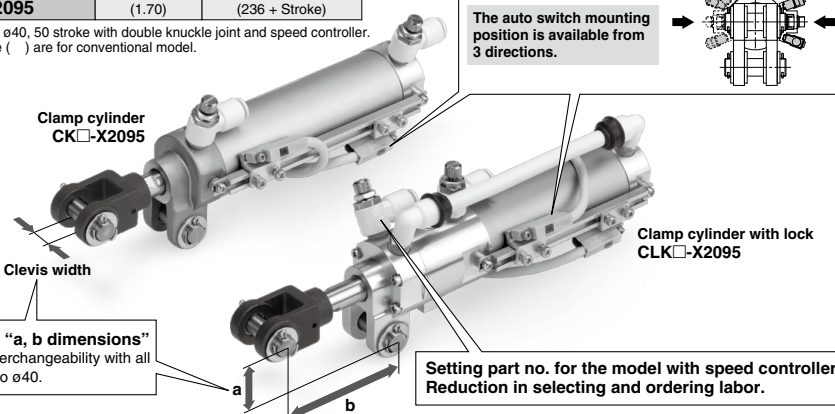
Compact auto switch (D-P3DW)  
Magnetic field resistant 2-color indication  
solid state auto switch

D-P3DW

Auto switch product  
volume reduced by 70%

D-P4DWL

The auto switch mounting  
position is available from  
3 directions.



### Variations

Model	Type		Series	Bore size	Stroke (mm)	Clevis width	End bracket	Option
Clamp cylinder	Built-in standard magnet type	D-P3DW D-P4DW	CKG	25, 32, 40	50, 75, 100 125, 150	A : 9 mm B : 12.5 mm	Double knuckle joint	Speed controllers with One-touch fittings (Both sides)
	Built-in strong magnet type	D-P7	CKP					
Clamp cylinder with lock	Built-in standard magnet type	D-P3DW D-P4DW	CLKG	32, 40				
	Built-in strong magnet type	D-P7	CLKP					

For details about this product, refer to the WEB catalog.

Air Cylinders

CJ2

CM2

CG1

MB

CA2

CQ2  
CQS

Lube-  
retainer

JA

MXH

MXQ

MGP

C□Y  
C□X

CK□1

C(L)K□

C(L)KU

CKQ

CKZ2N

WRF

2 CKGA80, 100/CKPA80, 100/With Magnetic 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

CKGA80-100Y-P4DWSC

CKPA80-100Y-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) A knuckle pin, cotter pins and flat washers 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	CKGA series
P4DWSE	D-P4DWSE	
P4DWL	D-P4DWL	
P4DWZ	D-P4DWZ	
P79WSE	D-P79WSE	CKPA series
P74L	D-P74L	
P74Z	D-P74Z	

Specifications

Clevis width	28 mm	CKGA/CKPA series
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 <sup>Note)</sup>	Double clevis	

Note) A clevis pin, cotter pins and flat washers are provided as a standard.

Auto Switch Mounting Bracket Assembly/Part No.

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

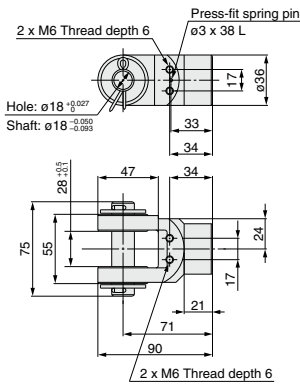
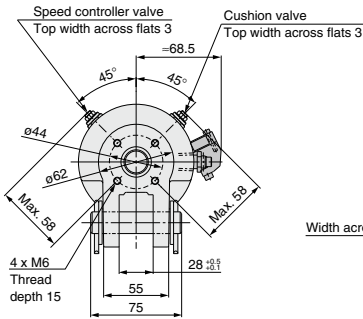
Built-in Standard (Strong) Magnet Cylinder Part No.

- 1) Built-in standard (strong) magnet type without auto switch, without 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

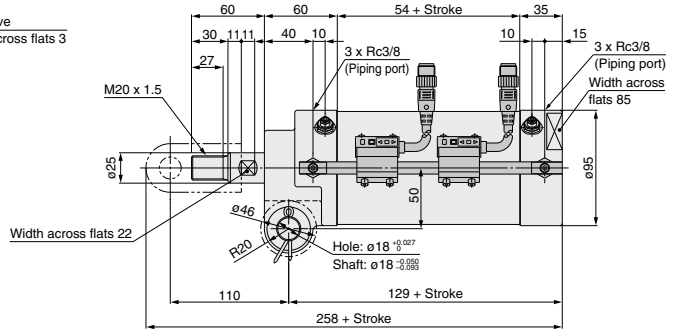


## Dimensions

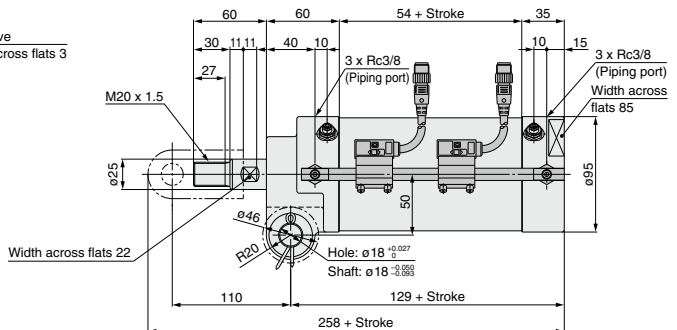
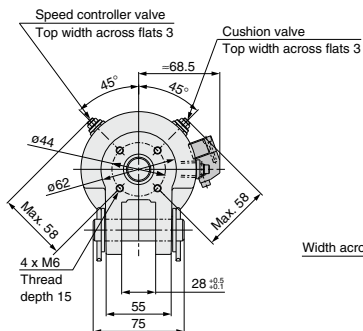
**CKGA80 Built-in standard magnet type/with magnetic field resistant auto switch (D-P4DWS□)**



### Double knuckle joint



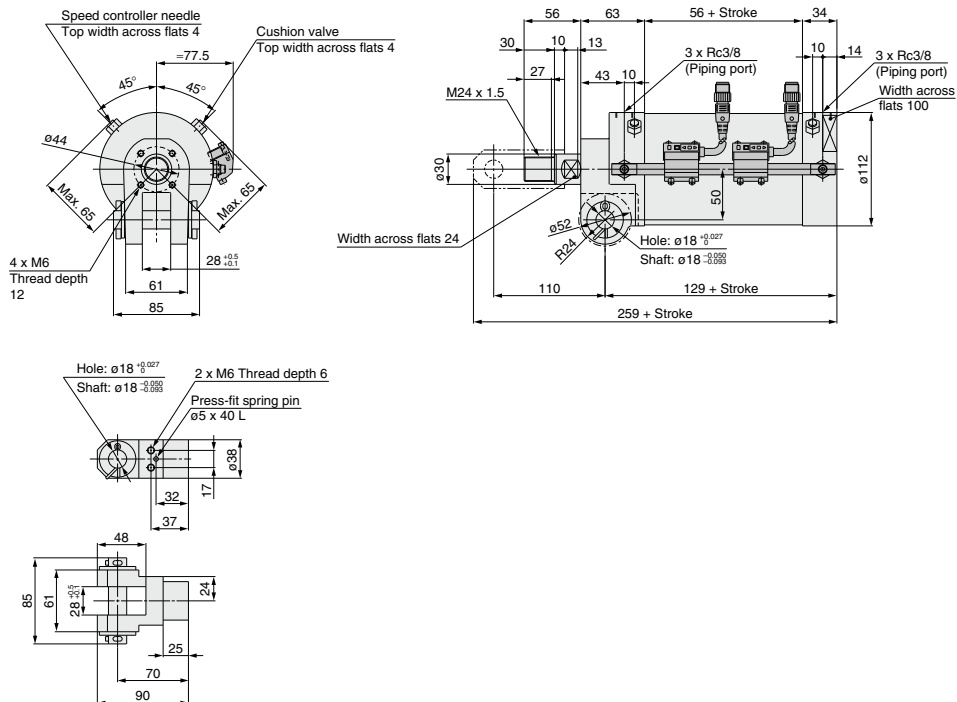
**CKPA80 Built-in strong magnet type/with magnetic field resistant auto switch (D-P79WSE)**



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

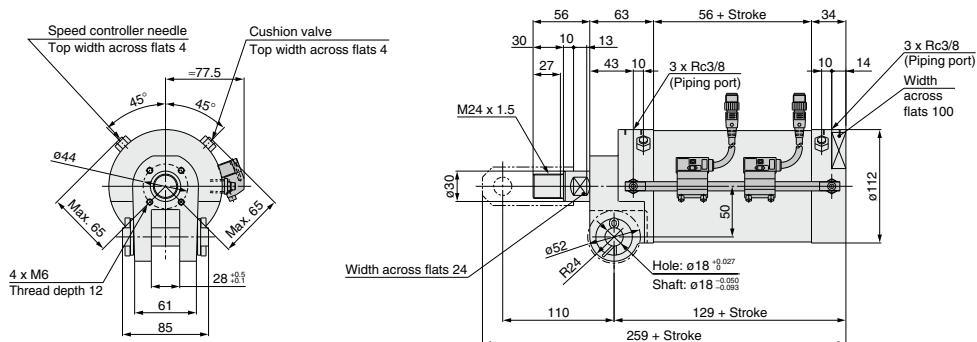
### Dimensions

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



Double knuckle joint

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



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

### 3 CKGA32/With Magnetic Field Resistant Auto Switch D-P4DW□□ (Band Mounting Style)

Band mounting of the magnetic field resistant auto switch (D-P4DW□□) to the built-in standard magnet clamp cylinder (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**

**CKGA32-100Y**

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) A knuckle pin, cotter pins and flat washers are provided as a standard for Y.

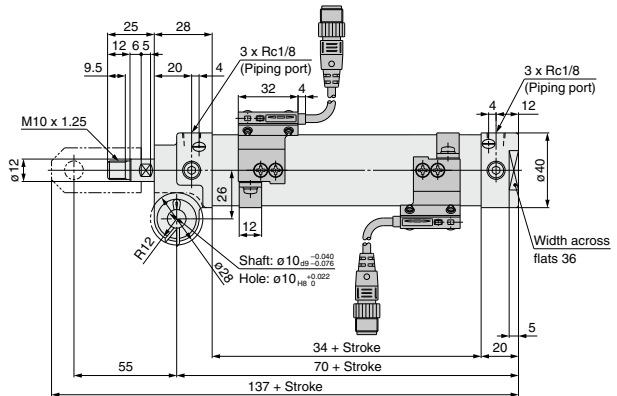
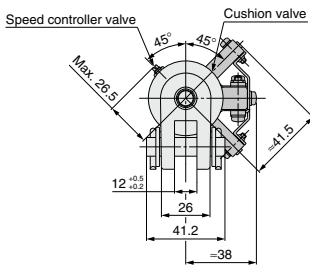
#### Specifications

Clevis width	12 mm	CKGA32 series
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 <sup>Note)</sup>	Double clevis	

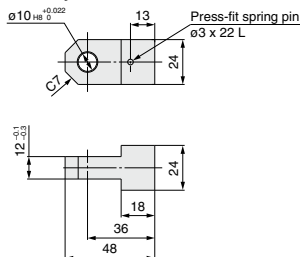
Note) A clevis pin, cotter pins and flat washers are provided as a standard.

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

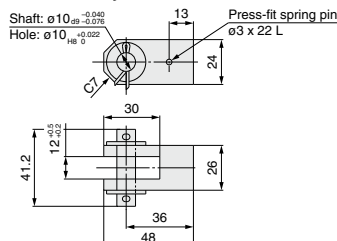
#### Dimensions



#### Single knuckle joint



#### Double knuckle joint



\* Please contact SMC for details of the CKGA32 series.