Clamp Cylinder

Series CK □ 1

- Clevis width 16.5 mm/19.5 mm
- Built-in speed controller
- With air cushion
- Magnetic field resistant auto switches are mountable.

CKU MK

CKQ CLKQ

CK□1

CLK2

Variations

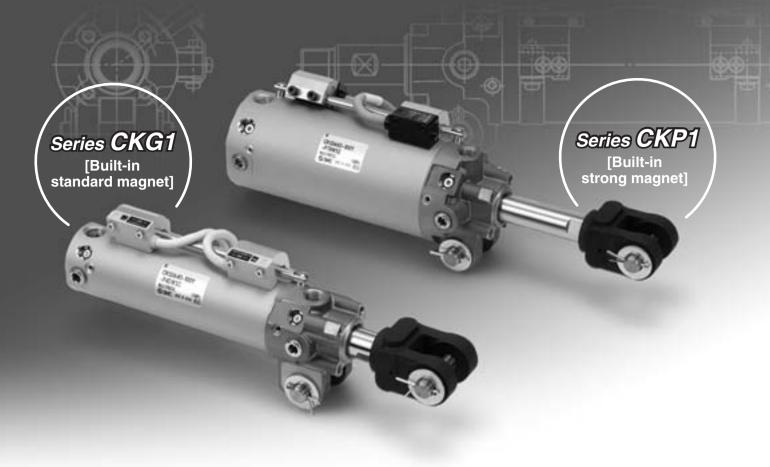
Series		Bore size (mm)	Stroke (mm)	Clevis width (mm)	Rod end bracket	Options
Basic type	Series CK1□		50		Single	Limit switch
		40	75		knuckle	mounting base
Built-in standard magnet type				A: 16.5 mm	joint	Dog fitting
(applicable to magnetic field resistant auto switches)	Series CKG1□	50	100	B: 19.5 mm	Double	
,		63	125		knuckle	Foot
Built-in strong magnet type (applicable to magnetic field resistant auto switches)	Series CKP1□		150		joint	Pedestal

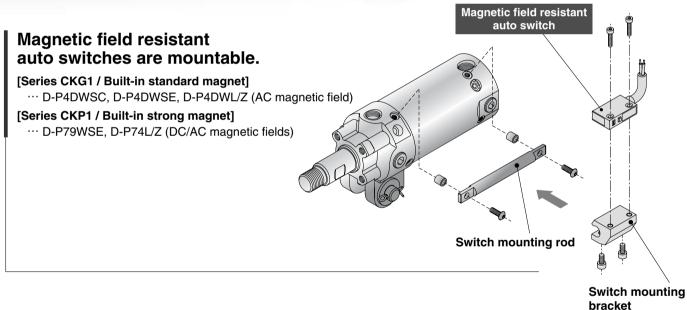




-X 🗆

Individual -X□

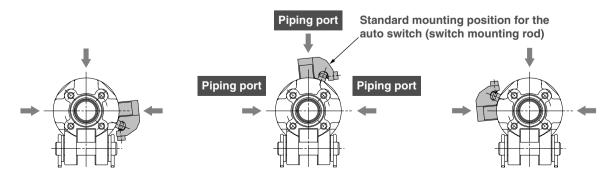




The auto switch mounting and the piping position are available in three-way directions.

The auto switch mounting position can be altered.

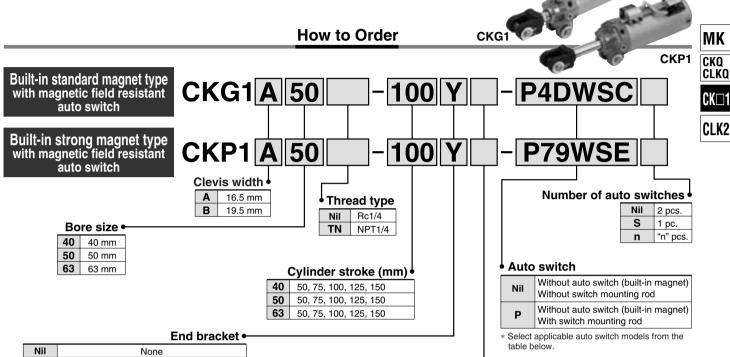
Also, piping is possible in three-way directions regardless of the auto switch mounting position.



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

Series CKG1/CKP1

Ø40, Ø50, Ø63



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 modern

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
В	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 mounting base K.

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

 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) CKG1A50-50Y CKP1: (Example) CKP1A50-50Y

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.

CKG1: (Example) CKG1A50-50Y-P CKP1: (Example) CKP1A50-50Y-P

Applicable Magnetic Field Resistant Auto Switches (Refer to pages 1719 to 1827 for detailed auto switch specifications.)

Applicable imagnetic Field nesistant Auto Switches (Refer to pages 1719 to 1827 for detailed auto switch specifications.)									
Applicable cylinder series	Туре	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no in use)	Load voltage	Lead wire length	Applicable load
		P4DWSC		Pre-wired connector		2-wire (3–4)	- 24 VDC	0.3 m	
Series CKG1	Solid state auto switch	P4DWSE	AC magnetic field (Single-phase	Tre-wired confidence	2-color	2-wire (1–4)			
		P4DWL	AC welding magnetic field)	Grommet	display	2-wire		3 m	
		P4DWZ						5 m	Relay, PLC Note 1)
	P79WSE		Pre-wired connector	2-color display	2-wire (1–4)	24 VDC	0.3 m		
Series CKP1	Reed auto switch	P74L	DC / AC magnetic field	Grommet	1-color display	2-wira	24 VDC 100 VAC	3 m	
	,	P74Z		Gronniet				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 1329.

Note 3) Refer to page 1330 when ordering the auto switch mouting bracket assembly or switch mounting rod assembly.



D-□

-X□ Individual -X□



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 Note 1)	Unclamped	side (head end): Wit	h air cushion	
Speed controller	E	quipped on both en	ds	
Lubrication	Non-lube			
Stroke length tolerance	+1.0 0			
Mounting Note 2)		Double clevis		

Note 1) With cushion on both ends are available as Made to Order. For details, refer to page 1336, Made to Order 4.

Ordering example CKG1A50-100Y-P4DWSC -X1515

- With cushion on both ends

Note 2) Clevis pin, Cotter pin, Flat washer are equipped as a standard.

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

Standard Stroke

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

End Bracket / Options

0	Danaminti	Description		s no.	
Symbol	Description		Series CKG1A/CKP1A	Series CKG1B/CKP1B	
ı	Cinale kayakla isint	M6 without tap		-104	
IA	Single knuckle joint	M6 with tap	CKB-IA04		
Υ	Double knuckle joint (Knuckle pin, Cotter pin,	M6 without tap	CKA-Y04	CKB-Y04	
YA	Flat washer are equipped as a standard.)	M6 with tap	CKA-YA04	CKB-YA04	
В	Limit switch mou	nting base	CK-B04		
D	Dog fittir	ıg	CK-I	004	
L	Foot		CK-L	_04	
		For 75 stroke	CKA-K075	_	
K	Pedestal	For 100 stroke	CKA-K100	_	
		For 150 stroke	CKA-K150	_	

Theoretical Output

						ι	Jnit: N
Bore size	Rod	Operat- ing	Piston	Opera	ting pro	essure	(MPa)
(mm)	size (mm)	direc- tion	area (mm²)	0.3	0.4	0.5	0.6
40	20	OUT	1260	378	504	630	756
40		IN	943	283	377	472	566
50	20	OUT	1960	588	784	980	1180
30	20	IN	1650	495	660	825	990
63	20	OUT	3120	934	1250	1560	1870
03	20	IN	2800	840	1120	1400	1680

Mass (Basic mass includes the switch mounting rod. At 0 stroke)

				Unit: kg	
	Bore size (mm)	40	50	63	
OKO4 = audia da a	Basic mass	0.75	0.97	1.18	
CKG1□ cylinder	Additional mass per 25 mm stroke	0.11	0.12	0.14	
CKP1□ cylinder	Basic mass	0.77	1.03	1.34	
Additional mass per 25 mm stroke		0.11	0.12	0.14	
Single knuckle joi	nt	0.20			
,	int (Knuckle pin, Cotter pin, quipped as a standard.)	0.34			
Limit switch moun	ting base	0.22			
Dog fitting		0.12			
Foot		0.24			
Pedestal			2.2		

Example) **CKG1 50-100Y-P** • Additional mass 0.12/25 mm

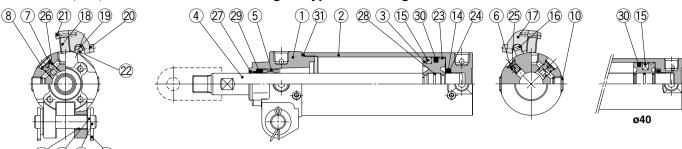
• Basic mass 0.97 (ø50) • Double knuckle joint...0.34 (Y)

 $0.97 + 0.12 \times 100/25 + 0.34 = 1.79 \text{ kg}$ Cylinder stroke 100 mm



Construction

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

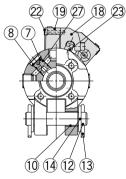


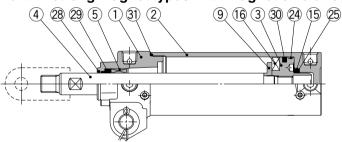
Component Parts

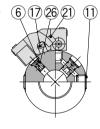
	iponent i arts			
No.	Description	Material	Qty	Note
1	Rod cover	Aluminum alloy	1	Chromated
2	Tube cover	Aluminum alloy	1	Hard anodized
3	Piston	Aluminum alloy	1	Chromated
4	Piston rod	Carbon steel	1	Hard chrome plated
5	Bushing	Copper alloy	1	
6	Cushion valve	Aluminum alloy	1	
7	Speed controller valve	Aluminum alloy	2	
8	Retaining ring	Spring steel	3	
9	Clevis bushing	Oil-impregnated sintered alloy	2	
10	Hexagon socket head plug	Carbon steel	4	Rc 1/4
11	Pin	Carbon steel	1	
12	Cotter pin	Low carbon steel wire rod	2	
13	Flat washer	Rolled steel	2	
14	Cushion seal retainer	Rolled steel	1	Zinc chromated
15	Magnet		1	
16	Switch mounting rod	Carbon steel	1	Zinc chromated
17	Auto switch mounting bracket	Aluminum alloy	_	
	•			

No.	Description	Material	Qty	Note
18	Magnetic field resistant auto switch	_	_	
19	Hexagon socket head button screw	Steel wire	2	M4 x 0.7 x 12 L
20	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M4 x 0.7 x 8 L
21	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M3 x 0.5 x 14 L
22	Switch mounting spacer	Aluminum alloy	2	
23	Wear ring	Resin	1	
24	Cushion seal	Urethane	1	
25	Cushion valve seal	NBR	1	
26	Speed controller valve seal	NBR	2	
27	Coil scraper	Phosphor bronze	1	
28	Piston gasket	NBR	1	
29	Rod seal	NBR	1	
30	Piston seal	NBR	1	
31	Tube gasket	NBR	1	

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	0
50	CK1A50-PS	Set of nos. above 29, 30, 31.
63	CK1A63-PS	(29, 30, 31).

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-005 (compatible with all sizes)

Please order 2 pieces exceeding 100 strokes.

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	Copper alloy	1	
6	Cushion valve	Aluminum alloy	1	
7	Speed controller valve	Aluminum alloy	2	
8	Retaining ring	Spring steel	3	
9	Magnet holder	Aluminum alloy	1	Chromated
10	Clevis bushing	Oil-impregnated sintered alloy	2	
_11	Hexagon socket head plug	Carbon steel	4	Rc 1/4
12	Pin	Carbon steel	1	
13	Cotter pin	Low carbon steel wire rod	2	
14	Flat washer	Rolled steel	2	
15	Cushion seal retainer	Rolled steel	1	Zinc chromated
16	Magnet	_	1	
17	Switch mounting rod	Carbon steel	1	Zinc chromated

No.	Description	Material	Qty	Note
18	Auto switch mounting bracket	Aluminum alloy	_	
19	Magnetic field resistant auto switch		_	
20	Hexagon socket head button screw	Steel wire	2	M4 x 0.7 x 12 L
21	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M4 x 0.7 x 8 L
22	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M3 x 0.5 x 16 L
23	Switch mounting spacer	Aluminum alloy	2	
24	Wear ring	Resin	1	
25	Cushion seal	Urethane	1	
26	Cushion valve seal	NBR	1	
27	Speed controller valve seal	NBR	2	
28	Coil scraper	Phosphor bronze	1	
29	Rod seal	NBR	1	
30	Piston seal	NBR	1	
31	Tube gasket	NBR	1	

MK

CKQ CLKQ

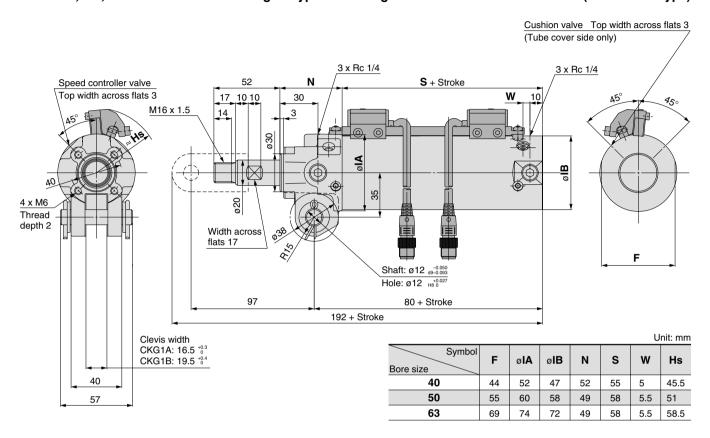
CK□1

CLK2

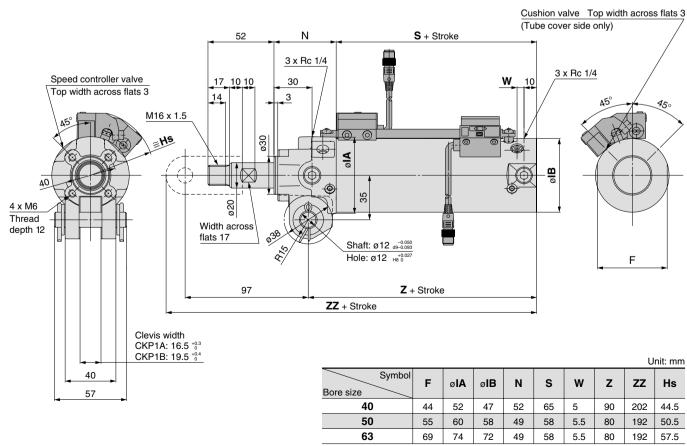


Dimensions

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



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



Clamp Cylinder: Basic Type / Built-in Standard Magnet Type Magnetic Field Resistant Auto Switch (Band Mounting Style)

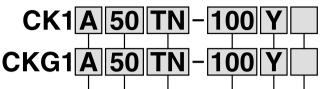
Series CK1/CKG1

ø40, ø50, ø63

How to Order

Without magnet

Built-in standard magnet type



Clevis width

16.5 mm 19.5 mm Bore size 40 40 mm 50 mm 63 mm

Threa	id type
Nil	Rc 1/4
TN	NPT 1/4

Cylinder stroke (mm)

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

MK

CKQ CLKQ

CK□1

CLK2

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

to below.

Option Nil None В Limit switch mounting base Dog fitting Note 1) D 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 mounting base 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

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 1331. 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:

CKG1A50-50Y ... 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	Туре	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no in use)	Load voltage	Lead wire length	Applicable load
			P4DWSC		Pre-wired connector		2-wire (3–4)		0.3 m	
Series CKG1	Sarias CKG1	Solid state	P4DWSE	AC magnetic field (Single-phase	Tre-wired confilector	2-color	2-wire	0.3 111	Relay,	
	auto switch	P4DWL	AC welding magnetic field)	Grommet	display	2-wire	24 VDC	3 m	PLC Note 1)	
			P4DWZ		Grommet		0		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 1329.







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 to +60°C					
Piston speed	50 to 500 mm/s					
Cushion Note 1)	Unclamped side (head end): With air cushion					
Speed controller	Equipped on both ends					
Lubrication	Non-lube					
Stroke length tolerance	+1.0 0					
Mounting Note 2)		Double clevis				

Note 1) With cushion on both ends are available as Made to Order. For details, refer to page 1336, Made to Order 4.

Ordering example CKG1A50-100Y -X1515

With cushion on both ends

Note 2) Clevis pin, Cotter pin, Flat washer are equipped as a standard.

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

Standard Stroke

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

End Bracket / Options

Symbol	Description		Part no.			
Symbol	Description	UII	Series CK1A/CKG1A	Series CK1B/CKG1B		
I	Cinale kayakla isint	M6 without tap	CKB	-104		
IA	Single knuckle joint	M6 with tap	CKB-IA04			
Y	Double knuckle joint (Knuckle pin, Cotter pin,	M6 without tap	CKA-Y04	CKB-Y04		
YA	Flat washer are equipped as a standard.)	M6 with tap	CKA-YA04	CKB-YA04		
В	Limit switch mou	nting base	CK-B04			
D	Dog fittir	ıg	CK-D04			
L	Foot		CK-L04			
K Pedestal		For 75 stroke	CKA-K075	_		
	Pedestal	For 100 stroke	CKA-K100	_		
		For 150 stroke	CKA-K150	_		

Theoretical Output

Unit: N								
Bore size	Rod size	Operat- ing	Piston area	Operating pressure (MPa)				
(mm)	(mm)	direc- tion	(mm²)	0.3	0.4	0.5	0.6	
40	20	OUT	1260	378	504	630	756	
40		IN	943	283	377	472	566	
	20	OUT	1960	588	784	980	1180	
50		IN	1650	495	660	825	990	
-		OUT	3120	934	1250	1560	1870	
63	20	IN	2800	840	1120	1400	1680	

Mass

Unit: kg 40 50 63 Bore size (mm) Basic mass 0.73 0.95 1.16 Cylinder Additional mass per 25 mm stroke 0.10 0.11 0.13 Single knuckle joint 0.20 Double knuckle joint (Knuckle pin, Cotter pin, 0.34 Flat washer are equipped as a standard.) Limit switch mounting base 0.22 Dog fitting 0.12 0.24 Foot 2.2 Pedestal

Calculation Example) **CK1G**□**50-100Y** • Basic mass 0.95 (ø50)

Double knuckle joint...0.34 (Y)

Additional mass 0.11/25 mm

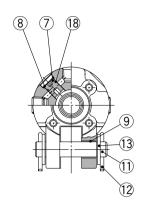
 Cylinder stroke 100 mm $0.95 + 0.11 \times 100/25 + 0.34 = 1.73 \text{ kg}$

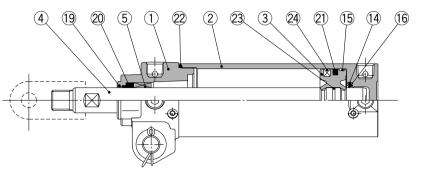


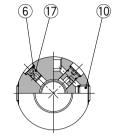
Clamp Cylinder Series $CK \square 1$

Construction

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







MK CKQ CLKQ

CK□1

CLK2

mnonent Barte

Con	nponent 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	Copper alloy	1	
6	Cushion valve	Aluminum alloy	1	
7	Speed controller valve	Aluminum alloy	2	
8	Retaining ring	Spring steel	3	
9	Clevis bushing	Oil-impregnated sintered alloy	2	
10	Hexagon socket head plug	Carbon steel	4	Rc 1/4
11	Pin	Carbon steel	1	
12	Cotter pin	Low carbon steel wire rod	2	
13	Flat washer	Rolled steel	2	
14	Cushion seal retainer	Rolled steel	1	Zinc chromated
15	Wear ring	Resin	1	
16	Cushion seal	Urethane	1	
17	Cushion valve seal	NBR	1	
18	Speed controller valve seal	NBR	2	
19	Coil scraper	Phosphor bronze	1	
20	Rod seal	NBR	1	
21	Piston seal	NBR	1	
22	Tube gasket	NBR	1	
23	Piston gasket	NBR	1	
24	Magnet	_	_	For CKG1

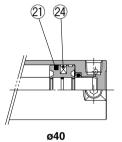
Replacement Parts/Seal Kit

Bore size (mm)	Order no.	Contents
40	CK1A40-PS	0
50	CK1A50-PS	Set of nos. above ②, ②, ②, ②.
63	CK1A63-PS	e, e, e.

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

Grease pack part no.: GR-S-005 (compatible with

all sizes)
Please order 2 pieces exceeding 100 strokes.



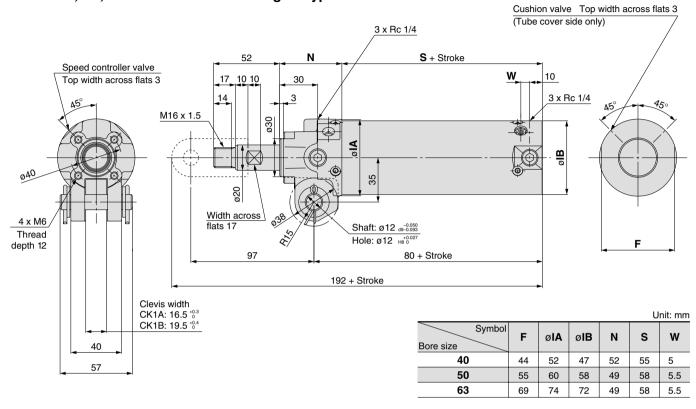
D-□

-X□

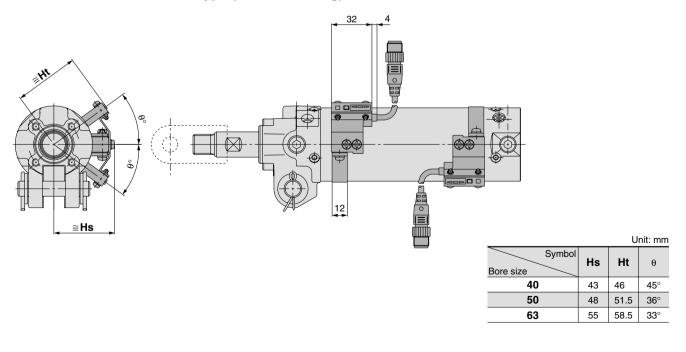
Individual -X□

Dimensions

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

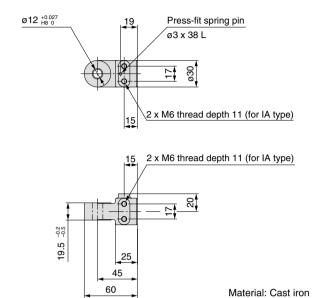


CKG1□40, 50, 63 / Example: Built-in standard magnet type + Magnetic field resistant auto switch D-P4DW□□ type (Band mounting)



End Bracket

Single knuckle joint

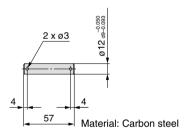


Part no.	Rod end bracket symbol	Applicable clamp cylinder
CKB-I04	I (M6 without tap)	Series CK□1A
CKB-IA04	IA (M6 with tap)	Series CK□1B

Note 1) Spring pin is attached to the single knuckle joint as a standard.

Note 2) The conventional model is equivelant to the component part no CKB-IA04 (rod end bracket symbol IA).

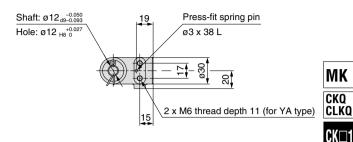
Pin

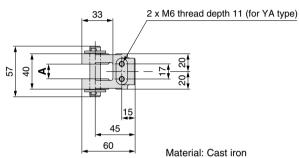


Part no.	Application
CK-P04	Knuckle pin Clevis pin

Note) Cotter pin and flat washer are provided as a standard.

Double knuckle joint





Unit: mm

CLK2

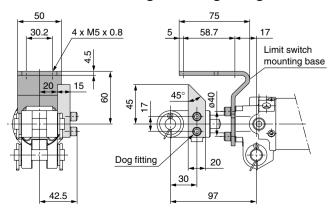
Part no.	Rod end bracket symbol	Α	Applicable clamp cylinder	
CKA-Y04	Y (M6 without tap)	16.5 ^{+0.3}	Series CK□1A	
CKA-YA04	YA (M6 with tap)	10.5 0	Selles CKLIA	
CKB-Y04	Y (M6 without tap)	19.5 +0.4	Series CK⊓1B	
CKB-YA04	YA (M6 with tap)	19.5 0	Selles CK LTB	

Note 1) Knuckle pin, cotter pin, flat washer and spring pin are attached to the double knuckle joint as a standard.

Note 2) The conventional model is equivelant to the component part no CKA-YA04, CKB-YA04 (rod end bracket symbol YA).

Option

Limit switch mounting base/Dog fitting



Material: Rolled steel

Part no.	Option symbol	Name	Applicable clamp cylinder
CK-B04	В	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 base and the dog bracket 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).

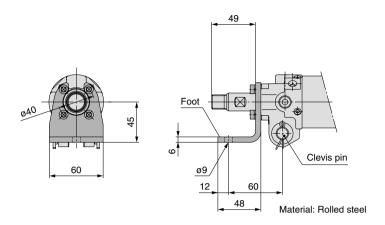






Option

Foot



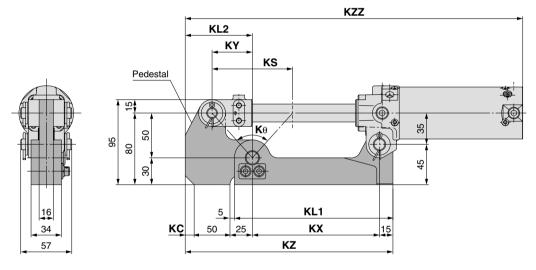
Part no.	Option symbol	Applicable clamp cylinder
CK-L04	L	Series CK□1A Series CK□1B

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

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

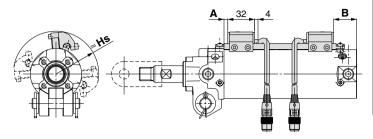
											Offic. Hilli
Part no.	Option symbol	KL1	KL2	KS	кх	KY	KZ	K θ	кс	KZZ 40 50 63	Applicable clamp cylinder
CKA-K075		167	75	70	132	35	222	69° 59'	0	362	CK□1A40-75Y CK□1A50-75Y CK□1A63-75Y
CKA-K100	К	177	75	90	142	45	232	83° 58'	0	397	CK□1A40-100Y CK□1A50-100Y CK□1A63-100Y
CKA-K150		202	85	140	167	70	267	108° 55'	10	482	CK□1A40-150Y CK□1A50-150Y CK□1A63-150Y

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



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

Rod mounting D-P4DW□□ type



Note) The above drawing is the mounting example for the D-P4DWS $\!\Box$ type.

Auto Switch Mounting Position and Its Height: Rod Mounting Style

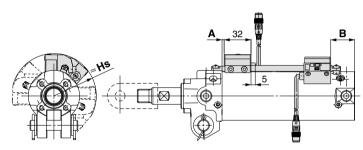
	J - ,			OTHE. ITHII		
Auto switch model	Cymbol	Auto switch set value and its height				
Auto Switch model	Symbol	ø40	ø50	ø63		
	Α	8	4.5	4.5		
D-P4DW□□	B Hs	20.5	27.5	27.5		
		45.5	51	58.5		
D DZOWOE	Α	5.5	0	0		
D-P79WSE D-P74□	В	27.5	26	26		
D-F74	Hs	46	51	58		

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.

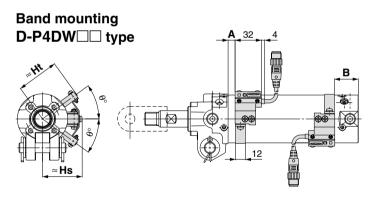
Note 2) A/B dimensions are the distance from the standard position (above drawing) to the end surface of the auto switch.

Note 3) The auto switch mounitng position is temporarily set at the time of shipping from our factory. Change it to the desired position in accordance to your facility.

D-P7□□□□ type



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



Note) The above drawing is the switch band mounting example for the D-P4DWS $\!\Box$ type.

Auto Switch Mounting Position and Its Height:

Auto switch model	Symbol	Auto switch set value and its height				
Auto Switch model	Symbol	ø40	ø50	ø63		
	Α	8	4.5	4.5		
	В	20.5	27.5	27.5		
D-P4DW□□	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) A/B dimensions are the distance from the standard position (above drawing) to the end surface of the auto switch.

Note 3) 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 1223

Minimum Stroke for Auto Switch Mounting

		Unit: mm
Auto switch model	1 pc.	2 pcs.
D-P4DW□□		
D-P79WSE	50	50
D-P74□		

Operating Range

1	Init:	mr

Auto swite	ala ma a al a l	Bore size			
Auto Swite	cn model	40	50	63	
D-P4DW□□	Rod mounting	4	4	4.5	
D-P4DW 🗆	Band mounting	5	5	5.5	
D-P79WSE	Dod so sustinos	0	0	0.5	
D-P74□	Rod mounting	8	9	9.5	

D-□ -**X**□

MK CKQ CLKQ

CLK2

Individual -X□

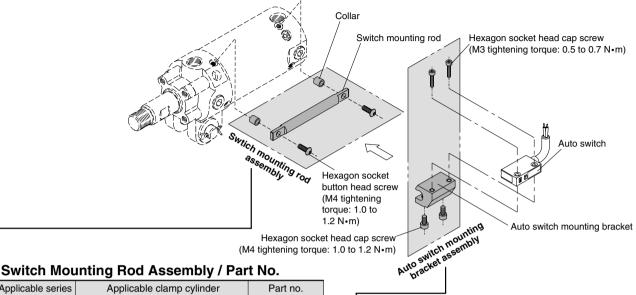
Besides the models listed in "How to Order," the following auto switches are applicable.

* For magnetic field resistant 2-color indication solid state auto switches, auto switches with pre-wired connector (D-P4DW□DPC type) are also available.



Auto Switch Mounting Bracket / Part No.

Switch mounting rod assembly / Auto switch mounting bracket assembly



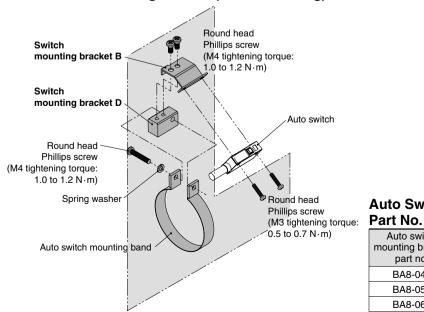
Switch Mounting Rod Assembly / Part No.

ourter mounting from Alexandry 7 fact from					
Applicable series	Applicable clamp cylinder	Part no.			
	CKP1□40-50	CKP40-R050			
Dedicated to	CKP1□40-75	CKP40-R075			
Series	CKP1□40-100	CKP40-R100			
CKP1□40	CKP1□40-125	CKP40-R125			
	CKP1□40-150	CKP40-R150			
	CKG1□40-50 CKG1□50-50/CKP1□50-50 CKG1□63-50/CKP1□63-50	CKG40-R050			
Series CKG1□40/50/	CKG1□40-75 CKG1□50-75/CKP1□50-75 CKG1□63-75/CKP1□63-75	CKG40-R075			
63 Series CKP1□50/63	CKG1□40-100 CKG1□50-100/CKP1□50-100 CKG1□63-100/CKP1□63-100	CKG40-R100			
Common Common	CKG1□40-125 CKG1□50-125/CKP1□50-125 CKG1□63-125/CKP1□63-125	CKG40-R125			
	CKG1□40-150 CKG1□50-150/CKP1□50-150 CKG1□63-150/CKP1□63-150	CKG40-R150			

Auto Switch Mounting Bracket Assembly / Part No.

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

Auto switch mounting bracket (Band mounting)



Auto Switch Mounting Bracket (Band Mounting) /

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



Made to Order Specifications:

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



MK

CKQ CLKQ

CK□1

CLK₂

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 1319.

CK G 1 Enter the standard model no. standard magnet Built-in Auto switch type: Band mounting style / Standard auto switch standard magnet Without auto switch

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

Number of auto switches

Nil 2 pcs.

Mounting Allowable Auto Switch: Band Mounting / Standard Auto Switch/Refer to pages 1719 to 1827 for auto switch specifications.

Applicable	Tuno	Electrical	Indicator	Wiring	Lo	ad volta	ge	Auto switch model	Lead	wire le	ength ((m)	Appli	icable
cylinder series	Туре	entry	light	(Output)	D	С	AC	Band mounting	0.5 (Nil)	1 (M)	3 (L)	5 (Z)	lo	ad
	Solid state	Grommet	Yes	2-wire	24 V	5 V		M9B	•	_	•	0		
	auto switch	Grommet	res	2-wire	24 V	12 V	_	M9BW	•	•		0		Dalass
Series CKG1							100 V	A93	•	_	•	_	l —	Relay, PLC
	Reed auto switch	Grommet	Yes	2-wire	24 V	12 V	100 V	B54						FLC
							200 V	D34		_	_	_		

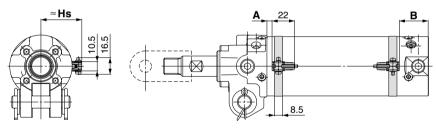
Note 1) Lead wire length symbol: 0.5 mNil (Example) M9BW (Example) M9BWM 1 m M (Example) M9BWL (Example) M9BWZ

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

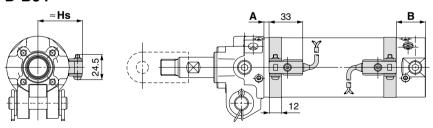
Note 3) PLC: Programmable Logic Controller

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

D-A93/M9B



D-B54



As for the precautions on the auto switches, product specifications, refer to pages 8 to 11 and 1719 to 1827.

Auto Switch Mounting Bracket Assembly / Part No.

Auto switch	Auto switch mounting bracket part no.				
Auto Switch	40	50	63		
D-A93 D-M9B D-M9BW	Note) ①BMA2-040 ②BJ3-1	Note) ①BMA2-050 ②BJ3-1	Note) ①BMA2-063 ②BJ3-1		
D-B54	BA-04	BA-05	BA-06		

Note) Two kinds of auto switch mounting brackets are required.

Minimum Stroke for Auto Switch Mounting Unit: mm

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

Auto Switch Mounting Position and Its Height Unit: mm

Auto	Cumah al	Auto switch set value and its height				
switch	Symbol	ø40	ø50	ø63		
	Α	11	7.5	7.5		
D-A93	В	23.5	30.5	30.5		
	Hs	34.5	40	47		
D-M9B D-M9BW	Α	15	11.5	11.5		
	В	27.5	34.5	34.5		
	Hs	34.5	40	47		
	Α	5.5	2	2		
	В	18	25	25		
	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)A/B dimensions are the distance from the standard position (above drawing) to the end surface of the auto switch.

Note 3) The auto switch mounitng position is temporarily set at the time of shipping from our factory. Change it to the desired position in accordance to your facility.

Operating Range

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

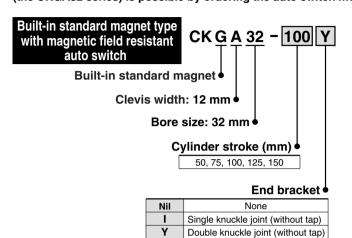
 Since this is a guideline including hysteresis, not meant to be guaranteed. (Assuming approximately ±30% dispersion.) There may be the case it will vary substantially depending on an ambient environment

D-□

-X□ Individual

2 CKGA32 Series / 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.



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

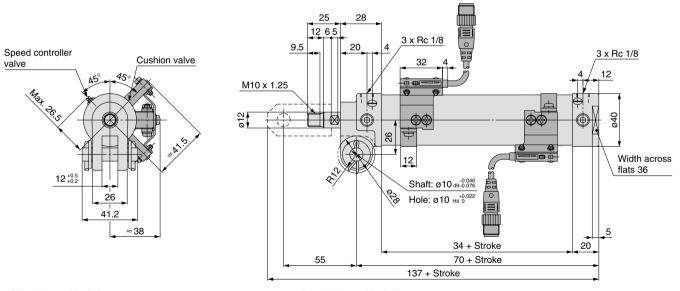
Specifications

peemeanene					
Clevis width 12 mm		Series CKGA32			
Fluid		Air			
Proof pressure		1.5 MPa			
Maximum oper	ating pressure	1.0 MPa			
Minimum opera	ating pressure	0.05 MPa			
Ambient and fl	uid 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			

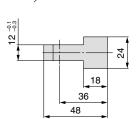
Note) Clevis pin, cotter pin and flat washer are provided as a standard.

Applicable auto switch	Auto switch mounting bracket part no.
D-P4DWSC	
D-P4DWSE	BA8-032
D-P4DWL	BA6-032
D-P4DW7	

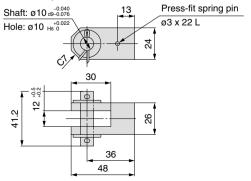
Dimensions



Single knuckle joint Ø10 HS 0 Press-fit spring pin Ø3 x 22 L



Double knuckle joint

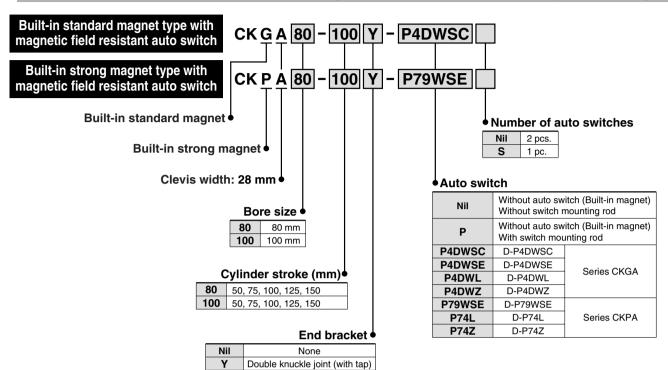


^{*} Please contact SMC for details of the CKGA32 series.



Clamp Cylinder Series CK 1

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



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

Specifications

Clevis width	28 mm	Series CKGA/CKPA		
Fluid		Air		
Proof pressure		1.5 MPa		
Maximum opera	ating pressure	1.0 MPa		
Minimum opera	ting pressure	0.05 MPa		
Ambient and flu	id temperature	-10°C to +60°C		
Piston speed		50 to 500 mm/s		
Cushion		With air cushion on both ends		
Speed controlle	er	Equipped on both ends		
Lubrication		Non-lube		
Stroke length to	olerance	+1.0 0		
Mounting Note)		Double clevis		

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

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

 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

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



-X□

MK

CKQ CLKQ

CK□1

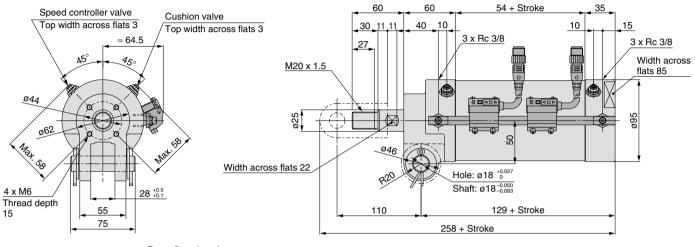
CLK2

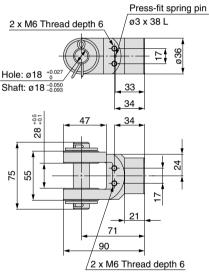


3 CKGA80, 100 / CKPA80, 100 Series / With Magnetic Field Resistant Auto Switch (Rod Mounting Style)

Dimensions

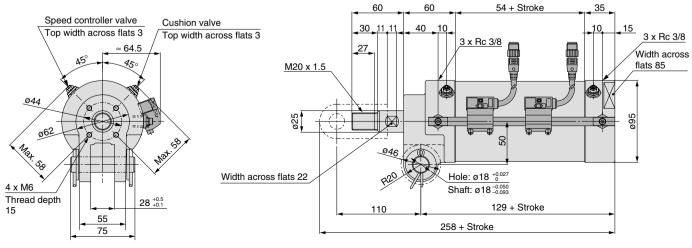
CKGA80 Built-in standard magnet type / with magnetic field resistant auto switch (D-P4DWS□ type)





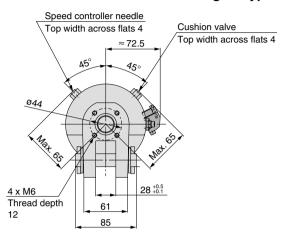
Double knuckle joint

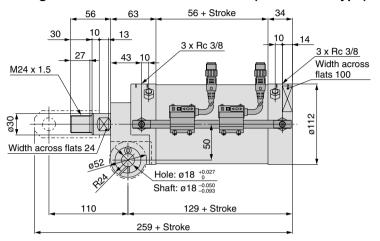
CKPA80 Built-in strong magnet type / with magnetic field resistant auto switch (D-P79WSE type)

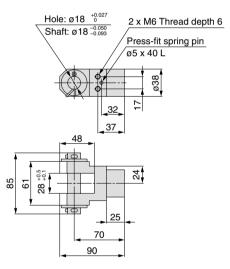


Clamp Cylinder Series CK 1

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

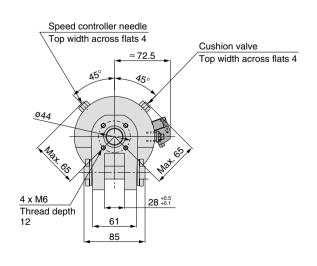


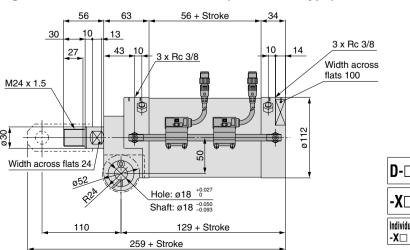




Double knuckle joint

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.



MK

CKQ CLKQ

CK□1

CLK2

Individual

4 CK□1□40, 50, 63 Series / With Cushion on Both Ends

Symbol -X1515

Clamp cylinder with cushion on both ends (with cushion on 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 Enter the standard model no X1515
Built-in standard magnet type with magnetic field resistant auto switch	CKG1 Enter the standard model no X1515
Built-in strong magnet type with magnetic field resistant auto switch	CKP1 Enter the standard model no X1515

The specifications and the dimensions other than the cushion are the same as the standard products.

For the respective specifications and the dimensions, please refer to pages 1319 to 1322 for the CKG1/CKP1 series, and pages 1323 to 1326 for the CK1 series.



Be sure to read before handling.

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

Cushion/Speed Controller Adjustment

⚠ Danger

1. Do not remove the retaining ring that fixes the speed controller valve and cushion valve. It is also unsafe to remove it once and then reattach it.

Without the retaining ring, the valve may be ejected when air pressure is supplied causing a serious hazard. Even if it is reattached, there remains the possibility that it may be unsecured, resulting in danger.

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.

Shown below is the fully open state, although the cushion valve can rotate 360 degrees.

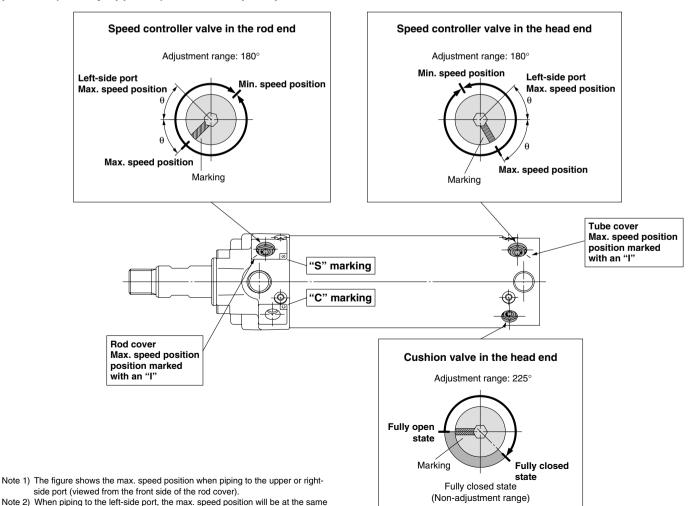
The adjustment range is about 225 degrees from the fully open state. The range between 225 and 360 degrees is the fully closed state.

Speed Controller Adjustment

angle, but on the opposite side.

The CK1 series integrates the speed controller (exhaust restrictor) in the rod and head end. The cushion is preadjusted 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.

If the speed controller valve is open all the way (max. speed position), rotating it in either direction—to the right or to the left—will cause a reduction in speed. Please note that the speed controller valve can be rotated to the right or left any number of times. However, the adjustment range is limited, and 180 degrees from the max. speed position (directly opposite) is the min. speed position.





D-□

-X□

MK

CKQ

CLKQ

CK□1

CLK2



Be sure to read before handling.

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

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.

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

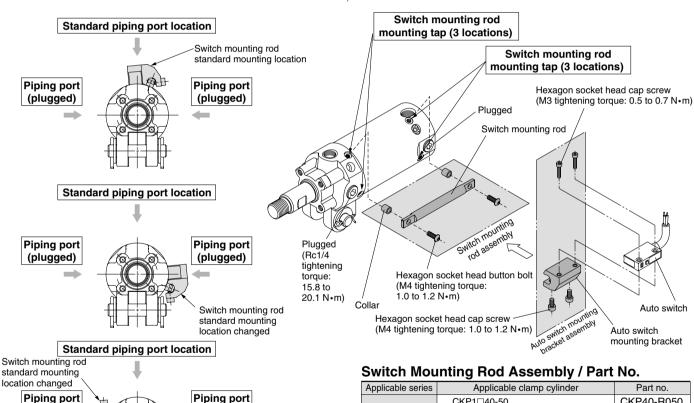
The switch mounting rod is mountable in 3-way directions. Please be careful to the following things when the switch mounting rod is changed.

⚠ Warning

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, Spacer with switch, Hexagon socket head button bolt)

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



Auto Switch Mounting Bracket Assembly / Part No.

(plugged)

rute entrem mounting bracket / tocombily / 1 art it						
Applicable	Applicable	Auto switch mounting bracket part no.				
cylinder series	auto switch	40	50	63		
	D-P4DWSC	BK1T-040				
Series CKG1	D-P4DWSE					
	D-P4DWL/Z					
Series CKP1	D-P79WSE D-P74L/7	BAP1T-040				

Switch Mounting hou Assembly / Part No.				
Applicable series	Applicable clamp cylinder	Part no.		
	CKP1□40-50	CKP40-R050		
Dedicated to	CKP1□40-75	CKP40-R075		
Series	CKP1□40-100	CKP40-R100		
CKP1□40	CKP1□40-125	CKP40-R125		
	CKP1□40-150	CKP40-R150		
	CKG1□40-50 CKG1□50-50/CKP1□50-50 CKG1□63-50/CKP1□63-50	CKG40-R050		
Series CKG1□40/50/	CKG1□40-75 CKG1□50-75/CKP1□50-75 CKG1□63-75/CKP1□63-75	CKG40-R075		
63 Series	CKG1□40-100 CKG1□50-100/CKP1□50-100 CKG1□63-100/CKP1□63-100	CKG40-R100		
CKP1□50/63 Common	CKG1□40-125 CKG1□50-125/CKP1□50-125 CKG1□63-125/CKP1□63-125	CKG40-R125		
	CKG1□40-150 CKG1□50-150/CKP1□50-150 CKG1□63-150/CKP1□63-150	CKG40-R150		

(plugged)



Be sure to read before handling.

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

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.
- 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 1340, 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.
- 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.
- 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.
- Avoid wiring in a manner in which repeated bending stress or tension is applied to lead wires.
- Please consult with SMC regarding use in an environment with constant water and coolant splashing.
- 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 1329 for mounting example and 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.













-X□ Individual -X□



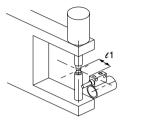


Be sure to read before handling.

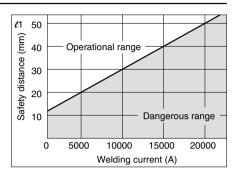
Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

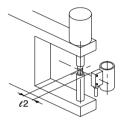
Data: Magnetic Field Resistant Reed Switch (D-P79WSE type, D-P74□ type) Safety Distance

Safety Distance from Side of Auto Switch

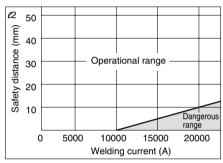












Safety Distance from Top of Auto Switch

