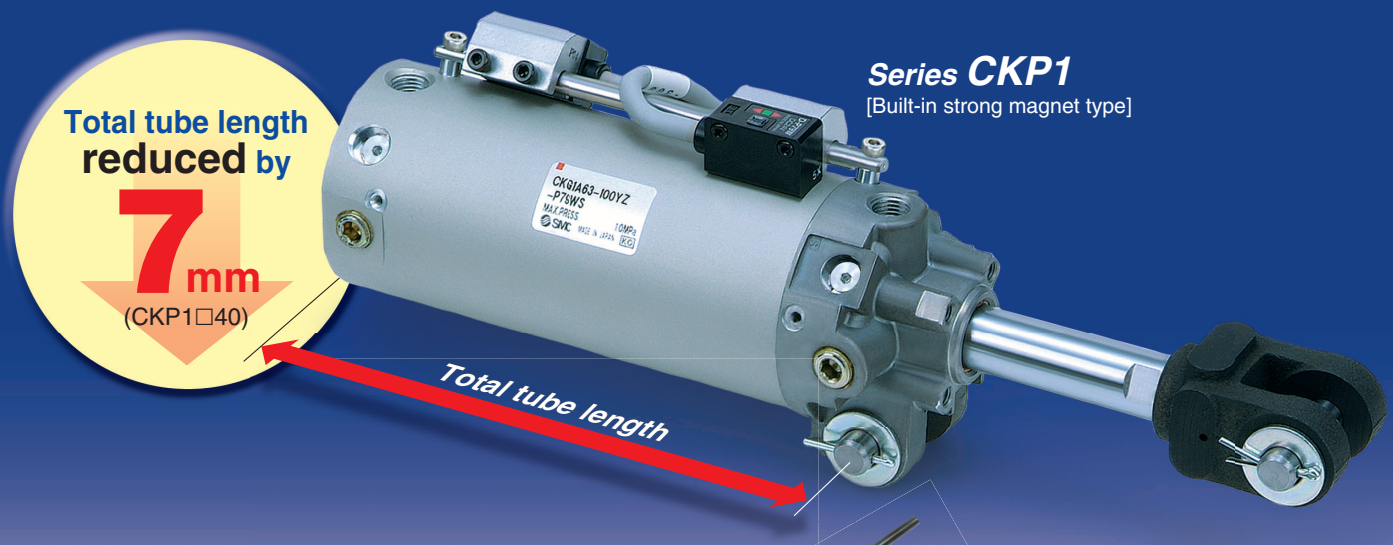
Clamp Cylinder

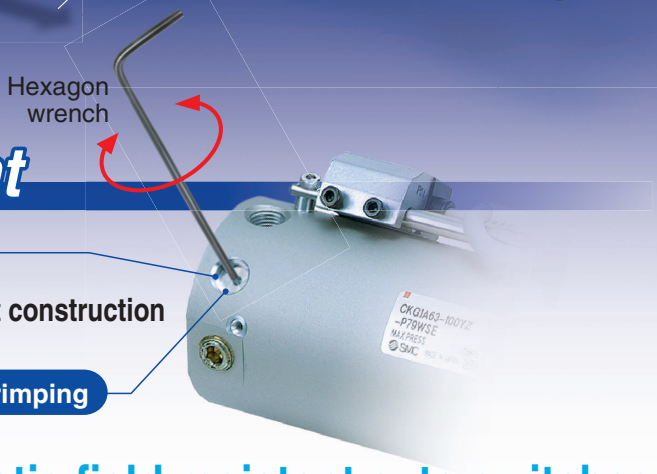
ø40, ø50, ø63

New

RoHS

Total tube length reduced





Easy speed adjustment

Speed controller valve

Easy fine speed adjustment with screw adjustment construction

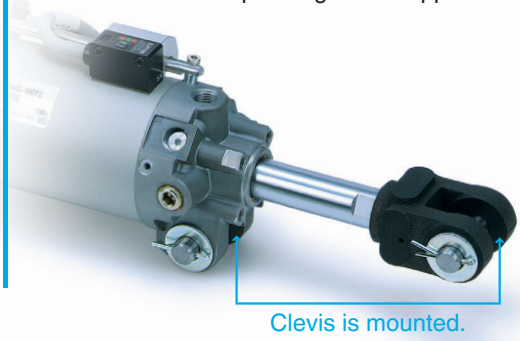
Retaining construction with crimping

Clevis width

12.5 mm is now available.

16.5 mm/19.5 mm

Possible to select depending on the application



Clevis is mounted.

Made to Order

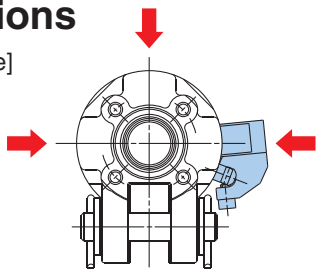
With air cushion on both ends (-X1515) is added.

Magnetic field resistant auto switches

Mountable from 3 directions

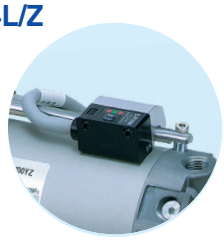
[Series CKG1/Built-in standard magnet type]

D-P3DWA, D-P4DW



[Series CKP1/Built-in strong magnet type]

D-P79WSE, D-P74L/Z



Series CK□1

SMC

CAT.EUS20-225Bb-UK

Total tube length reduced

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

Series CKP1 [mm]

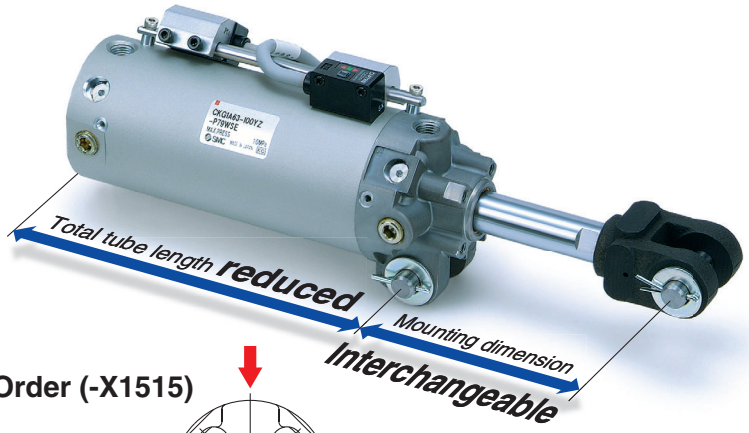
Bore size [mm]	New CKP1	Shortened dimensions	Existing model
40	58	7	65
50	56	2	58
63	56	2	58

Series CKG1 [mm]

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

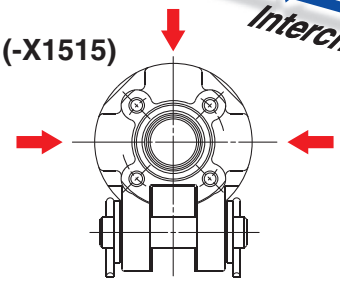
Mounting dimensions are the same as the existing product.

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)

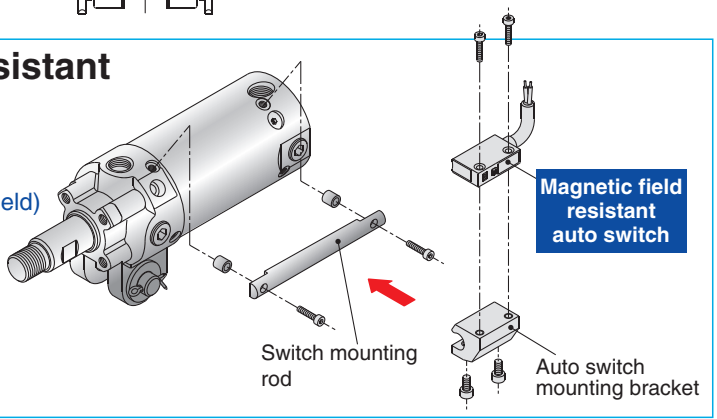


Piping ports are located on three surfaces.

Possible to mount magnetic field resistant auto switch in 3 directions

[Series CKG1/Built-in standard magnet type]
D-P3DWASC, D-P3DWASE, D-P3DWA/L/Z (AC magnetic field)
D-P4DWSC, D-P4DWSE, D-P4DWL/Z (AC magnetic field)

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



CK1 Series Variations

Series			Bore size [mm] 25	32	40	50	63	Stroke [mm]	Clevis width [mm]	Page
Clamp cylinder (Rod mounting style)	Built-in standard magnet type	CKG1			●	●	●	50, 75, 100, 125, 150, 200* *Except ø40	12.5, 16.5, 19.5	P.1
	Built-in strong magnet type	CKP1			●	●	●			
Clamp cylinder (Band mounting style)	Without magnet	CK1			●	●	●			P.6
	Built-in standard magnet type	CKG1			●	●	●			
Clamp cylinder/ Slim style (Rod mounting style)	Built-in standard magnet type	CKG□-X2095	●	●	●			50, 75, 100, 125, 150	9, 12.5	Digital Catalogue Visit www.smc.eu
	Built-in strong magnet type	CKP□-X2095	●	●	●					
Clamp cylinder with lock/Slim style (Rod mounting style)	Built-in standard magnet type	CLKG□-X2095	●	●	●					
	Built-in strong magnet type	CLKP□-X2095	●	●	●					
Clamp cylinder with lock	Built-in standard magnet type	CLK2G□		●	●	●	●	50, 75 100, 125 150	12, 16.5, 19.5	
	Built-in strong magnet type	CLK2P□			●	●	●		16.5, 19.5	

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

Series CKG1/CKP1

ø40, ø50, ø63

RoHS

How to Order

Built-in standard magnet CKG1 **A** **50** ☐ – **100** **Y** ☐ **Z** – **P3DWASC** ☐ – ☐

Built-in strong magnet CKP1 **A** **50** ☐ – **100** **Y** ☐ **Z** – **P79WSE** ☐ – ☐

Clevis width

A	16.5 mm
B	19.5 mm
C	12.5 mm

Bore size

40	40 mm
50	50 mm
63	63 mm

Thread type

—	Rc1/4
TN	NPT1/4
TF	G1/4

Cylinder stroke [mm]

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

End bracket

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

Auto switch

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

∗ Select applicable auto switch models from the table below.

Option

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

Note 1) When the dog fitting is selected, choose the rod end bracket IA or YA (M6 with tap).
Note 2) Only available for clevis width A (16.5 mm)

Number of auto switches

—	2 pcs.
S	1 pc.
n	"n" pcs.

Made to Order
Refer to page 2 for details.

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

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

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

2) Built-in standard (strong) magnet 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

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-P3DWASC	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
		D-P3DWASE				2-wire (1–4)			
		D-P3DWA		Grommet		2-wire		0.5 m	
		D-P3DWAL						3 m	
		D-P3DWAZ						5 m	
		D-P4DWSC		Pre-wired connector		2-wire (3–4)		0.3 m	
		D-P4DWSE				2-wire (1–4)			
		D-P4DWL		Grommet		2-wire		3 m	
		D-P4DWZ						5 m	
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 100 VAC	3 m	
		D-P74Z						5 m	

Note 1) Refer to page 13 when ordering the auto switch mounting bracket or switch mounting rod assembly.
Note 2) For the D-P3DWA☐, the auto switch and auto switch mounting bracket are packed together, (but not assembled).

Refer to pages 12 to 15 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 17 for details.)

Symbol	Specifications
-X1515	With air cushion on both ends

Specifications

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

Note) 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	CKC-Y04
YA		M6 with tap	CKA-YA04	CKB-YA04	CKC-YA04

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

Unit: kg

Bore size [mm]		40	50	63
CKG1□ cylinder	Basic weight	0.70	0.92	1.12
	Additional weight per 25 mm of stroke	0.11	0.12	0.14
CKP1□ 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 x 100/25 + 0.34 = 1.74 kg

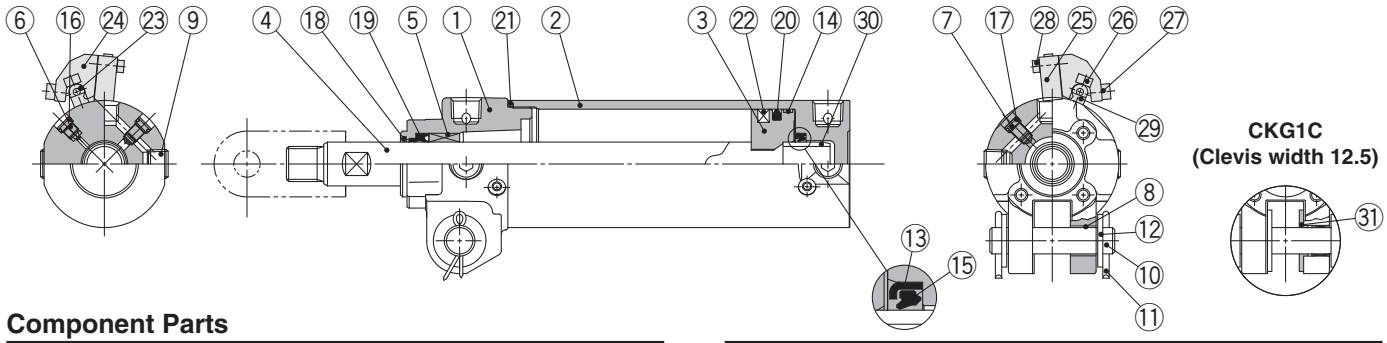
Theoretical Output

Unit: N

Bore size [mm]	Rod size [mm]	Operating direction	Piston area [mm²]	Operating pressure [MPa]			
				0.3	0.4	0.5	0.6
40	20	OUT	1260	378	504	630	756
		IN	943	283	377	472	566
50	20	OUT	1960	588	784	980	1180
		IN	1650	495	660	825	990
63	20	OUT	3120	934	1250	1560	1870
		IN	2800	840	1120	1400	1680

Construction

CKG1□40, 50, 63 Rod mounting style

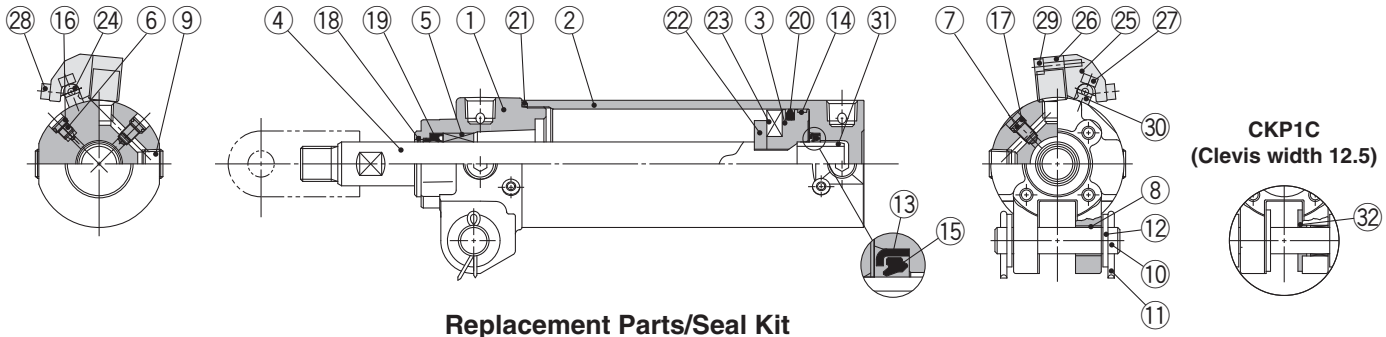


Component Parts

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 disassemble is required.

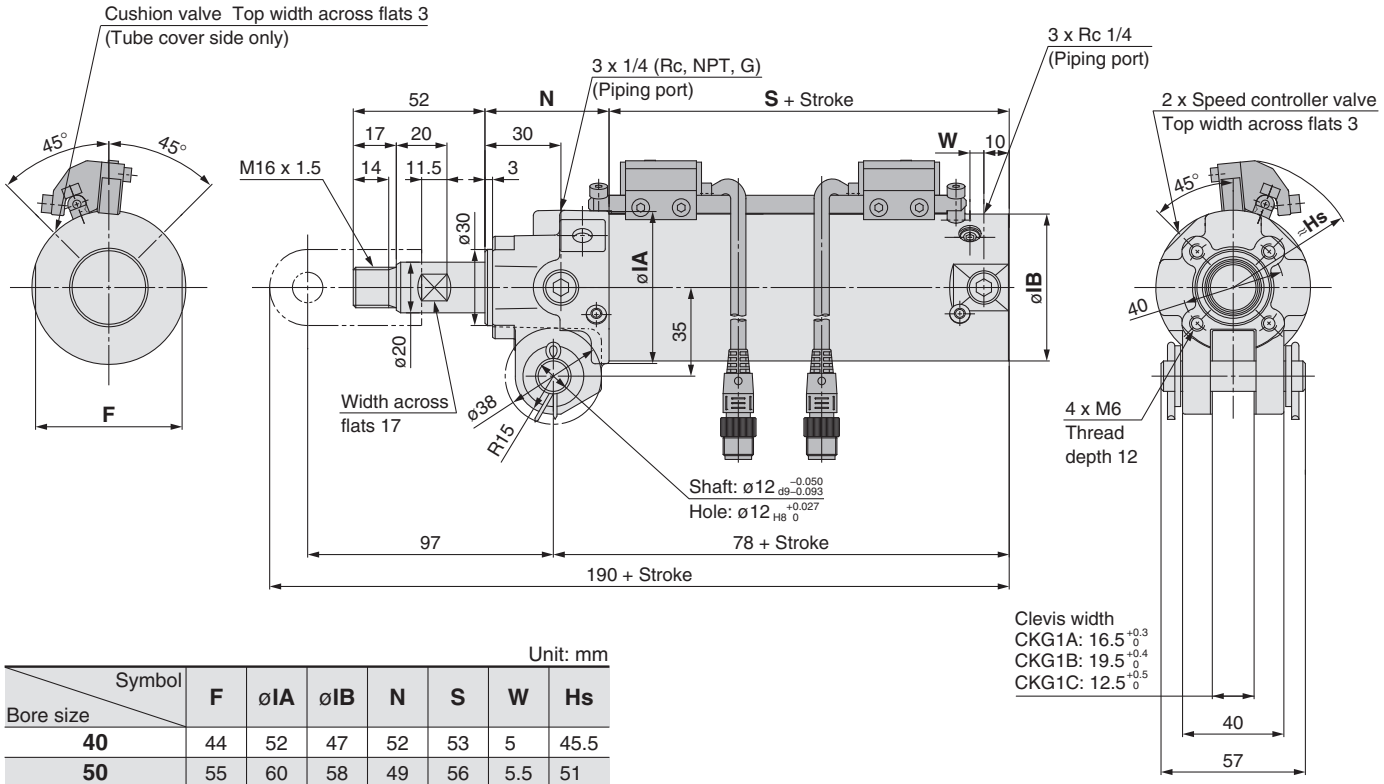
Component Parts

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

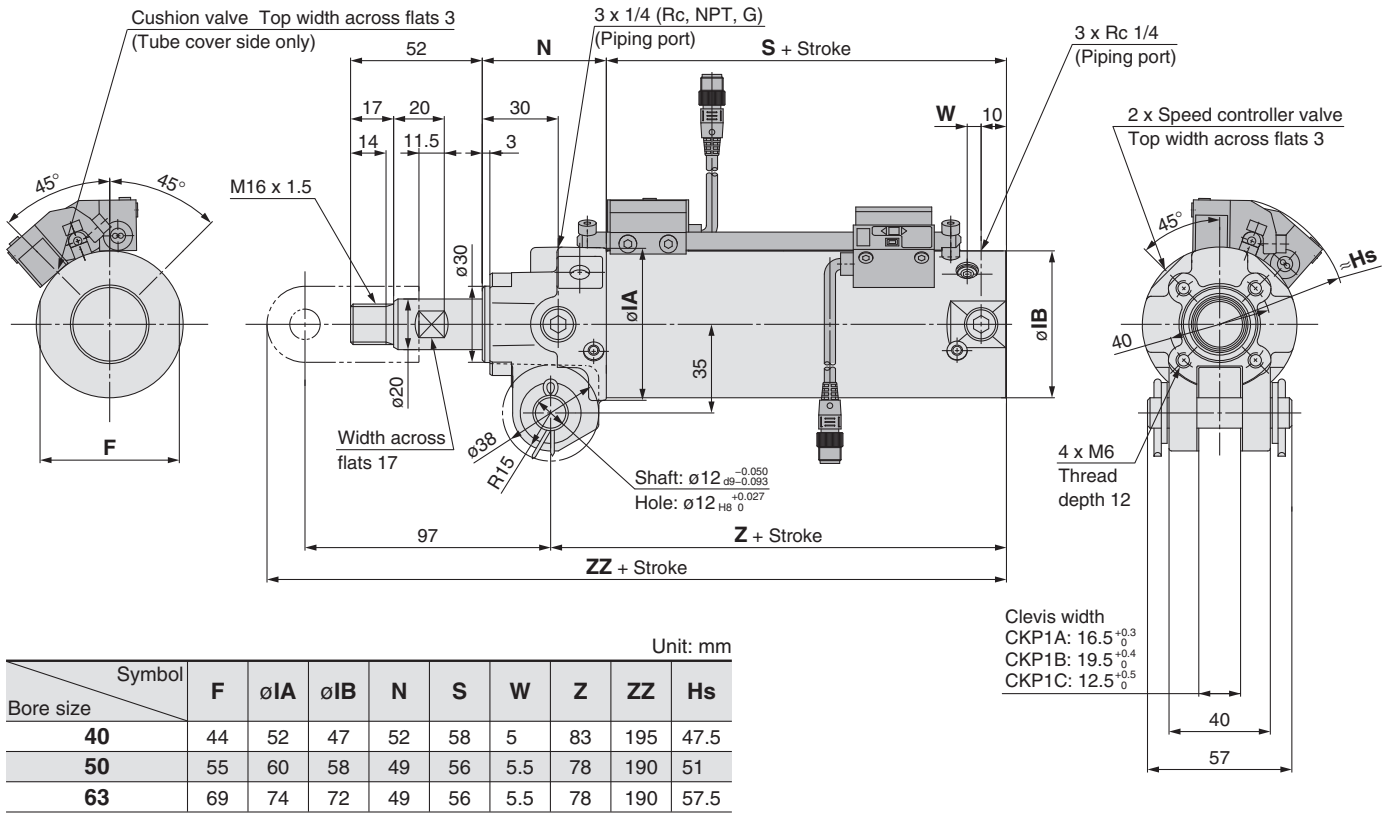
CKG1□40, 50, 63 Rod mounting style



Unit: mm

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

CKP1□40, 50, 63 Rod mounting style



Unit: mm

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

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

Series CK1/CKG1

ø40, ø50, ø63

RoHS

How to Order

CK1 **A** **50** □ – **100** **Y** □ **Z** – □

CK**G**1 **A** **50** □ – **100** **Y** □ **Z** – □

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

Built-in magnet for auto switch

Clevis width

A	16.5 mm
B	19.5 mm
C	12.5 mm

Bore size

40	40 mm
50	50 mm
63	63 mm

Thread type

—	Rc1/4
TN	NPT1/4
TF	G1/4

Cylinder stroke [mm]

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

Made to Order
Refer to page 8 for details.

Option

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

Note 1) When the dog fitting is selected, choose the rod end bracket IA or YA (M6 with tap).
Note 2) Only available for clevis width A (16.5 mm)

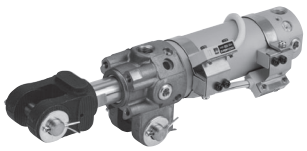
End bracket

—	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) 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 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 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-P4DWL/Z	**CKG1□63**

Ordering Example

Example case ① 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

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
		P4DWSE				2-wire (1–4)			
		P4DWL		Grommet		2-wire		3 m	
		P4DWZ						5 m	

Clamp Cylinder with Standard Auto Switch (Band Mounting/Rod Mounting Type)

Series CKG1

ø40, ø50, ø63

RoHS

How to Order

CK G 1 A 50 □ – 100 Y □ Z – M9BW □ – □ – □

Built-in magnet for auto switch

Clevis width

A	16.5 mm
B	19.5 mm
C	12.5 mm

Bore size

40	40 mm
50	50 mm
63	63 mm

Thread type

—	Rc1/4
TN	NPT1/4
TF	G1/4

Cylinder stroke [mm]

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

End bracket

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

Option

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

Note 1) When the dog fitting is selected, choose the rod end bracket IA or YA (M6 with tap).
Note 2) Only available for clevis width A (16.5 mm)

Auto switch

—	Without auto switch (Built-in magnet)

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

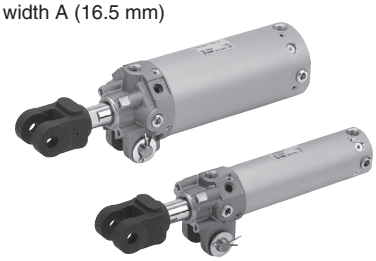
Number of auto switches

—	2 pcs.
S	1 pc.

Auto switch mounting type

—	Band mounting
P	Rod mounting

Made to Order
Refer to page 8 for details.



Standard Auto Switches ⚠ **Standard auto switches cannot be used under a strong magnetic field.**

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model	Lead wire length [m] 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	Pre-wired connector	Applicable load	
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	**M9N**	●	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				**M9P**	●	●	●	○	○		
				2-wire		12 V		**M9B**	●	●	●	○	○	—	
	Diagnostic indication (2-color indicator)			3-wire (NPN)		5 V, 12 V		**M9NW**	●	●	●	○	○	IC circuit	
				3-wire (PNP)				**M9PW**	●	●	●	○	○		
				2-wire		12 V		**M9BW**	●	●	●	○	○	—	
	Water resistant (2-color indicator)			3-wire (NPN)		5 V, 12 V		**M9NA**	○	○	●	○	○	IC circuit	
				3-wire (PNP)				**M9PA**	○	○	●	○	○		
				2-wire		12 V		**M9BA**	○	○	●	○	○	—	
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	**A96**	●	—	●	—	—	IC circuit	—
				2-wire	24 V	12 V	100 V	**A93**	●	●	●	●	—	—	Relay, PLC
			No			5 V, 12 V	100 V or less	**A90**	●	—	●	—	—	IC circuit	

∗ Solid state auto switches marked with "○" are produced upon receipt of order.
∗ Auto switches and mounting brackets are shipped together, (but not assembled).

∗ Lead wire length symbols: 0.5 m·····— (Example) M9NWV
1 m·····M (Example) M9NWVM
3 m·····L (Example) M9NWVL
5 m·····Z (Example) M9NWVZ

Specifications

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

Note) 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

Refer to pages 12 to 15 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 17 for details.)

Symbol	Specifications
-X1515	With air cushion on both ends

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 x 100/25 + 0.34 = 1.68 kg

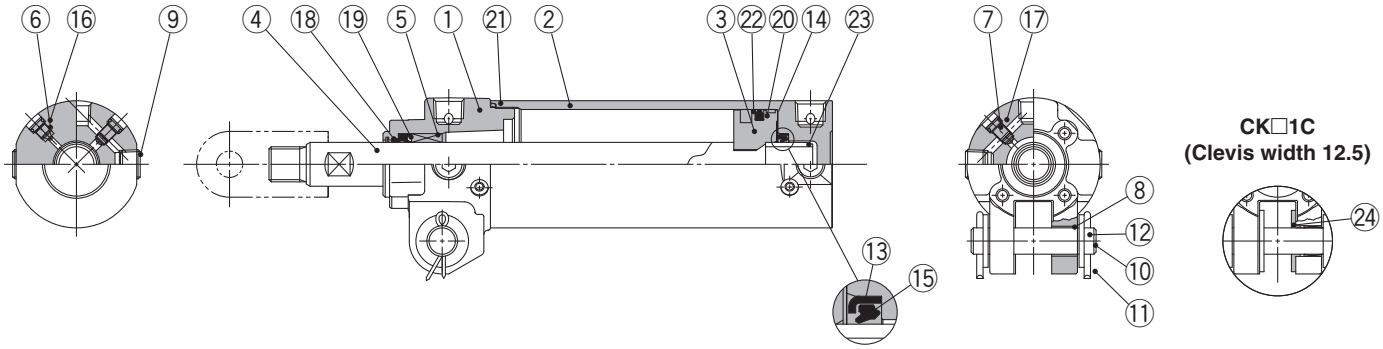
Theoretical Output

Unit: N

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

Construction

CK□1□40, 50, 63 Band 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	
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

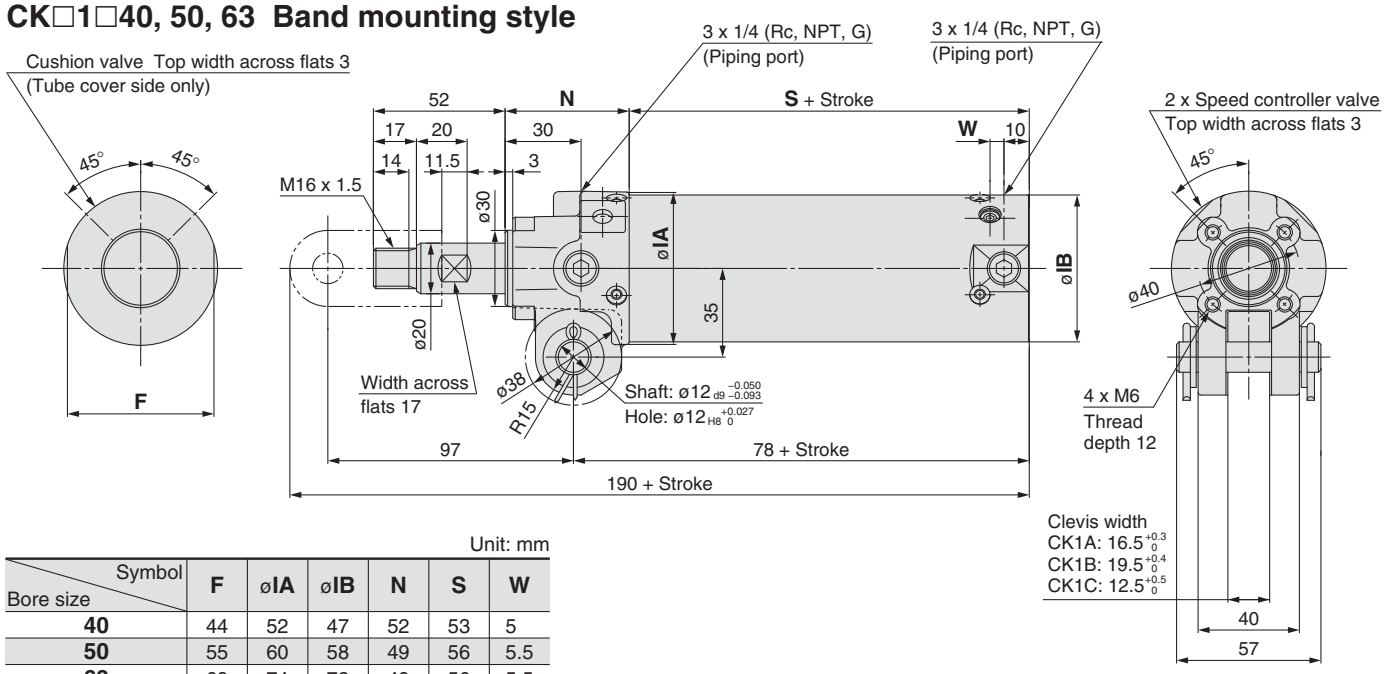
Replacement Parts/Seal Kit

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.

Dimensions

CK□1□40, 50, 63 Band mounting style

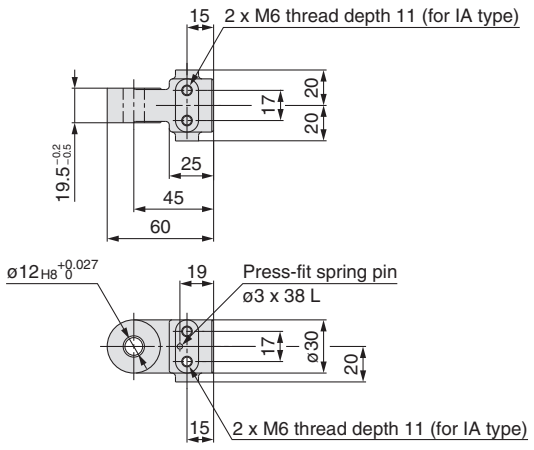


Unit: mm

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

End Bracket

Single Knuckle Joint

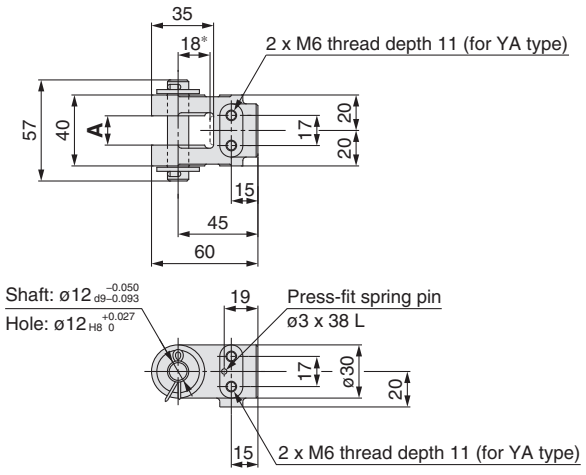


Material: Cast iron

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

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).

Double Knuckle Joint



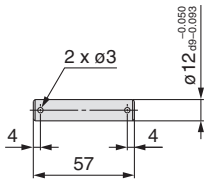
Material: Cast iron

Unit: mm

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

Pin



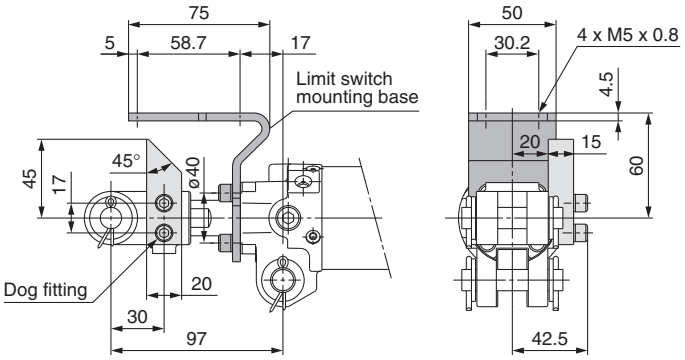
Material: Carbon steel

Part no.	Usage
CK-P04	Knuckle pin Clevis pin

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

Options

Limit Switch Mounting Base/Dog Fitting



Material: Rolled steel

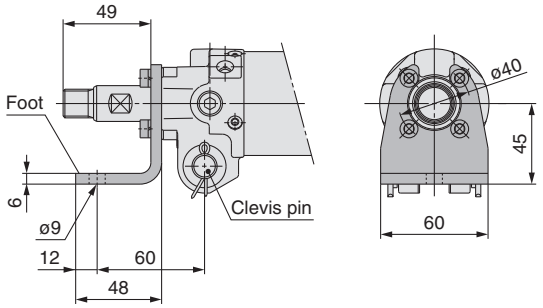
Part no.	Option symbol	Name	Applicable clamp cylinder
CK-B04	**B**	Limit switch mounting base	CK□1A series
CK-D04	**D**	Dog fitting	CK□1B series

Note 1) Limit switch mounting base and dog fitting can be repositioned by removing the hexagon socket head cap screw.
Note 2) When ordering the limit switch mounting base and the dog fitting individually, mounting bolts (hexagon socket head cap screw) and spring washers will be attached as a standard.

⚠

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

Foot

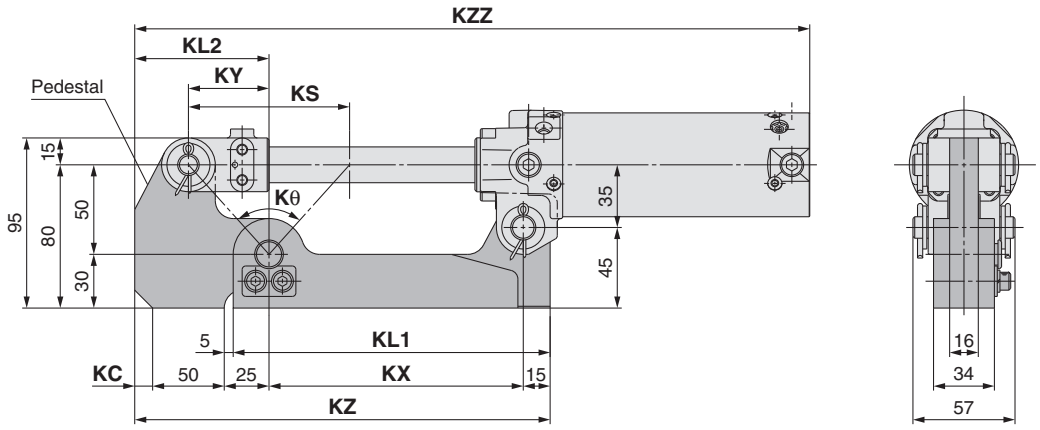


Material: Rolled steel

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

Note 1) A mounting bolt (hexagon socket head cap screw) and a spring washer will be attached as a standard for the foot bracket.
Note 2) When mounting the cylinder, use both the foot and clevis pin. Please avoid using the foot by itself as this may result in damage.

Pedestal



Material: Rolled steel

Unit: mm

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

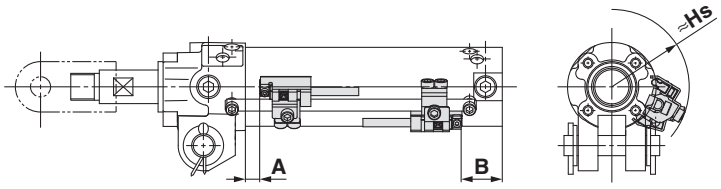
Note) Only available for the CK□1A series (Clevis width 16.5 mm)

Auto Switch Mounting (Rod Mounting Type)

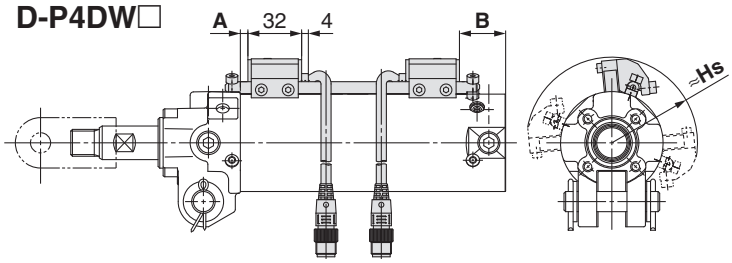
Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

Rod mounting

D-P3DWA□

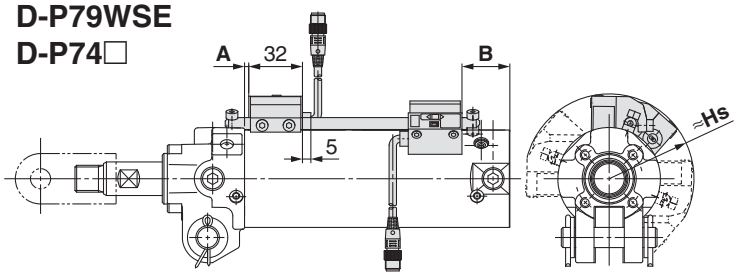


D-P4DW□



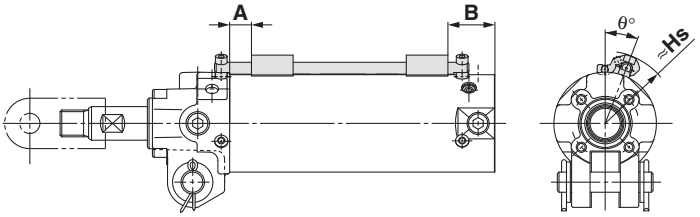
Note) The above drawing is the switch rod mounting example for the D-P4DWS□.

D-P79WSE
D-P74□



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

D-M9□/M9□W
D-M9□A/A9□



Note) The above drawing is the mounting example for the D-M9□ and D-A9□.

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-P3DWA□	A	8.5	6	6
	B	23.5	29	29
	Hs	46.5	52	59
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	0.5	0.5
	B	18	23.5	23.5
	Hs	47.5	51	57.5
D-M9□ D-M9□W D-M9□A	A	13	10.5	10.5
	B	28	33.5	33.5
	Hs	39	44.5	51.5
D-A9□	A	9	6.5	6.5
	B	24	29.5	29.5
	Hs	39	44.5	51.5

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.
Note 4) Adjust the auto switch after confirming the operating conditions in the actual setting.

Minimum Stroke for Auto Switch Mounting

Unit: mm

Auto switch model	With 1 pc.	With 2 pcs.	
		Different surfaces	Same surface
D-P3DWA□	50	50	
D-P4DW□			
D-P79WSE			
D-P74□			

Note 1) When two D-P3DWA□ are mounted to the cylinder with stroke 50 mm, mount them on different surfaces.
Note 2) The standard strokes of CKG1 are 50, 75, 100, 125 and 150 mm. The values in the table above are not based on the minimum detection interval when setting the D-P3DWA auto switch, but on the standard minimum stroke of the cylinder.

Operating Range

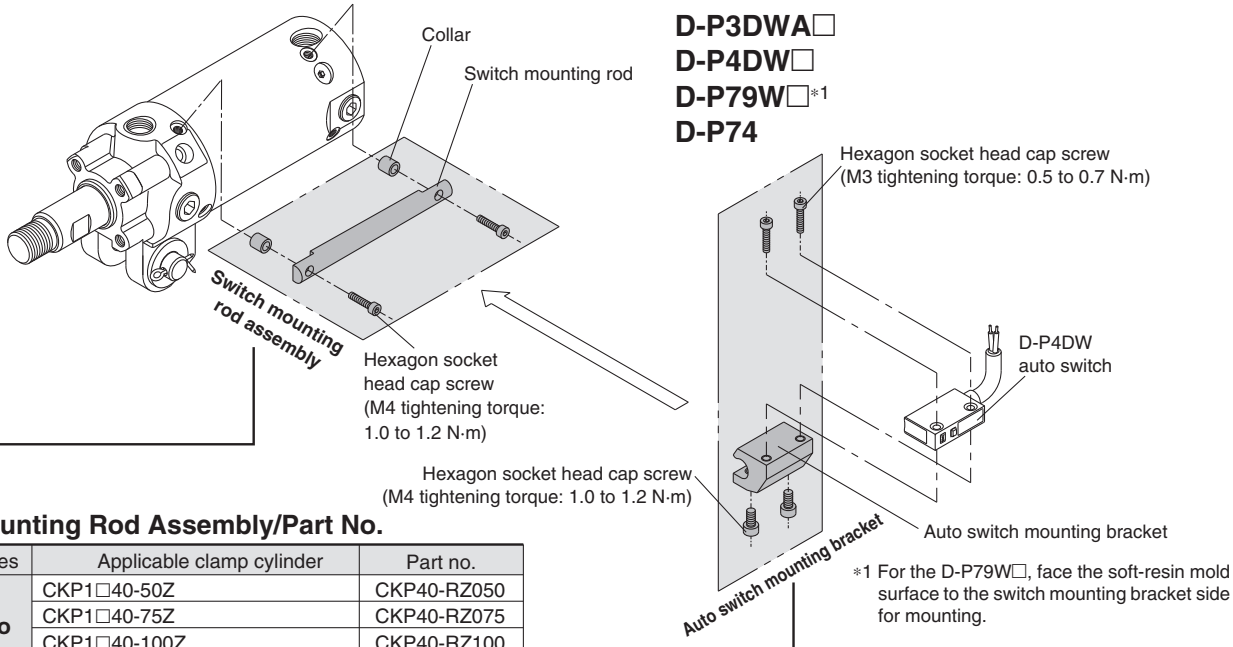
Unit: mm

Auto switch model	Bore size		
	40	50	63
D-P3DWA□	5.5	5.5	5.5
D-P4DW□	4	4	4.5
D-P79WSE	8	9	9.5
D-P74□			
D-M9□ D-M9□W D-M9□A	4	4.5	5
D-A9□	8	8	9

∗ 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

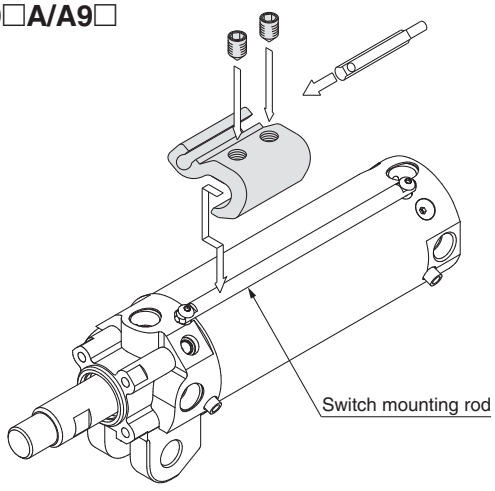


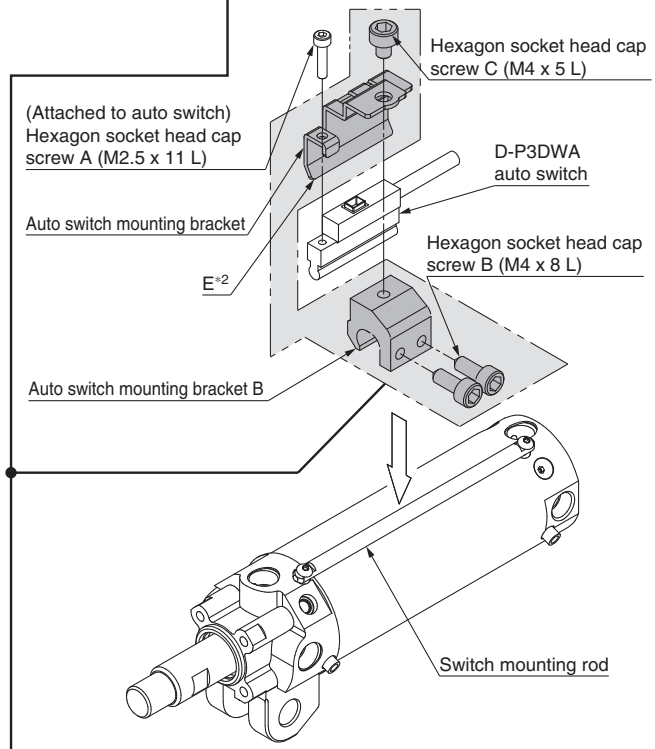
*1 For the D-P79W□, face the soft-resin mold surface to the switch mounting bracket side for mounting.

•Switch Mounting Rod Assembly/Part No.

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

D-M9□/M9□W
D-M9□A/A9□





*2 Mount the part E of the auto switch mounting bracket so that it is in contact with the cylinder tube.

Note 1) The tightening torque for a hexagon socket head cap screw (M2.5) is 0.2 to 0.3 N·m. Hold the shorter side of a hexagon wrench, and turn it to tighten. (Too much tightening may break the switch)

Note 2) Tighten the hexagon socket head cap screws B and C (M4) with a tightening torque of 1 to 1.2 N·m.

•Auto Switch Mounting Bracket/Part No.

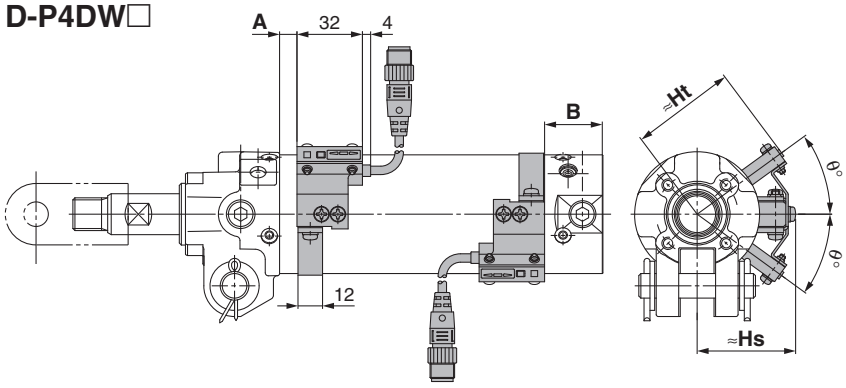
Applicable cylinder series	Applicable auto switch model	Part no.		
		40	50	63
CKG1	D-P3DWA□	BK7-040S		
	D-P4DW□	BK1T-040		
	D-M9□ D-A9□	BA7-040		
CKP1	D-P79WSE D-P74L/Z	BAP1T-040		

Auto Switch Mounting (Band Mounting Type)

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

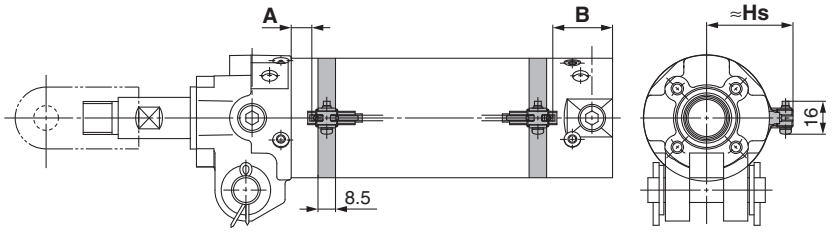
Band mounting style

D-P4DW□

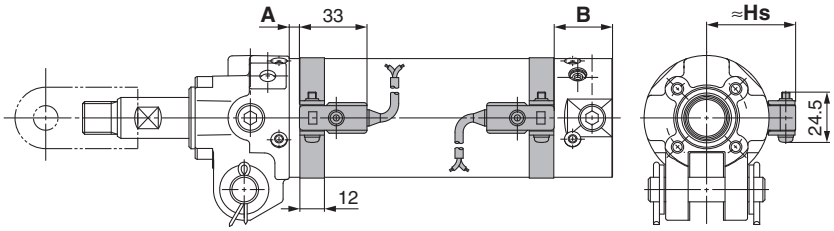


Note) The above drawing is the switch band mounting example for the D-P4DWS□.

D-M9□/M9□W
D-M9□A/A9□



D-B54



Auto Switch Mounting Position and Its Height Unit: mm

Auto switch model	Symbol	Auto switch set value and its height		
		ø40	ø50	ø63
D-P4DW□	A	6	3.5	3.5
	B	21	26.5	26.5
	Hs	43	48	55
	Ht	46	51.5	58.5
	θ	40°	36°	33°
D-M9□ D-M9□W D-M9□A	A	13	10.5	10.5
	B	28	33.5	33.5
	Hs	35	40.5	47.5
D-A9□	A	9	6.5	6.5
	B	24	29.5	29.5
	Hs	35	40.5	47.5
D-B54	A	3.5	1	1
	B	18.5	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 the D-M9□/M9□W/M9□A/A9□, A and B are the dimensions from the end of the head cover/rod cover to the end of the auto switch.
Note 4) As for the D-P4DW□ type, band mounting style, the auto switch mounting bracket and the auto switch have to be ordered separately. For details, refer to page 5.
Note 5) For 2-color indication, mount the switch in the middle of the green indication.

Minimum Stroke for Auto Switch Mounting Unit: mm

Auto switch model	With 1 pc.	With 2 pcs.	
		Different surfaces	Same surface
D-P3DWA□	50	50	50
D-P4DW□			
D-P79WSE			
D-P74□			
D-M9□ D-M9□W D-M9□A			
D-A9□			
D-B54	50	50	75

Note 1) When two D-P3DWA□ are mounted to the cylinder with stroke 50 mm, mount them on different surfaces.
Note 2) The standard strokes of CKG1 are 50, 75, 100, 125 and 150 mm. The values in the table above are not based on the minimum detection interval when setting the D-P3DWA auto switch, but on the standard minimum stroke of the cylinder.

⚠ Caution

As for the precautions on the auto switches, product specifications, refer to pages 19 to 21.

Operating Range

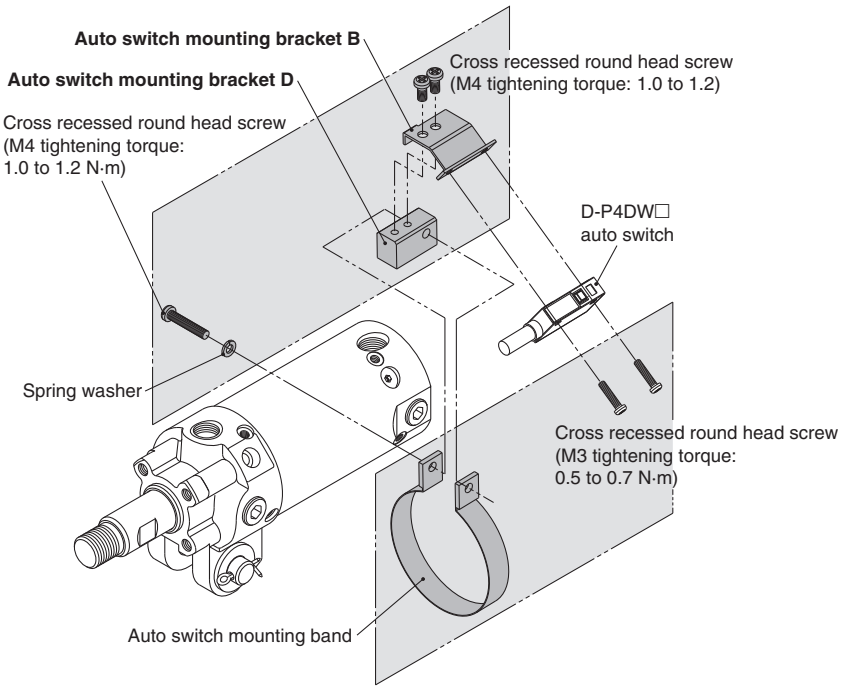
Unit: mm

Auto switch model	Bore size		
	40	50	63
D-P4DW□	5	5	5.5
D-M9□ D-M9□W D-M9□A	5.5	6.5	7
D-A9□	8	8	9
D-B54	10	10	11

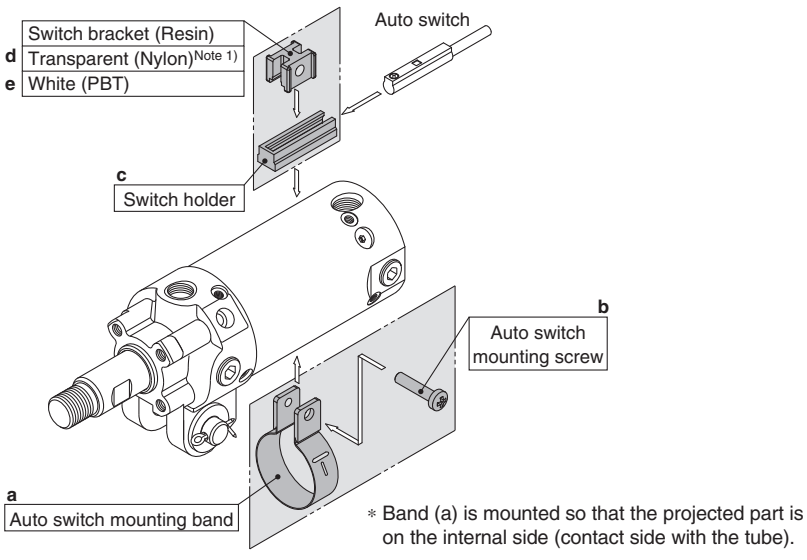
∗ Values which include hysteresis are for guideline purpose only, they are not a guarantee (assuming approximately ±30% dispersion) and may change substantially depending on the ambient environment.

Auto Switch Mounting Brackets/Part No.

Auto switch model	Bore size [mm]		
	40	50	63
D-P4DW□	BA8-040	BA8-050	BA8-063



Auto switch model	Bore size [mm]		
	40	50	63
D-M9□ **D-M9□W** **D-A9□**	BMA3-040 (A set of a, b, c, d)	BMA3-050 (A set of a, b, c, d)	BMA3-063 (A set of a, b, c, d)
D-M9□A[Note 2)]	BMA3-040S (A set of a, b, c, e)	BMA3-050S (A set of a, b, c, e)	BMA3-063S (A set of a, b, c, e)



D-B54	BA-04 (A set of band and screw)	BA-05 (A set of band and screw)	BA-06 (A set of band and screw)

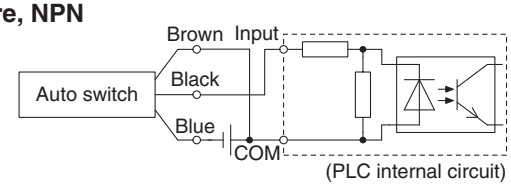
Note 1) Since the switch bracket (made from nylon) are affected in an environment where alcohol, chloroform, methylamines, hydrochloric acid or sulfuric acid is splashed over, so it cannot be used. Please contact SMC regarding other chemicals.

Note 2) As the indicator LED is projected from the switch unit, indicator LED may be damaged if the switch bracket is fixed on the indicator LED.

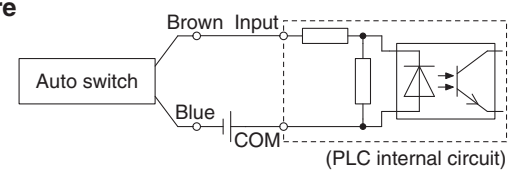
Prior to Use
Auto Switch Connection and Example

Sink Input Specifications

3-wire, NPN

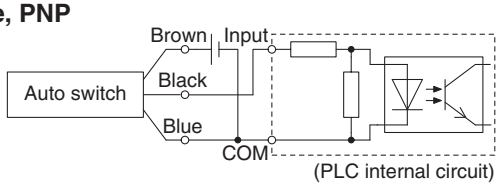


2-wire

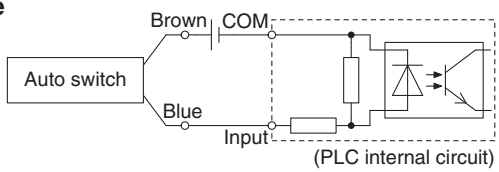


Source Input Specifications

3-wire, PNP



2-wire



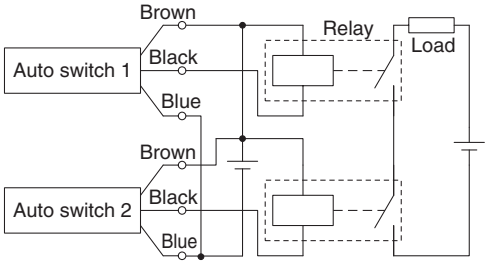
Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

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

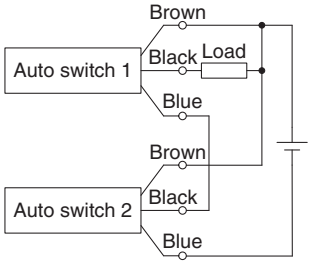
∗ When using solid state auto switches, ensure the application is setup so the signals for the first 50 ms are invalid.

3-wire AND connection for NPN output

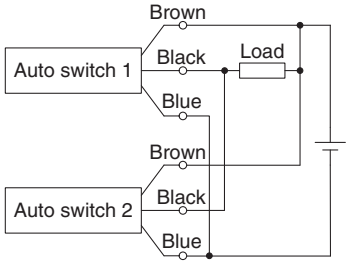
(Using relays)



(Performed with auto switches only)

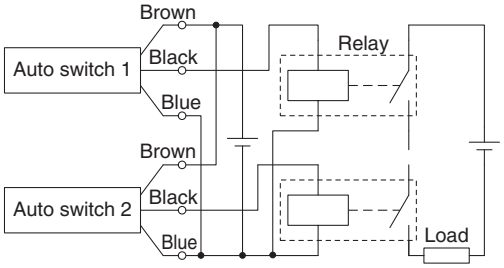


3-wire OR connection for NPN output

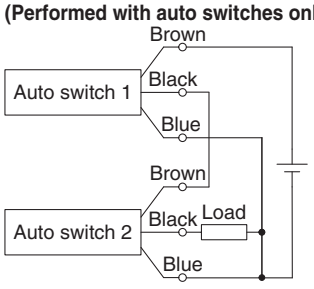


3-wire AND connection for PNP output

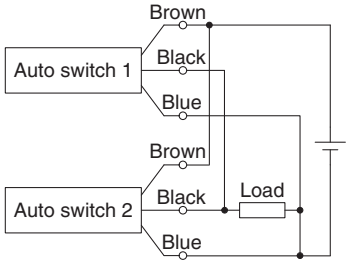
(Using relays)



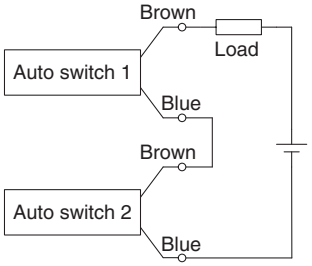
(Performed with auto switches only)



3-wire OR connection for PNP output



2-wire AND connection

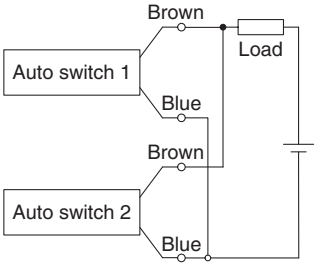


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state.
The indicator lights will light up when both of the auto switches are in the ON state.
Auto switches with load voltage less than 20 V cannot be used.

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.

Made to Order

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

Made to Order

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)

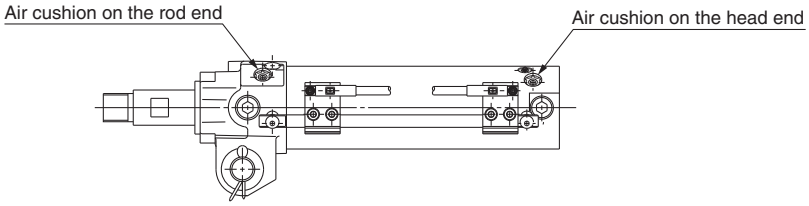
⚠ Caution

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**	**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**

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

Specific Product Precautions 1

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

Cushion/Speed Controller Adjustment

⚠ Danger

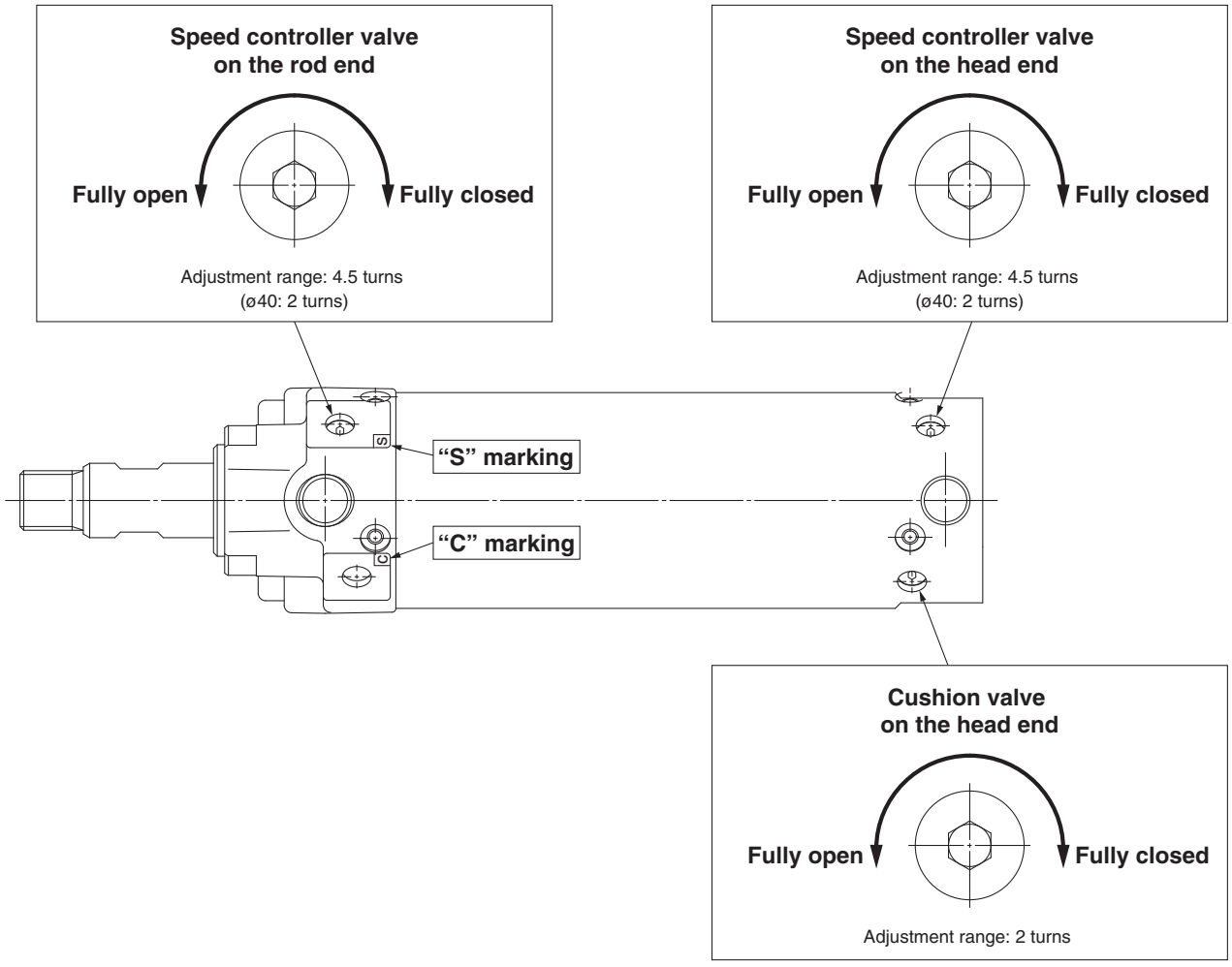
1. **Retaining construction with crimping is integrated in the speed controller valve and cushion valve. However, do no rotate the cushion valve exceeding two turns, and do not rotate the speed controller valve exceeding four and half turns (ø40: maximum two turns). If 0.6 N·m or more of torque is applied, 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.



Specific Product Precautions 2

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

Piping Port/Switch Mounting Rod Location Change

Piping Port Location Change

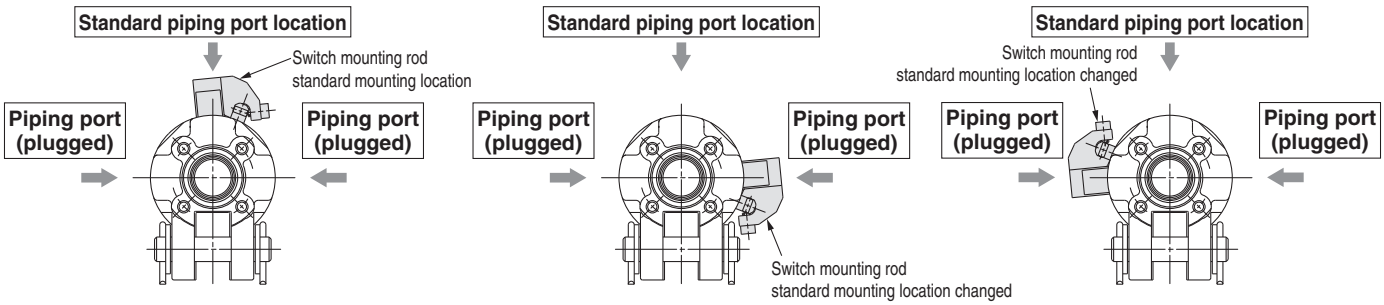
Piping is possible from 3 directions. When the piping port location is changed, carefully follow the instructions as detailed below.

⚠ 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.**

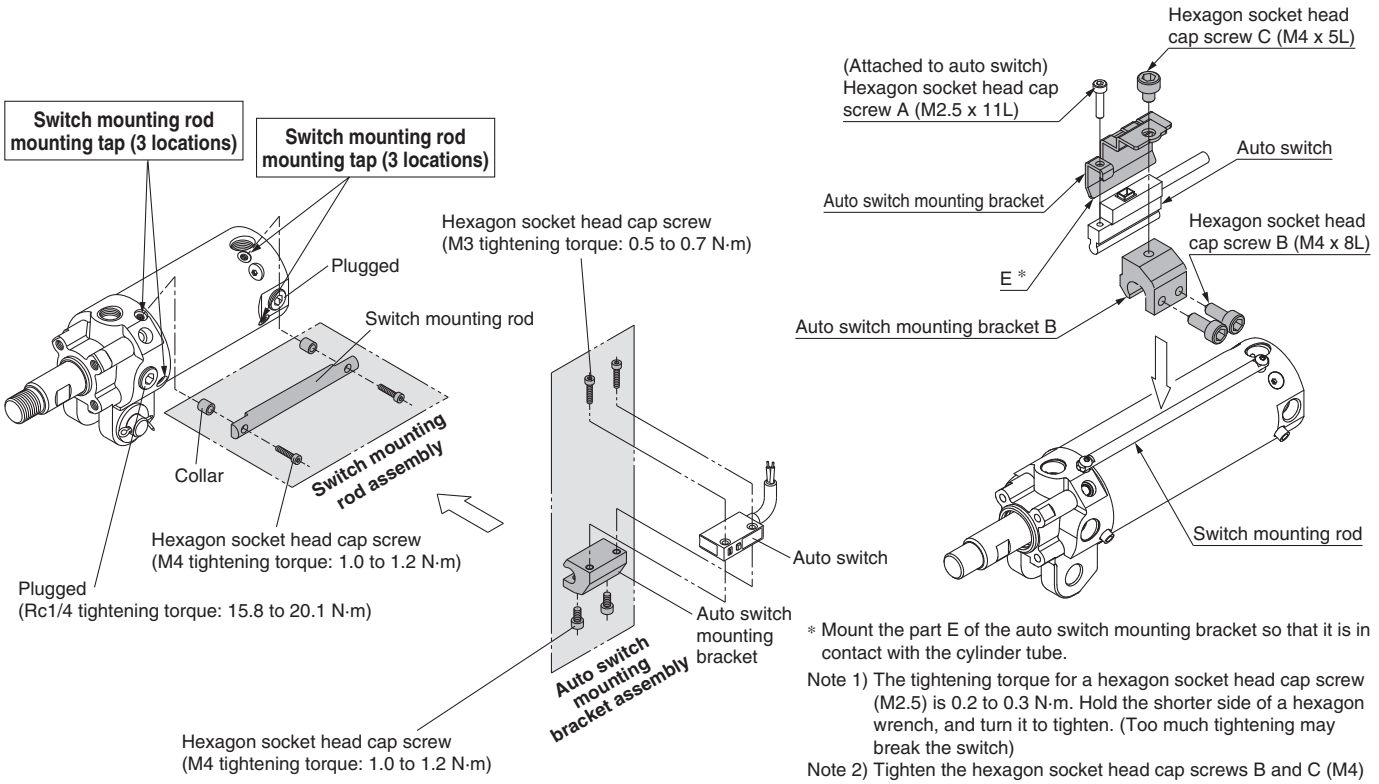
Switch Mounting Rod Location Change

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.**



* Mount the part E of the auto switch mounting bracket so that it is in contact with the cylinder tube.

Note 1) The tightening torque for a hexagon socket head cap screw (M2.5) is 0.2 to 0.3 N·m. Hold the shorter side of a hexagon wrench, and turn it to tighten. (Too much tightening may break the switch)

Note 2) Tighten the hexagon socket head cap screws B and C (M4) with a tightening torque of 1 to 1.2 N·m.

Series CK□1
Specific Product Precautions 3

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

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 labelled 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 21, 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 energised 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 ø8 or more that has excellent heat resistance and flexibility.
4. **Be careful not to drop objects, make dents, or apply excessive impact force when handling.**
5. **When operating two or more 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 12 for mounting example and the auto switch guide 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:

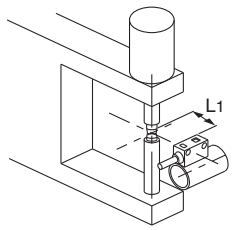
   Note that the voltage drop due to the internal resistance of the LED increases.

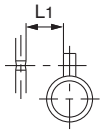
Specific Product Precautions 4

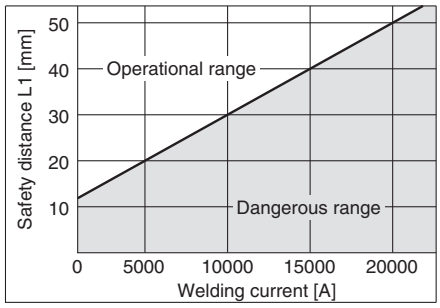
Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and the Operation Manual for Actuator and Auto Switch Precautions. Please download it via our website, http://www.smc.eu

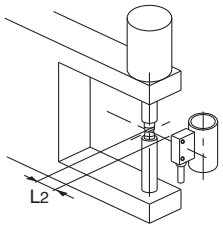
Data: Magnetic Field Resistant Reed Auto Switches (D-P79WSE, D-P74□) Safety Distance

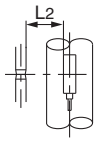
Safety Distance from Side of Auto Switch

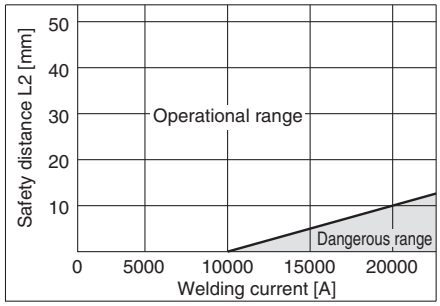




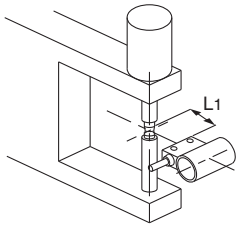


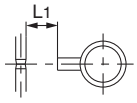


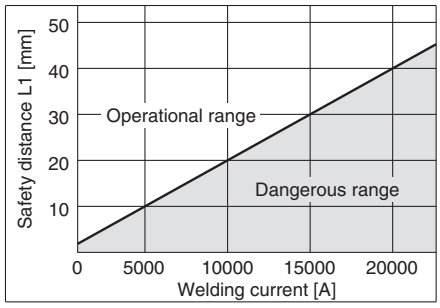


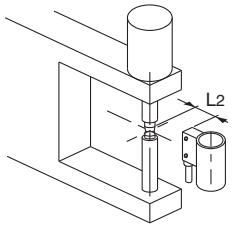


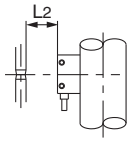
Safety Distance from Top of Auto Switch

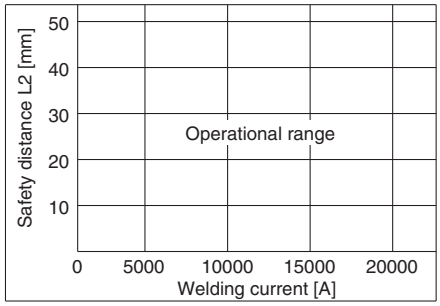












Related Products

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

1 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

CK G A 32 – 100 Y

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

—	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

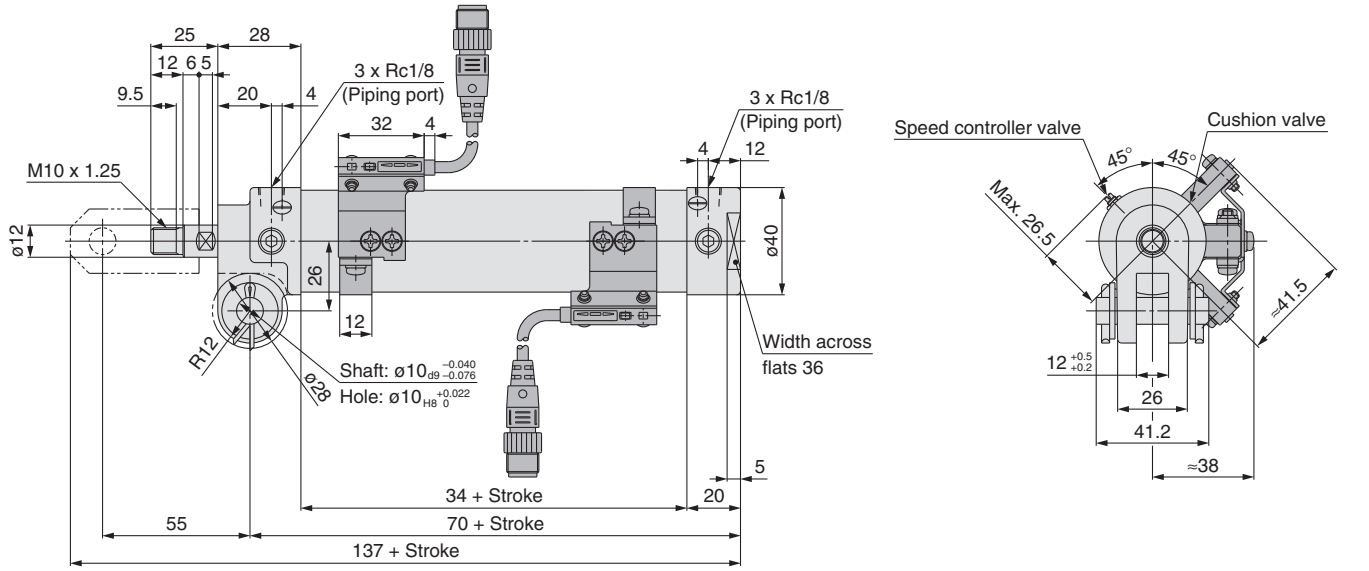
Clevis width	12 mm	CKGA32 series

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 Note)	Double clevis

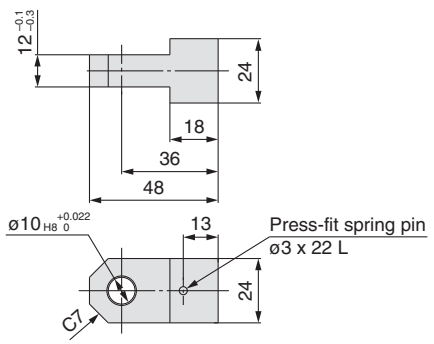
Note) A clevis pin, cotter pins and flat washers are provided as a standard.

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

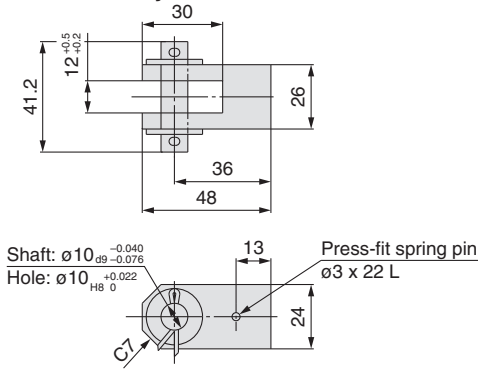
Dimensions



Single knuckle joint



Double knuckle joint



∗ Please contact SMC for details of the CKGA32 series.

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

CK G A 80 – 100 Y – P3DWASC □

CK P A 80 – 100 Y – P79WSE □

Built-in standard magnet

Built-in strong magnet

Clevis width: 28 mm

Bore size

80	80 mm
100	100 mm

Cylinder stroke [mm]

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

End bracket

—	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

—	2 pcs.
S	1 pc.

Auto switch

—	Without auto switch (Built-in magnet) Without switch mounting rod	
P	Without auto switch (Built-in magnet) With switch mounting rod	
P3DWASC	D-P3DWASC	Series CKGA
P3DWASE	D-P3DWASE	
P3DWAL	D-P3DWAL	
P3DWAZ	D-P3DWAZ	
P4DWSC	D-P4DWSC	Series CKGA
P4DWSE	D-P4DWSE	
P4DWL	D-P4DWL	
P4DWZ	D-P4DWZ	
P79WSE	D-P79WSE	Series CKPA
P74L	D-P74L	
P74Z	D-P74Z	

Specifications

Clevis width	28 mm	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 Note)	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-P3DWASC	BK7-080S	
D-P3DWASE		
D-P3DWAL		
D-P3DWAZ		
D-P4DWSC	BK9-080	
D-P4DWSE		
D-P4DWL		
D-P4DWZ		
D-P79WSE	BK10-080	
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 "—" as shown below.
CKGA: (Example) CKGA80-50Y
CKPA: (Example) CKPA80-50Y

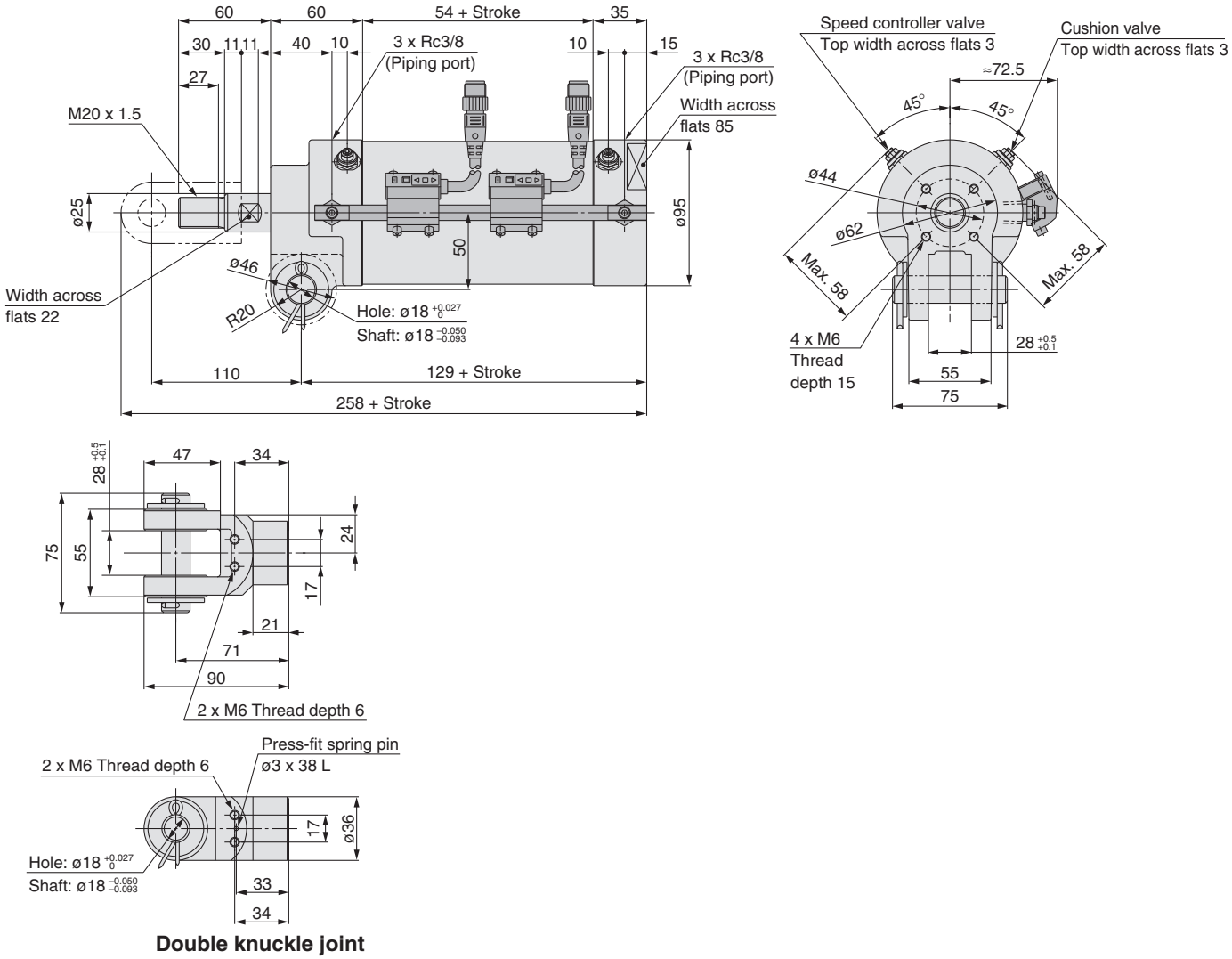
2) Built-in standard (strong) magnet type without auto switch, with switch mounting rod

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

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

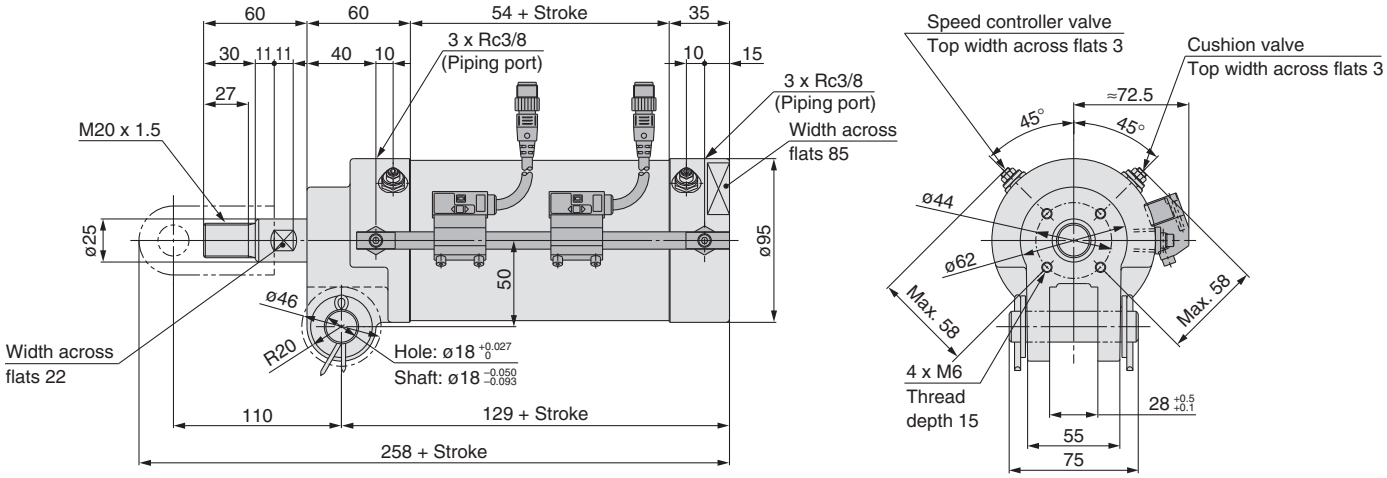
Dimensions

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



Double knuckle joint

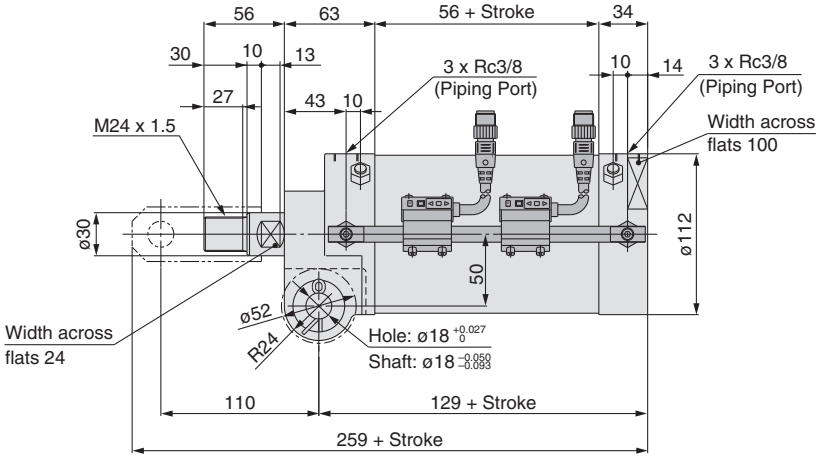
CKPA80 Built-in strong magnet type/with magnetic field resistant auto switch (D-P79WSE)

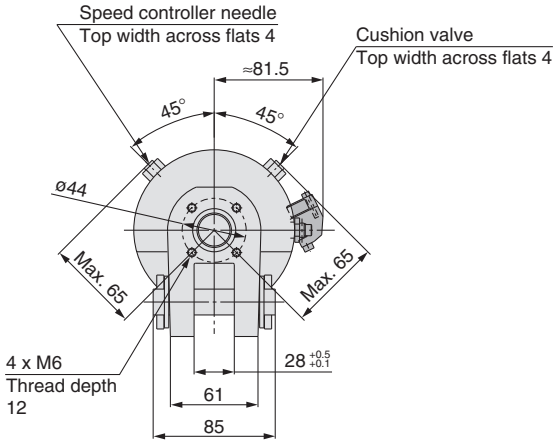


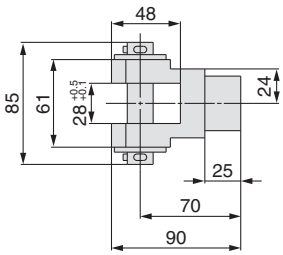
2 CKGA80, 100/CKPA80, 100/With Magnetic Field Resistant Auto Switch (Rod Mounting Style)

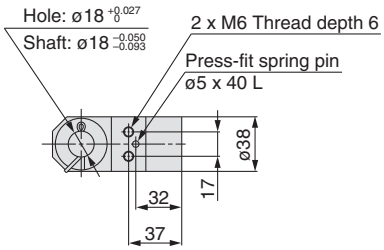
Dimensions

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



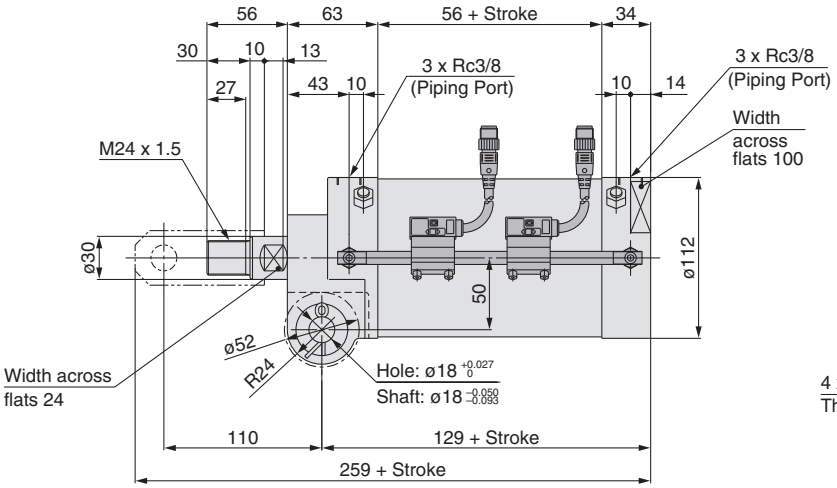


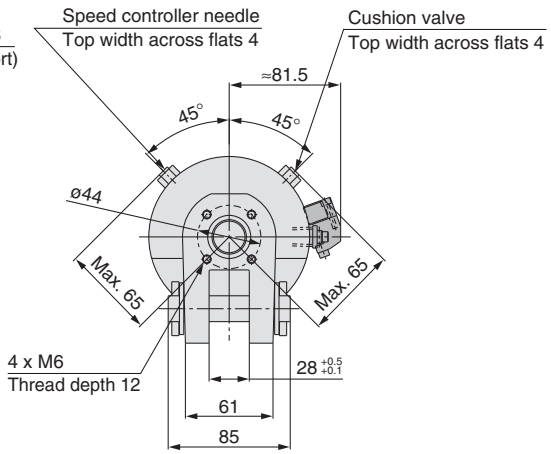




Double knuckle joint

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





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

Symbol
-X2095

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

The smallest class of clamp cylinder in the world

■ø25 is available.

Weight 380 g Length 186.7 mm

(ø25, 50 stroke without speed controller or auto switch)

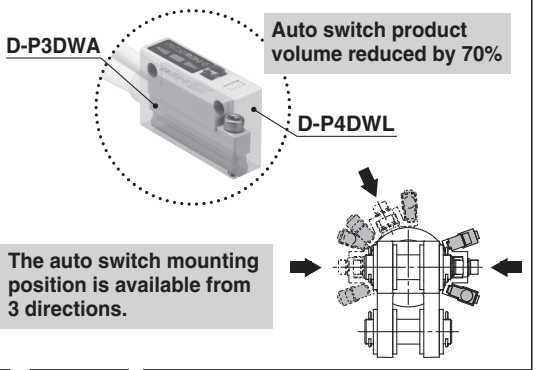
■Comparison with existing model

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 ø40, 50 stroke with double knuckle joint and speed controller.
The values in the ( ) are for conventional model.

Compact auto switch (D-P3DWA)
Magnetic field resistant 2-color indication solid state auto switch



The auto switch mounting position is available from 3 directions.

"Clevis width" "a, b dimensions" have common interchangeability with all three sizes, ø25 to ø40.

Setting part no. for the model with speed controller. Reduction in selecting and ordering labor.

Variations

Model	Type		Series	Bore size	Stroke [mm]	Clevis width	End bracket	Option
Clamp cylinder	Built-in standard magnet type	D-P3DWA 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-P3DWA D-P4DW	**CLKG**	32, 40				
	Built-in strong magnet type	D-P7	**CLKP**					

For details about this product, refer to the catalogue at www.smc.eu

⚠ Safety Instructions

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

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

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

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

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

⚠ Warning

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

⚠ Caution

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

Limited warranty and Disclaimer/ Compliance Requirements

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

Limited warranty and Disclaimer

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

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

Compliance Requirements

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

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

SMC Corporation (Europe)

Austria	☎+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	☎+32 (0)33551464	www.smcpneumatics.be	info@smcpneumatics.be
Bulgaria	☎+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	☎+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	☎+420 541424611	www.smc.cz	office@smc.cz
Denmark	☎+45 70252900	www.smcdk.com	smc@smcdk.com
Estonia	☎+372 6510370	www.smcpneumatics.ee	smc@smcpneumatics.ee
Finland	☎+358 207513513	www.smc.fi	smcfi@smc.fi
France	☎+33 (0)164761000	www.smc-france.fr	promotion@smc-france.fr
Germany	☎+49 (0)61034020	www.smc-pneumatik.de	info@smc-pneumatik.de
Greece	☎+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	☎+36 23511390	www.smc.hu	office@smc.hu
Ireland	☎+353 (0)14039000	www.smcpneumatics.ie	sales@smcpneumatics.ie
Italy	☎+39 0292711	www.smcitalia.it	mailbox@smcitalia.it
Latvia	☎+371 67817700	www.smclv.lv	info@smclv.lv
Lithuania	☎+370 5 2308118	www.smclt.lt	info@smclt.lt
Netherlands	☎+31 (0)205318888	www.smcpneumatics.nl	info@smcpneumatics.nl
Norway	☎+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	☎+48 (0)222119616	www.smc.pl	office@smc.pl
Portugal	☎+351 226166570	www.smc.eu	postpt@smc.smces.es
Romania	☎+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	☎+7 8127185445	www.smc-pneumatik.ru	info@smc-pneumatik.ru
Slovakia	☎+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	☎+386 (0)73885412	www.smc.si	office@smc.si
Spain	☎+34 902184100	www.smc.eu	post@smc.smces.es
Sweden	☎+46 (0)86031200	www.smc.nu	post@smc.nu
Switzerland	☎+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	☎+90 212 489 0 440	www.smcpnomatik.com.tr	info@smcpnomatik.com.tr
UK	☎+44 (0)845 121 5122	www.smcpneumatics.co.uk	sales@smcpneumatics.co.uk

SMC CORPORATION Akihabara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249 FAX: 03-5298-5362

1st printing UY printing UY 00 Printed in Spain

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.