

Clamp Cylinder with Lock

Series CLK2

∅32, ∅40, ∅50, ∅63



How to Order

Without magnet CLK2 **A** **50** **□** - **100** **Y** **□** - **B** **□**

Built-in standard magnet type CLK2 **G** **A** **50** **□** - **100** **Y** **□** - **B** **□**

Built-in standard magnet

Clevis width

A	12.5 mm	∅32
	16.5 mm	∅40, ∅50, ∅63
B	19.5 mm	∅50, ∅63

Bore size

32	32 mm
40	40 mm
50	50 mm
63	63 mm

Port type

Nil	Rc
TN	NPT

Cylinder stroke

50, 75, 100, 125, 150

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 not available for ∅32.
 Note 2) Conventional products for ∅40, 50, 60 are equivalent to IA and YA
 Note 3) Knuckle pin, cotter pin and flat washer are provided as a standard for Y and YA.

Option

Nil	None
B	Limit switch mounting base
D	Dog fitting ^{Note 2)}
L	Foot
K ^{Note 3)}	Pedestal (for 75, 100, 150 strokes only)

Note 1) Option is not available for ∅32.
 Note 2) When the dog fitting is selected, choose the rod end bracket IA or YA (M6 with tap).
 Note 3) Clevis width B (19.5 mm) is not available with mounting base K.

Locking direction

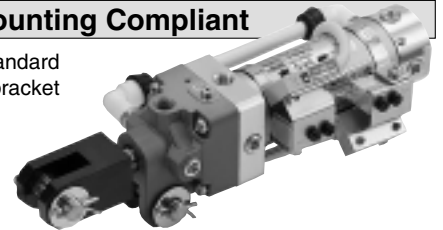
B	Retraction locking
F	Extension locking

Port/By-pass piping position
* Refer to page 8.

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

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 CLK2G32 to 63 series) is possible by ordering the switch mounting bracket and the auto switch individually.



How to Order

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

Component part no.	Applicable auto switch	Applicable clamp cylinder with lock
BA8-032	D-P4DWSC D-P4DWSE D-P4DWL/Z	CLK2G□32
BA8-040		CLK2G□40
BA8-050		CLK2G□50
BA8-063		CLK2G□63

Note) Refer to page 17 for mounting brackets.

Ordering Example for CLK2G32 to 63

- Example case ① Built-in standard magnet cylinder:
CLK2GA50-50Y-B 1
- Example case ② Magnetic field resistant auto switch:
D-P4DWSC 2
- Example case ③ Switch mounting bracket:
BA8-050 2

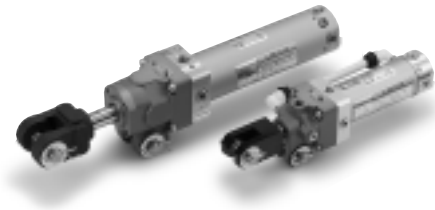
Note 1) Please order the same quantity for the switch mounting bracket and the magnetic field resistant auto switch respectively.
 Note 2) Band mounting for the magnetic field resistant auto switch D-P79WSE type, D-P74□ type is not applicable.

Applicable Magnetic Field Resistant Auto Switches (Refer to page 21 and 22 for detailed auto switch specifications.)

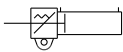
Applicable cylinder series	Type	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no. in use)	Load voltage	Lead wire length	Applicable load
CLK2G series	Solid state switch	P4DWSC	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color display	2-wire (3-4)	24 VDC	0.3 m	Relay, PLC
		P4DWSE				2-wire (1-4)			
		P4DWL		2-wire		3 m			
		P4DWZ						Grommet	

Note) PLC: Programmable Logic Controller

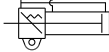
Clamp Cylinder with Lock Specifications



Symbol



Retraction locking type



Extension locking type

Standard Stroke

Bore size (mm)	Standard stroke (mm)
32, 40, 50, 63	50, 75, 100, 125, 150

Bore size	32	40	50	63
Action	Double acting, Single rod			
Fluid	Air			
Proof pressure	1.5 MPa			
Maximum operating pressure	1.0 MPa			
Minimum operating pressure	0.2 MPa			
Locking action	Spring locking			
Locking pressure	0.05 MPa			
Locking direction	One direction (Retraction, Extension)			
Lock holding force N ^{Note 1)} (Max. static load)	0.5 MPa or equivalent			
	402	629	982	1559
Lock application	Drop prevention, Position holding			
	Without auto switch: -10°C to 70°C			
	With auto switch: -10°C to 60°C			
Lubrication	Non-lube			
Piston speed	50 to 500 mm/s			
Stroke length tolerance	+1.0/0			
Cushion	Retraction direction (Head end): With air cushion			
Thread tolerance	JIS Class 2			
Mounting	Double clevis ^{Note 2)}			

Note 1) Be sure to comply with guidelines in the back of page 3 when selecting cylinders.

Note 2) Pin (for clevis), cotter pin, flat washer are equipped as a standard.

Clevis width	12 mm	ø32
	16.5 mm	ø40, ø50, ø63
	19.5 mm	ø50, ø63

Weight (Basic weight is for a 0 mm stroke.)

Bore size (mm)		32	40	50	63
Cylinder basic weight	CLK2□ series	B: 0.51 F: 0.54	B: 1.05 F: 1.11	B: 1.48 F: 1.54	B: 1.96 F: 2.02
	Additional weight per 25 mm stroke	0.08	0.08	0.11	0.13
Single knuckle joint		0.25	0.25	0.20	
Double knuckle joint (Pin, cotter pin, flat washer are included.)		0.17	0.36	0.34	
Limit switch mounting base		—		0.22	
Dog fitting		—		0.12	
Foot		—		0.24	
Pedestal		—		2.04	

Calculation

Example) CLK2B50-100Y-B

• Basic weight ... 1.48 (ø50)

• Additional weight ... 0.11/25 mm

• Cylinder stroke ... 100 mm

• Double knuckle joint ... 0.34 (Y)

1.48 + 0.11 x 100 / 25 + 0.34 = 2.26 kg

• Unit: kg

Port/By-pass Piping Position

Symbol	Port position	By-pass piping position	Locking direction	
			B: Retraction locking	F: Extension locking
Nil	Port on top	By-pass piping on left		
2	Port on left	By-pass piping on right		
3	Port on right	By-pass piping on left		
4	Port on top	By-pass piping on right	—	
5	Port on left	By-pass piping on top	—	
6	Port on right	By-pass piping on top	—	

⇨ Port

By-pass piping

Theoretical Output

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)			
				0.3	0.4	0.5	0.6
32	12	OUT	804	241	322	402	482
		IN	691	207	276	346	415
40	16	OUT	1260	378	504	630	756
		IN	1060	318	424	530	636
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

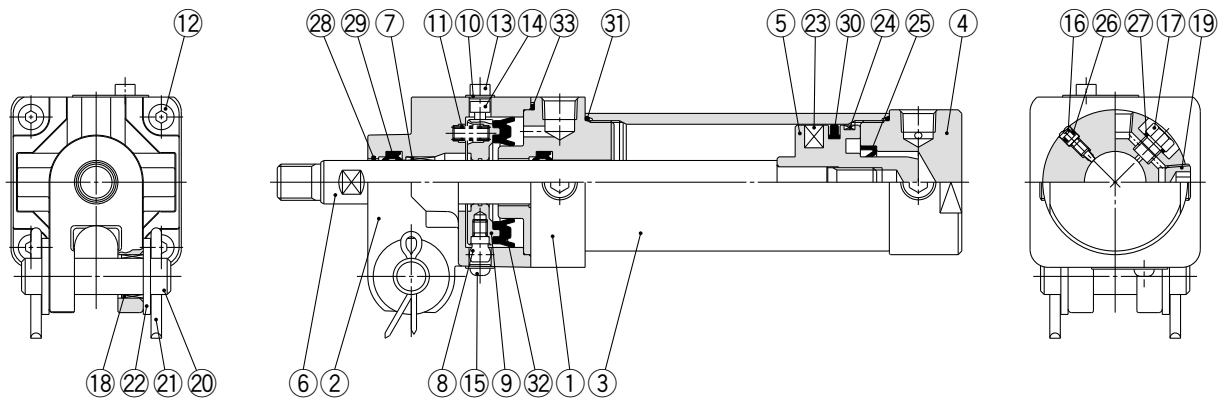
Accessories (Options)

	Description	Parts no.				
		CLK2A Series			CLK2B Series	
		32	40	50, 63	50, 63	
I	Single knuckle joint	M6 without tap	CLK-I03	CLK-I04	CKB-I04	
IA		M6 with tap	—	CLK-IA04	CKB-IA04	
Y	Double knuckle joint (knuckle pin, cotter pin, flat washer are equipped as a standard.)	M6 without tap	CLK-Y03	CLK-Y04	CKA-Y04	
YA		M6 with tap	—	CLK-YA04	CKA-YA04	
B	Limit switch mounting base	—	—	—	CK-B04	
D	Dog fitting	—	—	—	CK-D04	
L	Foot	—	—	—	CK-L04	
K	Pedestal	For 75 stroke	—	—	CKA-K075	—
		For 100 stroke	—	—	CKA-K100	—
		For 150 stroke	—	—	CKA-K150	—

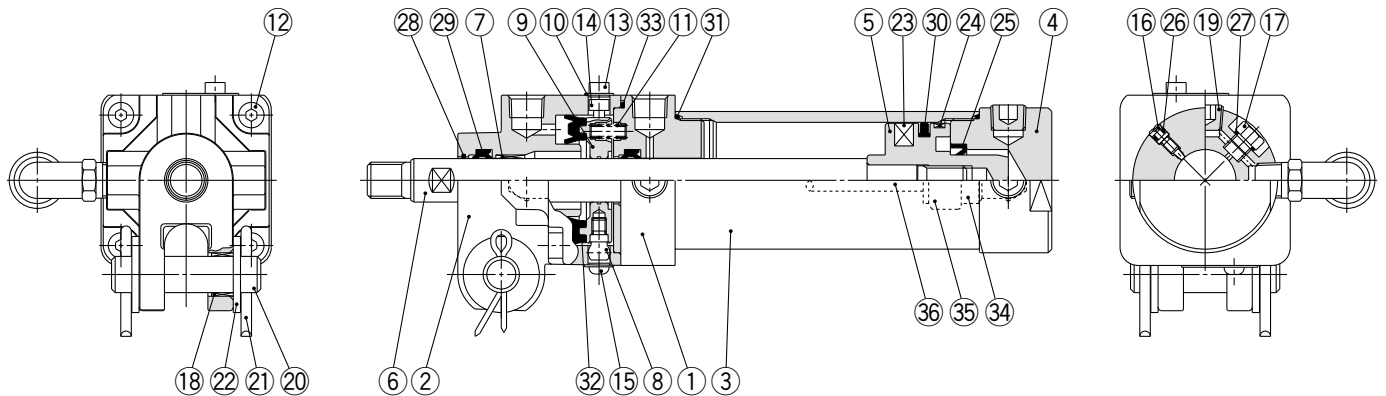
Series CLK2

Construction: CLK2A32 Without Magnet / CLK2GA32 Built-in Standard Magnet Type

Retraction locking (B)



Extension locking (F)



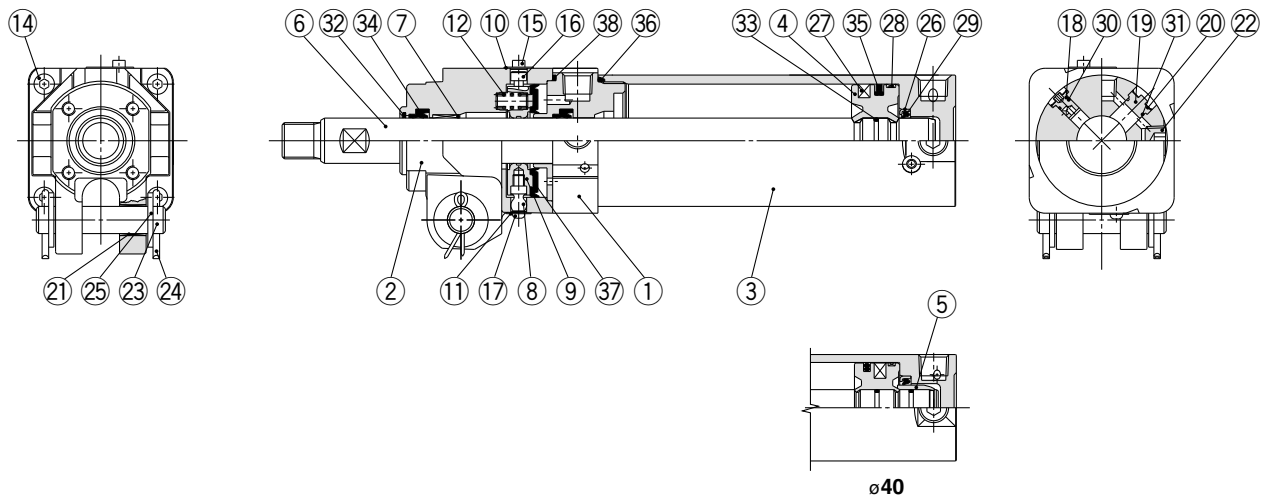
Component Parts

No.	Description	Material	Qty	Note
1	Rod cover	Aluminum alloy	1	Hard anodized
2	Cover	Aluminum alloy	1	Hard anodized
3	Cylinder tube	Aluminum alloy	1	Hard anodized
4	Head cover	Aluminum alloy	1	Chromated
5	Piston	Aluminum alloy	1	Chromated
6	Piston rod	Carbon steel	1	Hard chrome plated
7	Bushing	Copper alloy	1	
8	Pivot	Carbon steel	1	Heat treated, Electroless nickel plated
9	Lock ring	Carbon steel	1	Zinc chromated
10	Dust cover	Stainless steel	2	
11	Brake spring	Steel wire	2	Zinc chromated
12	Hexagon socket head cap screw	Chrome molybdenum steel	4	Nickel plated
13	Hexagon socket head cap screw	Chrome molybdenum steel	1	Nickel plated
14	Hexagon socket head cap screw	Chrome molybdenum steel	1	Nickel plated
15	Round head Phillips screw	Chrome molybdenum steel	1	Nickel plated
16	Cushion valve	Free-cutting brass	1	Electroless nickel plated
17	Plug	Free-cutting brass	1	
18	Clevis bushing	Oil-impregnated sintered alloy	2	

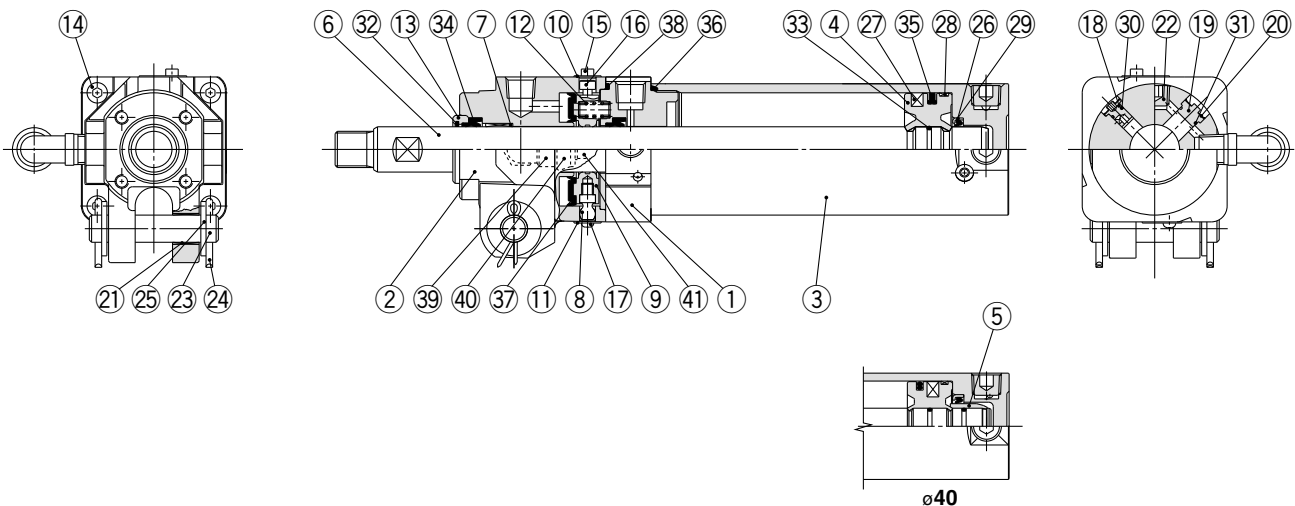
No.	Description	Material	Qty	Note
19	Hexagon socket head plug	Carbon steel	4(5)	Rc1/8, 5 pcs. of extension locking
20	Pin	Carbon steel	1	
21	Cotter pin	Low carbon steel wire rod	2	Zinc chromated
22	Flat washer	Rolled steel	2	Zinc chromated
23	Magnet	Magnetic material	1	CLK1GA32 only
24	Wear ring	Resin	1	
25	Cushion seal	NBR	1	
26	Cushion valve seal	NBR	1	
27	Plug seal	NBR	1	
28	Coil scraper	Phosphor bronze	1	
29	Rod seal	NBR	2	
30	Piston seal	NBR	1	
31	Tube gasket	NBR	2	
32	Lock ring seal	NBR	1	
33	O-ring	NBR	1	
34	FR one-touch fitting		2	Extension locking only
35	Spatter cover		2	Extension locking only
36	FR double layer tube		1	Extension locking only

Construction: CLK2□40/50/63 Without Magnet / CLK2G□40/50/63 Built-in Standard Magnet Type

Retraction locking (B)



Extension locking (F)



Component Parts

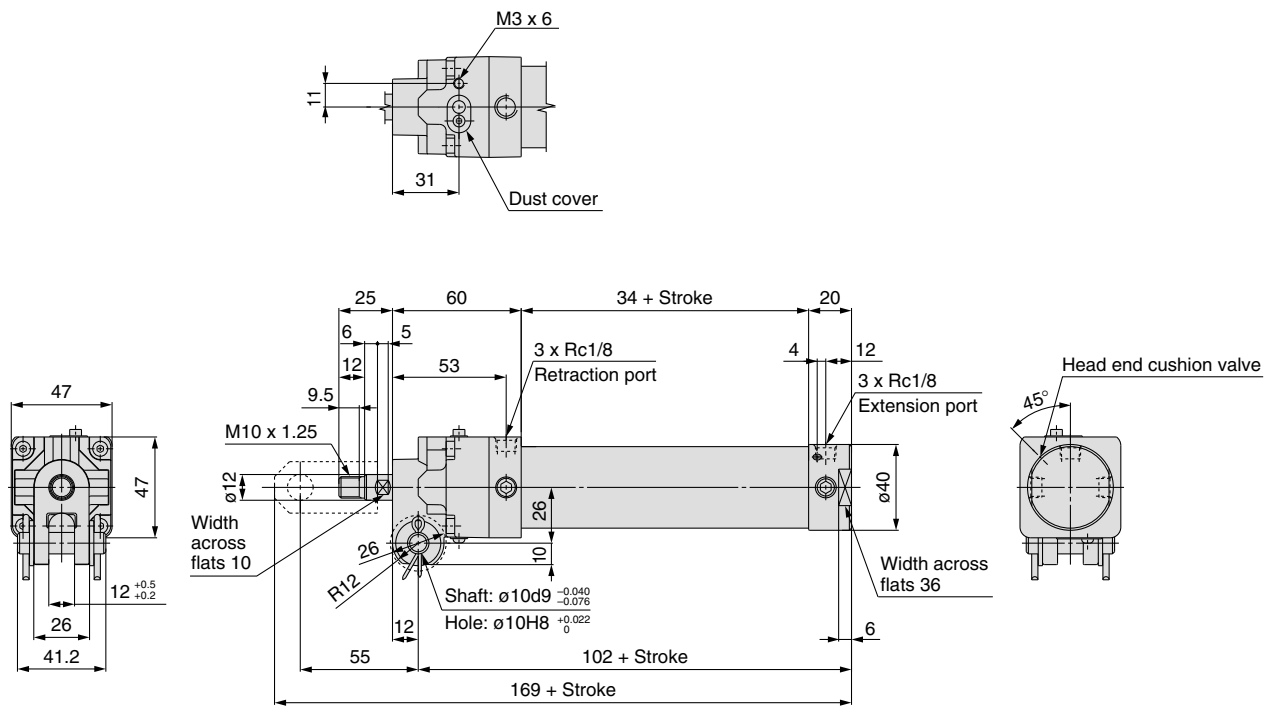
No.	Description	Material	Qty	Note
1	Rod cover	Aluminum alloy	1	Hard anodized
2	Cover	Aluminum alloy	1	Hard anodized
3	Tube cover	Aluminum alloy	1	Hard anodized
4	Piston	Aluminum alloy	1	Chromated
5	Cushion ring	Copper alloy	1	ø40 only
6	Piston rod	Carbon steel	1	Hard chrome plated
7	Bushing	Copper alloy	1	
8	Pivot	Carbon steel	1	Heat treated, Electroless nickel plated
9	Lock ring	Carbon steel	1	Zinc chromated
10	Dust cover	Stainless steel	1	
11	Dust cover	Stainless steel	1	
12	Brake spring	Steel wire	2	Zinc chromated
13	Retainer plate	Aluminum alloy	1	Anodized, Extension locking only
14	Hexagon socket head cap screw	Chrome molybdenum steel	4	Nickel plated
15	Hexagon socket head cap screw	Chrome molybdenum steel	1	Nickel plated
16	Hexagon socket head cap screw	Chrome molybdenum steel	1	Nickel plated
17	Round head Phillips screw	Chrome molybdenum steel	1	Nickel plated
18	Clevis bushing	Aluminum alloy	1	
19	Plug	Aluminum alloy	1	
20	Retaining ring	Spring steel	2	
21	Clevis bushing	Oil-impregnated sintered alloy	2	

No.	Description	Material	Qty	Note
22	Hexagon socket head plug	Carbon steel	4(5)	Rc1/4, 5 pcs. of extension locking
23	Pin	Carbon steel	1	
24	Cotter pin	Low carbon steel wire rod	2	Zinc chromated
25	Flat washer	Rolled steel	2	Zinc chromated
26	Cushion seal retainer	Rolled steel	1	Zinc chromated
27	Magnet	Magnetic material	1	CLK2G only
28	Wear ring	Resin	1	
29	Cushion seal	Urethane	1	
30	Cushion valve seal	NBR	1	
31	Plug gasket	NBR	1	
32	Coil scraper	Phosphor bronze	1	
33	Piston gasket	NBR	1(2)	2 pcs. for ø40
34	Rod seal	NBR	2	
35	Piston seal	NBR	1	
36	Tube gasket	NBR	1	
37	Lock ring seal	NBR	1	
38	O-ring	NBR	1	
39	FR one-touch fitting		2	Extension locking only
40	Spatter cover		2	Extension locking only
41	FR double layer tube		1	Extension locking only

Series CLK2

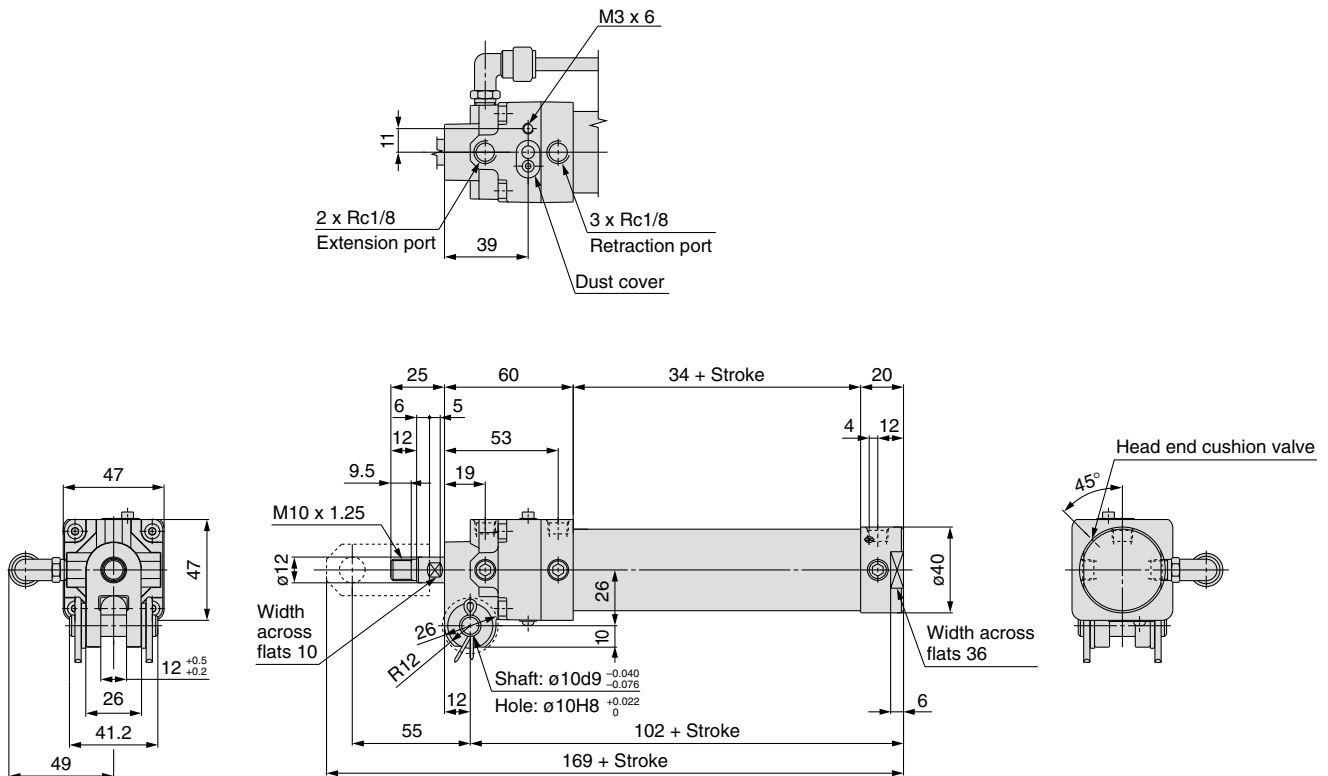
Dimensions: CLK2A32 Without Magnet / CLK2GA32 Built-in Standard Magnet Type

Retraction locking (B)



Note) Refer to page 14 and 15 for Accessories.

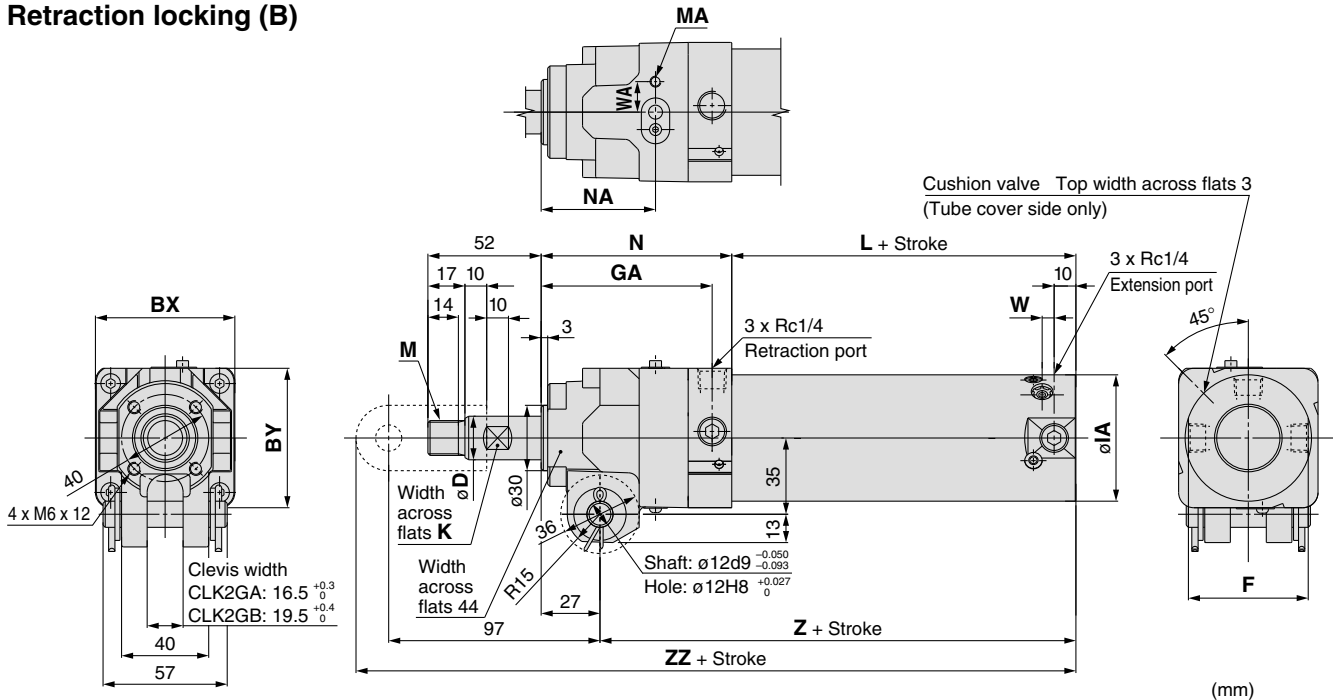
Extension locking (F)



Note) Refer to page 14 and 15 for Accessories.

Dimensions: CLK2□40/50/63 Without Magnet / CLK2G□40/50/63 Built-in Standard Magnet Type

Retraction locking (B)

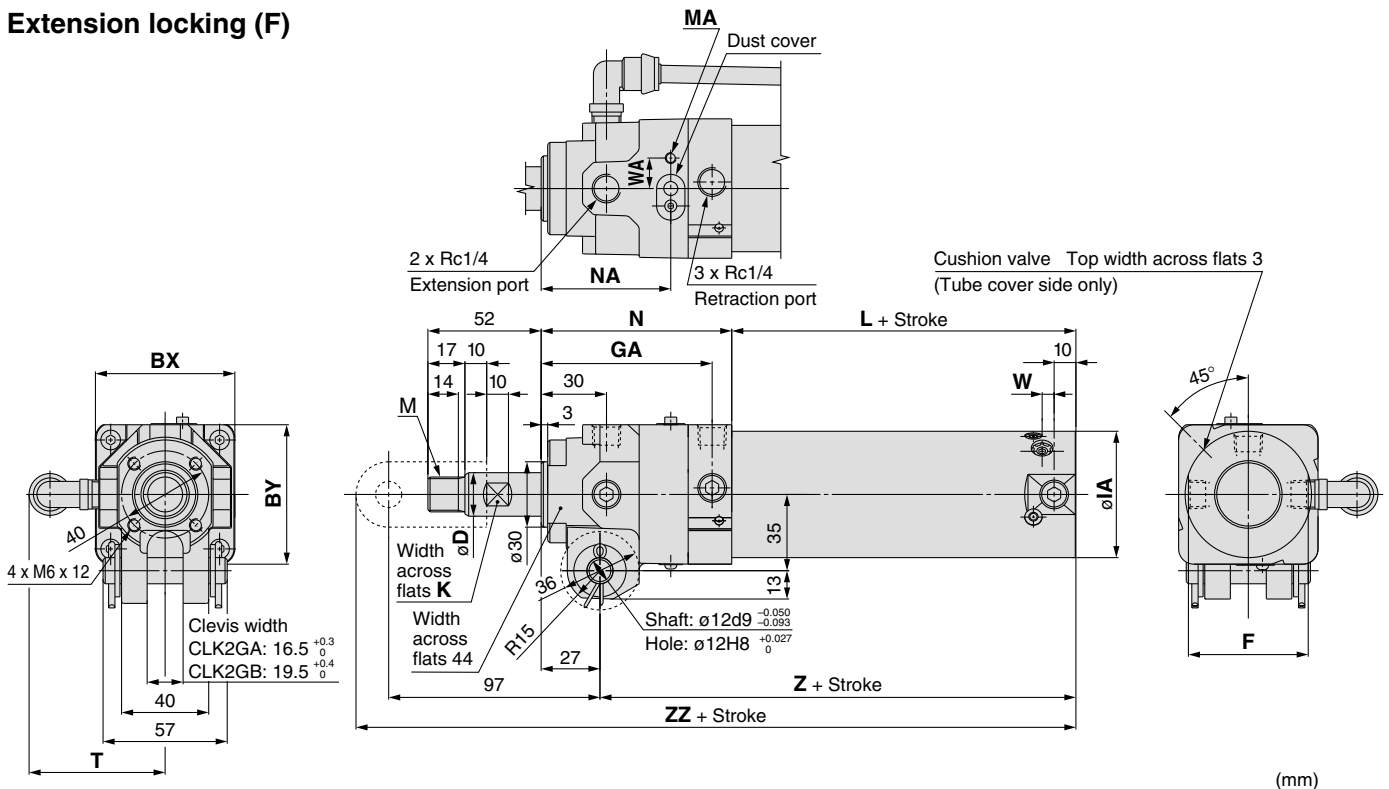


(mm)

Symbol	BX	BY	D	F	GA	IA	K	L	M	MA	N	NA	W	WA	Z	ZZ
Bore size																
40	56	54	16	44	77	47	14	55	M12 x 1.5	M4 x 7	86	51.5	5	12.5	114	226
50	64	64	20	55	78.5	58	17	58	M16 x 1.5	M4 x 7	87.5	52.5	5.5	14	118.5	230.5
63	74	74	20	69	82	72	17	58	M16 x 1.5	M5 x 7	91	53.5	5.5	19	122	234

Note) Refer to page 14 and 15 for Accessories.

Extension locking (F)



(mm)

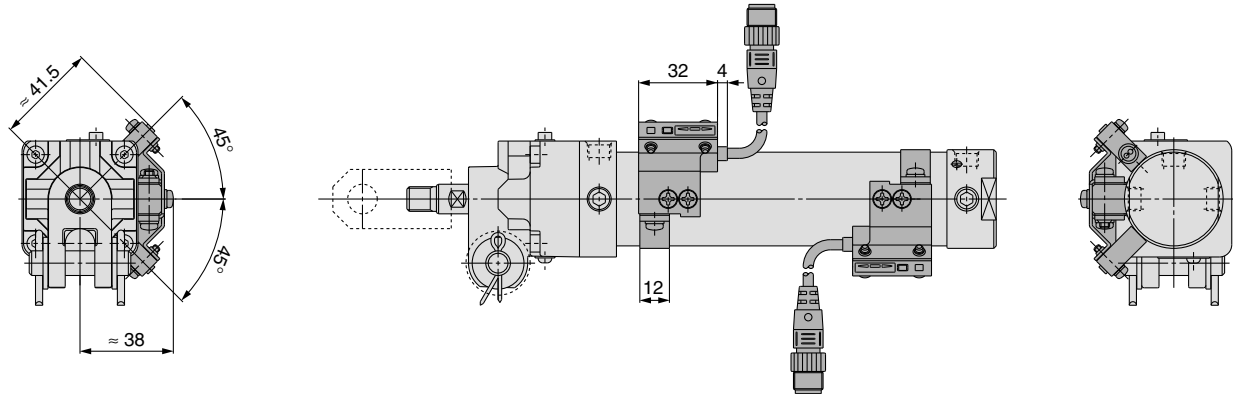
Symbol	BX	BY	D	F	GA	IA	K	L	M	MA	N	NA	T	W	WA	Z	ZZ
Bore size																	
40	56	54	16	44	77	47	14	55	M12 x 1.5	M4 x 7	86	59	57	5	12.5	114	226
50	64	64	20	55	78.5	58	17	58	M16 x 1.5	M4 x 7	87.5	59.5	60	5.5	14	118.5	230.5
63	74	74	20	69	82	72	17	58	M16 x 1.5	M5 x 7	91	61	67	5.5	19	122	234

Note) Refer to page 14 and 15 for Accessories.

Series CLK2

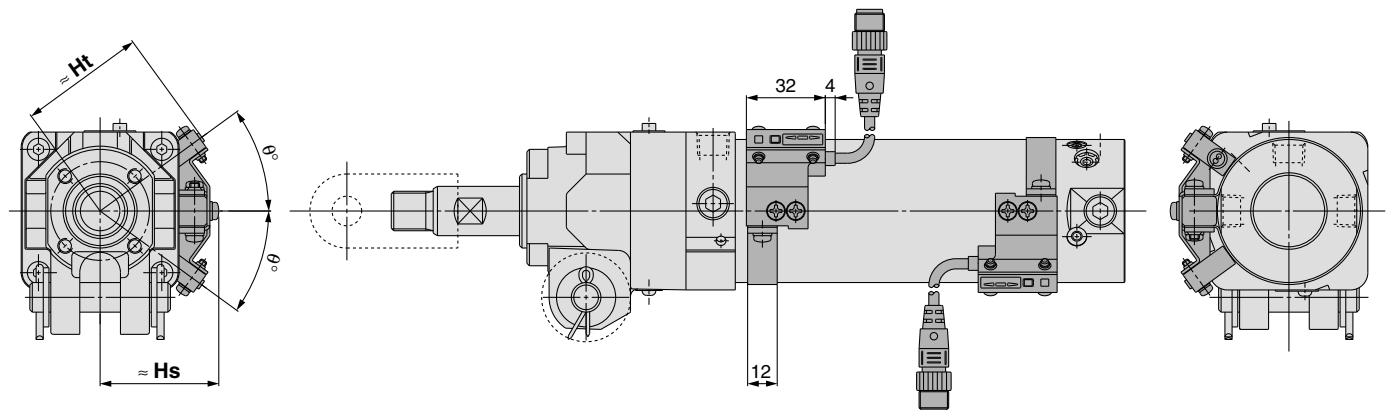
Dimensions: CLK1GA32 Example:

Built-in Standard Magnet Type + Magnetic Field Resistant Auto Switch D-P4DW□□ Type (Band mounting)



Dimensions: CLK1G□40/50/63 Example:

Built-in Standard Magnet Type + Magnetic Field Resistant Auto Switch D-P4DW□□ Type (Band mounting)



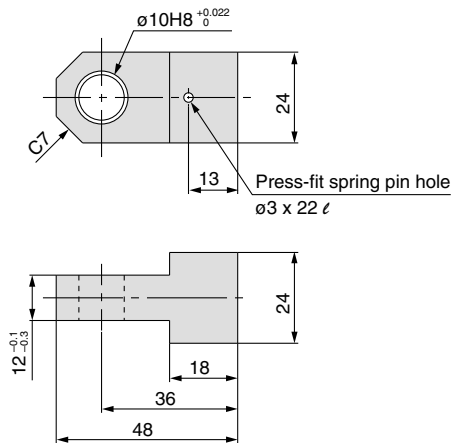
(mm)

Symbol	Hs	Ht	θ
Bore size 40	43	46	45°
50	48	51.5	36°
63	55	58.5	33°

Series CLK2 Accessories

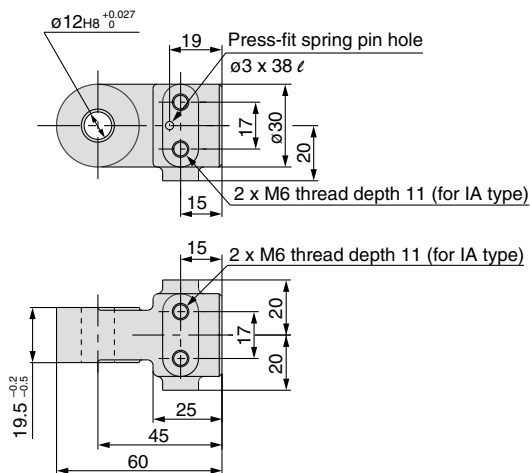
Single Knuckle Joint

For $\varnothing 32$



CLK-I03

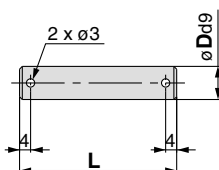
For $\varnothing 40, \varnothing 50, \varnothing 63$



Part no.	Rod end bracket symbol	Applicable clamp cylinder
CLK-I04	I (M6 without tap)	CLK2□A40 series
CLK-IA04	IA (M6 with tap)	CLK2□B40 series
CKB-I04	I (M6 without tap)	CLK2□A50 to 63 series
CKB-IA04	IA (M6 with tap)	CLK2□B50 to 63 series

Note) The conventional model (the CLK1 series) is equivalent to the component part no. CLK-IA04, CKB-IA04 (rod end bracket symbol IA).

Pin (for Clevis/Double Knuckle Joint)

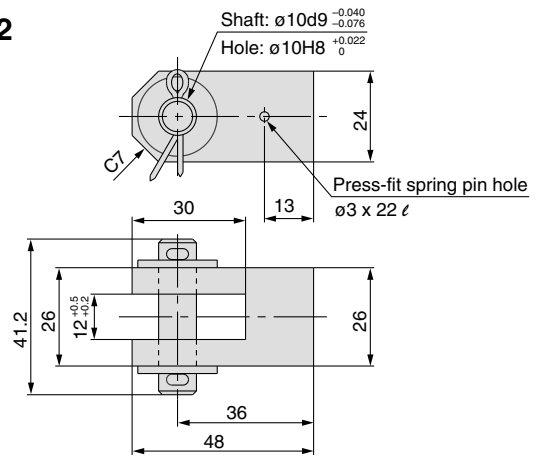


Part no.	D	L	Applicable clamp cylinder
CDP-2	10 $\begin{matrix} -0.040 \\ -0.076 \end{matrix}$	41.2	CLK2□A32 series
CK-P04	12 $\begin{matrix} -0.050 \\ -0.093 \end{matrix}$	57	CLK2□□40 to 63 series

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

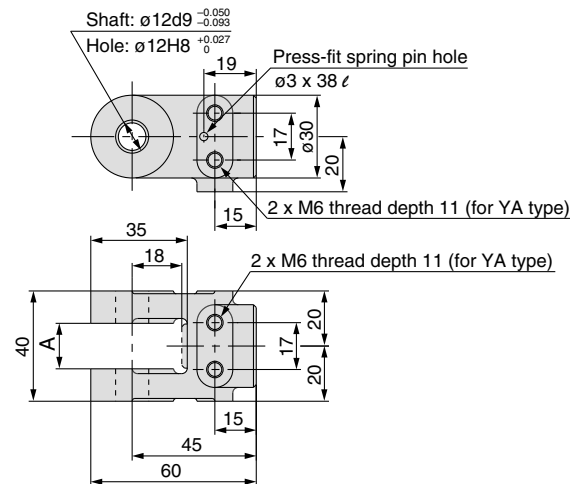
Double Knuckle Joint

For $\varnothing 32$



CLK-Y03

For $\varnothing 40, \varnothing 50, \varnothing 63$



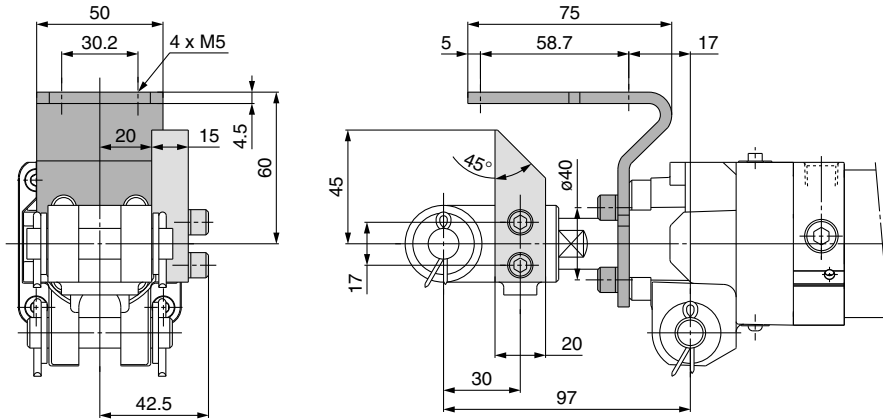
Part no.	Rod end bracket symbol	A	Applicable clamp cylinder
CLK-Y04	Y (M6 without tap)	16.5 $\begin{matrix} +0.3 \\ 0 \end{matrix}$	CLK2□A40 series
CLK-YA04	YA (M6 with tap)		CLK2□A50 to 63 series
CKA-Y04	Y (M6 without tap)	19.5 $\begin{matrix} +0.4 \\ 0 \end{matrix}$	CLK2□B50 to 63 series
CKB-Y04	Y (M6 without tap)		CLK2□B50 to 63 series
CKB-YA04	YA (M6 with tap)		

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

Note 2) The conventional model (the CLK1 series) is equivalent to the component part no. CLK-YA04, CKA-YA04, CKB-YA04 (rod end bracket symbol YA).

Series CLK2 Accessories

Limit Switch Mounting Base/Dog Fitting



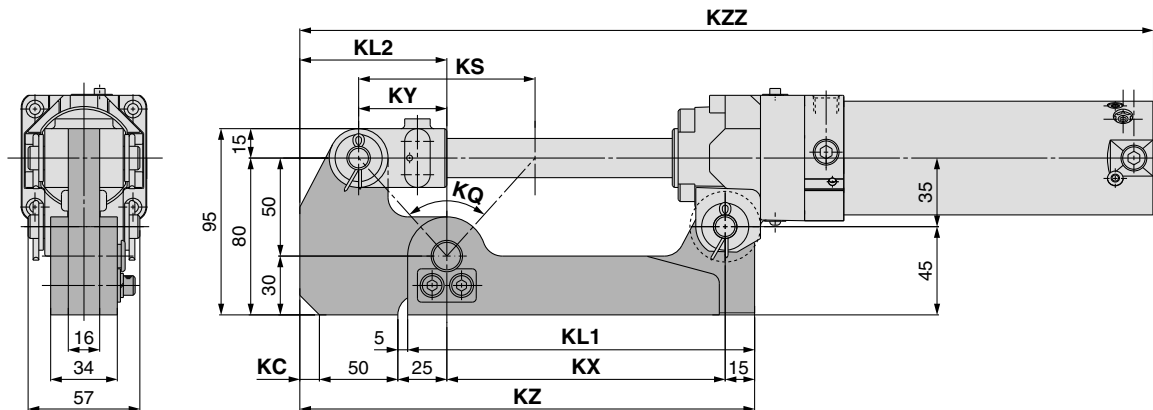
When you attach a dog fitting, be sure to use a knuckle joint, M6 with tap (rod end bracket symbol IA or YA). The dog fitting cannot be attached to the knuckle joint, M6 without tap (rod end bracket symbol I or Y).

Part no.	Option symbol	Name	Applicable clamp cylinder
CK-B04	B	Limit switch mounting base	CLK2□A40 to 63 series
CK-D04	D	Dog fitting	CLK2□B40 to 63 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 base and the dog bracket individually, a spring washer for the mounting bolt (hexagon socket head cap screw) will be attached as a standard.

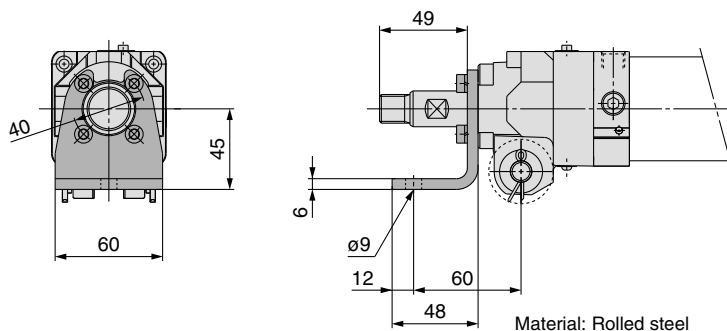
Pedestal



Type	KL1	KL2	KX	KZ	KY	KS	KQ	KC	KZZ			Applicable cylinder
									Bore size			
									40	50	63	
CKA-K075	167	75	132	222	35	70	69° 59'	0	396 (406)	400.5	404	CLK2□A40-75Y, CLK2□A50-75Y, CLK2□A63-75Y
CKA-K100	177	75	142	232	45	90	83° 58'	0	431 (441)	435.5	439	CLK2□A40-100Y, CLK2□A50-100Y, CLK2□A63-100Y
CKA-K150	202	85	167	267	70	140	108° 55'	10	516 (526)	520.5	524	CLK2□A40-150Y, CLK2□A50-150Y, CLK2□A63-150Y

Note) () denotes the dimensions for CLK2PA40.

Foot



Material: Rolled steel

Part no.	Option symbol	Applicable clamp cylinder
CK-L04	L	CLK2□A40 to 63 series CLK2□B40 to 63 series

Note) Mounting bolts (hexagon socket head cap screws) and spring washers are attached to the foot as standard.



1 Band Mounting / Standard Auto Switch

The built-in standard magnet clamp cylinder / the CLK2G series can be attached to the band mounting / 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 7.

Built-in standard magnet CLK2 G **Enter the standard model no.** — **M9BW**

Built-in standard magnet • **Auto switch type: Band mounting / Standard auto switch**

Nil	Without auto switch
-----	---------------------

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

Number of auto switches

Nil	2 pcs.
S	1 pc.

Mounting Allowable Auto Switch: Band Mounting / Standard Auto Switch

Applicable cylinder series	Type	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length (m)			Applicable load	
					DC	AC		Band mounting	0.5 (Nil)	3 (L)		5 (Z)
CLK2G series	Reed switch	Grommet	Yes	2-wire	24 V	12 V	100 V	A93	●	●	—	— Relay, PLC
							100 V 200 V	B54	●	●	●	
	Solid state switch	Grommet	Yes	2-wire	24 V	5 V 12 V	—	M9B	●	●	○	
							M9BW	●	●	○		

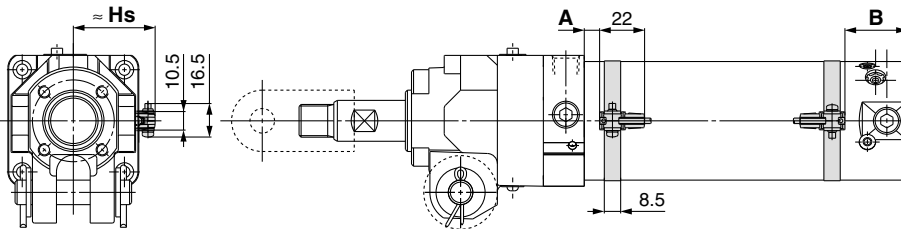
Note 1) Lead wire length symbol 0.5 m Nil M9BW
3 m L M9BWL
5 m Z M9BWZ

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

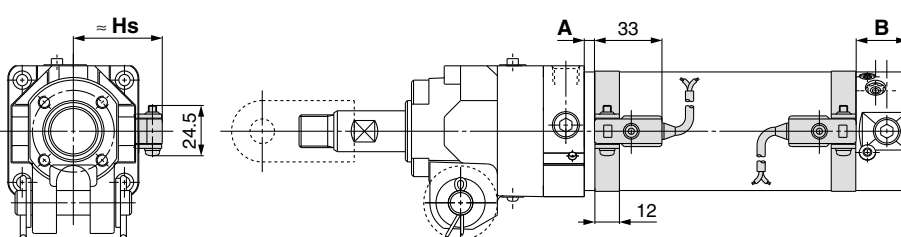
Note 3) PLC: Programmable Logic Controller

Auto Switch Proper Mounting Position for Stroke End Detection and Its Height

D-A93/M9B



D-B54



Minimum Stroke for Auto Switch Mounting

Unit: mm

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

Auto Switch Mounting Position and Its Height

Unit: mm

Auto switch	Symbol	Auto switch set value and its height			
		32	40	50	63
D-A93	A	3	11	7.5	7.5
	B	30.5	23.5	30.5	30.5
	Hs	30	34.5	40	47
D-M9B D-M9BW	A	7	15	11.5	11.5
	B	34.5	27.5	34.5	34.5
	Hs	30	34.5	40	47
D-B54	A	0	5.5	2	2
	B	25	18	25	25
	Hs	33.5	38	43.5	50.5

⚠ Caution

As for the precautions on the auto switches and product specifications, refer to the general catalog (Best Pneumatics) or individual catalog.

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 mounting position is temporarily set at the time of shipping from our factory. Change it to the desired position in accordance to your facility.

Switch Mounting Bracket Assembly / Part No.

Auto switch	Mounting bracket part no.			
	32	40	50	63
D-A93	Note)	Note)	Note)	Note)
D-M9B	①BMA2-032	①BMA2-040	①BMA2-050	①BMA2-063
D-M9BW	②BJ3-1	②BJ3-1	②BJ3-1	②BJ3-1
D-B54	BA-32	BA-04	BA-05	BA-06

Note) Two kinds of mounting brackets are required.

Operating Range

Unit: mm

Auto switch model	Bore size			
	32	40	50	63
D-A93	8	8	8	9
D-M9B	4	3.5	4	4
D-M9BW	5	5.5	6.5	7
D-B54	9	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.