Pin Clamp Cylinder D series

Series CKQ$^{G}_{P}$D/CLKQ$^{G}_{P}$D

How to Order

Built-in standard magnet
With magnetic field resistant auto switch

Built-in strong magnet
With magnetic field resistant auto switch

C	□	KQG	D	A	50	□	–	177	R	A	L	□	–	P4DWSC	□
C	□	KQP	D	A	50	□	–	198	R	A	L	□	–	P79WSE	□

With lock on the clamp side

Nil	Without lock
L	With lock

Mounting surface (viewed from top)

Symbol	Port location
A	Port, Mounting surface
B	Port, Mounting surface

Bore size

50	50 mm

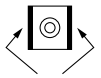
Port thread type

Nil	Rc
TN	NPT
TF	G

Guide pin diameter

∗ For guide pin diameter, refer to Table 1 below.

Body shape

Symbol	Dimension	Mounting hole (tap, pin hole) arrangement		Mounting	Mounting surface (viewed from top)
D	□66		○: Mounting tap ◔: Pin hole	Mounting tap: 4 x M10 x 1.5 Pin hole: 2 x ø8H7	 Mounting surface (Two facing sides)

Guide pin shape

R	Round type
D	Diamond type∗

∗ Diamond type guide pin diameter is ø17.5 or more.

Clamp arm position (clockwise viewed from top)

A	Same direction as port Port, Clamp arm, Guide pin	**C**	180° from port Port, Guide pin, Clamp arm
B	90° from port Port, Clamp arm, Guide pin	**D**	270° from port Port, Clamp arm, Guide pin

Number of auto switches

Nil	2 pcs.
S	1 pc. (Unclamp side)

∗ The D-P4/P7 type is different-surface mounting. (Refer to page 42.)

Auto switch type

Nil	Without auto switch (Built-in magnet)

∗ For applicable auto switch models, refer to page 3.
∗ Auto switches are included, (but not assembled).

Shim

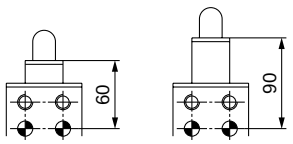
Nil	Without shims
S	With 3 mm shims∗

∗ When a model includes shims, two 1 mm shims and two 0.5 mm shims are attached.

Clamping height (Refer to the below figure.)

L	LOW type (60 mm)
H	HIGH type (90 mm)

LOW type **HIGH type**



Clamping height

Table 1. Guide Pin Diameter

Symbol	125	127	128	129	130	145	147	148	149	150	155	157	158	159	160
Guide pin diameter	12.5	12.7	12.8	12.9	13.0	14.5	14.7	14.8	14.9	15.0	15.5	15.7	15.8	15.9	16.0
Applicable hole diameter of workpiece	For ø13					For ø15					For ø16				
Guide pin shape	Round type														

Round type **Diamond type**

Symbol	175	177	178	179	180	195	197	198	199	200	245	247	248	249	250	295	297	298	299	300
Guide pin diameter	17.5	17.7	17.8	17.9	18.0	19.5	19.7	19.8	19.9	20.0	24.5	24.7	24.8	24.9	25.0	29.5	29.7	29.8	29.9	30.0
Applicable hole diameter of workpiece	For ø18					For ø20					For ø25					For ø30				
Guide pin shape	Round type, Diamond type																			

Table 2. Applicable Auto Switches / For detailed specifications about an auto switch for itself, refer to page 43 through to 47.

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
C(L)KQG series	**Solid state switch**	**D-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
		D-P4DWSE				2-wire (1–4)			
		D-P4DWL		Grommet		2-wire		3 m	
		D-P4DWZ						5 m	
C(L)KQP series	**Reed switch**	**D-P79WSE**	DC/AC magnetic field	Pre-wired connector	2-color display	2-wire (1–4)	24 VDC	0.3 m	
		D-P74L		Grommet (Pre-wired connector) Note 2)	1-color display	2-wire	24 VDC 100 VAC	3 m	
		D-P74Z						5 m	

Note 1) PLC: Programmable Logic Controller
Note 2) Refer to page 47 for pre-wired connector products.

Basic Specifications

Action	Double acting	
Bore size (mm)	50	
Fluid	Air	
Minimum operating pressure	CKQ□: 0.1 MPa	CLKQ□ (With lock): 0.15 MPa*
Ambient and fluid temperature	–10 to 60°C (No freezing)	
Cushion	None	
Lubrication	Non-lube	
Piston speed (Clamp speed)	50 to 150 mm/sec	
Port size (Cylinder port)	1/4 (Rc, NPT, G)	

∗ Minimum operating pressure is 0.2 MPa when cylinder part and locking part use the same piping.

Proof Pressure/Maximum Operating Pressure

Guide pin diameter	Proof pressure	Max. operating pressure
ø12.5 to ø13.0	1.0 MPa	0.7 MPa
ø14.5 to ø30.0	1.5 MPa	1.0 MPa

Clamp Specifications

Clamp stroke	Without shims	With shims
	10 mm	10 to 13 mm
Clamp arm	1 pc.	
Guide pin shape	Round type, Diamond type	

∗ Refer to the below “Clamp Specifications” and Selection regarding detailed specifications of the clamping force, etc.

∗ Diamond type guide pin diameter is ø17.5 or more.

Weight

Unit: kg

Model	C(L)KQ$^{G}_{P}$D			
Guide pin diameter (mm)	Without lock		With lock	
	L	H	L	H
ø12.5 to 13.0	1.66	1.83	2.18	2.34
ø14.5 to 15.0	1.66	1.83	2.18	2.34
ø15.5 to 16.0	1.67	1.83	2.18	2.35
ø17.5 to 18.0	1.71	1.88	2.22	2.4
ø19.5 to 20.0	1.72	1.89	2.23	2.41
ø24.5 to 25.0	1.78	1.98	2.29	2.5
ø29.5 to 30.0	1.82	2.02	2.33	2.54

Lock Specifications

Locking action	Spring locking (Exhaust locking)
Unlocking pressure	0.2 MPa or more
Lock starting pressure	0.05 MPa or less
Locking direction	Lock at extended direction (Clamp holding)
Port size (Lock release port)	1/8 (Rc, NPT, G)
Holding force (N) (Maximum static load)	982

Clamp Specifications

(N)

Model	Guide pin diameter	Operating pressure (MPa)								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CKQ$^{G}_{P}$	ø12.5 to ø13.0	164.9	329.8	494.7	659.6	824.5	989.4	—	—	—
	ø14.5 to ø30.0	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1319.2	1484.1
CLKQ$^{G}_{P}$	ø12.5 to ø13.0	82.4	247.3	412.2	577.1	742.0	906.9	—	—	—
	ø14.5 to ø30.0	82.4	247.3	412.2	577.1	742.0	906.9	Note 1) 1071.8	Note 1) 1236.7	Note 1) 1401.6

Note 1) Lock holding force of the CLKQ□ is 982 N. Design the circuit such that the lock holding force is taken into consideration when the operating pressure exceeds 0.75 MPa. The operating pressure should be not greater than the lock holding force as it may cause wearing out and/or damage of the locking part and shorten lock life and may lead to possible failure if applied with a load larger than the lock holding force.

Note 2) It takes approximately 0.3 seconds for the cylinder to operate to generate clamping force from an unclamping state (when no speed controller is installed). Design circuit taking into consideration the time before the clamping force is generated.

Note 3) Determine the clamping force according to the strength of the workpiece. It can be damaged if the clamping force is too large.

Maintenance Parts

Replacement Parts: Seal Kit

Kit No.	Content
CQ2B50-PS	Piston seal Rod seal Tube gasket

∗ Consult SMC for maintenance service. Seal kit for maintenance of the CLKQ$^{G}_{P}$ series is not available.

Replacement Parts: Grease Pack

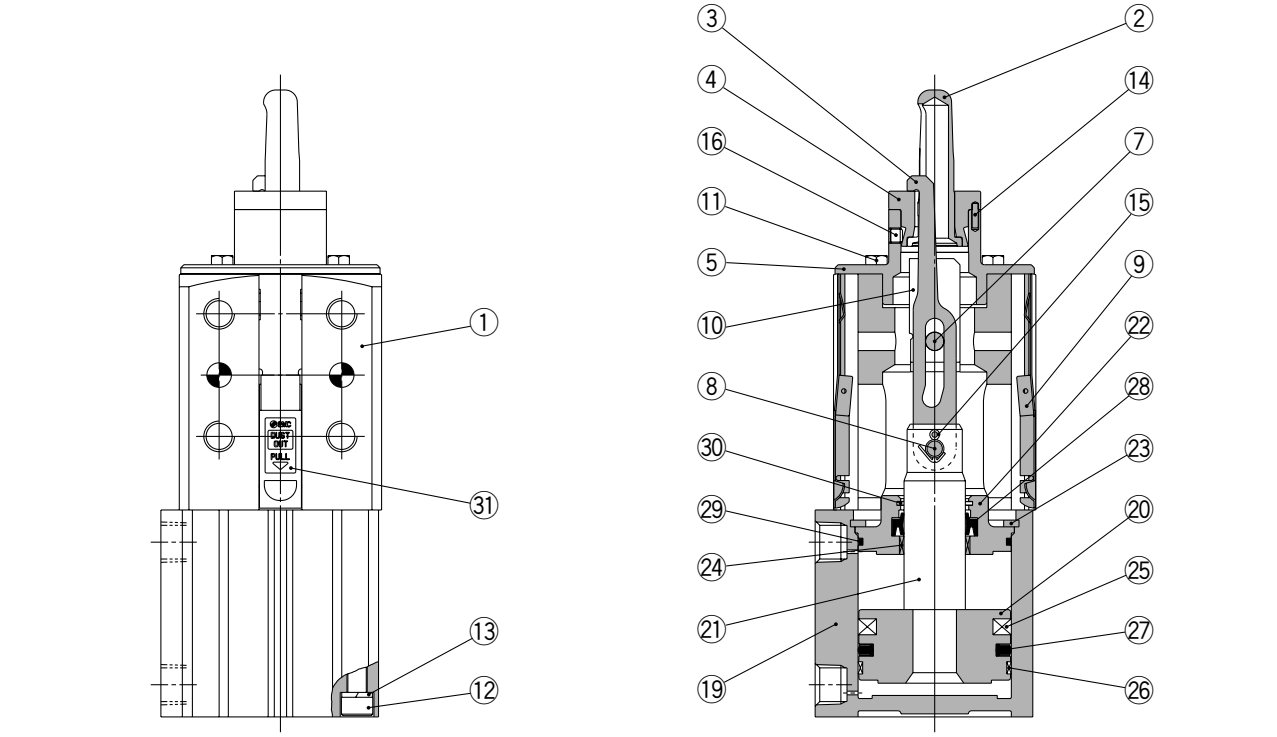
Kit No.	Content
GR-S-010	Grease 10 g

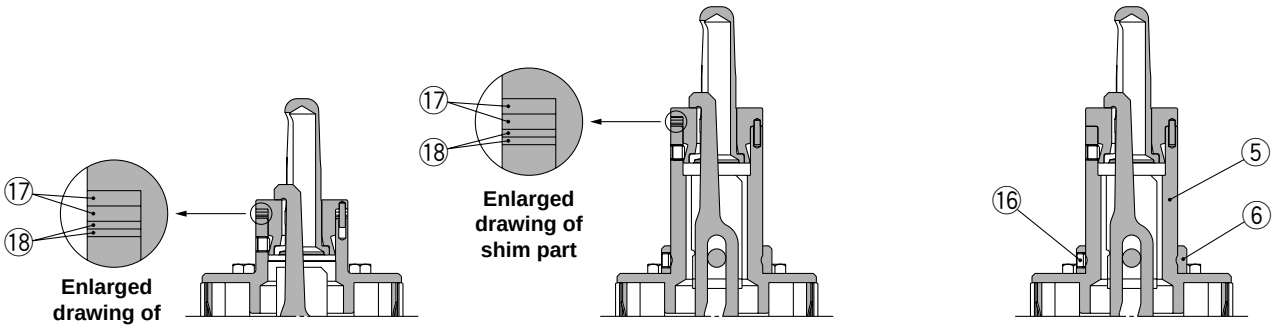
∗ Consult SMC when replacing the actuating cylinders.

Construction

CKQGDA50

∗ The below figures indicate the CKQGDA50-□RAL.





CKQGD□50□-□R□LS
Clamping height: LOW type
With shims

CKQGD□50□-□R□HS
Clamping height: HIGH type
With shims

CKQGD□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

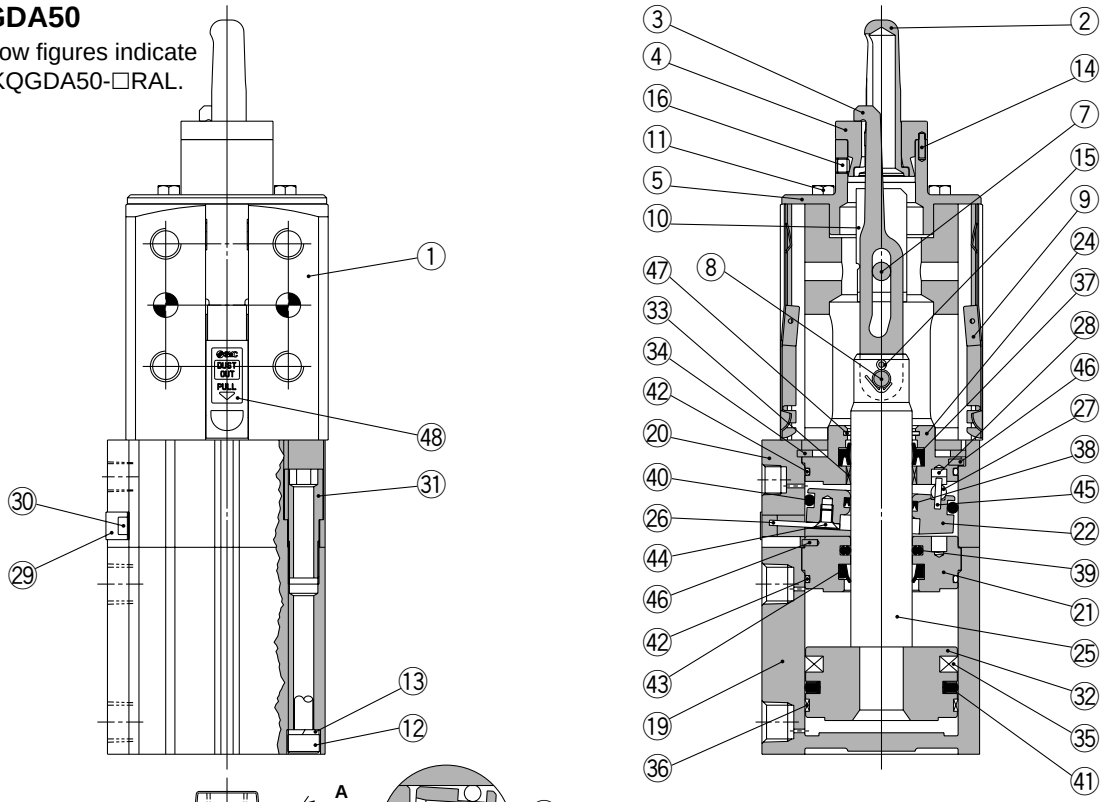
Component Parts

No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Structural steel	
22	**Collar**	Aluminum alloy	
23	**Retaining ring**	Tool steel	
24	**Bushing**	Lead-bronze casted	
25	**Magnet**	Magnetic material	
26	**Wear ring**	Resin	
27	**Piston seal**	NBR	
28	**Rod seal**	NBR	
29	**Tube gasket**	NBR	
30	**Coil scraper**	Bronze	
31	**Seal**	PET	

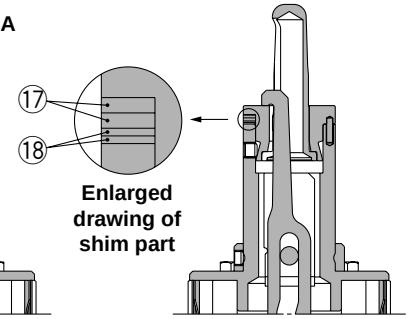
Construction

CLKQGDA50

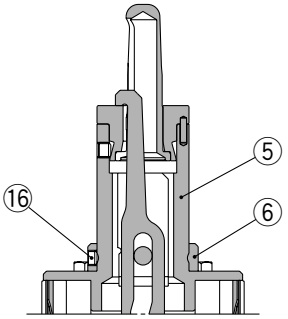
∗ The below figures indicate the CLKQGDA50-□RAL.



CLKQGD□50□-□R□LS
Clamping height: LOW type
With shims



CLKQGD□50□-□R□HS
Clamping height: HIGH type
With shims



CLKQGD□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	

Component Parts

No.	Description	Material	Note
17	Shim A	Stainless steel	t = 1 mm
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Structural steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	

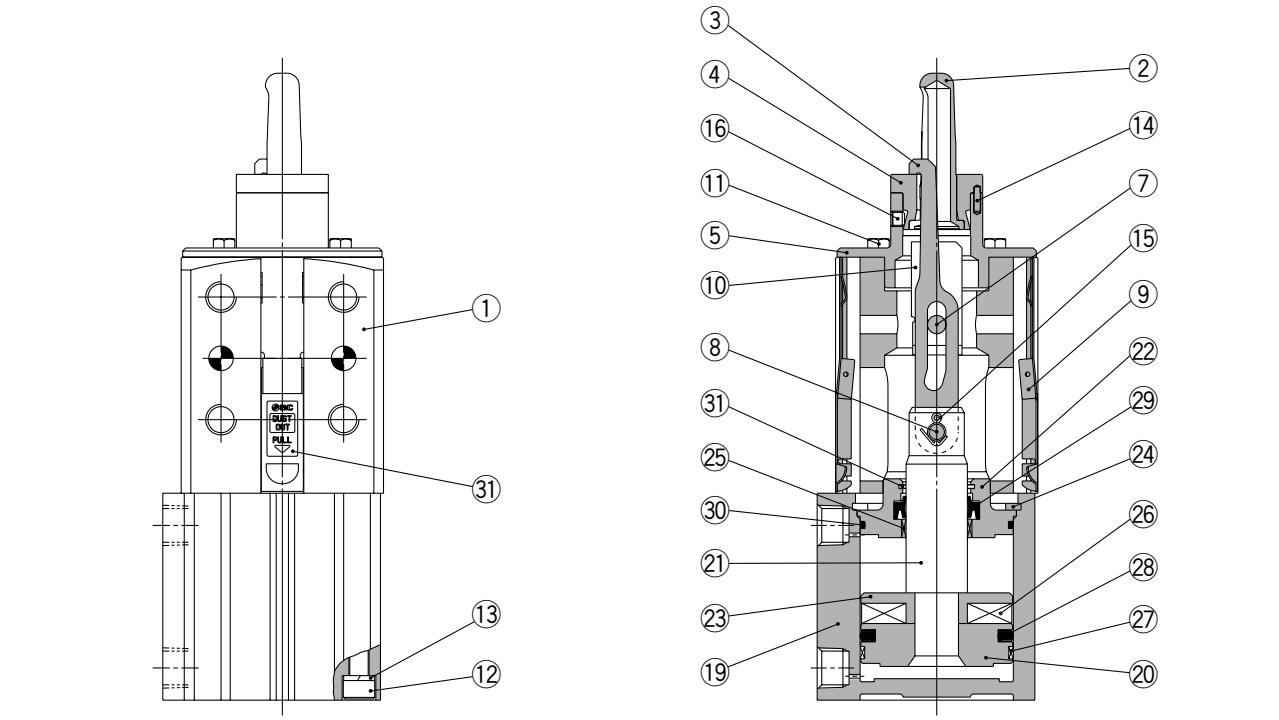
Component Parts

No.	Description	Material	Note
33	Bushing	Lead-bronze casted	
34	Retaining ring	Tool steel	
35	Magnet	Magnetic material	
36	Wear ring	Resin	
37	Rod seal A	NBR	
38	Rod seal B	NBR	
39	Rod seal C	NBR	
40	Piston seal A	NBR	
41	Piston seal B	NBR	
42	Tube gasket	NBR	
43	Scraper	NBR	
44	Hex. socket counter-sunk head screw	Structural steel	
45	Spring pin	Tool steel	
46	Parallel pin	Stainless steel	
47	Coil scraper	Bronze	
48	Seal	PET	

Construction

CKQPDA50

∗ The below figures indicate the CKQPDA50-□RAL.



CKQPD□50□-□R□LS
Clamping height: LOW type
With shims

CKQPD□50□-□R□HS
Clamping height: HIGH type
With shims

CKQPD□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

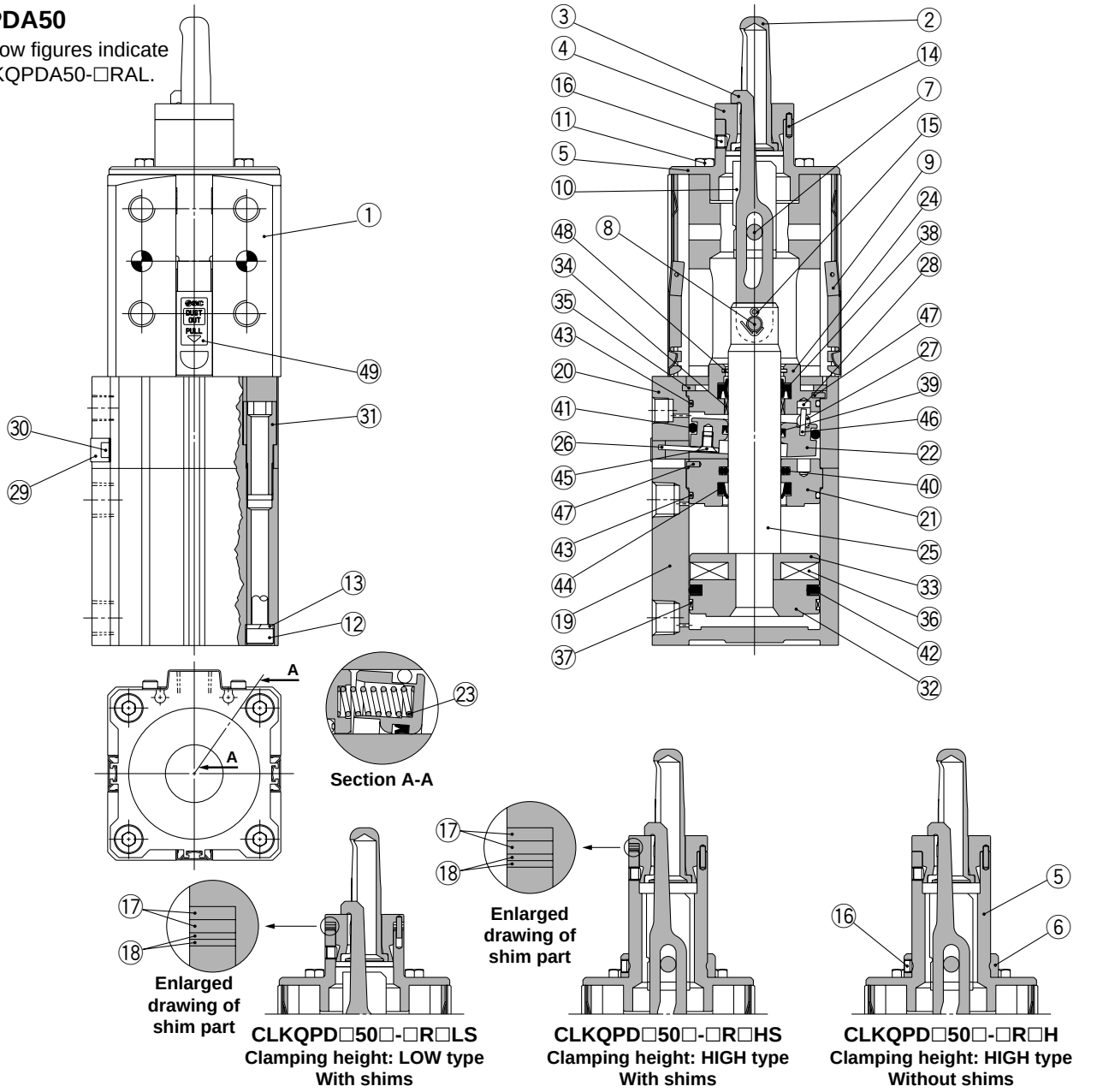
Component Parts

No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Stainless steel	
22	**Collar**	Aluminum alloy	
23	**Magnet holder**	Aluminum alloy	
24	**Retaining ring**	Tool steel	
25	**Bushing**	Lead-bronze casted	
26	**Magnet**	Magnetic material	
27	**Wear ring**	Resin	
28	**Piston seal**	NBR	
29	**Rod seal**	NBR	
30	**Tube gasket**	NBR	
31	**Coil scraper**	Bronze	
32	**Seal**	PET	

Construction

CLKQPDA50

∗ The below figures indicate the CLKQPDA50-□RAL.



CLKQPD□50□-□R□LS
Clamping height: LOW type
With shims

CLKQPD□50□-□R□HS
Clamping height: HIGH type
With shims

CLKQPD□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	
17	Shim A	Stainless steel	t = 1 mm

Component Parts

No.	Description	Material	Note
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Stainless steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	
33	Magnet holder	Aluminum alloy	
34	Bushing	Lead-bronze casted	

Component Parts

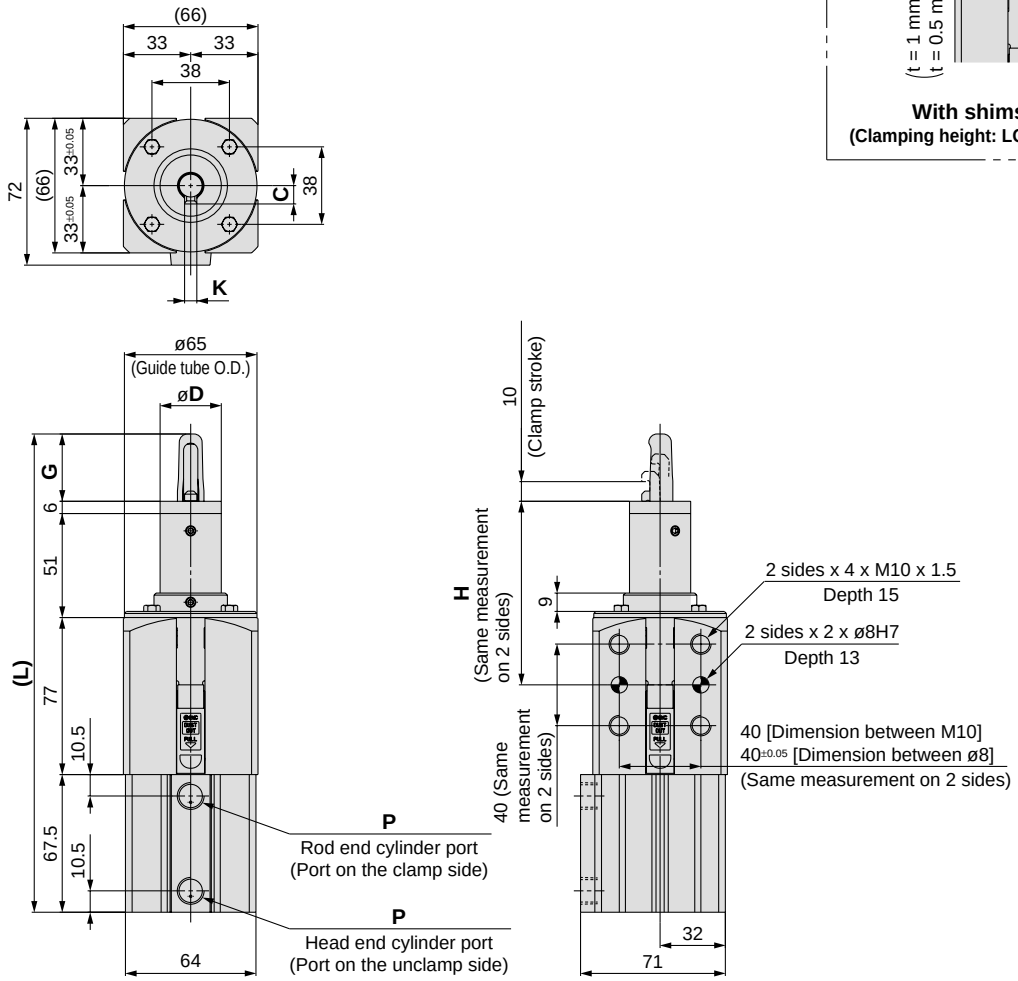
No.	Description	Material	Note
35	Retaining ring	Tool steel	
36	Magnet	Magnetic material	
37	Wear ring	Resin	
38	Rod seal A	NBR	
39	Rod seal B	NBR	
40	Rod seal C	NBR	
41	Piston seal A	NBR	
42	Piston seal B	NBR	
43	Tube gasket	NBR	
44	Scraper	NBR	
45	Hex. socket counter-sunk head screw	Structural steel	
46	Spring pin	Tool steel	
47	Parallel pin	Stainless steel	
48	Coil scraper	Bronze	
49	Seal	PET	

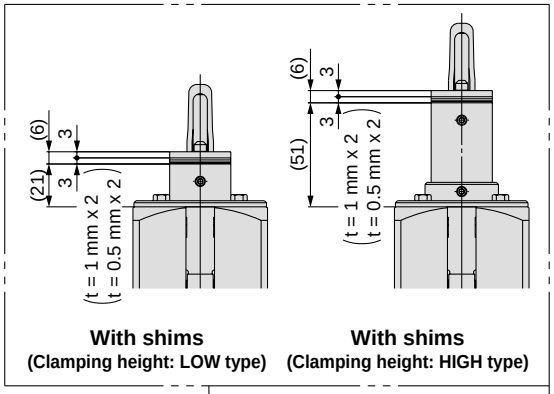
Dimensions

CKQ$^{G}_{P}$DA50

(**CKQ$^{G}_{P}$DB50** The angle of the cylinder port location against the mounting surface is 90°.)

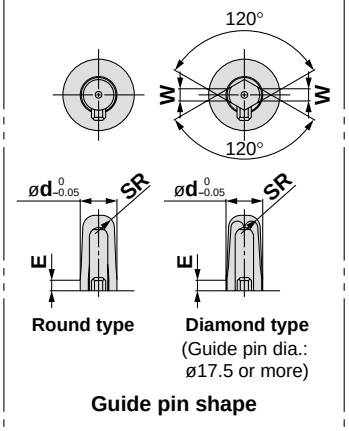
* Refer to “How to Order” on page 2 for relationship between the mounting surface and a port location.
* The below figures indicate the CKQ$^{G}_{P}$DA50-□RAH.





With shims
(Clamping height: LOW type)

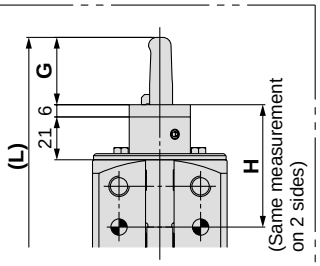
With shims
(Clamping height: HIGH type)



Round type

Diamond type
(Guide pin dia.:
ø17.5 or more)

Guide pin shape



Clamping height: LOW type

Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø13	9	ø30	ø12.5	≈10	33	Without shims 60±0.05 / With shims 60	Without shims 90±0.05 / With shims 90	6	204.5	234.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8									
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 60±0.05 / With shims 60	Without shims 90±0.05 / With shims 90	7	205.5	235.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8									
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 60±0.05 / With shims 60	Without shims 90±0.05 / With shims 90	7	205.5	235.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8									
			ø15.9	≈8									
			ø16.0	≈7									

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

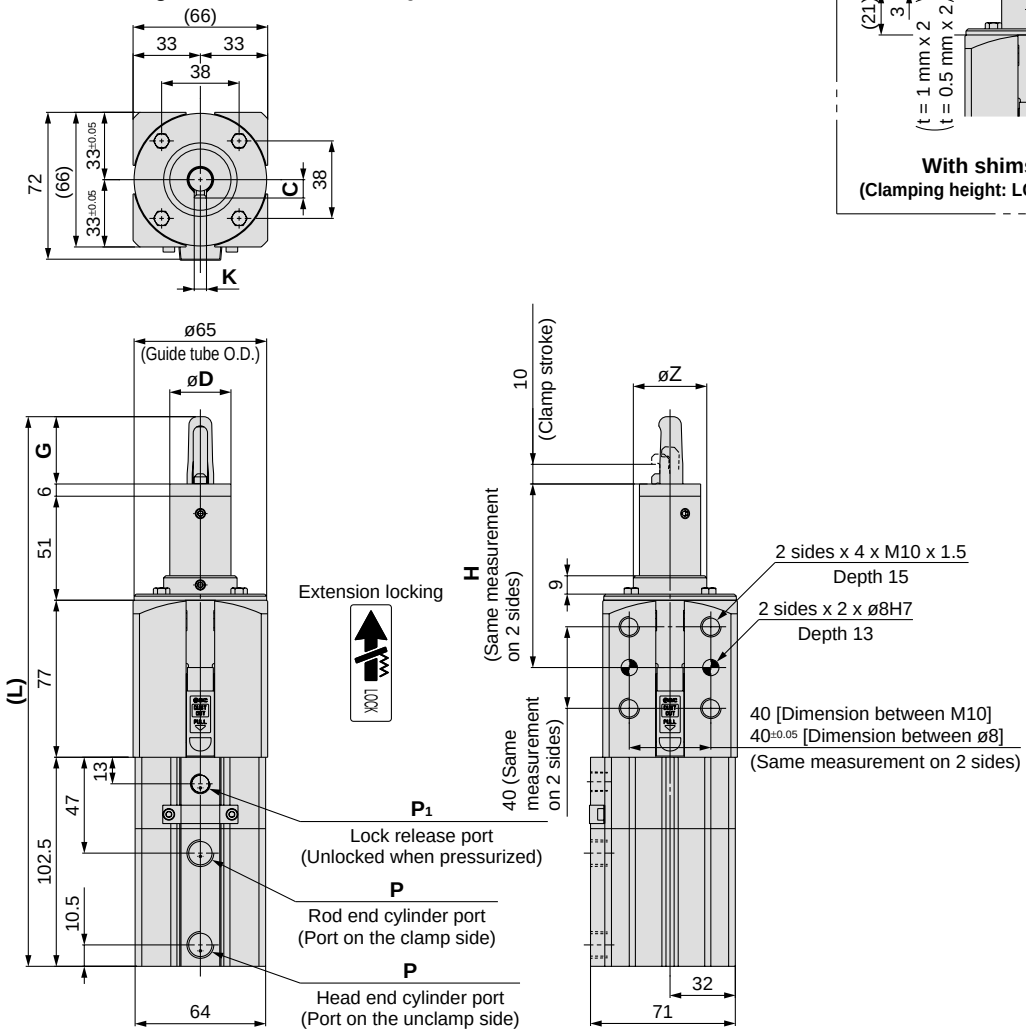
Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø18	12	ø35	ø17.5	≈10	37	Without shims 60±0.05 / With shims 60	Without shims 90±0.05 / With shims 90	7	208.5	238.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8									
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 60±0.05 / With shims 60	Without shims 90±0.05 / With shims 90	8	210.5	240.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8									
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 60±0.05 / With shims 60	Without shims 90±0.05 / With shims 90	8	210.5	240.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8									
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 60±0.05 / With shims 60	Without shims 90±0.05 / With shims 90	8	210.5	240.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8									
			ø29.9	≈8									
			ø30.0	≈7									

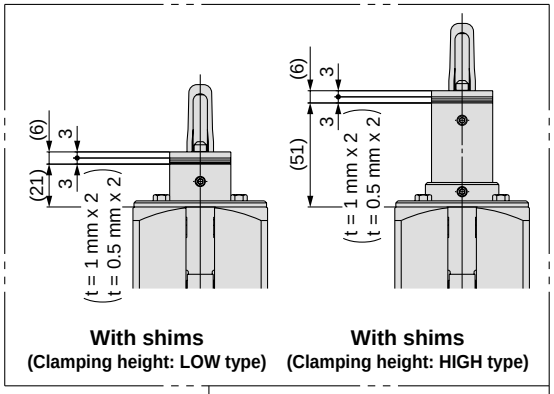
Dimensions

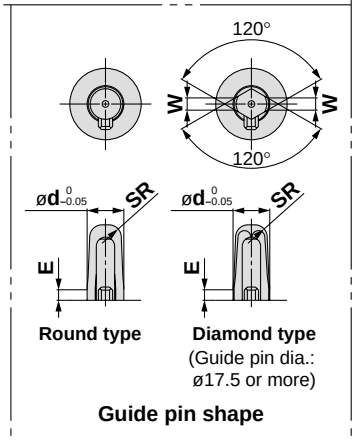
CLKQ$^{G}_{P}$DA50

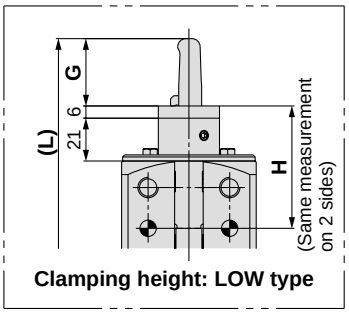
(**CLKQ$^{G}_{P}$DB50** The angle of the cylinder port location against the mounting surface is 90°.)

* Refer to "How to Order" on page 2 for relationship between the mounting surface and a port location.
* The below figures indicate the CLKQ$^{G}_{P}$DA50-□RAH.









Hole diameter of workpiece	C	øD	ød	E	G	H LOW type	H HIGH type	K	L LOW type	L HIGH type	SR	W	øZ
ø13	9	ø30	ø12.5	≈10	33	Without shims 60±0.05	Without shims 90±0.05	6	239.5	269.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8		With shims 60	With shims 90						
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 60±0.05	Without shims 90±0.05	7	240.5	270.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8		With shims 60	With shims 90						
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 60±0.05	Without shims 90±0.05	7	240.5	270.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8		With shims 60	With shims 90						
			ø15.9	≈8									
			ø16.0	≈7									

Hole diameter of workpiece	C	øD	ød	E	G	H LOW type	H HIGH type	K	L LOW type	L HIGH type	SR	W	øZ
ø18	12	ø35	ø17.5	≈10	37	Without shims 60±0.05	Without shims 90±0.05	7	243.5	273.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8		With shims 60	With shims 90						
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 60±0.05	Without shims 90±0.05	8	245.5	275.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8		With shims 60	With shims 90						
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 60±0.05	Without shims 90±0.05	8	245.5	275.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8		With shims 60	With shims 90						
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 60±0.05	Without shims 90±0.05	8	245.5	275.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8		With shims 60	With shims 90						
			ø29.9	≈8									
			ø30.0	≈7									

P			P1		
Nil	TN	TF	Nil	TN	TF
Rc1/4	NPT1/4	G1/4	Rc1/8	NPT1/8	G1/8

Pin Clamp Cylinder U series

Series CKQ$^{G}_{P}$U/CLKQ$^{G}_{P}$U

How to Order

Built-in standard magnet
With magnetic field resistant auto switch

C□KQGU**A**50□-177**R**A**L**□-P4DWSC□

Built-in strong magnet
With magnetic field resistant auto switch

C□KQPU**A**50□-198**R**A**L**□-P79WSE□

With lock on the clamp side

Nil	Without lock
L	With lock

Mounting surface (viewed from top)

Symbol	Port location
A	Port, Mounting surface
B	Port, Mounting surface

Bore size

50	50 mm

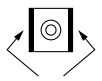
Port thread type

Nil	Rc
TN	NPT
TF	G

Guide pin diameter

∗ For guide pin diameter, refer to Table 1 below.

Body shape

Symbol	Dimension	Mounting hole (tap, pin hole) arrangement		Mounting	Mounting surface (viewed from top)
U	□66		○: Mounting tap ◔: Pin hole	Mounting tap: 2 x M10 x 1.5 Pin hole: 2 x ø8H7	 Mounting surface (Two facing sides)

Guide pin shape

R	Round type
D	Diamond type∗

∗ Diamond type guide pin diameter is ø17.5 or more.

Clamp arm position (clockwise viewed from top)

A	Same direction as port Port, Clamp arm, Guide pin	**C**	180° from port Port, Guide pin, Clamp arm
B	90° from port Port, Clamp arm, Guide pin	**D**	270° from port Port, Clamp arm, Guide pin

Number of auto switches

Nil	2 pcs.
S	1 pc. (Unclamp side)

∗ The D-P4/P7 type is different-surface mounting. (Refer to page 42.)

Auto switch type

Nil	Without auto switch (Built-in magnet)

∗ For applicable auto switch models, refer to page 13.
∗ Auto switches are included, (but not assembled).

Shim

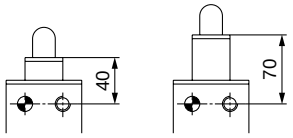
Nil	Without shims
S	With 3 mm shims∗

∗ When a model includes shims, two 1 mm shims and two 0.5 mm shims are attached.

Clamping height (Refer to the below figure.)

L	LOW type (40 mm)
H	HIGH type (70 mm)

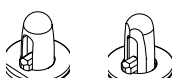
LOW type **HIGH type**



Clamping height

Table 1. Guide Pin Diameter

Symbol	125	127	128	129	130	145	147	148	149	150	155	157	158	159	160
Guide pin diameter	12.5	12.7	12.8	12.9	13.0	14.5	14.7	14.8	14.9	15.0	15.5	15.7	15.8	15.9	16.0
Applicable hole diameter of workpiece	For ø13					For ø15					For ø16				
Guide pin shape	Round type														



Round type **Diamond type**

Symbol	175	177	178	179	180	195	197	198	199	200	245	247	248	249	250	295	297	298	299	300
Guide pin diameter	17.5	17.7	17.8	17.9	18.0	19.5	19.7	19.8	19.9	20.0	24.5	24.7	24.8	24.9	25.0	29.5	29.7	29.8	29.9	30.0
Applicable hole diameter of workpiece	For ø18					For ø20					For ø25					For ø30				
Guide pin shape	Round type, Diamond type																			

Table 2. Applicable Auto Switches / For detailed specifications about an auto switch for itself, refer to page 43 through to 47.

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
C(L)KQG series	**Solid state switch**	**D-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
		D-P4DWSE				2-wire (1–4)			
		D-P4DWL		Grommet		2-wire		3 m	
		D-P4DWZ						5 m	
C(L)KQP series	**Reed switch**	**D-P79WSE**	DC/AC magnetic field	Pre-wired connector	2-color display	2-wire (1–4)	24 VDC	0.3 m	
		D-P74L		Grommet (Pre-wired connector) Note 2)	1-color display	2-wire	24 VDC 100 VAC	3 m	
		D-P74Z						5 m	

Note 1) PLC: Programmable Logic Controller
Note 2) Refer to page 47 for pre-wired connector products.

Series CKQ$^{G}_{P}$U/CLKQ$^{G}_{P}$U

Basic Specifications

Action	Double acting	
Bore size (mm)	50	
Fluid	Air	
Minimum operating pressure	CKQ□: 0.1 MPa	CLKQ□ (With lock): 0.15 MPa*
Ambient and fluid temperature	–10 to 60°C (No freezing)	
Cushion	None	
Lubrication	Non-lube	
Piston speed (Clamp speed)	50 to 150 mm/sec	
Port size (Cylinder port)	1/4 (Rc, NPT, G)	

∗ Minimum operating pressure is 0.2 MPa when cylinder part and locking part use the same piping.

Proof Pressure/Maximum Operating Pressure

Guide pin diameter	Proof pressure	Max. operating pressure
ø12.5 to ø13.0	1.0 MPa	0.7 MPa
ø14.5 to ø30.0	1.5 MPa	1.0 MPa

Clamp Specifications

Clamp stroke	Without shims	With shims
	10 mm	10 to 13 mm
Clamp arm	1 pc.	
Guide pin shape	Round type, Diamond type	

∗ Refer to the below “Clamp Specifications” and Selection regarding detailed specifications of the clamping force, etc.

∗ Diamond type guide pin diameter is ø17.5 or more.

Weight

Unit: kg

Model	C(L)KQ$^{G}_{P}$U			
Guide pin diameter (mm)	Without lock		With lock	
	L	H	L	H
ø12.5 to 13.0	1.67	1.84	2.19	2.36
ø14.5 to 15.0	1.67	1.84	2.19	2.36
ø15.5 to 16.0	1.68	1.85	2.19	2.36
ø17.5 to 18.0	1.72	1.9	2.24	2.41
ø19.5 to 20.0	1.73	1.91	2.24	2.42
ø24.5 to 25.0	1.79	2	2.3	2.51
ø29.5 to 30.0	1.83	2.04	2.35	2.55

Lock Specifications

Locking action	Spring locking (Exhaust locking)
Unlocking pressure	0.2 MPa or more
Lock starting pressure	0.05 MPa or less
Locking direction	Lock at extended direction (Clamp holding)
Port size (Lock release port)	1/8 (Rc, NPT, G)
Holding force (N) (Maximum static load)	982

Clamp Specifications

(N)

Model	Guide pin diameter	Operating pressure (MPa)								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CKQ$^{G}_{P}$	ø12.5 to ø13.0	164.9	329.8	494.7	659.6	824.5	989.4	—	—	—
	ø14.5 to ø30.0	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1319.2	1484.1
CLKQ$^{G}_{P}$	ø12.5 to ø13.0	82.4	247.3	412.2	577.1	742.0	906.9	—	—	—
	ø14.5 to ø30.0	82.4	247.3	412.2	577.1	742.0	906.9	Note 1) 1071.8	Note 1) 1236.7	Note 1) 1401.6

Note 1) Lock holding force of the CLKQ□ is 982 N. Design the circuit such that the lock holding force is taken into consideration when the operating pressure exceeds 0.75 MPa. The operating pressure should be not greater than the lock holding force as it may cause wearing out and/or damage of the locking part and shorten lock life and may lead to possible failure if applied with a load larger than the lock holding force.

Note 2) It takes approximately 0.3 seconds for the cylinder to operate to generate clamping force from an unclamping state (when no speed controller is installed). Design circuit taking into consideration the time before the clamping force is generated.

Note 3) Determine the clamping force according to the strength of the workpiece. It can be damaged if the clamping force is too large.

Maintenance Parts

Replacement Parts: Seal Kit

Kit No.	Content
CQ2B50-PS	Piston seal Rod seal Tube gasket

∗ Consult SMC for maintenance service. Seal kit for maintenance of the CLKQ$^{G}_{P}$ series is not available.

Replacement Parts: Grease Pack

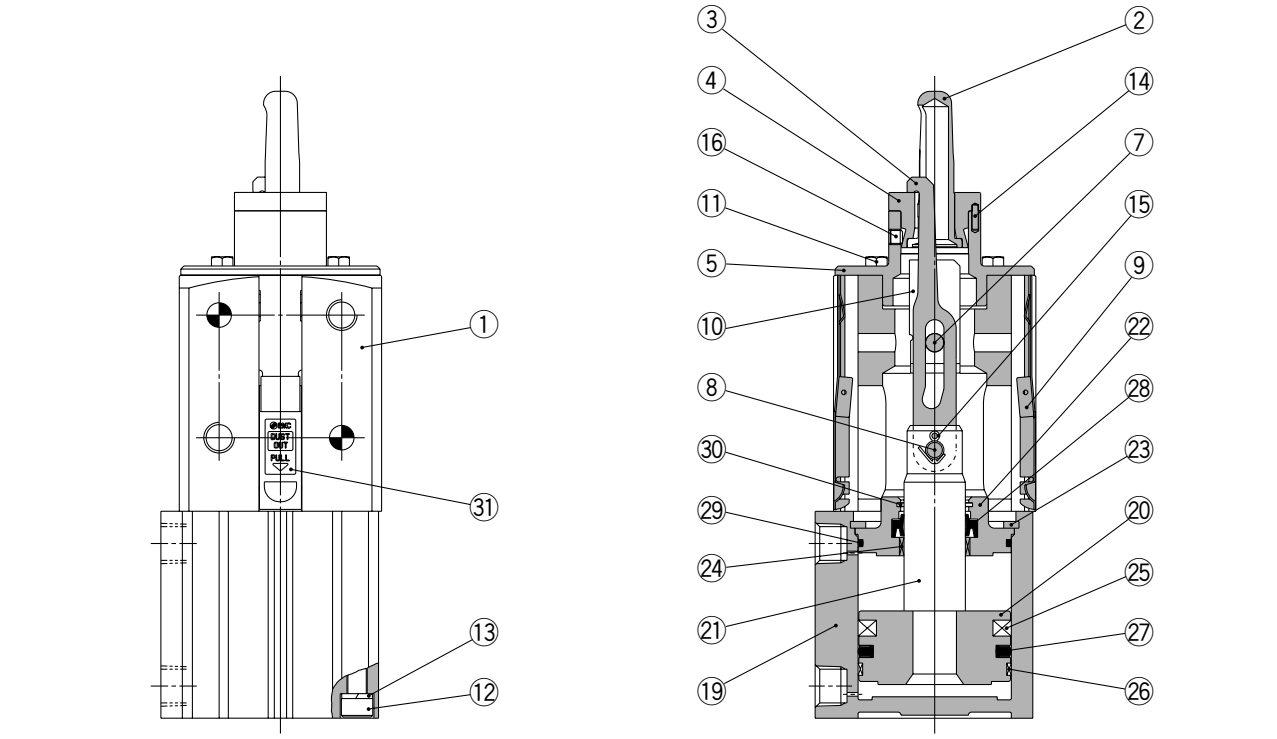
Kit No.	Content
GR-S-010	Grease 10 g

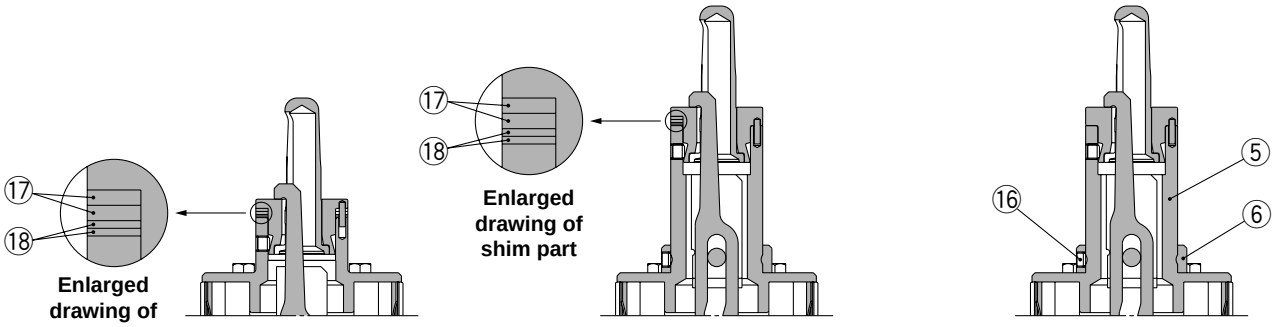
∗ Consult SMC when replacing the actuating cylinders.

Construction

CKQGUA50

∗ The below figures indicate the CKQGUA50-□RAL.





CKQGU□50□-□R□LS
Clamping height: LOW type
With shims

CKQGU□50□-□R□HS
Clamping height: HIGH type
With shims

CKQGU□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

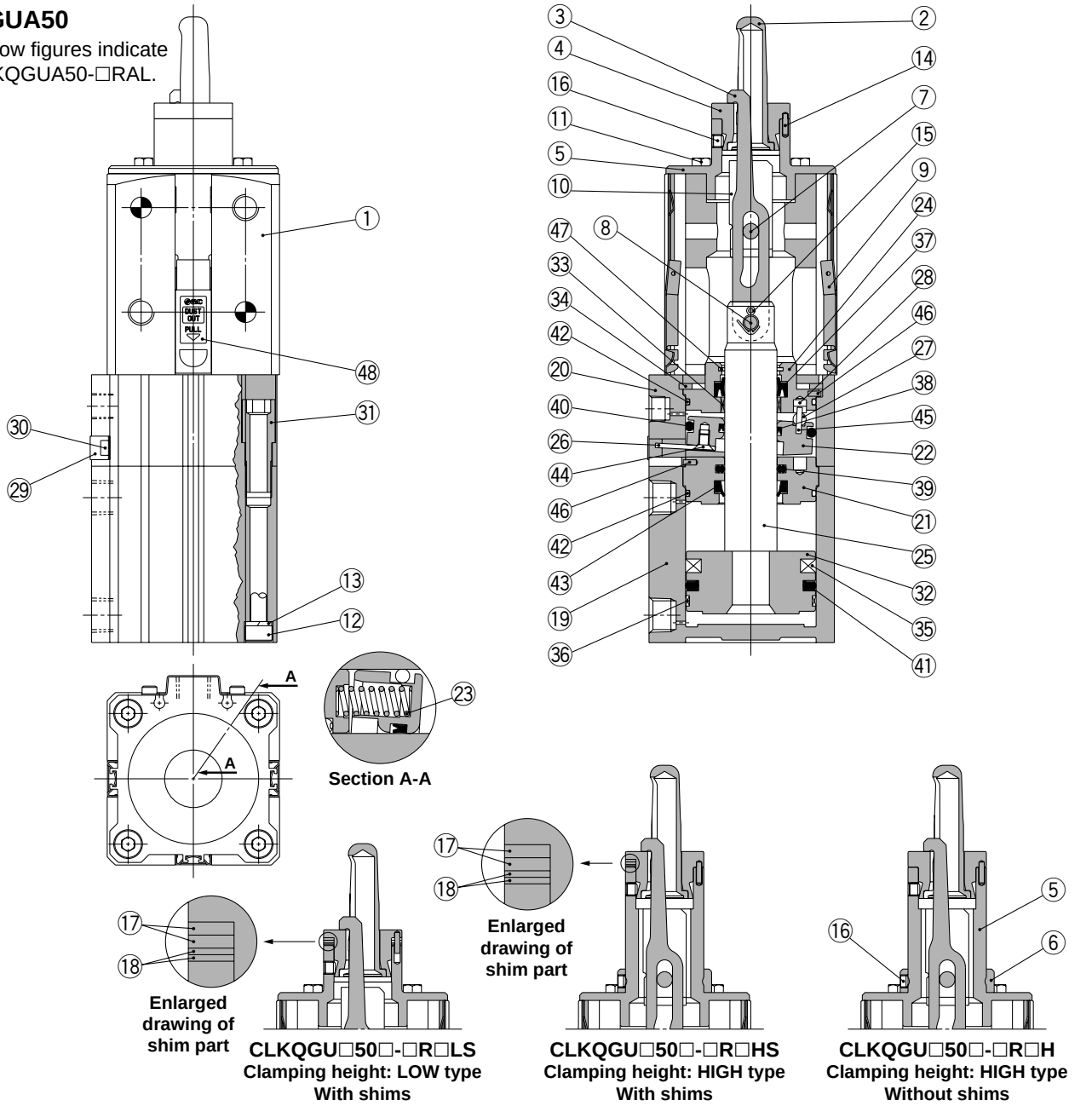
Component Parts

No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Structural steel	
22	**Collar**	Aluminum alloy	
23	**Retaining ring**	Tool steel	
24	**Bushing**	Lead-bronze casted	
25	**Magnet**	Magnetic material	
26	**Wear ring**	Resin	
27	**Piston seal**	NBR	
28	**Rod seal**	NBR	
29	**Tube gasket**	NBR	
30	**Coil scraper**	Bronze	
31	**Seal**	PET	

Construction

CLKQGUA50

∗ The below figures indicate the CLKQGUA50-□RAL.



CLKQGU□50□-□R□LS
Clamping height: LOW type
With shims

CLKQGU□50□-□R□HS
Clamping height: HIGH type
With shims

CLKQGU□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	

Component Parts

No.	Description	Material	Note
17	Shim A	Stainless steel	t = 1 mm
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Structural steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	

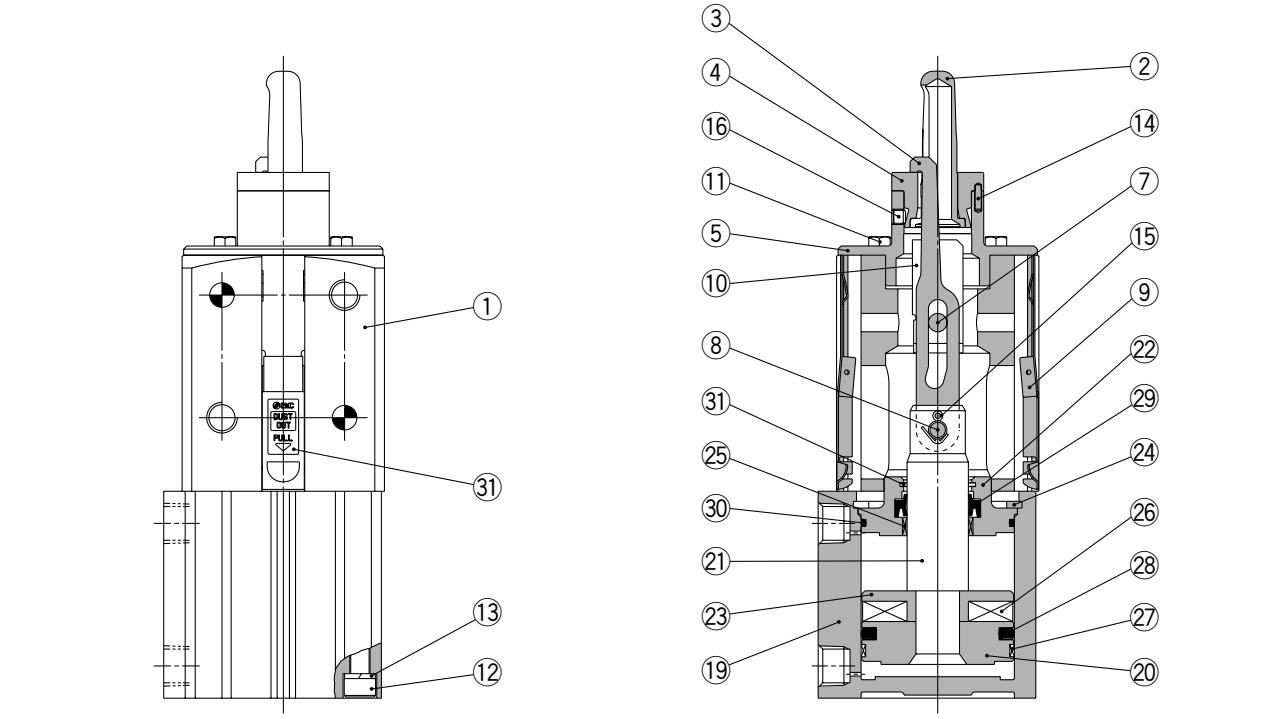
Component Parts

No.	Description	Material	Note
33	Bushing	Lead-bronze casted	
34	Retaining ring	Tool steel	
35	Magnet	Magnetic material	
36	Wear ring	Resin	
37	Rod seal A	NBR	
38	Rod seal B	NBR	
39	Rod seal C	NBR	
40	Piston seal A	NBR	
41	Piston seal B	NBR	
42	Tube gasket	NBR	
43	Scraper	NBR	
44	Hex. socket counter-sunk head screw	Structural steel	
45	Spring pin	Tool steel	
46	Parallel pin	Stainless steel	
47	Coil scraper	Bronze	
48	Seal	PET	

Construction

CKQPUA50

∗ The below figures indicate the CKQPUA50-□RAL.



CKQPU□50□-□R□LS
Clamping height: LOW type
With shims

CKQPU□50□-□R□HS
Clamping height: HIGH type
With shims

CKQPU□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

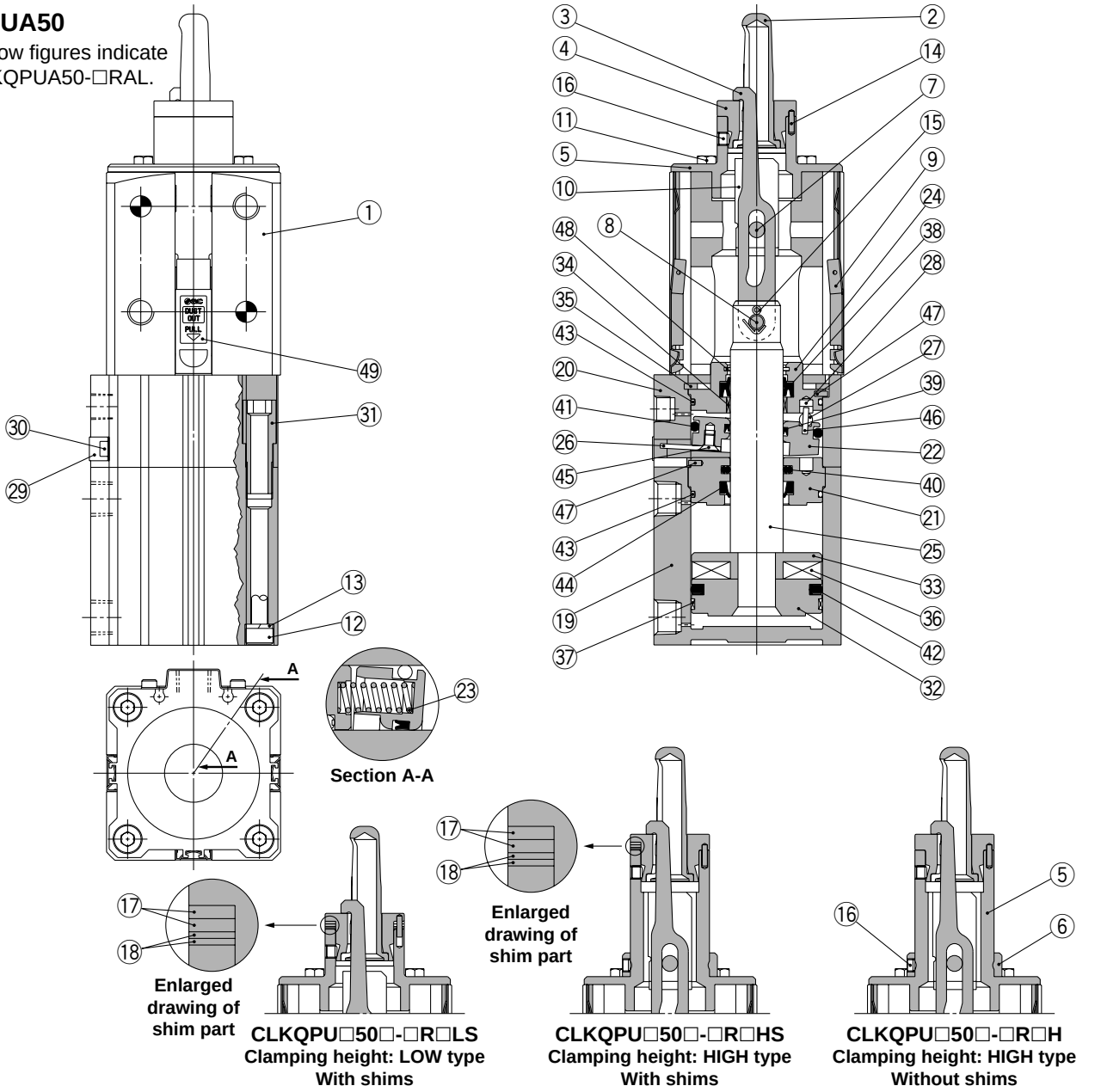
Component Parts

No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Stainless steel	
22	**Collar**	Aluminum alloy	
23	**Magnet holder**	Aluminum alloy	
24	**Retaining ring**	Tool steel	
25	**Bushing**	Lead-bronze casted	
26	**Magnet**	Magnetic material	
27	**Wear ring**	Resin	
28	**Piston seal**	NBR	
29	**Rod seal**	NBR	
30	**Tube gasket**	NBR	
31	**Coil scraper**	Bronze	
32	**Seal**	PET	

Construction

CLKQPUA50

∗ The below figures indicate the CLKQPUA50-□RAL.



CLKQPU□50□-□R□LS
Clamping height: LOW type
With shims

CLKQPU□50□-□R□HS
Clamping height: HIGH type
With shims

CLKQPU□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	
17	Shim A	Stainless steel	t = 1 mm

Component Parts

No.	Description	Material	Note
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Stainless steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	
33	Magnet holder	Aluminum alloy	
34	Bushing	Lead-bronze casted	

Component Parts

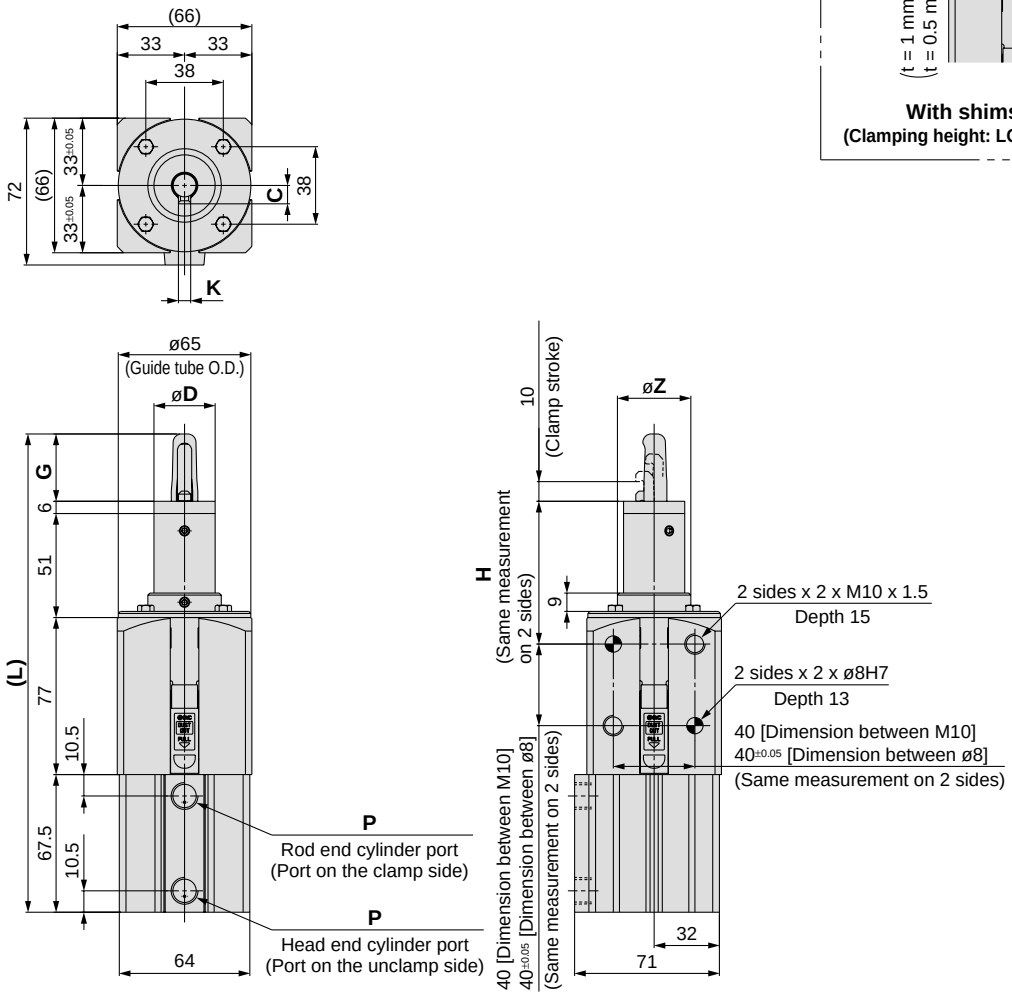
No.	Description	Material	Note
35	Retaining ring	Tool steel	
36	Magnet	Magnetic material	
37	Wear ring	Resin	
38	Rod seal A	NBR	
39	Rod seal B	NBR	
40	Rod seal C	NBR	
41	Piston seal A	NBR	
42	Piston seal B	NBR	
43	Tube gasket	NBR	
44	Scraper	NBR	
45	Hex. socket counter-sunk head screw	Structural steel	
46	Spring pin	Tool steel	
47	Parallel pin	Stainless steel	
48	Coil scraper	Bronze	
49	Seal	PET	

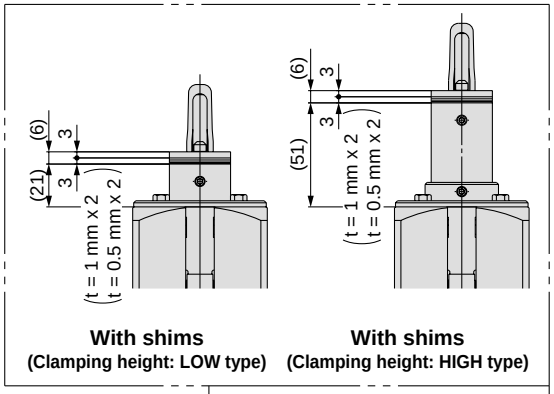
Dimensions

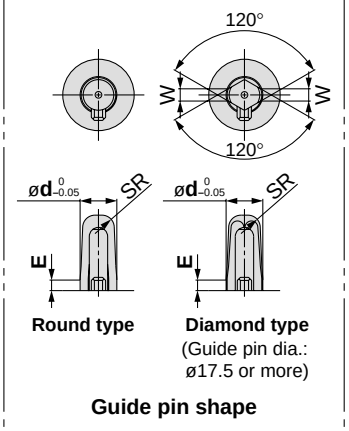
$CKQ^{G}_{P}UA50$

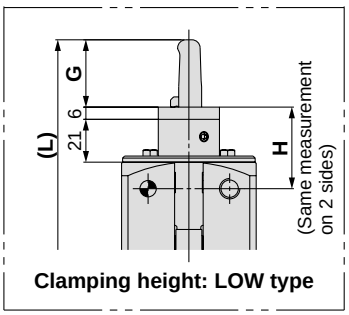
(**$CKQ^{G}_{P}UB50$** The angle of the cylinder port location against the mounting surface is 90°.)

* Refer to "How to Order" on page 12 for relationship between the mounting surface and a port location.
* The below figures indicate the $CKQ^{G}_{P}UA50$-□RAH.









Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø13	9	ø30	ø12.5	≈10	33	Without shims 40±0.05	Without shims 70±0.05	6	204.5	234.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8		With shims 40	With shims 70						
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 40±0.05	Without shims 70±0.05	7	205.5	235.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8		With shims 40	With shims 70						
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 40±0.05	Without shims 70±0.05	7	205.5	235.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8		With shims 40	With shims 70						
			ø15.9	≈8									
			ø16.0	≈7									

Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø18	12	ø35	ø17.5	≈10	37	Without shims 40±0.05	Without shims 70±0.05	7	208.5	238.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8		With shims 40	With shims 70						
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8		With shims 40	With shims 70						
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8		With shims 40	With shims 70						
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8		With shims 40	With shims 70						
			ø29.9	≈8									
			ø30.0	≈7									

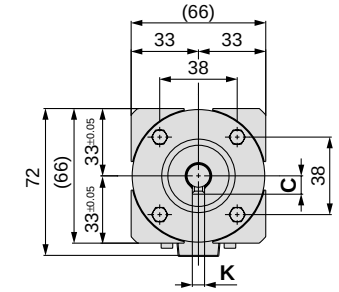
P		
Nil	**TN**	**TF**
Rc1/4	NPT1/4	G1/4

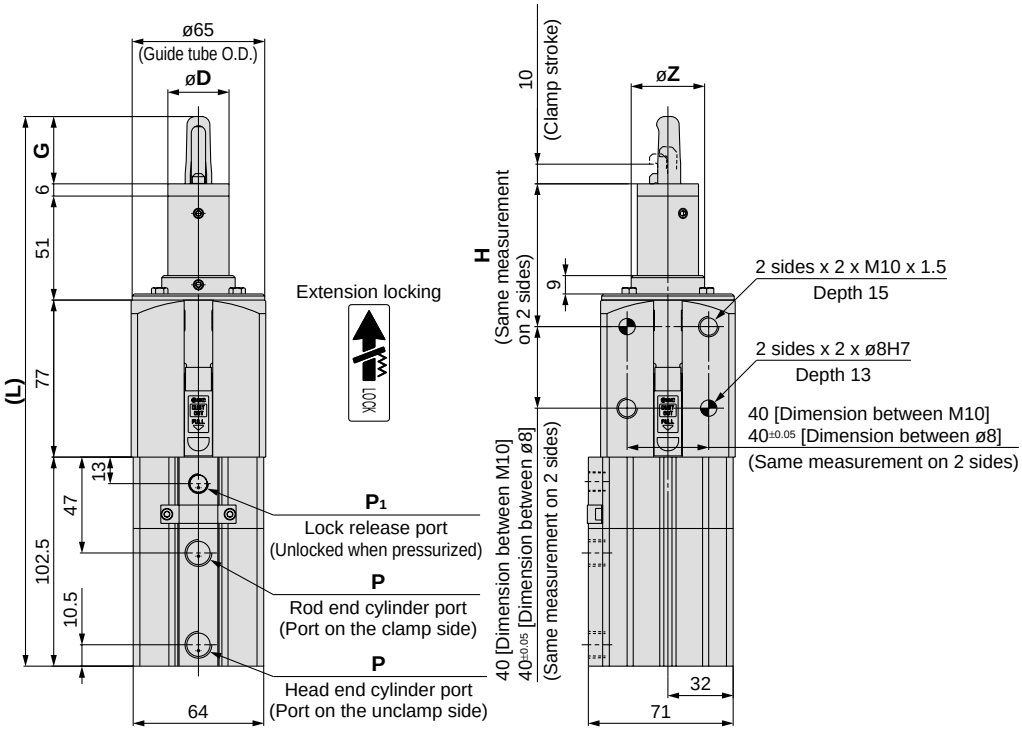
Dimensions

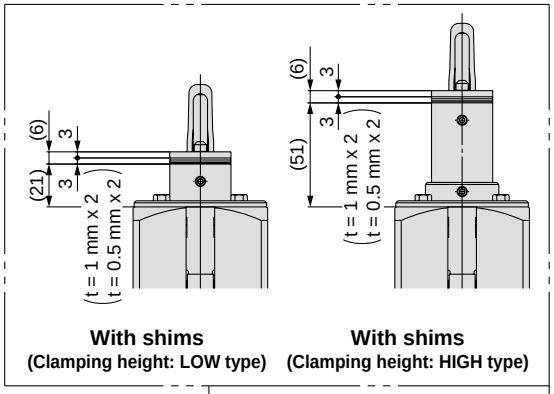
CLKQ$^{G}_{P}$UA50

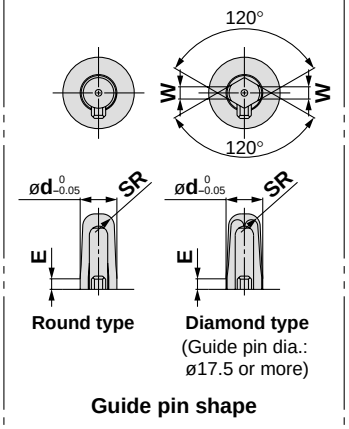
(**CLKQ$^{G}_{P}$UB50** The angle of the cylinder port location against the mounting surface is 90°.)

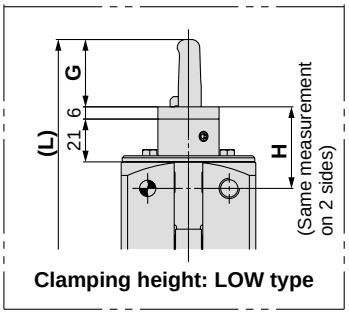
* Refer to "How to Order" on page 12 for relationship between the mounting surface and a port location.
* The below figures indicate the CLKQ$^{G}_{P}$UA50-□RAH.











Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø13	9	ø30	ø12.5	≈10	33	Without shims 40±0.05	Without shims 70±0.05	6	239.5	269.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8		With shims 40	With shims 70						
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 40±0.05	Without shims 70±0.05	7	240.5	270.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8		With shims 40	With shims 70						
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 40±0.05	Without shims 70±0.05	7	240.5	270.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8		With shims 40	With shims 70						
			ø15.9	≈8									
			ø16.0	≈7									

Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø18	12	ø35	ø17.5	≈10	37	Without shims 40±0.05	Without shims 70±0.05	7	243.5	273.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8		With shims 40	With shims 70						
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8		With shims 40	With shims 70						
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8		With shims 40	With shims 70						
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8		With shims 40	With shims 70						
			ø29.9	≈8									
			ø30.0	≈7									

P			P1		
Nil	TN	TF	Nil	TN	TF
Rc1/4	NPT1/4	G1/4	Rc1/8	NPT1/8	G1/8

Pin Clamp Cylinder

K series

Series CKQ$^{G}_{P}$K/CLKQ$^{G}_{P}$K

How to Order

Built-in standard magnet
With magnetic field resistant auto switch

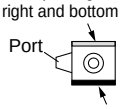
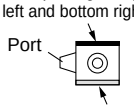
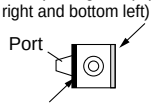
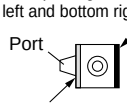
Built-in strong magnet
With magnetic field resistant auto switch

C	□	KQG	K	C	50	□	–	177	R	A	L	□	–	P4DWSC	□
C	□	KQP	K	C	50	□	–	198	R	A	L	□	–	P79WSE	□

With lock on the clamp side

Nil	Without lock
L	With lock

Mounting surface (viewed from top)

Symbol	Port location	Symbol	Port location
C	Mounting surface with the taps diagonal (top right and bottom left)  Mounting surface with the taps diagonal (top left and bottom right)	**E**	Mounting surface with the taps diagonal (top left and bottom right)  Mounting surface with the taps diagonal (top right and bottom left)
D	Mounting surface with the taps diagonal (top right and bottom left)  Mounting surface with the taps diagonal (top left and bottom right)	**F**	Mounting surface with the taps diagonal (top left and bottom right)  Mounting surface with the taps diagonal (top right and bottom left)

Bore size

50	50 mm

Port thread type

Nil	Rc
TN	NPT
TF	G

Guide pin diameter

∗ For guide pin diameter, refer to Table 1 below.

Number of auto switches

Nil	2 pcs.
S	1 pc. (Unclamp side)

∗ The D-P4/P7 type is different-surface mounting. (Refer to page 42.)

Auto switch type

Nil	Without auto switch (Built-in magnet)

∗ For applicable auto switch models, refer to page 23.
∗ Auto switches are included, (but not assembled).

Shim

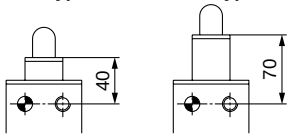
Nil	Without shims
S	With 3 mm shims∗

∗ When a model includes shims, two 1 mm shims and two 0.5 mm shims are attached.

Clamping height (Refer to the below figure.)

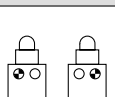
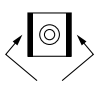
L	LOW type (40 mm)
H	HIGH type (70 mm)

LOW type **HIGH type**



Clamping height

Body shape

Symbol	Dimension	Mounting hole (tap, pin hole) arrangement		Mounting	Mounting surface (viewed from top)
K	□66		○: Mounting tap ◔: Pin hole	Mounting tap: 2 x M10 x 1.5 Pin hole: 2 x ø10H7	 Mounting surface (Two facing sides)

Guide pin shape

R	Round type
D	Diamond type∗

∗ Diamond type guide pin diameter is ø17.5 or more.

Clamp arm position (clockwise viewed from top)

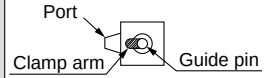
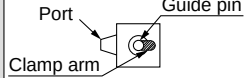
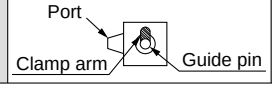
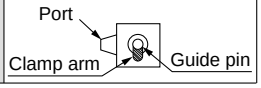
A	Same direction as port 	**C**	180° from port 
B	90° from port 	**D**	270° from port 

Table 1. Guide Pin Diameter

Symbol	125	127	128	129	130	145	147	148	149	150	155	157	158	159	160
Guide pin diameter	12.5	12.7	12.8	12.9	13.0	14.5	14.7	14.8	14.9	15.0	15.5	15.7	15.8	15.9	16.0
Applicable hole diameter of workpiece	For ø13					For ø15					For ø16				
Guide pin shape	Round type														

Round type **Diamond type**

Symbol	175	177	178	179	180	195	197	198	199	200	245	247	248	249	250	295	297	298	299	300
Guide pin diameter	17.5	17.7	17.8	17.9	18.0	19.5	19.7	19.8	19.9	20.0	24.5	24.7	24.8	24.9	25.0	29.5	29.7	29.8	29.9	30.0
Applicable hole diameter of workpiece	For ø18					For ø20					For ø25					For ø30				
Guide pin shape	Round type, Diamond type																			

SMC

Table 2. Applicable Auto Switches / For detailed specifications about an auto switch for itself, refer to page 43 through to 47.

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
C(L)KQG series	**Solid state switch**	**D-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
		D-P4DWSE				2-wire (1–4)			
		D-P4DWL		Grommet		2-wire		3 m	
		D-P4DWZ						5 m	
C(L)KQP series	**Reed switch**	**D-P79WSE**	DC/AC magnetic field	Pre-wired connector	2-color display	2-wire (1–4)	24 VDC	0.3 m	
		D-P74L		Grommet (Pre-wired connector) Note 2)	1-color display	2-wire	24 VDC 100 VAC	3 m	
		D-P74Z						5 m	

Note 1) PLC: Programmable Logic Controller
Note 2) Refer to page 47 for pre-wired connector products.

Series CKQ$^{G}_{P}$K/CLKQ$^{G}_{P}$K

Basic Specifications

Action	Double acting	
Bore size (mm)	50	
Fluid	Air	
Minimum operating pressure	CKQ□: 0.1 MPa	CLKQ□ (With lock): 0.15 MPa*
Ambient and fluid temperature	–10 to 60°C (No freezing)	
Cushion	None	
Lubrication	Non-lube	
Piston speed (Clamp speed)	50 to 150 mm/sec	
Port size (Cylinder port)	1/4 (Rc, NPT, G)	

∗ Minimum operating pressure is 0.2 MPa when cylinder part and locking part use the same piping.

Proof Pressure/Maximum Operating Pressure

Guide pin diameter	Proof pressure	Max. operating pressure
ø12.5 to ø13.0	1.0 MPa	0.7 MPa
ø14.5 to ø30.0	1.5 MPa	1.0 MPa

Clamp Specifications

Clamp stroke	Without shims	With shims
	10 mm	10 to 13 mm
Clamp arm	1 pc.	
Guide pin shape	Round type, Diamond type	

∗ Refer to the below “Clamp Specifications” and Selection regarding detailed specifications of the clamping force, etc.

∗ Diamond type guide pin diameter is ø17.5 or more.

Lock Specifications

Locking action	Spring locking (Exhaust locking)
Unlocking pressure	0.2 MPa or more
Lock starting pressure	0.05 MPa or less
Locking direction	Lock at extended direction (Clamp holding)
Port size (Lock release port)	1/8 (Rc, NPT, G)
Holding force (N) (Maximum static load)	982

Weight

Unit: kg

Model	C(L)KQ$^{G}_{P}$K			
Guide pin diameter (mm)	Without lock		With lock	
	L	H	L	H
ø12.5 to 13.0	1.67	1.84	2.19	2.35
ø14.5 to 15.0	1.67	1.84	2.19	2.35
ø15.5 to 16.0	1.68	1.84	2.19	2.36
ø17.5 to 18.0	1.72	1.89	2.23	2.41
ø19.5 to 20.0	1.73	1.9	2.24	2.42
ø24.5 to 25.0	1.79	1.99	2.3	2.51
ø29.5 to 30.0	1.83	2.03	2.34	2.55

Clamp Specifications

(N)

Model	Guide pin diameter	Operating pressure (MPa)								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CKQ$^{G}_{P}$	ø12.5 to ø13.0	164.9	329.8	494.7	659.6	824.5	989.4	—	—	—
	ø14.5 to ø30.0	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1319.2	1484.1
CLKQ$^{G}_{P}$	ø12.5 to ø13.0	82.4	247.3	412.2	577.1	742.0	906.9	—	—	—
	ø14.5 to ø30.0	82.4	247.3	412.2	577.1	742.0	906.9	Note 1) 1071.8	Note 1) 1236.7	Note 1) 1401.6

Note 1) Lock holding force of the CLKQ□ is 982 N. Design the circuit such that the lock holding force is taken into consideration when the operating pressure exceeds 0.75 MPa. The operating pressure should be not greater than the lock holding force as it may cause wearing out and/or damage of the locking part and shorten lock life and may lead to possible failure if applied with a load larger than the lock holding force.

Note 2) It takes approximately 0.3 seconds for the cylinder to operate to generate clamping force from an unclamping state (when no speed controller is installed). Design circuit taking into consideration the time before the clamping force is generated.

Note 3) Determine the clamping force according to the strength of the workpiece. It can be damaged if the clamping force is too large.

Maintenance Parts

Replacement Parts: Seal Kit

Kit No.	Content
CQ2B50-PS	Piston seal Rod seal Tube gasket

∗ Consult SMC for maintenance service. Seal kit for maintenance of the CLKQ$^{G}_{P}$ series is not available.

Replacement Parts: Grease Pack

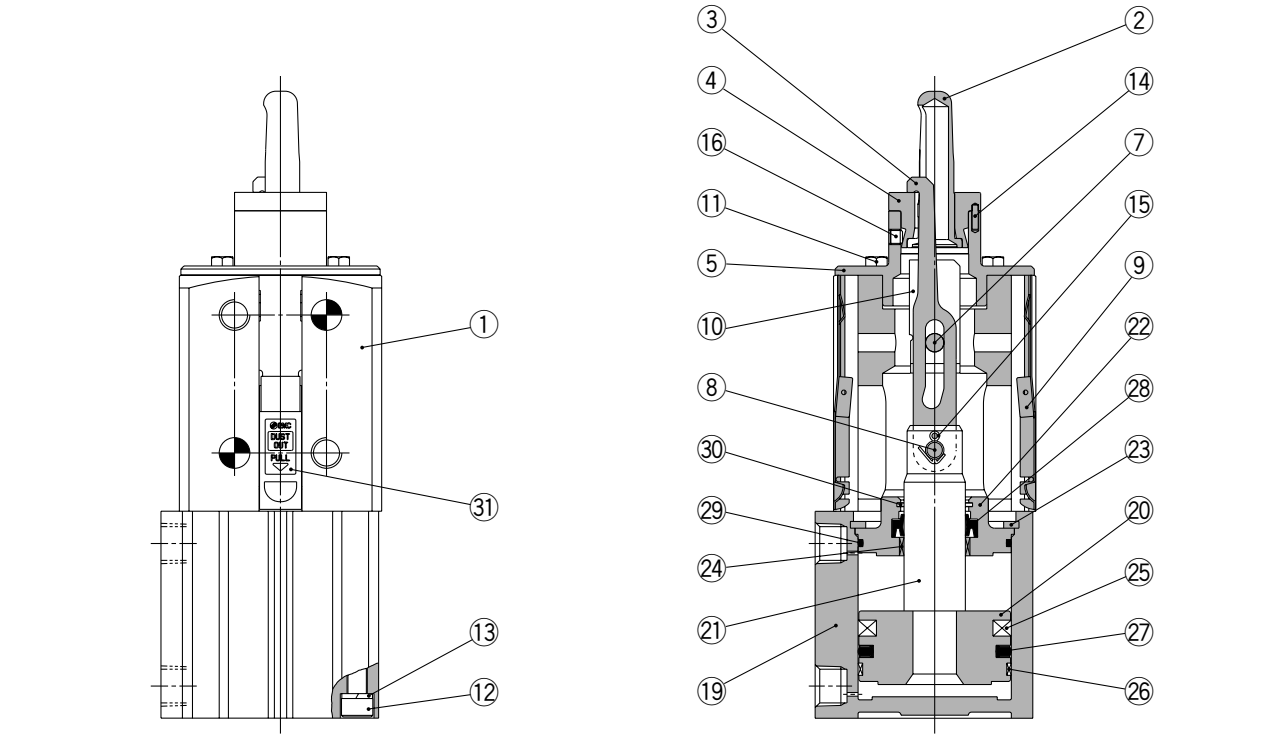
Kit No.	Content
GR-S-010	Grease 10 g

∗ Consult SMC when replacing the actuating cylinders.

Construction

CKQGKC50

∗ The below figures indicate the CKQGKC50-□RAL.



CKQGK□50□-□R□LS
Clamping height: LOW type
With shims

CKQGK□50□-□R□HS
Clamping height: HIGH type
With shims

CKQGK□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

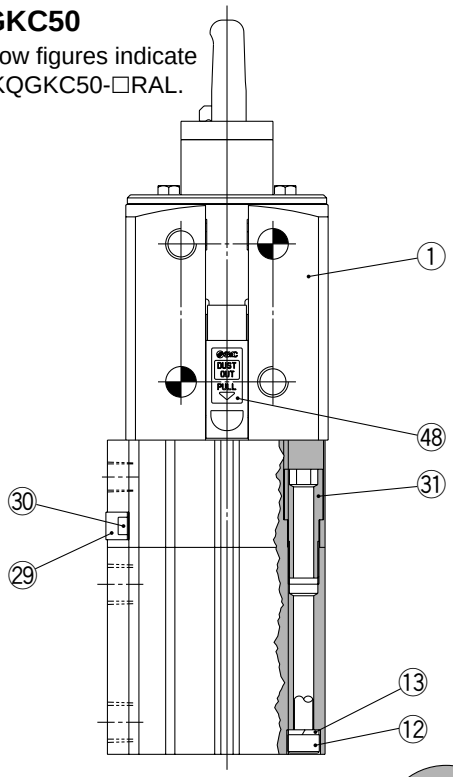
Component Parts

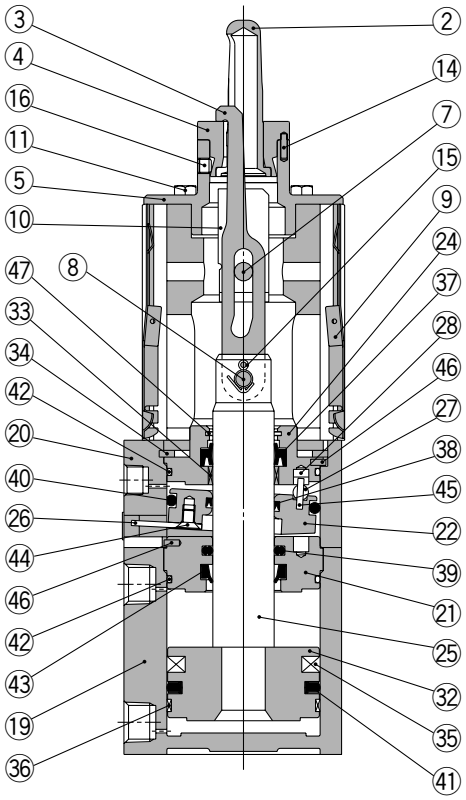
No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Structural steel	
22	**Collar**	Aluminum alloy	
23	**Retaining ring**	Tool steel	
24	**Bushing**	Lead-bronze casted	
25	**Magnet**	Magnetic material	
26	**Wear ring**	Resin	
27	**Piston seal**	NBR	
28	**Rod seal**	NBR	
29	**Tube gasket**	NBR	
30	**Coil scraper**	Bronze	
31	**Seal**	PET	

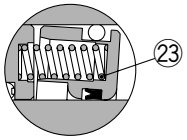
Construction

CLKQGKC50

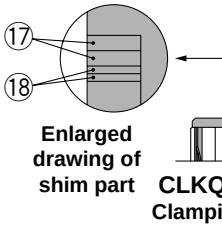
∗ The below figures indicate the CLKQGKC50-□RAL.



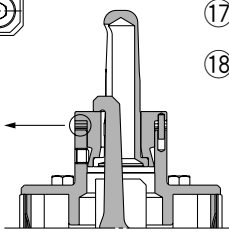




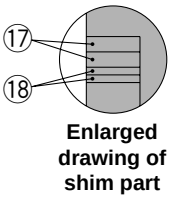
Section A-A



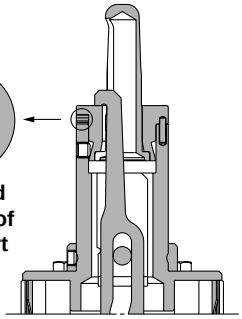
Enlarged drawing of shim part



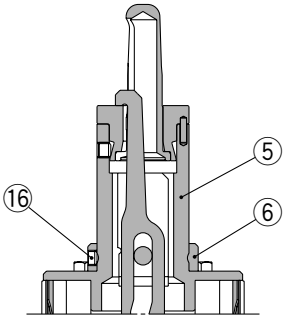
CLKQGK□50□-□R□LS
Clamping height: LOW type
With shims



Enlarged drawing of shim part



CLKQGK□50□-□R□HS
Clamping height: HIGH type
With shims



CLKQGK□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	

Component Parts

No.	Description	Material	Note
17	Shim A	Stainless steel	t = 1 mm
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Structural steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	

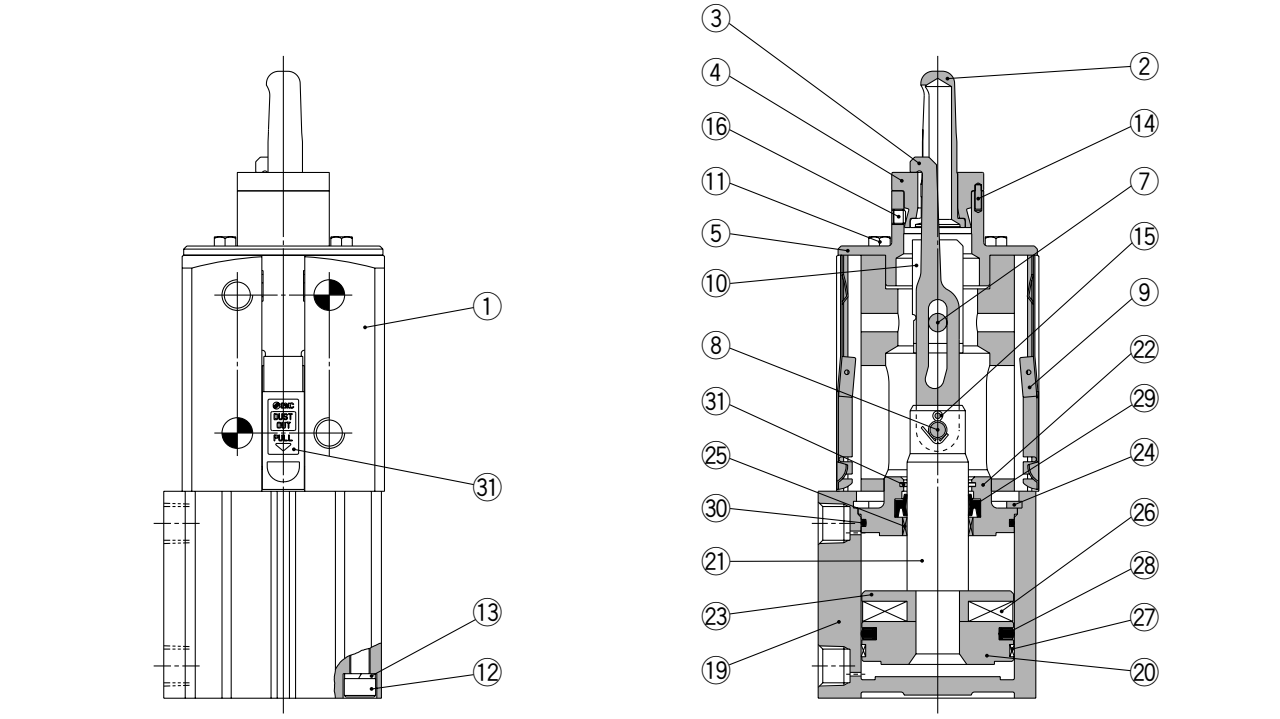
Component Parts

No.	Description	Material	Note
33	Bushing	Lead-bronze casted	
34	Retaining ring	Tool steel	
35	Magnet	Magnetic material	
36	Wear ring	Resin	
37	Rod seal A	NBR	
38	Rod seal B	NBR	
39	Rod seal C	NBR	
40	Piston seal A	NBR	
41	Piston seal B	NBR	
42	Tube gasket	NBR	
43	Scraper	NBR	
44	Hex. socket counter-sunk head screw	Structural steel	
45	Spring pin	Tool steel	
46	Parallel pin	Stainless steel	
47	Coil scraper	Bronze	
48	Seal	PET	

Construction

CKQPKC50

∗ The below figures indicate the CKQPKC50-□RAL.



CKQPK□50□-□R□LS
Clamping height: LOW type
With shims

CKQPK□50□-□R□HS
Clamping height: HIGH type
With shims

CKQPK□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

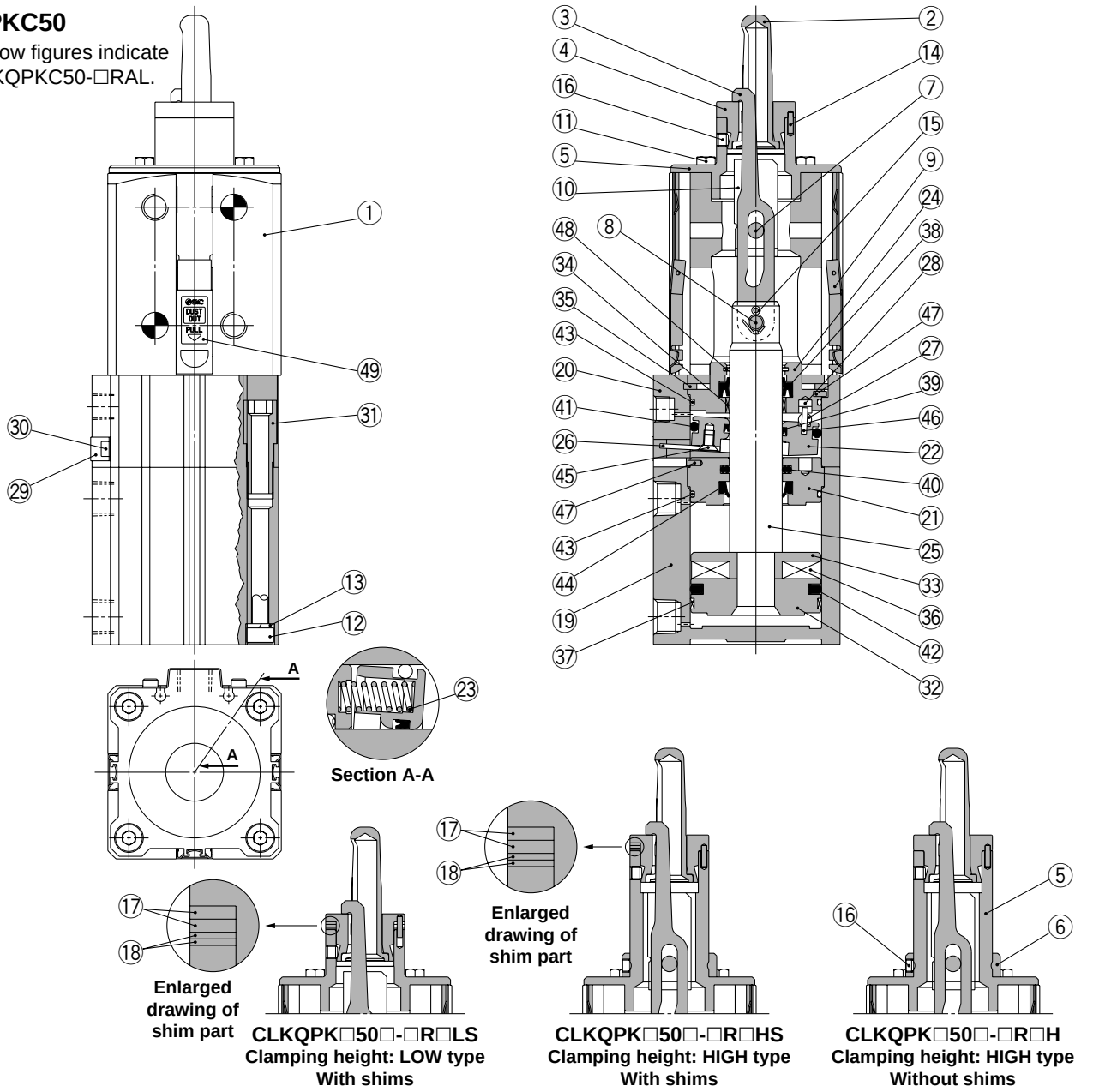
Component Parts

No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Stainless steel	
22	**Collar**	Aluminum alloy	
23	**Magnet holder**	Aluminum alloy	
24	**Retaining ring**	Tool steel	
25	**Bushing**	Lead-bronze casted	
26	**Magnet**	Magnetic material	
27	**Wear ring**	Resin	
28	**Piston seal**	NBR	
29	**Rod seal**	NBR	
30	**Tube gasket**	NBR	
31	**Coil scraper**	Bronze	
32	**Seal**	PET	

Construction

CLKQPKC50

∗ The below figures indicate the CLKQPKC50-□RAL.



CLKQPK□50□-□R□LS
Clamping height: LOW type
With shims

CLKQPK□50□-□R□HS
Clamping height: HIGH type
With shims

CLKQPK□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	
17	Shim A	Stainless steel	t = 1 mm

Component Parts

No.	Description	Material	Note
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Stainless steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	
33	Magnet holder	Aluminum alloy	
34	Bushing	Lead-bronze casted	

Component Parts

No.	Description	Material	Note
35	Retaining ring	Tool steel	
36	Magnet	Magnetic material	
37	Wear ring	Resin	
38	Rod seal A	NBR	
39	Rod seal B	NBR	
40	Rod seal C	NBR	
41	Piston seal A	NBR	
42	Piston seal B	NBR	
43	Tube gasket	NBR	
44	Scraper	NBR	
45	Hex. socket counter-sunk head screw	Structural steel	
46	Spring pin	Tool steel	
47	Parallel pin	Stainless steel	
48	Coil scraper	Bronze	
49	Seal	PET	

Dimensions

CKQ$^{G}_{P}$KC50

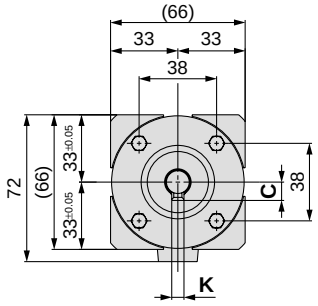
(**CKQ$^{G}_{P}$KD50** Relationship between the mounting surface and a port location is  .)

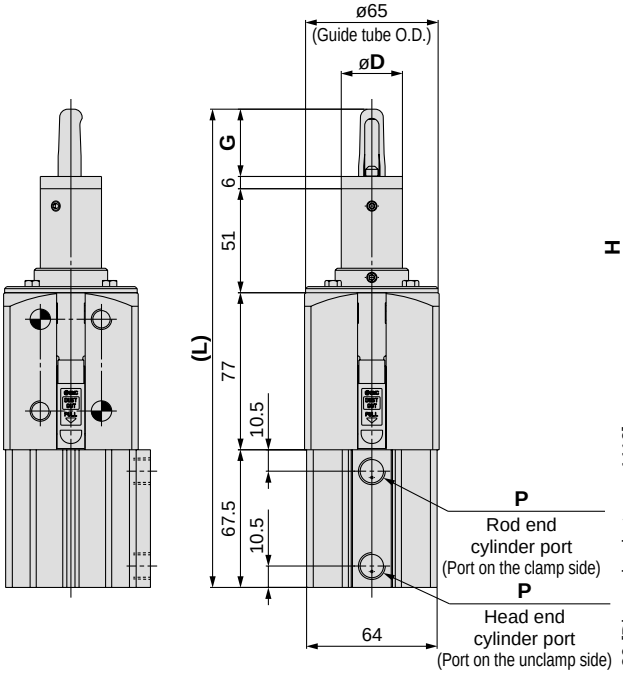
(**CKQ$^{G}_{P}$KE50** Relationship between the mounting surface and a port location is  .)

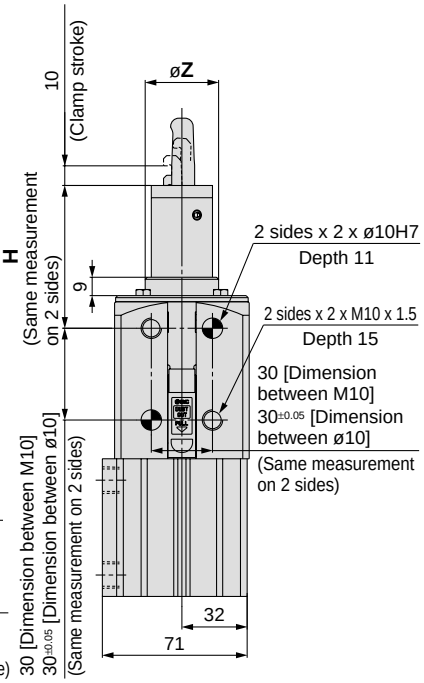
(**CKQ$^{G}_{P}$KF50** Relationship between the mounting surface and a port location is  .)

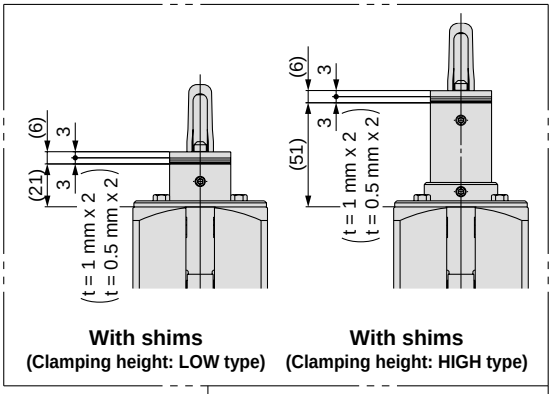
∗ Refer to "How to Order" on page 22 for relationship between the mounting surface and a port location.

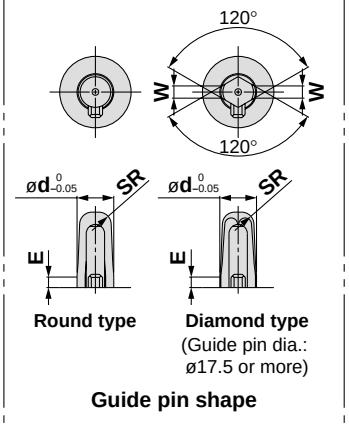
∗ The below figures indicate the CKQ$^{G}_{P}$KC50-□RAH.

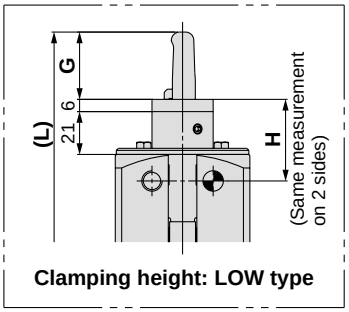












Hole diameter of workpiece	C	øD	ød	E	G	H LOW type	H HIGH type	K	L LOW type	L HIGH type	SR	W	øZ
ø13	9	ø30	ø12.5	≈10	33	Without shims 40±0.05	Without shims 70±0.05	6	204.5	234.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8		With shims 40	With shims 70						
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 40±0.05	Without shims 70±0.05	7	205.5	235.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8		With shims 40	With shims 70						
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 40±0.05	Without shims 70±0.05	7	205.5	235.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8		With shims 40	With shims 70						
			ø15.9	≈8									
			ø16.0	≈7									

Hole diameter of workpiece	C	øD	ød	E	G	H LOW type	H HIGH type	K	L LOW type	L HIGH type	SR	W	øZ
ø18	12	ø35	ø17.5	≈10	37	Without shims 40±0.05	Without shims 70±0.05	7	208.5	238.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8		With shims 40	With shims 70						
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8		With shims 40	With shims 70						
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8		With shims 40	With shims 70						
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8		With shims 40	With shims 70						
			ø29.9	≈8									
			ø30.0	≈7									

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

Dimensions

CLKQ$^{G}_{P}$KC50

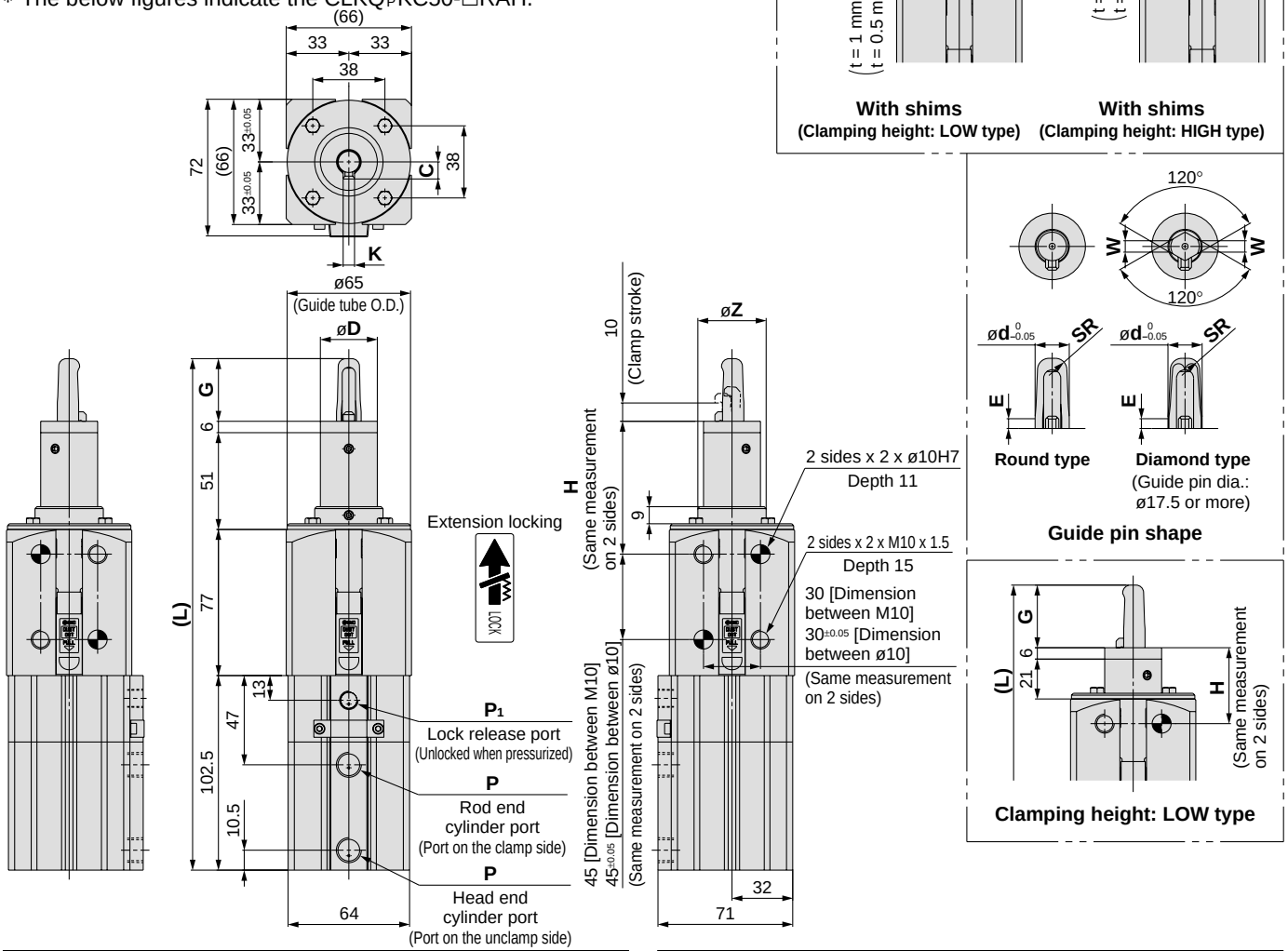
(**CLKQ$^{G}_{P}$KD50** Relationship between the mounting surface and a port location is  .)

(**CLKQ$^{G}_{P}$KE50** Relationship between the mounting surface and a port location is  .)

(**CLKQ$^{G}_{P}$KF50** Relationship between the mounting surface and a port location is  .)

∗ Refer to "How to Order" on page 22 for relationship between the mounting surface and a port location.

∗ The below figures indicate the CLKQ$^{G}_{P}$KC50-□RAH.



Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø13	9	ø30	ø12.5	≈10	33	Without shims 40±0.05	Without shims 70±0.05	6	239.5	269.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8		With shims 40	With shims 70						
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 40±0.05	Without shims 70±0.05	7	240.5	270.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8		With shims 40	With shims 70						
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 40±0.05	Without shims 70±0.05	7	240.5	270.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8		With shims 40	With shims 70						
			ø15.9	≈8									
			ø16.0	≈7									

Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø18	12	ø35	ø17.5	≈10	37	Without shims 40±0.05	Without shims 70±0.05	7	243.5	273.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8		With shims 40	With shims 70						
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8		With shims 40	With shims 70						
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8		With shims 40	With shims 70						
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8		With shims 40	With shims 70						
			ø29.9	≈8									
			ø30.0	≈7									

P			P1		
Nil	TN	TF	Nil	TN	TF
Rc1/4	NPT1/4	G1/4	Rc1/8	NPT1/8	G1/8

Pin Clamp Cylinder M series

Series CKQ$^{G}_{P}$M/CLKQ$^{G}_{P}$M

How to Order

Built-in standard magnet With magnetic field resistant auto switch

C ☐ KQG M C 50 ☐ − 177 R A L ☐ − P4DWSC ☐

Built-in strong magnet With magnetic field resistant auto switch

C ☐ KQP M C 50 ☐ − 198 R A L ☐ − P79WSE ☐

With lock on the clamp side

Nil	Without lock
L	With lock

Mounting surface (viewed from top)

Symbol	Port location	Symbol	Port location
C	Mounting surface with the taps diagonal (top right and bottom left) / Port / Mounting surface with the taps diagonal (top left and bottom right)	E	Mounting surface with the taps diagonal (top left and bottom right) / Port / Mounting surface with the taps diagonal (top right and bottom left)
D	Mounting surface with the taps diagonal (top right and bottom left) / Port / Mounting surface with the taps diagonal (top left and bottom right)	F	Mounting surface with the taps diagonal (top left and bottom right) / Port / Mounting surface with the taps diagonal (top right and bottom left)

Bore size

50	50 mm

Port thread type

Nil	Rc
TN	NPT
TF	G

Guide pin diameter

* For guide pin diameter, refer to Table 1 below.

Body shape

Symbol	Dimension	Mounting hole (tap, pin hole) arrangement		Mounting	Mounting surface (viewed from top)
M	□66		○: Mounting tap ◐: Pin hole	Mounting tap: 2 x M12 x 1.75 Pin hole: 2 x ø10H7	Mounting surface (Two facing sides)

Guide pin shape

R	Round type
D	Diamond type*

* Diamond type guide pin diameter is ø17.5 or more.

Number of auto switches

Nil	2 pcs.
S	1 pc. (Unclamp side)

* The D-P4/P7 type is different-surface mounting. (Refer to page 42.)

Auto switch type

Nil	Without auto switch (Built-in magnet)

* For applicable auto switch models, refer to page 33.
* Auto switches are included, (but not assembled).

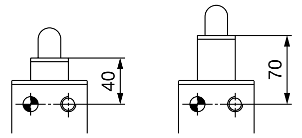
Shim

Nil	Without shims
S	With 3 mm shims*

* When a model includes shims, two 1 mm shims and two 0.5 mm shims are attached.

Clamping height (Refer to the below figure.)

L	LOW type (40 mm)
H	HIGH type (70 mm)



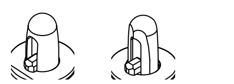
Clamping height

Clamp arm position (clockwise viewed from top)

A	Same direction as port (Port, Clamp arm, Guide pin)	C	180° from port (Port, Guide pin, Clamp arm)
B	90° from port (Port, Clamp arm, Guide pin)	D	270° from port (Port, Clamp arm, Guide pin)

Table 1. Guide Pin Diameter

Symbol	125	127	128	129	130	145	147	148	149	150	155	157	158	159	160
Guide pin diameter	12.5	12.7	12.8	12.9	13.0	14.5	14.7	14.8	14.9	15.0	15.5	15.7	15.8	15.9	16.0
Applicable hole diameter of workpiece	For ø13					For ø15					For ø16				
Guide pin shape	Round type														



Symbol	175	177	178	179	180	195	197	198	199	200	245	247	248	249	250	295	297	298	299	300
Guide pin diameter	17.5	17.7	17.8	17.9	18.0	19.5	19.7	19.8	19.9	20.0	24.5	24.7	24.8	24.9	25.0	29.5	29.7	29.8	29.9	30.0
Applicable hole diameter of workpiece	For ø18					For ø20					For ø25					For ø30				
Guide pin shape	Round type, Diamond type																			

Table 2. Applicable Auto Switches / For detailed specifications about an auto switch for itself, refer to page 43 through to 47.

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
C(L)KQG series	**Solid state switch**	**D-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
		D-P4DWSE				2-wire (1–4)			
		D-P4DWL		Grommet		2-wire		3 m	
		D-P4DWZ						5 m	
C(L)KQP series	**Reed switch**	**D-P79WSE**	DC/AC magnetic field	Pre-wired connector	2-color display	2-wire (1–4)	24 VDC	0.3 m	
		D-P74L		Grommet (Pre-wired connector) Note 2)	1-color display	2-wire	24 VDC 100 VAC	3 m	
		D-P74Z						5 m	

Note 1) PLC: Programmable Logic Controller
Note 2) Refer to page 47 for pre-wired connector products.

Series CKQ$^{G}_{P}$M/CLKQ$^{G}_{P}$M

Basic Specifications

Action	Double acting	
Bore size (mm)	50	
Fluid	Air	
Minimum operating pressure	CKQ□: 0.1 MPa	CLKQ□ (With lock): 0.15 MPa*
Ambient and fluid temperature	–10 to 60°C (No freezing)	
Cushion	None	
Lubrication	Non-lube	
Piston speed (Clamp speed)	50 to 150 mm/sec	
Port size (Cylinder port)	1/4 (Rc, NPT, G)	

∗ Minimum operating pressure is 0.2 MPa when cylinder part and locking part use the same piping.

Proof Pressure/Maximum Operating Pressure

Guide pin diameter	Proof pressure	Max. operating pressure
ø12.5 to ø13.0	1.0 MPa	0.7 MPa
ø14.5 to ø30.0	1.5 MPa	1.0 MPa

Clamp Specifications

Clamp stroke	Without shims	With shims
	10 mm	10 to 13 mm
Clamp arm	1 pc.	
Guide pin shape	Round type, Diamond type	

∗ Refer to the below “Clamp Specifications” and Selection regarding detailed specifications of the clamping force, etc.

∗ Diamond type guide pin diameter is ø17.5 or more.

Weight

Unit: kg

Model	C(L)KQ$^{G}_{P}$M			
Guide pin diameter (mm)	Without lock		With lock	
	L	H	L	H
ø12.5 to 13.0	1.67	1.84	2.18	2.35
ø14.5 to 15.0	1.67	1.84	2.18	2.35
ø15.5 to 16.0	1.67	1.84	2.19	2.36
ø17.5 to 18.0	1.72	1.89	2.23	2.41
ø19.5 to 20.0	1.72	1.9	2.24	2.42
ø24.5 to 25.0	1.78	1.99	2.3	2.51
ø29.5 to 30.0	1.83	2.03	2.34	2.55

Lock Specifications

Locking action	Spring locking (Exhaust locking)
Unlocking pressure	0.2 MPa or more
Lock starting pressure	0.05 MPa or less
Locking direction	Lock at extended direction (Clamp holding)
Port size (Lock release port)	1/8 (Rc, NPT, G)
Holding force (N) (Maximum static load)	982

Clamp Specifications

(N)

Model	Guide pin diameter	Operating pressure (MPa)								
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
CKQ$^{G}_{P}$	ø12.5 to ø13.0	164.9	329.8	494.7	659.6	824.5	989.4	—	—	—
	ø14.5 to ø30.0	164.9	329.8	494.7	659.6	824.5	989.4	1154.3	1319.2	1484.1
CLKQ$^{G}_{P}$	ø12.5 to ø13.0	82.4	247.3	412.2	577.1	742.0	906.9	—	—	—
	ø14.5 to ø30.0	82.4	247.3	412.2	577.1	742.0	906.9	Note 1) 1071.8	Note 1) 1236.7	Note 1) 1401.6

Note 1) Lock holding force of the CLKQ□ is 982 N. Design the circuit such that the lock holding force is taken into consideration when the operating pressure exceeds 0.75 MPa. The operating pressure should be not greater than the lock holding force as it may cause wearing out and/or damage of the locking part and shorten lock life and may lead to possible failure if applied with a load larger than the lock holding force.

Note 2) It takes approximately 0.3 seconds for the cylinder to operate to generate clamping force from an unclamping state (when no speed controller is installed). Design circuit taking into consideration the time before the clamping force is generated.

Note 3) Determine the clamping force according to the strength of the workpiece. It can be damaged if the clamping force is too large.

Maintenance Parts

Replacement Parts: Seal Kit

Kit No.	Content
CQ2B50-PS	Piston seal Rod seal Tube gasket

∗ Consult SMC for maintenance service. Seal kit for maintenance of the CLKQ$^{G}_{P}$ series is not available.

Replacement Parts: Grease Pack

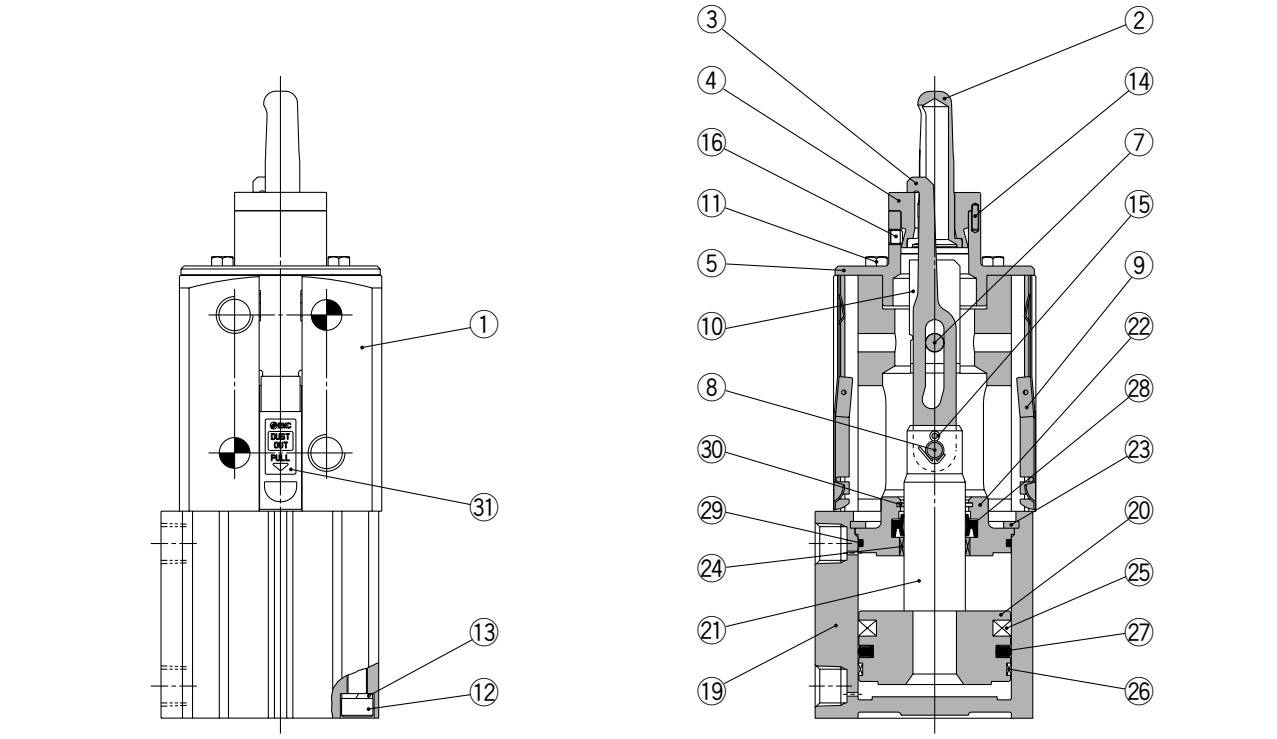
Kit No.	Content
GR-S-010	Grease 10 g

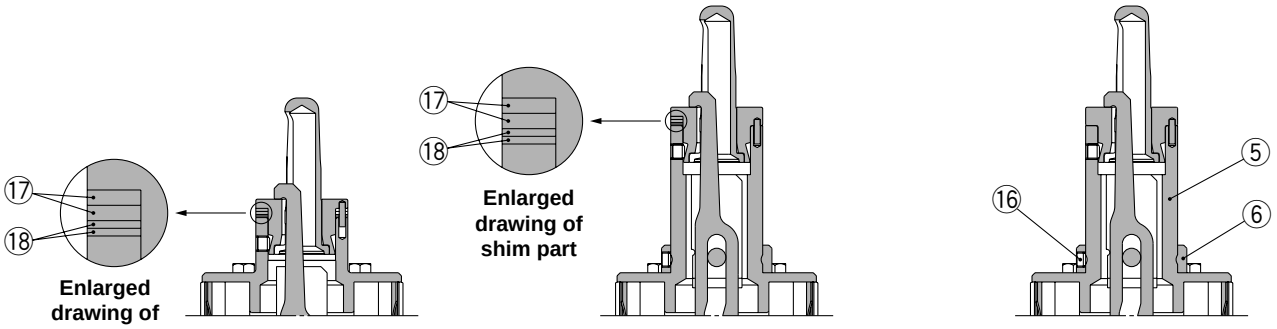
∗ Consult SMC when replacing the actuating cylinders.

Construction

CKQGMC50

∗ The below figures indicate the CKQGMC50-□RAL.





CKQGM□50□-□R□LS
Clamping height: LOW type
With shims

CKQGM□50□-□R□HS
Clamping height: HIGH type
With shims

CKQGM□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

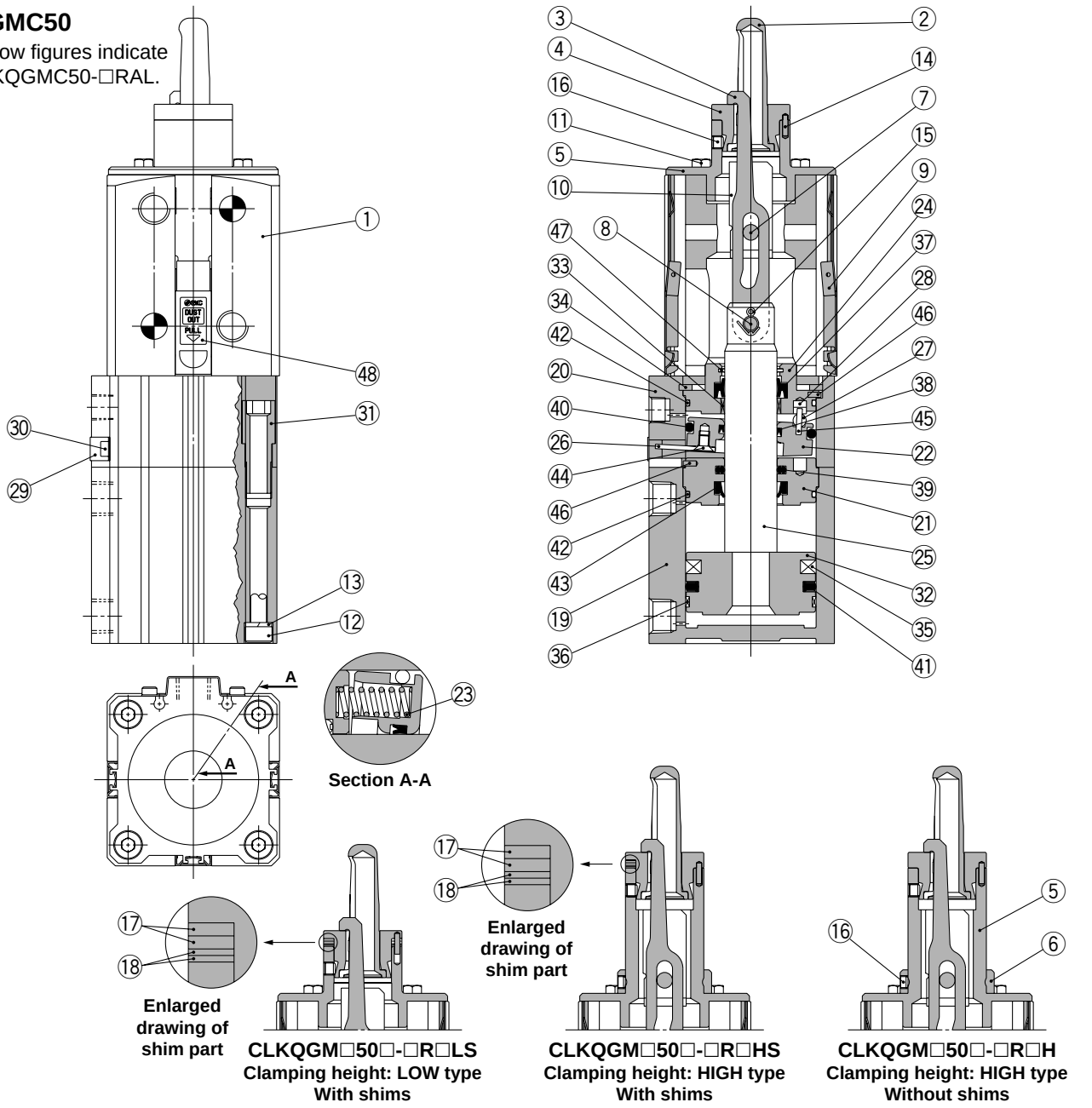
Component Parts

No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Structural steel	
22	**Collar**	Aluminum alloy	
23	**Retaining ring**	Tool steel	
24	**Bushing**	Lead-bronze casted	
25	**Magnet**	Magnetic material	
26	**Wear ring**	Resin	
27	**Piston seal**	NBR	
28	**Rod seal**	NBR	
29	**Tube gasket**	NBR	
30	**Coil scraper**	Bronze	
31	**Seal**	PET	

Construction

CLKQGMC50

∗ The below figures indicate the CLKQGMC50-□RAL.



CLKQGM□50□-□R□LS
Clamping height: LOW type
With shims

CLKQGM□50□-□R□HS
Clamping height: HIGH type
With shims

CLKQGM□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	

Component Parts

No.	Description	Material	Note
17	Shim A	Stainless steel	t = 1 mm
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Structural steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	

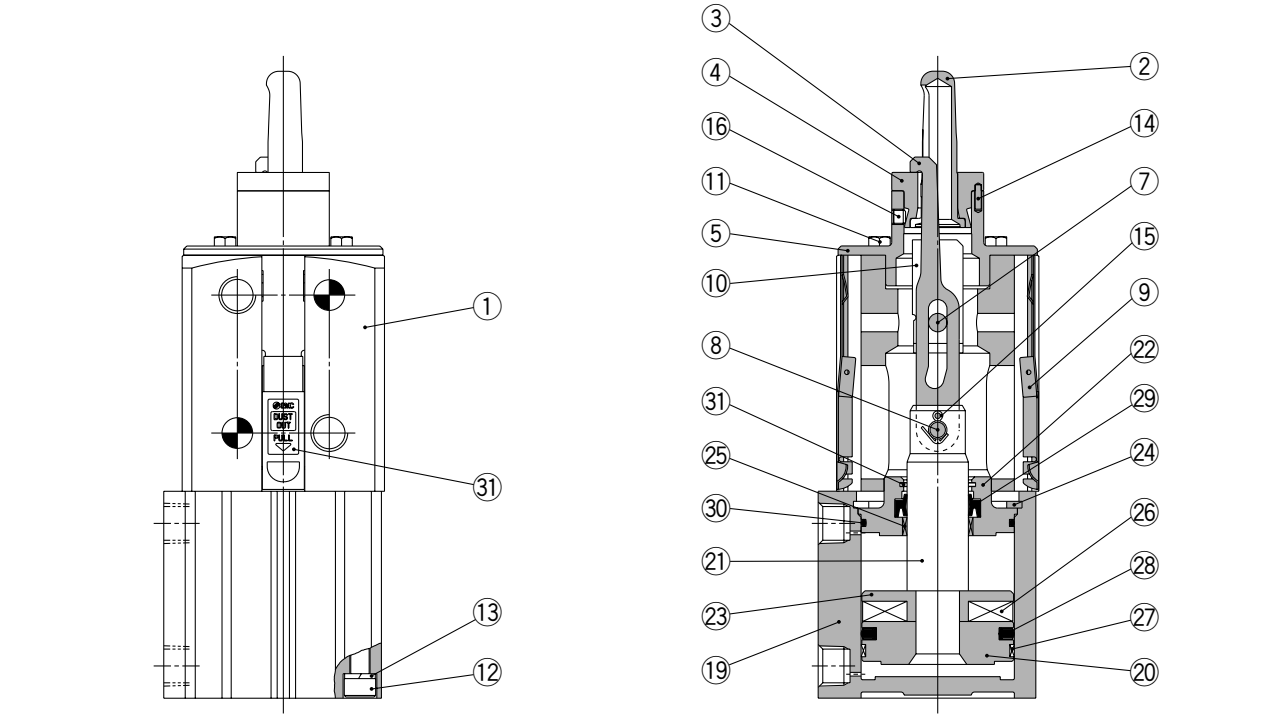
Component Parts

No.	Description	Material	Note
33	Bushing	Lead-bronze casted	
34	Retaining ring	Tool steel	
35	Magnet	Magnetic material	
36	Wear ring	Resin	
37	Rod seal A	NBR	
38	Rod seal B	NBR	
39	Rod seal C	NBR	
40	Piston seal A	NBR	
41	Piston seal B	NBR	
42	Tube gasket	NBR	
43	Scraper	NBR	
44	Hex. socket counter-sunk head screw	Structural steel	
45	Spring pin	Tool steel	
46	Parallel pin	Stainless steel	
47	Coil scraper	Bronze	
48	Seal	PET	

Construction

CKQPMC50

∗ The below figures indicate the CKQPMC50-□RAL.



CKQPM□50□-□R□LS
Clamping height: LOW type
With shims

CKQPM□50□-□R□HS
Clamping height: HIGH type
With shims

CKQPM□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminum alloy	
2	**Guide pin**	Stainless steel	
3	**Clamp arm**	Structural steel	
4	**Seat**	Stainless steel	
5	**Guide tube**	Structural steel	
6	**Ring**	Aluminum alloy	
7	**Pin A**	Structural steel	
8	**Pin B**	Structural steel	
9	**Cover assembly**	Stainless steel	
10	**Spatter cover**	Tough pitch copper	
11	**Hexagon bolt**	Structural steel	
12	**Hexagon socket head cap screw**	Stainless steel	
13	**Spring washer**	Stainless steel	
14	**Parallel pin**	Tool steel	
15	**Cotter pin**	Stainless steel	
16	**Hexagon socket head set screw**	Structural steel	

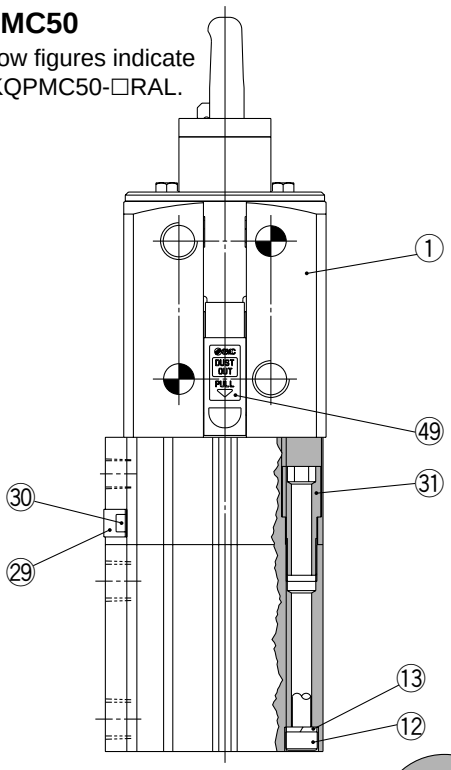
Component Parts

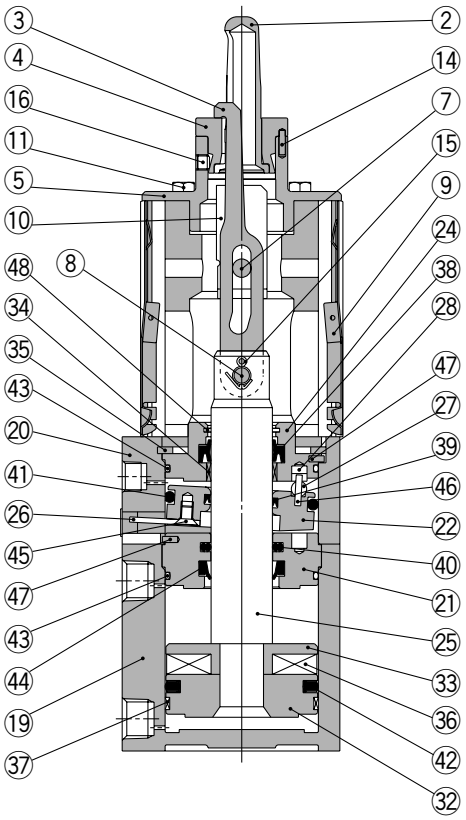
No.	Description	Material	Note
17	**Shim A**	Stainless steel	t = 1 mm
18	**Shim B**	Stainless steel	t = 0.5 mm
19	**Cylinder tube**	Aluminum alloy	
20	**Piston**	Aluminum alloy	
21	**Piston rod**	Stainless steel	
22	**Collar**	Aluminum alloy	
23	**Magnet holder**	Aluminum alloy	
24	**Retaining ring**	Tool steel	
25	**Bushing**	Lead-bronze casted	
26	**Magnet**	Magnetic material	
27	**Wear ring**	Resin	
28	**Piston seal**	NBR	
29	**Rod seal**	NBR	
30	**Tube gasket**	NBR	
31	**Coil scraper**	Bronze	
32	**Seal**	PET	

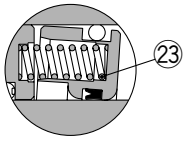
Construction

CLKQPMC50

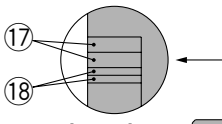
∗ The below figures indicate the CLKQPMC50-□RAL.



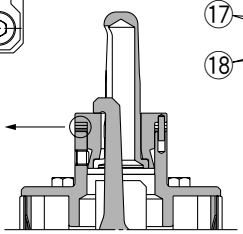




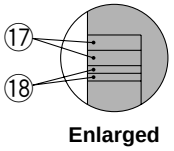
Section A-A



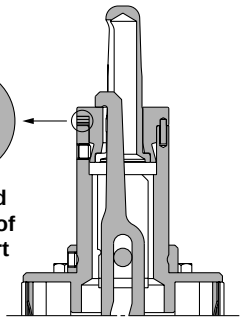
Enlarged drawing of shim part



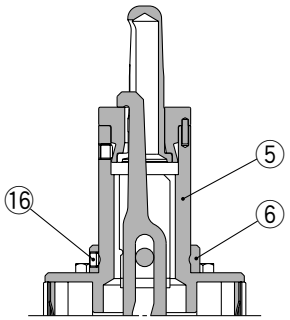
CLKQPM□50□-□R□LS
Clamping height: LOW type
With shims



Enlarged drawing of shim part



CLKQPM□50□-□R□HS
Clamping height: HIGH type
With shims



CLKQPM□50□-□R□H
Clamping height: HIGH type
Without shims

Component Parts

No.	Description	Material	Note
1	Body	Aluminum alloy	
2	Guide pin	Stainless steel	
3	Clamp arm	Structural steel	
4	Seat	Stainless steel	
5	Guide tube	Structural steel	
6	Ring	Aluminum alloy	
7	Pin A	Structural steel	
8	Pin B	Structural steel	
9	Cover assembly	Stainless steel	
10	Spatter cover	Tough pitch copper	
11	Hexagon bolt	Structural steel	
12	Hexagon socket head cap screw	Stainless steel	
13	Spring washer	Stainless steel	
14	Parallel pin	Tool steel	
15	Cotter pin	Stainless steel	
16	Hexagon socket head set screw	Structural steel	
17	Shim A	Stainless steel	t = 1 mm

Component Parts

No.	Description	Material	Note
18	Shim B	Stainless steel	t = 0.5 mm
19	Cylinder tube	Aluminum alloy	
20	Lock body	Aluminum alloy	
21	Intermediate collar	Aluminum alloy	
22	Lock ring	Tool steel	
23	Brake spring	Steel wire	
24	Collar	Aluminum alloy	
25	Piston rod	Stainless steel	
26	Lever	Stainless steel	
27	Pivot pin	Structural steel	
28	Pivot key	Structural steel	
29	Dust cover	Steel strip	
30	Dust cover holding bolt	Structural steel	
31	Unit holding bolt	Structural steel	
32	Piston	Aluminum alloy	
33	Magnet holder	Aluminum alloy	
34	Bushing	Lead-bronze casted	

Component Parts

No.	Description	Material	Note
35	Retaining ring	Tool steel	
36	Magnet	Magnetic material	
37	Wear ring	Resin	
38	Rod seal A	NBR	
39	Rod seal B	NBR	
40	Rod seal C	NBR	
41	Piston seal A	NBR	
42	Piston seal B	NBR	
43	Tube gasket	NBR	
44	Scraper	NBR	
45	Hex. socket counter-sunk head screw	Structural steel	
46	Spring pin	Tool steel	
47	Parallel pin	Stainless steel	
48	Coil scraper	Bronze	
49	Seal	PET	

Dimensions

CKQ$^{G}_{P}$MC50

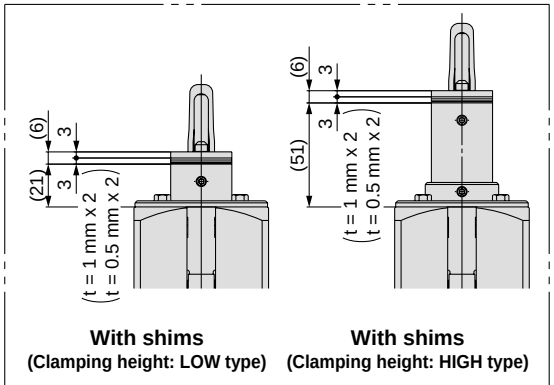
(**CKQ$^{G}_{P}$MD50** Relationship between the mounting surface and a port location is  .)

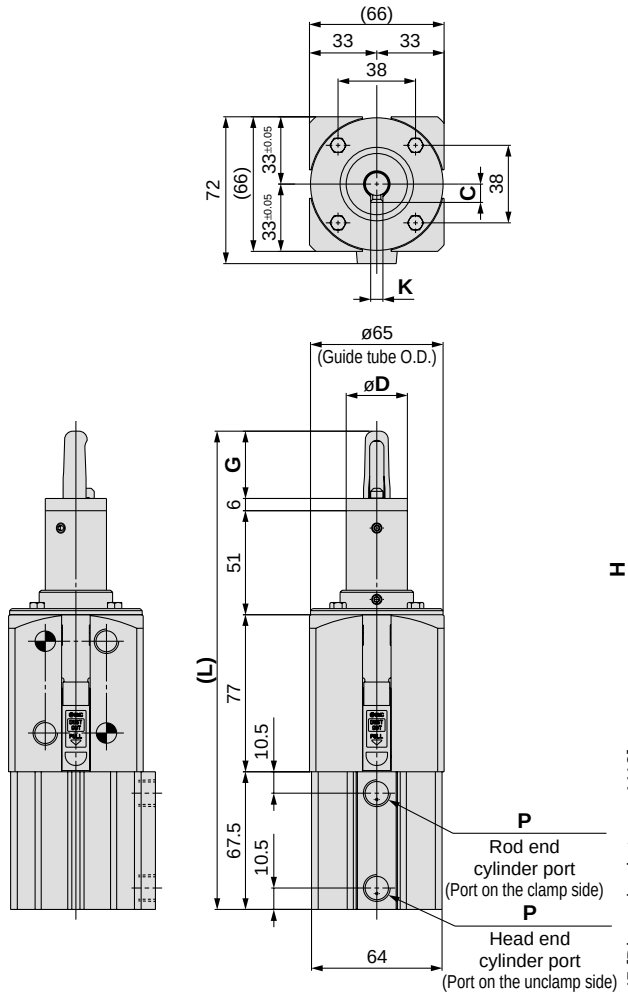
(**CKQ$^{G}_{P}$ME50** Relationship between the mounting surface and a port location is  .)

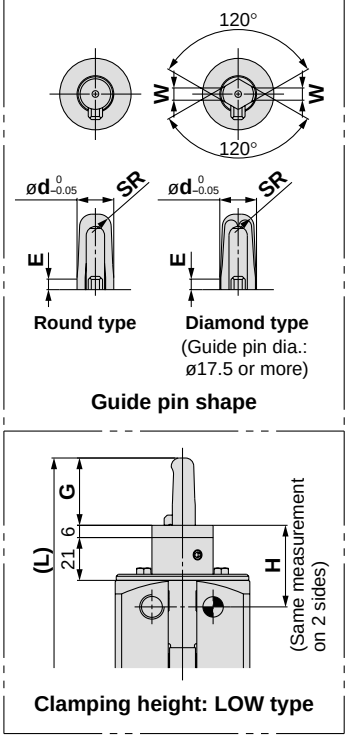
(**CKQ$^{G}_{P}$MF50** Relationship between the mounting surface and a port location is  .)

∗ Refer to "How to Order" on page 32 for relationship between the mounting surface and a port location.

∗ The below figures indicate the CKQ$^{G}_{P}$MC50-□RAH.







Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø13	9	ø30	ø12.5	≈10	33	Without shims 40±0.05	Without shims 70±0.05	6	204.5	234.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8		With shims 40	With shims 70						
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 40±0.05	Without shims 70±0.05	7	205.5	235.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8		With shims 40	With shims 70						
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 40±0.05	Without shims 70±0.05	7	205.5	235.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8		With shims 40	With shims 70						
			ø15.9	≈8									
			ø16.0	≈7									

Hole diameter of workpiece	C	øD	ød	E	G	H		K	L		SR	W	øZ
						LOW type	HIGH type		LOW type	HIGH type			
ø18	12	ø35	ø17.5	≈10	37	Without shims 40±0.05	Without shims 70±0.05	7	208.5	238.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8		With shims 40	With shims 70						
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8		With shims 40	With shims 70						
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8		With shims 40	With shims 70						
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	210.5	240.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8		With shims 40	With shims 70						
			ø29.9	≈8									
			ø30.0	≈7									

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

Dimensions

CLKQ$^{G}_{P}$MC50

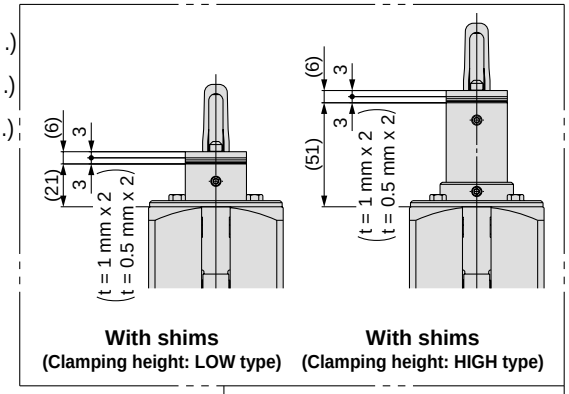
(**CLKQ$^{G}_{P}$MD50** Relationship between the mounting surface and a port location is  .)

(**CLKQ$^{G}_{P}$ME50** Relationship between the mounting surface and a port location is  .)

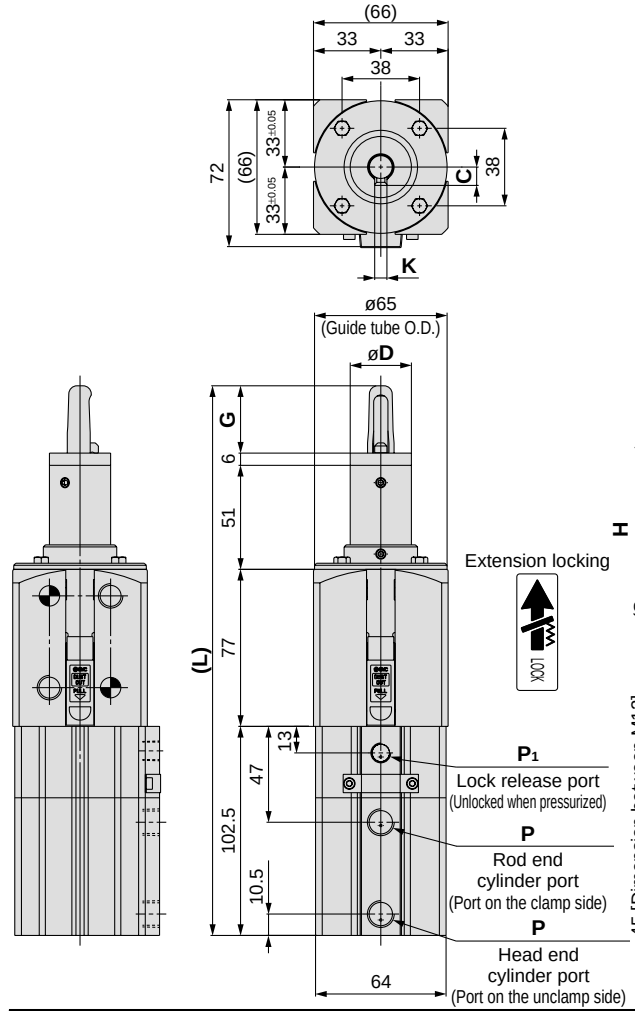
(**CLKQ$^{G}_{P}$MF50** Relationship between the mounting surface and a port location is  .)

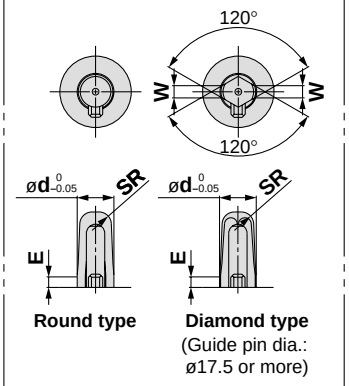
∗ Refer to "How to Order" on page 32 for relationship between the mounting surface and a port location.

∗ The below figures indicate the CLKQ$^{G}_{P}$MC50-□RAH.



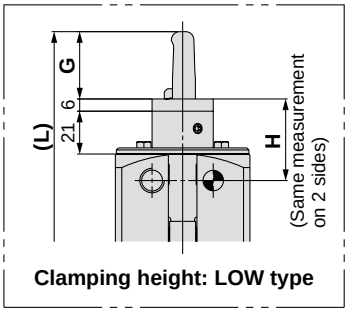
With shims (Clamping height: LOW type) **With shims (Clamping height: HIGH type)**





Round type **Diamond type** (Guide pin dia.: ø17.5 or more)

Guide pin shape



Clamping height: LOW type

Hole diameter of workpiece	C	øD	ød	E	G	H LOW type	H HIGH type	K	L LOW type	L HIGH type	SR	W	øZ
ø13	9	ø30	ø12.5	≈10	33	Without shims 40±0.05	Without shims 70±0.05	6	239.5	269.5	4	—	ø36
			ø12.7	≈9									
			ø12.8	≈8		With shims 40	With shims 70						
			ø12.9	≈8									
			ø13.0	≈7									
ø15	11	ø30	ø14.5	≈9	34	Without shims 40±0.05	Without shims 70±0.05	7	240.5	270.5	5	—	ø36
			ø14.7	≈8									
			ø14.8	≈8		With shims 40	With shims 70						
			ø14.9	≈7									
			ø15.0	≈7									
ø16	11	ø30	ø15.5	≈10	34	Without shims 40±0.05	Without shims 70±0.05	7	240.5	270.5	5.5	—	ø36
			ø15.7	≈9									
			ø15.8	≈8		With shims 40	With shims 70						
			ø15.9	≈8									
			ø16.0	≈7									

Hole diameter of workpiece	C	øD	ød	E	G	H LOW type	H HIGH type	K	L LOW type	L HIGH type	SR	W	øZ
ø18	12	ø35	ø17.5	≈10	37	Without shims 40±0.05	Without shims 70±0.05	7	243.5	273.5	6	6	ø40
			ø17.7	≈9									
			ø17.8	≈8		With shims 40	With shims 70						
			ø17.9	≈8									
			ø18.0	≈7									
ø20	13	ø35	ø19.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	7	7	ø40
			ø19.7	≈9									
			ø19.8	≈8		With shims 40	With shims 70						
			ø19.9	≈8									
			ø20.0	≈7									
ø25	16	ø40	ø24.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	9.5	7	ø47
			ø24.7	≈9									
			ø24.8	≈8		With shims 40	With shims 70						
			ø24.9	≈8									
			ø25.0	≈7									
ø30	18	ø40	ø29.5	≈10	39	Without shims 40±0.05	Without shims 70±0.05	8	245.5	275.5	11	9	ø47
			ø29.7	≈9									
			ø29.8	≈8		With shims 40	With shims 70						
			ø29.9	≈8									
			ø30.0	≈7									

P			P1		
Nil	TN	TF	Nil	TN	TF
Rc1/4	NPT1/4	G1/4	Rc1/8	NPT1/8	G1/8