

Pin Clamp Cylinder Compact Cylinder Type

C(L)KQG32 Series

ø32

How to Order

Clamping height LOW type C L KQG B 32-075 R A L-P3DWASC -X2081

Clamping height HIGH type C L KQG B 32-075 R A H-M9BW -X2082

With lock

Nil	Without lock
L	With lock

Mounting surface position (viewed from top)

Symbol	Mounting surface position
A	
B	
C	
D	

Bore size

32	32 mm
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Guide pin diameter

* For guide pin diameter, refer to page 530.

Guide pin shape

R	Round type
D	Diamond type

Auto switch type

Nil	Without auto switch
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Number of auto switches

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

Auto switch type

* Refer to the table below for the applicable auto switch model.
 * Auto switches are shipped together, (but not assembled).
 * Refer to the table below for the applicable auto switches.
 * When the total thickness of clamped workpiece is over 2 mm, the auto switch may not be adjusted to the most sensitive position.
 * Secure the minimum bending radius of the auto switch lead wire before use (Refer to page 544).

Clamp arm position (clockwise viewed from top)

Symbol	Clamp arm position	Symbol	Clamp arm position
A	Same as the port side	C	180° from the port side
B	90° from the port side	D	270° from the port side

Auto Switch Models: Refer to pages 941 to 1067 for further information on auto switches.

Magnetic Field Resistant Auto Switches

Type	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no. in use)	Load voltage	Lead wire length	Applicable load
Solid state auto switch	P3DWASC	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color	2-wire (3-4)	24 VDC	0.3 m	Relay, PLC Note 1)
	P3DWASE				2-wire (1-4)		0.5 m	
	P3DWA		Grommet		2-wire		3 m	
	P3DWAL						5 m	
	P3DWAZ		Pre-wired connector		2-wire (3-4)		0.3 m	
	P4DWSC				2-wire (1-4)		3 m	
	P4DWSE		Grommet		2-wire		5 m	
	P4DWL							
	P4DWZ							

Note 1) PLC: Programmable Logic Controller Note 2) There are applicable auto switches other than the listed above. For details, refer to the table below.

Small Auto Switches Small auto switches cannot be used under a strong magnetic field.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length [m]				Pre-wired connector	Applicable load			
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)					
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC	
				3-wire (PNP)				M9PV	M9P	●	●	●	○	○			
	2-wire			M9BV				M9B	●	●	●	○	○				
	3-wire (NPN)			M9NWV				M9NW	●	●	●	○	○				
	Diagnostic indication (2-color indicator)			3-wire (PNP)	M9PWV	M9PW		●	●	●	○	○	IC circuit				
	Water resistant (2-color indicator)			2-wire	M9BWV	M9BW		●	●	●	○	○	—				
				3-wire (NPN)	M9NAV	M9NA		○	○	●	○	○	IC circuit				
				3-wire (PNP)	M9PAV	M9PA		○	○	●	○	○	—				
		2-wire	M9BAV	M9BA	○	○	●	○	○	—							
	Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	—	●	—	—	IC circuit	—
No				2-wire	24 V	12 V	100 V	A93V*1	A93	●	●	●	●	—	—	—	Relay, PLC
					5 V, 12 V	100 V or less		A90V	A90	●	—	●	—	—	—	IC circuit	—

*1 1 m lead wire is only applicable to the D-A93.

* Solid state auto switches marked with "○" are produced upon receipt of order.

* Auto switches and mounting brackets are shipped together, (but not assembled).

*: Lead wire length symbols: 0.5 m..... Nil (Example) M9NWV
 1 m..... M (Example) M9NWVM
 3 m..... L (Example) M9NWVL
 5 m..... Z (Example) M9NWVZ

C(L)KQG32 Series



Basic Specifications

Model			C(L)KQG32
Action			Double acting
Bore size [mm]			32
Cylinder stroke/Clamp stroke [mm]			12.5 (Without workpiece)/10
Fluid			Air
Minimum operating pressure			CKQ□: 0.1 MPa CLKQ□: 0.15 MPa*
Maximum operating pressure	Guide pin diameter [mm]	ø7.5 to ø13.0	0.7 MPa
		ø13.5 to ø20.0	1.0 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)			Rc1/8

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

Lock Specifications

Locking action	Spring locking (Exhaust locking)
Unlocking pressure	0.2 MPa
Lock starting pressure	0.05 MPa
Locking direction	Unclamp direction locking
Port size (Lock release port)	Rc1/8
Holding force (Maximum static load)	402 N

Guide Pin Diameter

Symbol	075	076	077	078	079	080	085	086	087	088	089	090	095	096	097	098	099	100	105	106	107	108	109	110
Guide pin diameter [mm]	7.5	7.6	7.7	7.8	7.9	8.0	8.5	8.6	8.7	8.8	8.9	9.0	9.5	9.6	9.7	9.8	9.9	10.0	10.5	10.6	10.7	10.8	10.9	11.0
Applicable hole diameter of workpiece [mm]	For ø8						For ø9						For ø10						For ø11					
Guide pin shape	Round type												Round type/Diamond type											

Symbol	115	116	117	118	119	120	125	126	127	128	129	130	135	136	137	138	139	140	145	146	147	148	149	150
Guide pin diameter [mm]	11.5	11.6	11.7	11.8	11.9	12.0	12.5	12.6	12.7	12.8	12.9	13.0	13.5	13.6	13.7	13.8	13.9	14.0	14.5	14.6	14.7	14.8	14.9	15.0
Applicable hole diameter of workpiece [mm]	For ø12						For ø13						For ø14						For ø15					
Guide pin shape	Round type/Diamond type																							

Symbol	155	156	157	158	159	160	175	176	177	178	179	180	195	196	197	198	199	200
Guide pin diameter [mm]	15.5	15.6	15.7	15.8	15.9	16.0	17.5	17.6	17.7	17.8	17.9	18.0	19.5	19.6	19.7	19.8	19.9	20.0
Applicable hole diameter of workpiece [mm]	For ø16						For ø18						For ø20					
Guide pin shape	Round type/Diamond type																	

Clamping Force

Model	Guide pin diameter [mm]	Operating pressure [MPa]									Unit: [N]
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	
C(L)KQG32	ø7.5 to ø13.0	121	181	241	302	362	422	—	—	—	
	ø13.5 to ø20.0	121	181	241	302	362	422	483	543	603	

Note 1) 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.

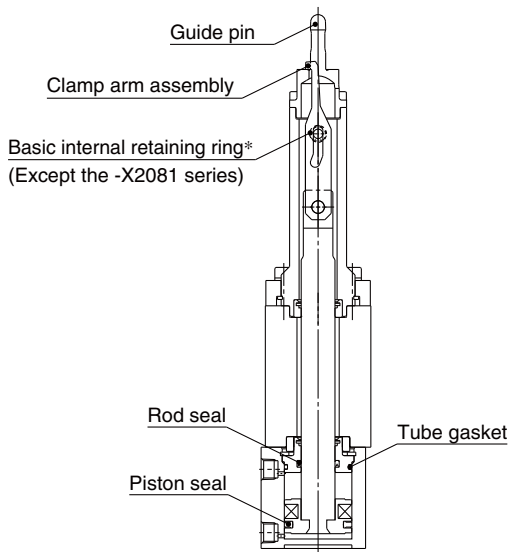
Note 2) Determine the clamping force according to the strength of the workpiece. It can be damaged if the clamping force is too large.

Note 3) Guide pins and clamp arms are consumable items. Please prepare spare parts in case they are damaged. It is recommended to prepare spare parts for guide pins and clamp arms, especially for products used in workpieces with ø12 or less hole diameters.

Weight

Unit: g					
Model		CKQG32		CLKQG32	
		-X2081	-X2082	-X2081	-X2082
Guide pin diameter [mm]	ø7.5 to ø8.0	900	1110	1140	1350
	ø8.5 to ø9.0				
	ø9.5 to ø10.0				
	ø10.5 to ø11.0				
	ø11.5 to ø12.0				
	ø12.5 to ø13.0	940	1150	1180	1390
	ø13.5 to ø14.0				
	ø14.5 to ø15.0				
	ø15.5 to ø16.0	950	1160	1190	1400
	ø17.5 to ø18.0				
ø19.5 to ø20.0					

Replacement Parts



CKQG□32-100R□H-X2082

■Guide Pin Order No.

CKQG32X-075 R

Guide pin diameter

* Refer to Table 1 (Symbol 2) below.

Guide pin shape

	Round type	Diamond type
R		

■Clamp Arm Assembly Order No.

CKQG32X-08 B

Applicable hole diameter of workpiece

* Refer to Table 1 (Symbol 1) below.

Clamp arm assembly

* The clamp arm includes a basic internal retaining ring.

■Seal Kit (For type without lock only)

Kit no.	Contents
CQ2B32-PS	①Piston seal ②Rod seal ③Tube gasket

* Seal kit includes ①, ②, ③. Since the seal kit does not include a grease pack, order the "Grease Pack" below separately.

* CLKQ cannot be disassembled and therefore no seal kit is available.

■Grease Pack

Kit no.	Contents
GR-S-010	Grease 10 g

* Please consult with SMC when replacing the actuating cylinders.

■Shim (Option)

Refer to page 543 for details about part numbers and dimensions.

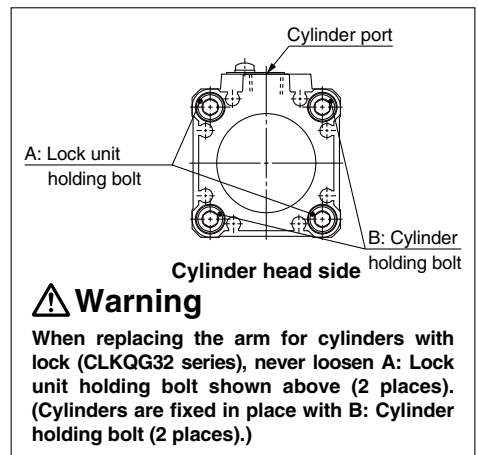


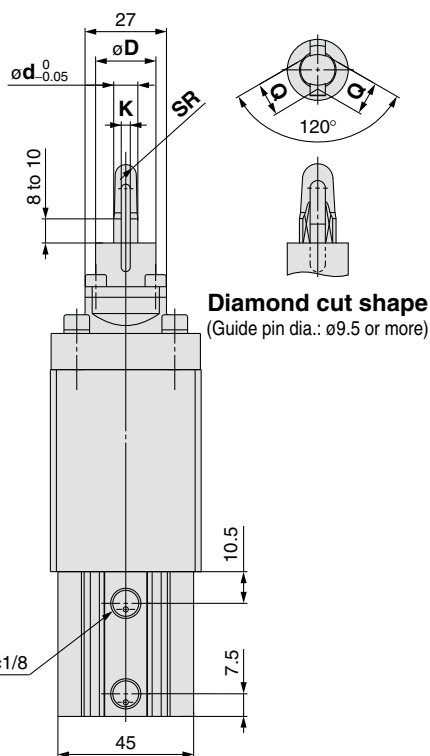
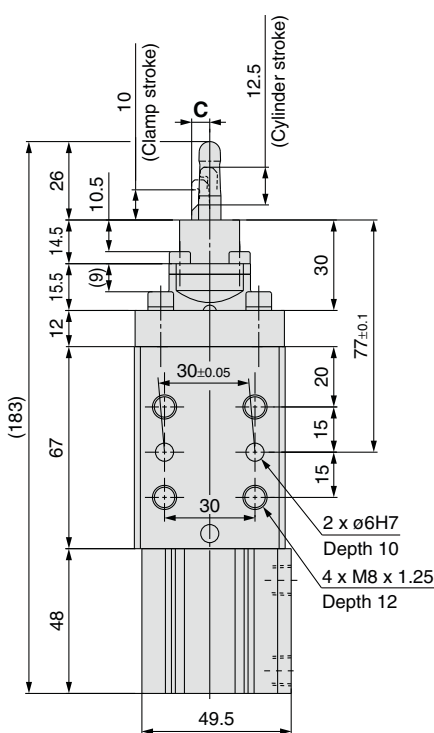
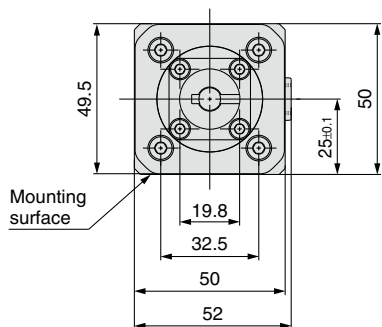
Table 1. Guide Pin Diameter/Applicable Hole Diameter of Workpiece

Symbol 1	Applicable hole diameter of workpiece	Symbol 2	Guide pin diameter	Shape	Symbol 1	Applicable hole diameter of workpiece	Symbol 2	Guide pin diameter	Shape	Symbol 1	Applicable hole diameter of workpiece	Symbol 2	Guide pin diameter	Shape
08	8	075	7.5	Round type	12	12	115	11.5	Round type	16	16	155	15.5	Round type
		076	7.6				116	11.6				156	15.6	
		077	7.7				117	11.7				157	15.7	
		078	7.8				118	11.8				158	15.8	
		079	7.9				119	11.9				159	15.9	
		080	8.0				120	12.0				160	16.0	
09	9	085	8.5	Round type	13	13	125	12.5	Round type	18	18	175	17.5	Round type
		086	8.6				126	12.6				176	17.6	
		087	8.7				127	12.7				177	17.7	
		088	8.8				128	12.8				178	17.8	
		089	8.9				129	12.9				179	17.9	
		090	9.0				130	13.0				180	18.0	
10	10	095	9.5	Round type	14	14	135	13.5	Diamond type	20	20	195	19.5	Diamond type
		096	9.6				136	13.6				196	19.6	
		097	9.7				137	13.7				197	19.7	
		098	9.8				138	13.8				198	19.8	
		099	9.9				139	13.9				199	19.9	
		100	10.0				140	14.0				200	20.0	
11	11	105	10.5	Diamond type	15	15	145	14.5						
		106	10.6				146	14.6						
		107	10.7				147	14.7						
		108	10.8				148	14.8						
		109	10.9				149	14.9						
		110	11.0				150	15.0						

C(L)KQG32 Series

Dimensions

CKQG□32 (Clamping height LOW type) * The figures below indicate the CKQGB32-□RCL-X2081.



Mounting surface position

A	
B	
C	
D	

Clamp arm position

A	Same as the port side
B	90° from the port side
C	180° from the port side
D	270° from the port side

The diagram shows a square plate with four ports labeled A, B, C, and D. Port A is on the right side, B is on the bottom, C is on the left, and D is on the top. A 'Clamp arm' is shown on the left side, pointing towards port C. An arrow labeled 'Port side' points from the right towards the plate.

Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø8	6	20	7.5	3.5	3.5	—	075
			7.6				076
			7.7				077
			7.8				078
			7.9				079
			8.0				080
ø9	6.5	20	8.5	4	4	—	085
			8.6				086
			8.7				087
			8.8				088
			8.9				089
			9.0				090
ø10	7.5	20	9.5	4	4.5	9.2	095
			9.6				096
			9.7				097
			9.8				098
			9.9				099
			10.0				100
ø11	7.5	20	10.5	4	4.5	9.8	105
			10.6				106
			10.7				107
			10.8				108
			10.9				109
			11.0				110

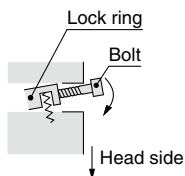
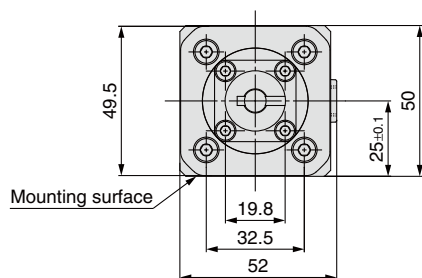
Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø12	8.5	20	11.5	5	5	10.9	115
			11.6				116
			11.7				117
			11.8				118
			11.9				119
			12.0				120
ø13	8.5	20	12.5	5	5.5	11.6	125
			12.6				126
			12.7				127
			12.8				128
			12.9				129
			13.0				130
ø14	10.5	25	13.5	6	5.5	12.6	135
			13.6				136
			13.7				137
			13.8				138
			13.9				139
			14.0				140
ø15	10.5	25	14.5	6	6	13.3	145
			14.6				146
			14.7				147
			14.8				148
			14.9				149
			15.0				150

Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø16	11.5	25	15.5	6	6.5	14.3	155
			15.6				156
			15.7				157
			15.8				158
			15.9				159
			16.0				160
ø18	13	27	17.5	6	7.5	16.4	175
			17.6				176
			17.7				177
			17.8				178
			17.9				179
			18.0				180
ø20	13	27	19.5	6	8	17.2	195
			19.6				196
			19.7				197
			19.8				198
			19.9				199
			20.0				200

C(L)KQG32 Series

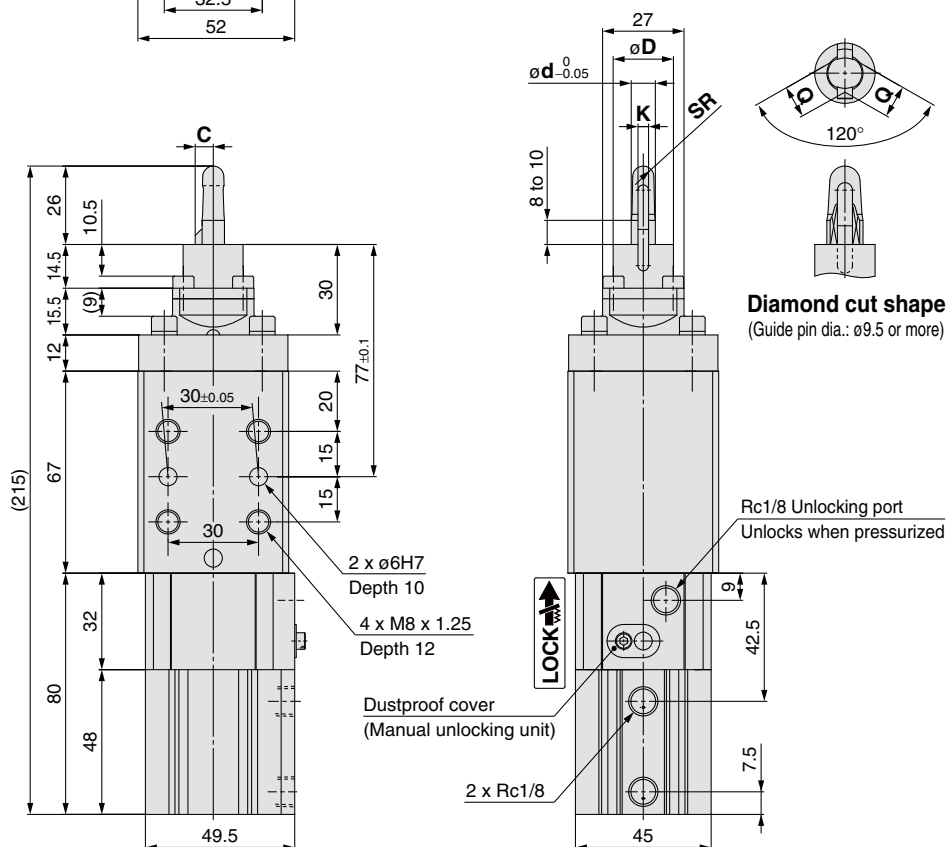
Dimensions

CLKQG□32 (Clamping height LOW type) * The figures below indicate the CLKQGB32-□RCL-X2081.



Manually unlocking

- 1) Remove the dustproof cover.
- 2) Screw the commercially available bolt (M3 x 15 L or more) into the lock ring shown on the left and raise the lock ring toward the head side.
- 3) The lock ring and piston rod form a right angle, and the lock is released.



Mounting surface position

A	
B	
C	
D	

Clamp arm position

A	Same as the port side
B	90° from the port side
C	180° from the port side
D	270° from the port side

The diagram shows a square flange with four circular holes. The holes are labeled A, B, C, and D. A horizontal line with an arrow pointing to the right is labeled 'Port side'. The label 'A' is positioned to the right of the top-right hole. The label 'B' is positioned below the bottom hole. The label 'C' is positioned to the left of the left hole. The label 'D' is positioned above the top hole. A line labeled 'Clamp arm' points to the top-left corner of the flange.

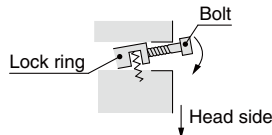
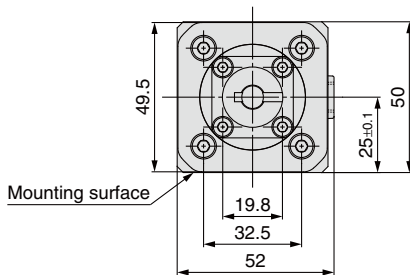
Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø8	6	20	7.5	3.5	3.5	—	075
			7.6				076
			7.7				077
			7.8				078
			7.9				079
			8.0				080
ø9	6.5	20	8.5	4	4	—	085
			8.6				086
			8.7				087
			8.8				088
			8.9				089
			9.0				090
ø10	7.5	20	9.5	4	4.5	9.2	095
			9.6				096
			9.7				097
			9.8				098
			9.9				099
			10.0				100
ø11	7.5	20	10.5	4	4.5	9.8	105
			10.6				106
			10.7				107
			10.8				108
			10.9				109
			11.0				110

Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø12	8.5	20	11.5	5	5	10.9	115
			11.6				116
			11.7				117
			11.8				118
			11.9				119
			12.0				120
ø13	8.5	20	12.5	5	5.5	11.6	125
			12.6				126
			12.7				127
			12.8				128
			12.9				129
			13.0				130
ø14	10.5	25	13.5	6	5.5	12.6	135
			13.6				136
			13.7				137
			13.8				138
			13.9				139
			14.0				140
ø15	10.5	25	14.5	6	6	13.3	145
			14.6				146
			14.7				147
			14.8				148
			14.9				149
			15.0				150

Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø16	11.5	25	15.5	6	6.5	14.3	155
			15.6				156
			15.7				157
			15.8				158
			15.9				159
			16.0				160
ø18	13	27	17.5	6	7.5	16.4	175
			17.6				176
			17.7				177
			17.8				178
			17.9				179
			18.0				180
ø20	13	27	19.5	6	8	17.2	195
			19.6				196
			19.7				197
			19.8				198
			19.9				199
			20.0				200

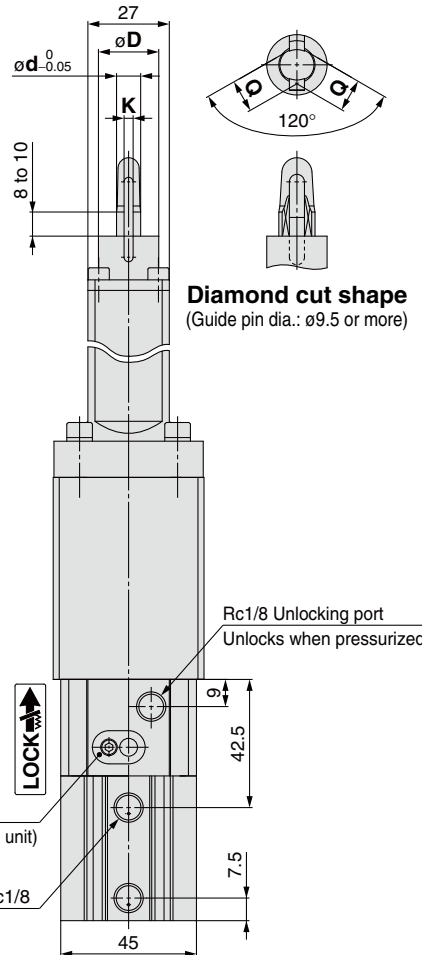
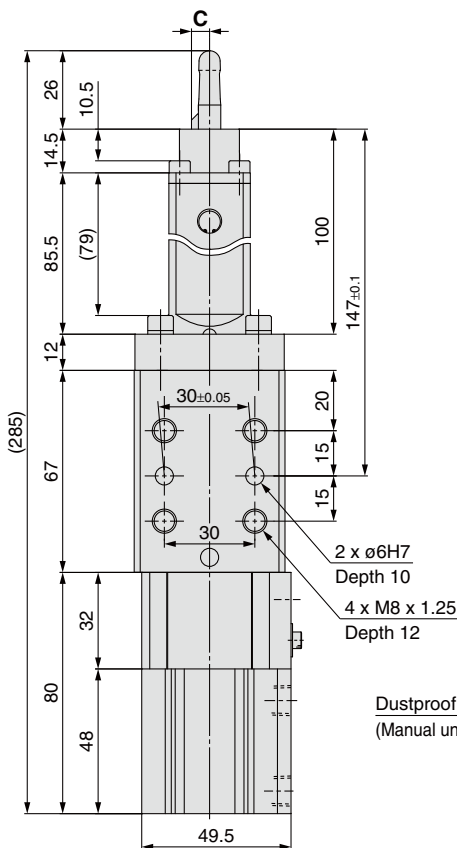
Dimensions

CLKQG□32 (Clamping height HIGH type) * The figures below indicate the CLKQGB32-□RCH-X2082.



Manually unlocking

- 1) Remove the dustproof cover.
- 2) Screw the commercially available bolt (M3 x 15 L or more) into the lock ring shown on the left and raise the lock ring toward the head side.
- 3) The lock ring and piston rod form a right angle, and the lock is released.



Mounting surface position

A	
B	
C	
D	

Clamp arm position

A	Same as the port side
B	90° from the port side
C	180° from the port side
D	270° from the port side

Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø8	6	20	7.5	3.5	3.5	—	075
			7.6				076
			7.7				077
			7.8				078
			7.9				079
			8.0				080
ø9	6.5	20	8.5	4	4	—	085
			8.6				086
			8.7				087
			8.8				088
			8.9				089
			9.0				090
ø10	7.5	20	9.5	4	4.5	9.2	095
			9.6				096
			9.7				097
			9.8				098
			9.9				099
			10.0				100
ø11	7.5	20	10.5	4	4.5	9.8	105
			10.6				106
			10.7				107
			10.8				108
			10.9				109
			11.0				110

Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø12	8.5	20	11.5	5	5	10.9	115
			11.6				116
			11.7				117
			11.8				118
			11.9				119
			12.0				120
ø13	8.5	20	12.5	5	5.5	11.6	125
			12.6				126
			12.7				127
			12.8				128
			12.9				129
			13.0				130
ø14	10.5	25	13.5	6	5.5	12.6	135
			13.6				136
			13.7				137
			13.8				138
			13.9				139
			14.0				140
ø15	10.5	25	14.5	6	6	13.3	145
			14.6				146
			14.7				147
			14.8				148
			14.9				149
			15.0				150

Hole diameter of workpiece	C	D	d	K	SR	Q	Model number
ø16	11.5	25	15.5	6	6.5	14.3	155
			15.6				156
			15.7				157
			15.8				158
			15.9				159
			16.0				160
ø18	13	27	17.5	6	7.5	16.4	175
			17.6				176
			17.7				177
			17.8				178
			17.9				179
			18.0				180
ø20	13	27	19.5	6	8	17.2	195
			19.6				196
			19.7				197
			19.8				198
			19.9				199
			20.0				200

C(L)KQG32/C(L)KU32 Series **Options**

Dimensions

Shim

C(L)KQG32-X2081

LOW type

C(L)KQG32-X2082

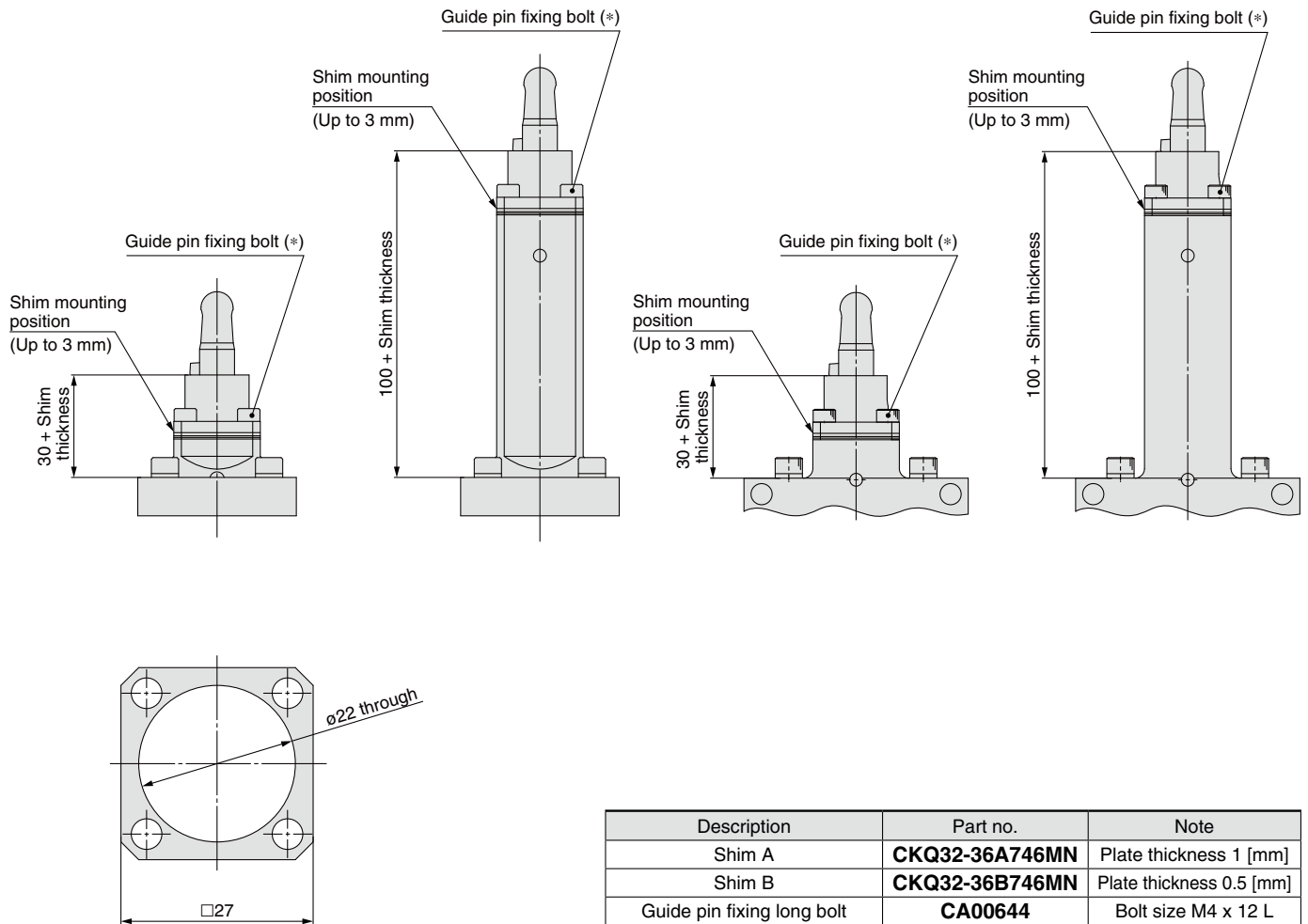
HIGH type

C(L)KU32-X2321

LOW type

C(L)KU32-X2322

HIGH type



Shim dimensions

- Shims can be mounted up to 3 mm.
However, when mounting 2 mm or more shims, use the above guide pin fixing long bolt instead of a guide pin fixing bolt (marked with *).
- For auto switches (except the M9□V), when the total thickness of shims and a workpiece is over 2 mm, the auto switch may not be adjusted to the most sensitive position.

MK

MK2T

CK□1

CLK2

CLKG

CKQ
CLKQ

CK ☐
CLK ☐

CKQ ☐D-☐

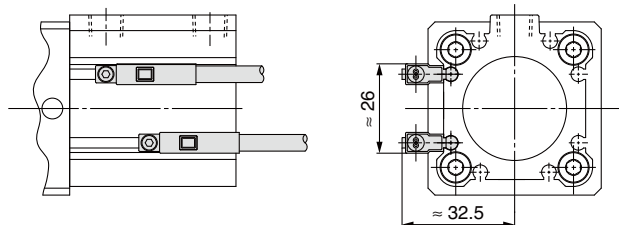
-X ☐

C(L)KQG32 Series Auto Switch Mounting 1

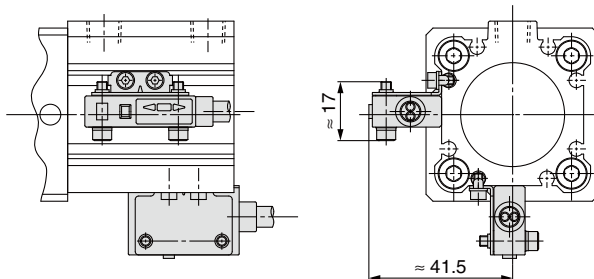
Auto Switch Mounting Height

Applicable cylinder: C(L)KQG32-X2081
C(L)KQG32-X2082

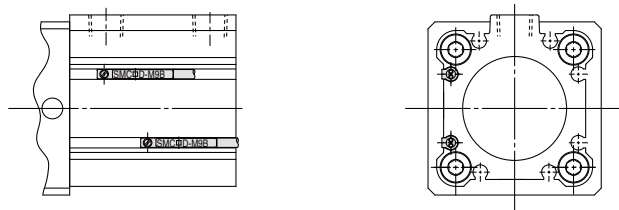
D-P3DWA□



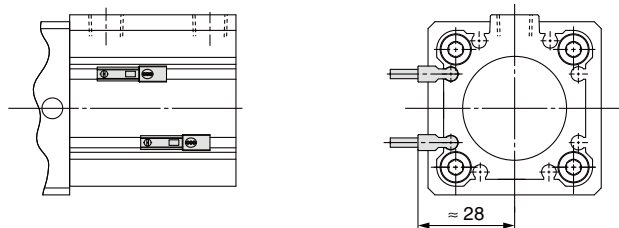
D-P4DW□



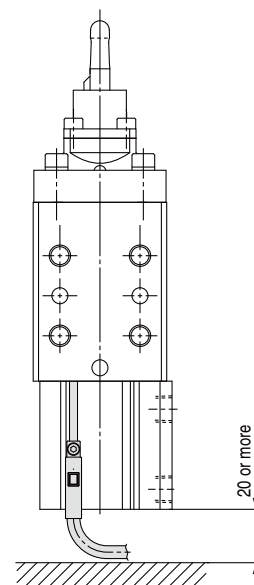
D-M9□
D-M9□W
D-A9□



D-M9□V
D-M9□WV
D-A9□V

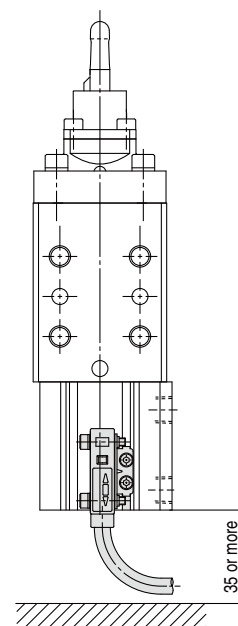


For D-P3DWA□



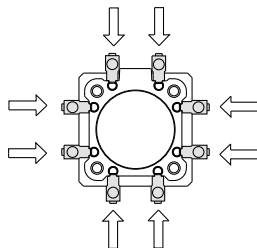
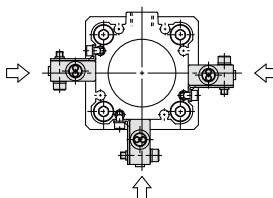
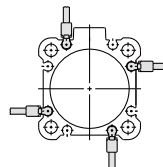
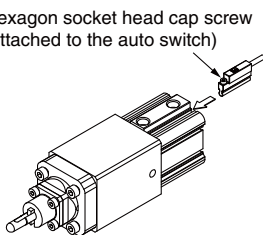
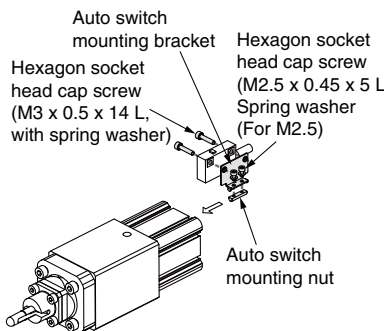
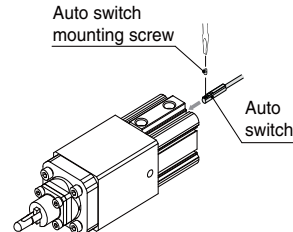
Note) Allow 20 mm or more space at the cylinder head side to secure the minimum bending radius of the auto switch lead wire.

For D-P4DW□



Note) Allow 35 mm or more space at the cylinder head side to secure the minimum bending radius of the auto switch lead wire.

Auto Switch Mounting Bracket Part No./Mounting Method

Applicable cylinder	C(L)KQG32-X2081, -X2082								
Applicable auto switches	D-P3DWA□	D-P4DW□	D-M9□(V), D-M9□W(V), D-M9□A(V) D-A9□(V)						
Bore size [mm]	ø32								
Auto switch mounting bracket part no.	—	BQ7-032	—						
Auto switch mounting bracket fitting parts lineup/Weight	—	• Auto switch mounting bracket • Auto switch mounting nut • Hexagon socket head cap screw (M3 x 0.5 x 14 L, with spring washer) • Hexagon socket head cap screw (M2.5 x 0.45 x 5 L) • Spring washer (For M2.5) Weight: 8.5 g	—						
Auto switch mounting surfaces	Surfaces with auto switch mounting slot	Surfaces with auto switch mounting slot	Surfaces with auto switch mounting slot						
	 * When mounting on the port side, select fittings with width across 12 mm or less.								
Mounting of auto switch	①Insert the auto switch into the mating groove of the cylinder tube. ②Check the detecting position of the auto switch and fix the auto switch firmly with the hexagon socket head cap screw (attached to the auto switch). Note) The tightening torque for the hexagon socket head cap screw is 0.2 to 0.3 N·m.  Hexagon socket head cap screw (attached to the auto switch)	①Fix the auto switch and the auto switch mounting bracket temporarily with the hexagon socket head cap screws (M3 x 14 L). ②Insert the hexagon socket head cap screws (M2.5 x 5 L) into the spring washers (for M2.5), and tighten the auto switch mounting bracket and auto switch mounting nut temporarily. ③Insert the temporarily fixed auto switch mounting nut into the mating groove of the cylinder tube. ④Check the detecting position of the auto switch and fix the auto switch firmly with the hexagon socket head cap screw (M2.5 x 5 L, M3 x 14 L). Note 1) The tightening torque for the hexagon socket head cap screw (M3 x 14 L) is 0.5 to 0.6 N·m. Note 2) The tightening torque for the hexagon socket head cap screw (M2.5 x 5 L) is 0.25 to 0.35 N·m.  Auto switch mounting bracket Hexagon socket head cap screw (M3 x 0.5 x 14 L, with spring washer) Hexagon socket head cap screw (M2.5 x 0.45 x 5 L) Spring washer (For M2.5) Auto switch mounting nut	 Auto switch mounting screw Auto switch • When tightening the auto switch mounting screw, use a watchmakers' screwdriver with a handle 5 to 6 mm in diameter. Tightening Torque for Auto Switch Mounting Screw [N·m] <table><tr><th>Auto switch model</th><th>Tightening torque</th></tr><tr><td>D-A9□(V) (Excluding D-A93)</td><td>0.10 to 0.20</td></tr><tr><td>D-M9□(V) D-M9□W(V) D-M9□A(V) D-A93</td><td>0.05 to 0.15</td></tr></table>	Auto switch model	Tightening torque	D-A9□(V) (Excluding D-A93)	0.10 to 0.20	D-M9□(V) D-M9□W(V) D-M9□A(V) D-A93	0.05 to 0.15
	Auto switch model	Tightening torque							
D-A9□(V) (Excluding D-A93)	0.10 to 0.20								
D-M9□(V) D-M9□W(V) D-M9□A(V) D-A93	0.05 to 0.15								

MK

MK2T

CK□1

CLK2

CLKG

CKQ
CLKQ

CK□
CLK□

CKQ□

D-□

-X□