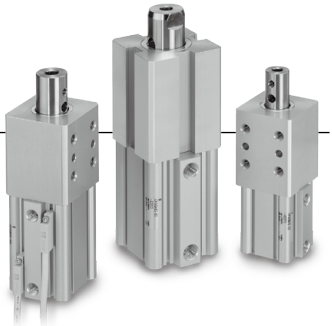
For High Precision Positioning

Pin Shift Cylinder



CKQG-X2370 ø32, ø40, ø50
(Built-in standard magnet)

CKQP-X2371 ø50
(Built-in strong magnet)

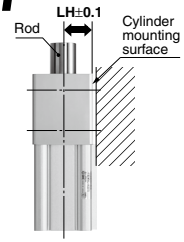
High Precision

Rod end Deflection ±0.1 mm or less

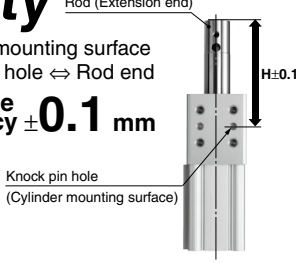
- Rod end deflection of ±0.1 mm or less is achieved when a load is applied to the rod at its extension end.

Position Reproducibility

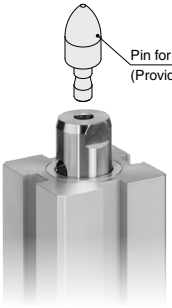
Mounting surface ⇔ Rod center
Distance accuracy ±0.1 mm
* For details, refer to "Caution on Design" on page 1334.



Cylinder mounting surface knock pin hole ⇔ Rod end
Distance accuracy ±0.1 mm

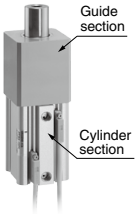


Pin for positioning the workpiece provided by the customer can be directly mounted.



Reduces labor time by integrating the cylinder and guide.

- Reduction in design labor
- Reduction in assembly labor



Magnetic field resistant auto switches are mountable.

- CKQG-X2370
  ⊃ Solid state auto switch **D-P3DWA□** **D-P4DW□**
- CKQP-X2371
  ⊃ Reed auto switch **D-P7□**

The D-P3DWA is mountable on 4 surfaces.
* The D-P4DW□ and D-P7□ are mountable on 3 surfaces.

Built-in coil scraper

- Removes welding spatters, foreign matter, cutting chips, etc. sticking to the piston rod.

CKQ G-X2370 P-X2371

Pin Shift Cylinder
CKQG-X2370
CKQP-X2371

How to Order

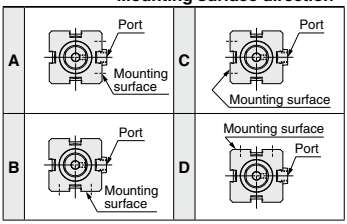
Built-in standard magnet type with magnetic field resistant auto switch CKQG D 32 – 25 – P3DWAL ☐ – X2370

Built-in standard magnet type with magnetic field resistant auto switch CKQG D 40 – 25 ☐ – P3DWAL ☐ – X2370

Built-in standard magnet type with magnetic field resistant auto switch CKQG D 50 – 30 – P3DWAL ☐ – X2370

Built-in strong magnet type with magnetic field resistant auto switch CKQP D 50 – 30 – P74L ☐ – X2371

Mounting surface direction



Bore size

Cylinder stroke

Bore size (mm)	Stroke (mm)			
	25	30	40	50
32	○	—	○	—
40	○	—	○	—
50	—	○	—	○

Piston rod end hole size

Nil	ø8
A	ø10

Auto switch
Select applicable auto switch models from Table 1.

Nil	Without auto switch (Built-in magnet)

Number of auto switches

Nil	2 pcs.
S	1 pc.

Table 1

Applicable Auto Switches/Refer to **the WEB catalog** or Best Pneumatics No. 3 for further information on auto switches.

Applicable cylinder series	Type	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no. in use)	Load voltage	Lead wire length	Applicable load
Series CKQG	Solid state auto switch	P3DWASC	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color indication	2-wire (3-4)	24 VDC	0.3 m	Relay, PLC Note)
		P3DWASE				2-wire (1-4)			
		P3DWA		Grommet		2-wire		0.5 m	
		P3DWAL						3 m	
		P3DWAZ						5 m	
		P4DWSC		Pre-wired connector		2-wire (3-4)		0.3 m	
		P4DWSE				2-wire (1-4)			
		P4DWL		Grommet		2-wire		3 m	
		P4DWZ						5 m	
Series CKQP	Reed auto switch	P79WSE	DC/AC magnetic field	Pre-wired connector	2-color indication	2-wire (1-4)	24 VDC	0.3 m	
		P74L		Grommet	1-color indication	2-wire	24 VDC 100 VAC	3 m	
		P74Z						5 m	

Note) PLC: Programmable Logic Controller

Specifications

Model	CKQG-X2370			CKQP-X2371
Bore size (mm)	**32**	**40**	**50**	**50**
Maximum operating pressure	1.0 MPa			
Proof pressure	1.5 MPa			
Minimum operating pressure	0.2 MPa			
Ambient temperature	–10 to 60°C (No freezing)			
Operating air temperature				
Cushion	None			
Applicable auto switches	D-P3DWA□ D-P4DW□			D-P79WSE D-P74□

Theoretical Output

(N)

Bore size (mm)	Operating direction	Piston area (mm^2)	Operating pressure (MPa)					
			0.2	0.3	0.4	0.5	0.6	1.0
ø32	OUT	804	160	241	321	402	482	804
	IN	490	98	147	196	245	294	490
ø40	OUT	1256	251	378	502	628	753	1256
	IN	765	153	229	306	382	459	764
ø50	OUT	1964	392	589	785	982	1178	1964
	IN	1256	251	378	502	628	753	1256

Weight

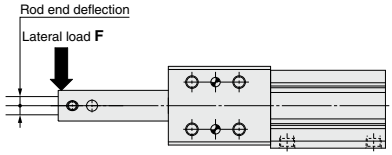
(kg)

Model	Bore size (mm)	Stroke (mm)			
		25	**30**	**40**	**50**
CKQG-X2370	**32**	0.95	—	1.02	—
	40	1.31	—	1.4	—
	50	—	2.1	—	2.3
CKQP-X2371	**50**	—	2.3	—	2.5

Rod End Deflection

(mm)

Bore size (mm)	Stroke (mm)	Lateral load **F** (N)		
		98	196	294
50	**30**	±0.1 or less		
	50			
40	**25**			
	40			
32	**25**			
	40			



Caution on Design

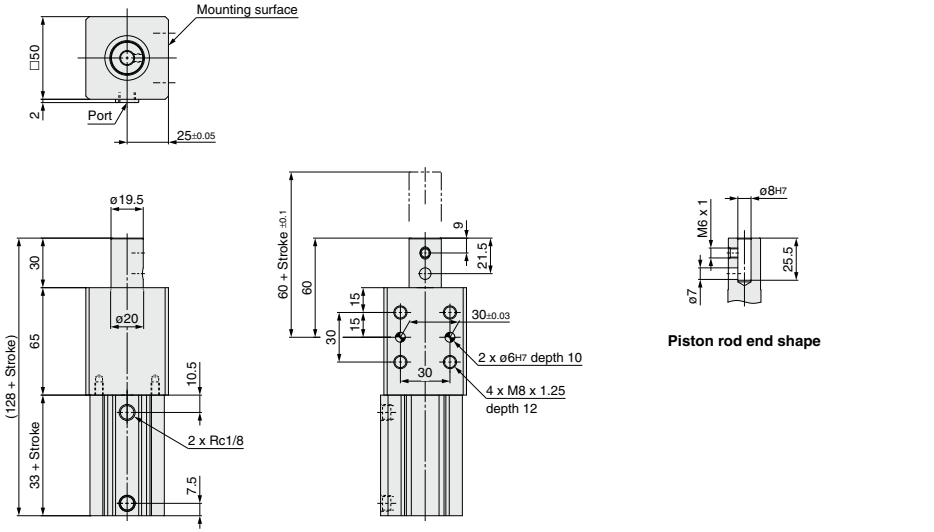
⚠Caution

For position reproducibility, a distance accuracy of ±0.1 mm from the mounting surface to the rod center (when the piston rod is retracted) is calculated with the root mean square method.

Dimensions

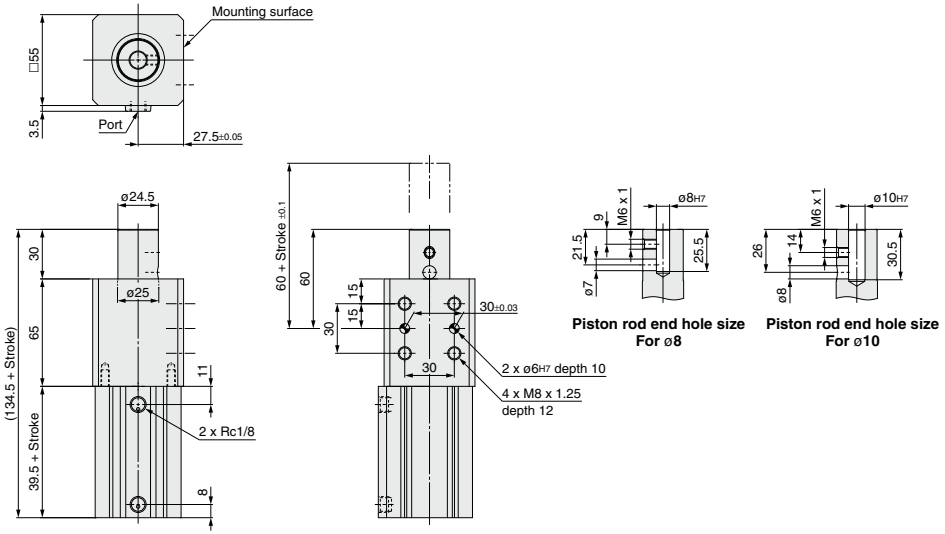
CKQG□32-□-□□-X2370

∗ The figures below indicate the CKQGD32-□-□□-X2370.



CKQG□40-□□-□□-X2370

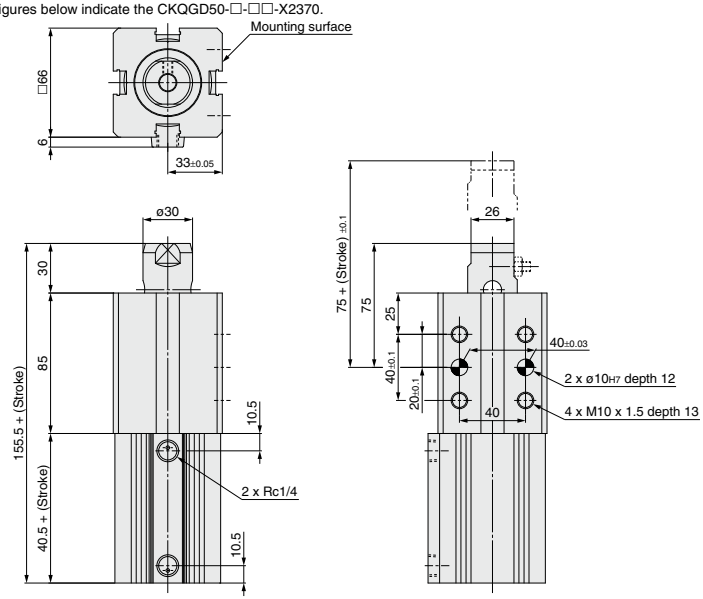
∗ The figures below indicate the CKQGD40-□□-□□-X2370.



Dimensions

CKQG□50-□-□□-X2370

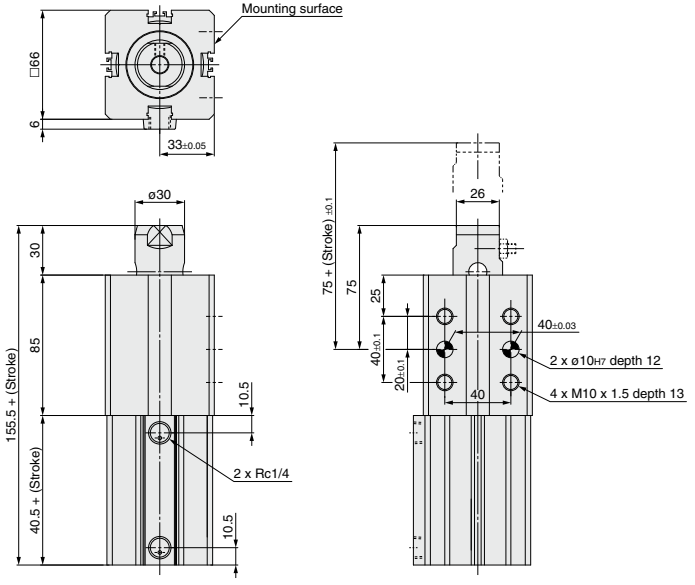
∗ The figures below indicate the CKQGD50-□-□□-X2370.



Detail of piston rod end

CKQP□50-□-□□-X2371

∗ The figures below indicate the CKQPD50-□-□□-X2371.



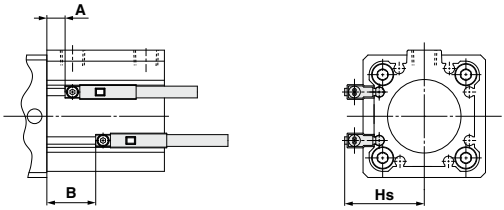
Detail of piston rod end

CKQG-X2370/CKQP-X2371
Auto Switch Mounting

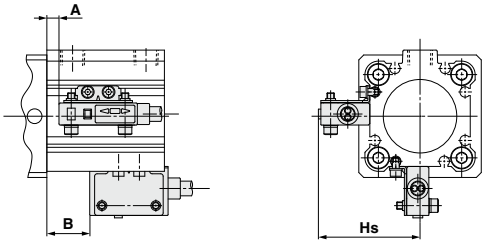
Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

[CKQG-X2370]

D-P3DWA□



D-P4DW□

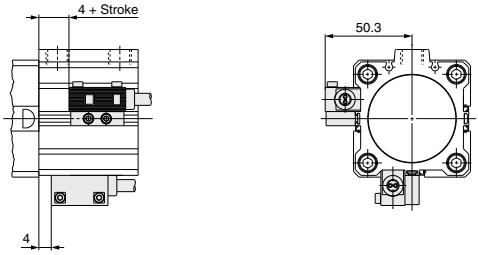


(mm)

Auto switch model / Bore size	D-P3DWA□			D-P4DW□		
	A	B	Hs	A	B	Hs
32	13	13 + Stroke	34	6	6 + Stroke	41.3
40	17.5	17.5 + Stroke	37.2	10.5	10.5 + Stroke	44.6
50	16	16 + Stroke	42	9	9 + Stroke	50.3

[CKQP-X2371]

D-P7□

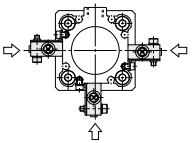
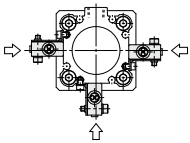
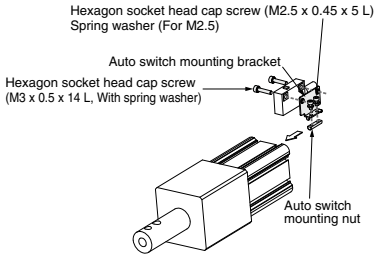
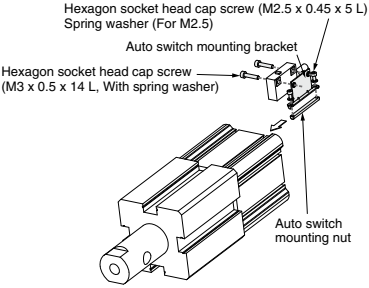


Mounting

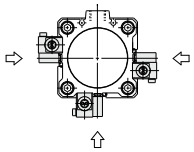
When installing the cylinders with auto switches, pay attention to the bending radius of the auto switch lead wire.
For details, refer to **the WEB catalog** or Best Pneumatics No. 3 and the Operation Manual.

Auto Switch Mounting Bracket Part No./Mounting Method

Applicable cylinder	**CKQG-X2370**
Applicable auto switch	**D-P3DWA□**
Bore size (mm)	**ø32, ø40, ø50**
Auto switch mounting bracket part no.	No mounting bracket required as the auto switch is directly mounted.
Auto switch tightening torque	0.2 to 0.3 N·m

Applicable cylinder	**CKQG-X2370**	
Applicable auto switch	**D-P4DW□**	
Bore size (mm)	**ø32, ø40**	**ø50**
Auto switch mounting bracket part no.	C2Q32-42-880NN-R	C2Q40-42-6618M-R
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 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 = 12 g
Auto switch mounting surface	Surfaces with auto switch mounting slot 	Surfaces with auto switch mounting slot 
Mounting of auto switch	1. Fix the auto switch and the auto switch mounting bracket temporarily with the hexagon socket head cap screws (M3 x 14 L). 2. Insert 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. 3. Insert the temporarily fixed auto switch mounting nut into the mating groove of the cylinder tube. 4. Check the detecting position of the auto switch and fix the auto switch firmly with the hexagon socket head cap screws (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. 	1. Fix the auto switch and the auto switch mounting bracket temporarily with the hexagon socket head cap screws (M3 x 14 L). 2. Insert 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. 3. Insert the temporarily fixed auto switch mounting nut into the mating groove of the cylinder tube. 4. Check the detecting position of the auto switch and fix the auto switch firmly with the hexagon socket head cap screws (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 Part No./Mounting Method

Applicable cylinder	**CKQP-X2371**
Applicable auto switch	**D-P7□**
Bore size (mm)	**ø50**
Auto switch mounting bracket part no.	BQP1T-050
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 (M3 x 0.5 x 14 L) ● Spring washer (For M2.5) Weight = 16 g
Auto switch mounting surface	Surfaces with auto switch mounting slot 
Mounting of auto switch	1. Mount the auto switch mounting bracket onto the auto switch mounting nut by tightening the bracket mounting screws lightly the through hole on the top of bracket. 2. Insert the nut section of the auto switch mounting bracket assembly (bracket + nut) into the groove of the rail and set it at the auto switch mounting position. 3. Insert the auto switch mounting screws into the through hole of the auto switch, and fix the auto switch mounting bracket and auto switch temporarily. 4. Check the detecting position of the auto switch and fix the auto switch firmly with the auto switch mounting screws and bracket mounting screws. (The tightening torque is 0.5 to 0.7 N·m.) Note) Be careful of the mounting direction of the D-P79WSE when installed to the auto switch mounting bracket. Be sure the soft-resin mold surface faces the auto switch mounting bracket side when mounting.