# SMC Information

**SMC Corporation**
Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku,
Tokyo 101-0021, JAPAN
URL http://www.smcworld.com

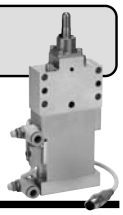

**09-E553**
D-DN Printing OV 12450KS

# Pin Clamp Cylinders

## Compact Cylinder Type

**CKQG32** LOW type (**-X2081**)
**CKQG32** HIGH type (**-X2082**)

## Plate Cylinder Type



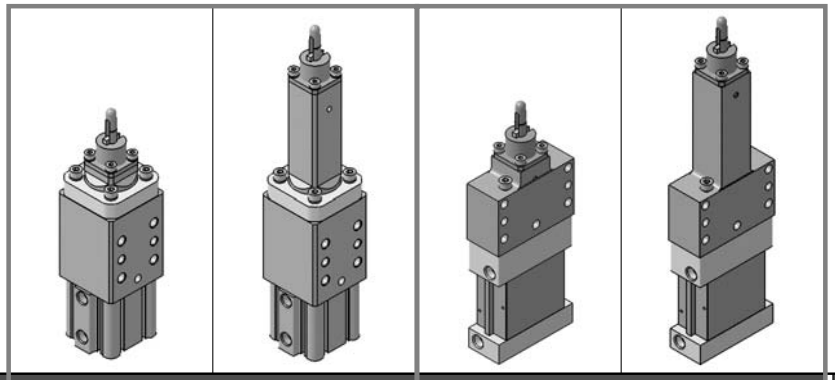
**CKU32** LOW type (**-X2091**)
**CKU32** HIGH type (**-X2092**)

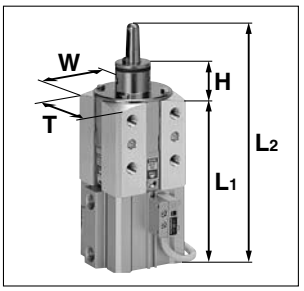
## ■ø32 added

- Compact design makes it applicable to a broad range of work pieces
- Contributes to reduce weight of the jig

## ■Can be selected 2 types of clamping heights

Height: 30 mm (LOW type), 100 mm (HIGH type)



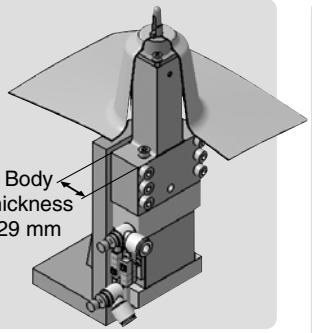



(mm)

| Model | | CKQG32 Compact cylinder type (Guide pin diameter ø12) | | CKU32 Plate cylinder type (Guide pin diameter ø12) | | CKQG50 (Guide pin diameter ø13) | |
|---|---|---|---|---|---|---|---|
| Clamping height | | LOW type | HIGH type | LOW type | HIGH type | LOW type | HIGH type |
| Clamping height | H | 30 | 100 | 30 | 100 | 24 | 54 |
| Body thickness | T | 50 | | 29 | | 66 | |
| Body width | W | 50 | | 70 | | 66 | |
| Body length | $L_1$ | 127 | | 132.5 | | 147.5 | |
| Overall length | $L_2$ | 183 | 253 | 188.5 | 258.5 | 204.5 | 234.5 |
| Weight (g) | | 900 | 1110 | 740 | 910 | 1670 | 1840 |

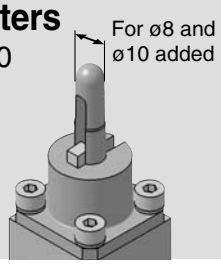
## ■29 mm thin, plate cylinder CKU32 added

- Compatible with installing in narrow spaces
- For small and lightweight workpiece operations such as clamping, material handling, etc.



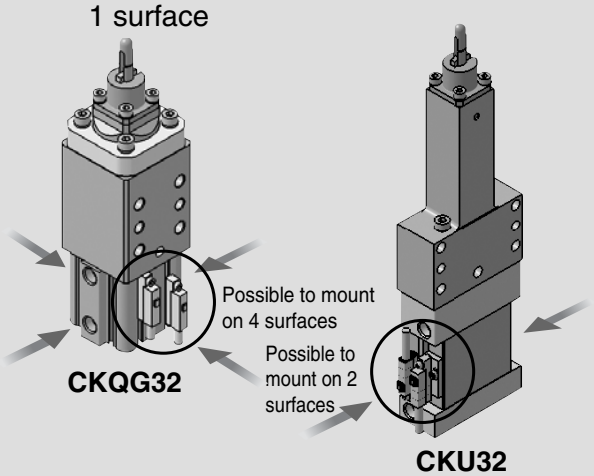

## ■Newly added guide pins for work pieces with ø8 and ø10 hole diameters

- Guide pin diameter: ø7.5 to ø20 (48 types)
- Applicable hole diameter of workpiece for ø8 to ø20 (8 types)




## ■Compatible with mounting magnetic field resistant auto switch (D-P3DW□)

- Possible to mount 2 auto switches on 1 surface



# Pin Clamp Cylinder Compact Cylinder Type

# Series CKQG32

## How to Order

**Clamping Height LOW type** CKQG **B** 32 – 075 **R** **A** L – **C** **□** – X2081

**Clamping Height HIGH type** CKQG **B** 32 – 075 **R** **A** H – **C** **□** – X2082

**Mounting surface position (viewed from top)**

| Symbol | Mounting surface position |
|---|---|
| A | Port side ←, Mounting surface ↖ |
| B | Port side ←, Mounting surface ↖ |
| C | Mounting surface ↖, Port side ← |
| D | Mounting surface ↘, Port side ← |

**Bore size**

| | |
|---|---|
| 32 | 32 mm |

**Guide pin diameter**

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

**Guide pin shape**

| | |
|---|---|
| R | Round type |

**Number of auto switches**

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

**Auto switch type**

| | |
|---|---|
| Nil | Without auto switch (Built-in magnet) |
| C | D-P3DWSC |
| E | D-P3DWSE |
| N | D-P3DW |
| L | D-P3DWL |
| Z | D-P3DWZ |

∗ Auto switches and mounting brackets are shipped together, (but not assembled).
∗ Refer to the table below for the applicable auto switches.
∗ When the total thickness of the clamped workpiece is over 2 mm, the auto switch may not be adjusted the most sensitive position.

**Clamp arm position (clockwise viewed from top)**

| Symbol | Clamp arm position |
|---|---|
| A | Same as the port side: Port side ←, Clamp arm ↖ |
| B | 90° from the port side: Port side ←, Clamp arm ↖ |
| C | 180° from the port side: Port side ←, Clamp arm ↖ |
| D | 270° from the port side: Port side ←, Clamp arm ↖ |

**Table 1. Guide Pin Diameter**

| Symbol | 075 | 076 | 077 | 078 | 079 | 080 | 095 | 096 | 097 | 098 | 099 | 100 | 115 | 116 | 117 | 118 | 119 | 120 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guide pin diameter [mm] | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 | 8.0 | 9.5 | 9.6 | 9.7 | 9.8 | 9.9 | 10.0 | 11.5 | 11.6 | 11.7 | 11.8 | 11.9 | 12.0 |
| Applicable hole diameter of workpiece [mm] | For ø8 | | | | | | For ø10 | | | | | | For ø12 | | | | | |
| Guide pin shape | Round type | | | | | | | | | | | | | | | | | |

| Symbol | 135 | 136 | 137 | 138 | 139 | 140 | 145 | 146 | 147 | 148 | 149 | 150 | 155 | 156 | 157 | 158 | 159 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guide pin diameter [mm] | 13.5 | 13.6 | 13.7 | 13.8 | 13.9 | 14.0 | 14.5 | 14.6 | 14.7 | 14.8 | 14.9 | 15.0 | 15.5 | 15.6 | 15.7 | 15.8 | 15.9 | 16.0 |
| Applicable hole diameter of workpiece [mm] | For ø14 | | | | | | For ø15 | | | | | | For ø16 | | | | | |
| Guide pin shape | Round type | | | | | | | | | | | | | | | | | |

| Symbol | 175 | 176 | 177 | 178 | 179 | 180 | 195 | 196 | 197 | 198 | 199 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guide pin diameter [mm] | 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 ø18 | | | | | | For ø20 | | | | | |
| Guide pin shape | Round type | | | | | | | | | | | |

**Applicable Auto Switches** / Refer to Best Pneumatics No. 3 for further information on 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 | D-P3DWSC | 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 Note 1) |
| | D-P3DWSE | | | | 2-wire (1 – 4) | | | |
| | D-P3DW | | Grommet | | 2-wire | | 0.5 m | |
| | D-P3DWL | | | | | | 3 m | |
| | D-P3DWZ | | | | | | 5 m | |

Note 1) PLC: Programmable Logic Controller
Note 2) Since there are other applicable auto switches than listed, refer to Best Pneumatics No. 3 for details.

## Basic Specifications

| Model | | | CKQG32 |
|---|---|---|---|
| **Action** | | | Double acting |
| **Bore size (mm)** | | | 32 |
| **Cylinder stroke/Clamp stroke (mm)** | | | 12.5 mm (Without workpiece)/10 mm |
| **Fluid** | | | Air |
| **Minimum operating pressure** | | | 0.1 MPa |
| **Maximum operating pressure** | **Guide pin diameter (mm)** | **ø7.5 to ø12.0** | 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 |

## Clamping Force

(N)

| Model | Guide pin diameter (mm) | Operating pressure (MPa) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 |
| **CKQG32** | ø7.5 to ø12.0 | 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.

## Clamp Specifications

| Model | CKQG32 |
|---|---|
| **Clamp stroke** | 10 mm |
| **Clamp arm** | 1 pc. |
| **Guide pin shape** | Round type |

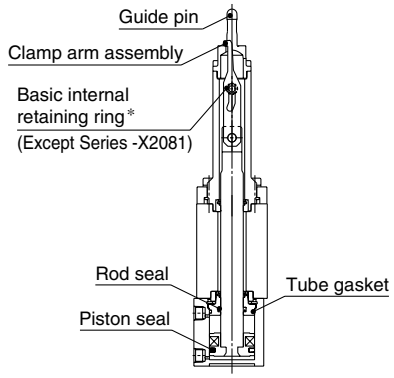
∗ Refer to the above "Clamping Force" for detailed specifications of the clamping force, etc.

## Weight

Unit: g

| Model | | CKQG32 | |
|---|---|---|---|
| | | **-X2081** | **-X2082** |
| Guide pin diameter (mm) | ø7.5 to ø8.0 | 900 | 1110 |
| | ø9.5 to ø10.0 | | |
| | ø11.5 to ø12.0 | | |
| | ø13.5 to ø14.0 | 940 | 1150 |
| | ø14.5 to ø15.0 | | |
| | ø15.5 to ø16.0 | | |
| | ø17.5 to ø18.0 | 950 | 1160 |
| | 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**

### ■ 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

| Kit No. | Contents |
|---|---|
| CQ2B32-PS | ①Piston seal<br>②Rod seal<br>③Tube gasket |

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

### ■ Grease Pack

| Kit No. | Contents |
|---|---|
| GR-S-010 | Grease 10 g |

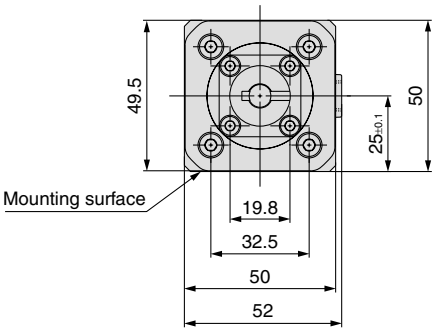
∗ Consult with SMC when replacing the actuating cylinders.

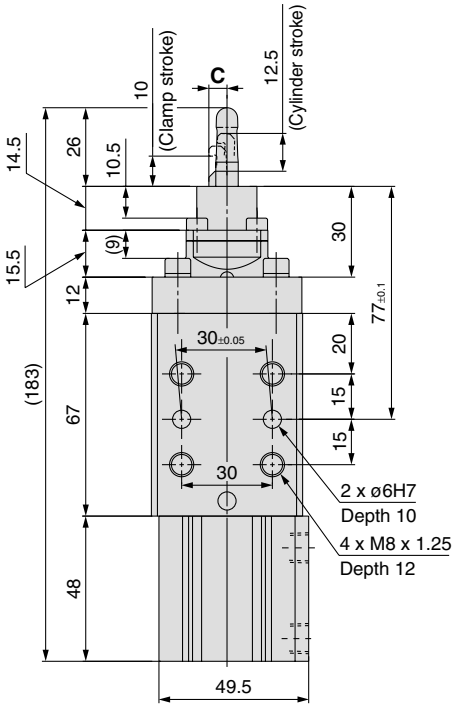
**Table 1. Guide Pin Diameter/Applicable Hole Diameter of Workpiece**

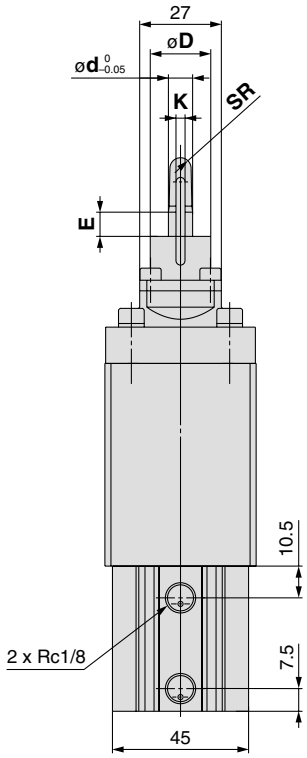
| Symbol 1 | Applicable hole diameter of workpiece | Symbol 2 | Guide pin diameter |
|---|---|---|---|
| **08** | 8 | **075** | 7.5 |
| | | **076** | 7.6 |
| | | **077** | 7.7 |
| | | **078** | 7.8 |
| | | **079** | 7.9 |
| | | **080** | 8.0 |
| **10** | 10 | **095** | 9.5 |
| | | **096** | 9.6 |
| | | **097** | 9.7 |
| | | **098** | 9.8 |
| | | **099** | 9.9 |
| | | **100** | 10.0 |
| **12** | 12 | **115** | 11.5 |
| | | **116** | 11.6 |
| | | **117** | 11.7 |
| | | **118** | 11.8 |
| | | **119** | 11.9 |
| | | **120** | 12.0 |
| **14** | 14 | **135** | 13.5 |
| | | **136** | 13.6 |
| | | **137** | 13.7 |
| | | **138** | 13.8 |
| | | **139** | 13.9 |
| | | **140** | 14.0 |
| **15** | 15 | **145** | 14.5 |
| | | **146** | 14.6 |
| | | **147** | 14.7 |
| | | **148** | 14.8 |
| | | **149** | 14.9 |
| | | **150** | 15.0 |
| **16** | 16 | **155** | 15.5 |
| | | **156** | 15.6 |
| | | **157** | 15.7 |
| | | **158** | 15.8 |
| | | **159** | 15.9 |
| | | **160** | 16.0 |
| **18** | 18 | **175** | 17.5 |
| | | **176** | 17.6 |
| | | **177** | 17.7 |
| | | **178** | 17.8 |
| | | **179** | 17.9 |
| | | **180** | 18.0 |
| **20** | 20 | **195** | 19.5 |
| | | **196** | 19.6 |
| | | **197** | 19.7 |
| | | **198** | 19.8 |
| | | **199** | 19.9 |
| | | **200** | 20.0 |

## Dimensions

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



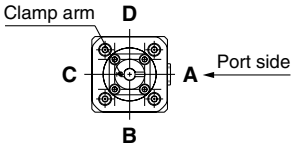




**Mounting surface position**

| | |
|---|---|
| A | Port side, Mounting surface |
| B | Port side, Mounting surface |
| C | Mounting surface, Port side |
| D | Mounting surface, Port side |

**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 |

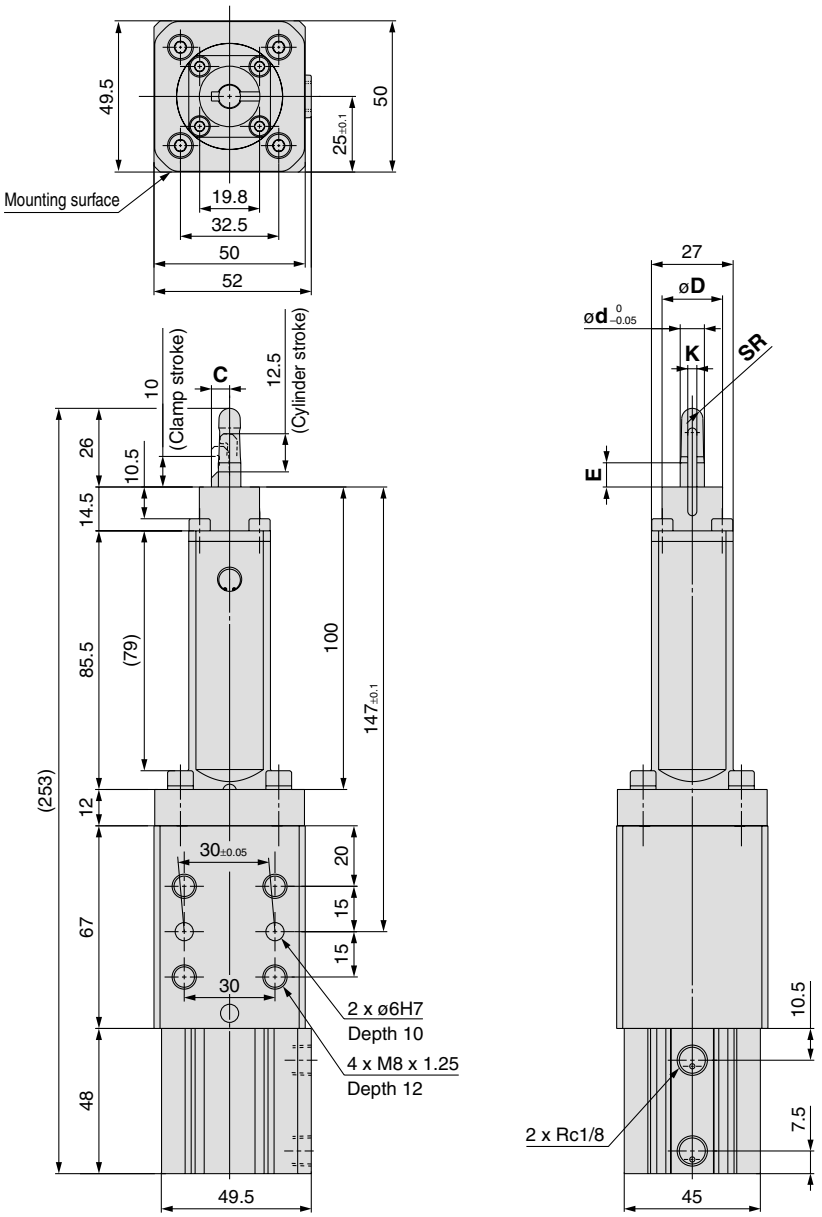



| Hole diameter of workpiece | C | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø8 | 6 | ø20 | ø7.5 | ≈10 | 3.5 | 3.5 | 075 |
| | | | ø7.6 | ≈9.8 | | | 076 |
| | | | ø7.7 | ≈9.2 | | | 077 |
| | | | ø7.8 | ≈8.8 | | | 078 |
| | | | ø7.9 | ≈8.4 | | | 079 |
| | | | ø8.0 | ≈8 | | | 080 |
| ø10 | 7.5 | ø20 | ø9.5 | ≈10 | 4 | 4.5 | 095 |
| | | | ø9.6 | ≈9.8 | | | 096 |
| | | | ø9.7 | ≈9.2 | | | 097 |
| | | | ø9.8 | ≈8.8 | | | 098 |
| | | | ø9.9 | ≈8.4 | | | 099 |
| | | | ø10.0 | ≈8 | | | 100 |
| ø12 | 8.5 | ø20 | ø11.5 | ≈10 | 5 | 5 | 115 |
| | | | ø11.6 | ≈9.8 | | | 116 |
| | | | ø11.7 | ≈9.2 | | | 117 |
| | | | ø11.8 | ≈8.8 | | | 118 |
| | | | ø11.9 | ≈8.4 | | | 119 |
| | | | ø12.0 | ≈8 | | | 120 |
| ø14 | 10.5 | ø25 | ø13.5 | ≈10 | 6 | 5.5 | 135 |
| | | | ø13.6 | ≈9.8 | | | 136 |
| | | | ø13.7 | ≈9.2 | | | 137 |
| | | | ø13.8 | ≈8.8 | | | 138 |
| | | | ø13.9 | ≈8.4 | | | 139 |
| | | | ø14.0 | ≈8 | | | 140 |

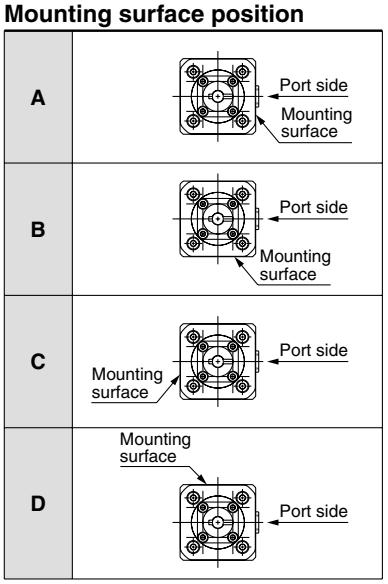
| Hole diameter of workpiece | C | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø15 | 10.5 | ø25 | ø14.5 | ≈10 | 6 | 6 | 145 |
| | | | ø14.6 | ≈9.8 | | | 146 |
| | | | ø14.7 | ≈9.2 | | | 147 |
| | | | ø14.8 | ≈8.8 | | | 148 |
| | | | ø14.9 | ≈8.4 | | | 149 |
| | | | ø15.0 | ≈8 | | | 150 |
| ø16 | 11.5 | ø25 | ø15.5 | ≈10 | 6 | 6.5 | 155 |
| | | | ø15.6 | ≈9.8 | | | 156 |
| | | | ø15.7 | ≈9.2 | | | 157 |
| | | | ø15.8 | ≈8.8 | | | 158 |
| | | | ø15.9 | ≈8.4 | | | 159 |
| | | | ø16.0 | ≈8 | | | 160 |
| ø18 | 13 | ø27 | ø17.5 | ≈9.3 | 6 | 7.5 | 175 |
| | | | ø17.6 | ≈9.1 | | | 176 |
| | | | ø17.7 | ≈8.8 | | | 177 |
| | | | ø17.8 | ≈8.5 | | | 178 |
| | | | ø17.9 | ≈8.3 | | | 179 |
| | | | ø18.0 | ≈8 | | | 180 |
| ø20 | 13 | ø27 | ø19.5 | ≈9.3 | 6 | 8 | 195 |
| | | | ø19.6 | ≈9.1 | | | 196 |
| | | | ø19.7 | ≈8.8 | | | 197 |
| | | | ø19.8 | ≈8.5 | | | 198 |
| | | | ø19.9 | ≈8.3 | | | 199 |
| | | | ø20.0 | ≈8 | | | 200 |

## Dimensions

### CKQG□32 (Clamping height HIGH type) * The figures below indicate the CKQGB32-□RCH-X2082.

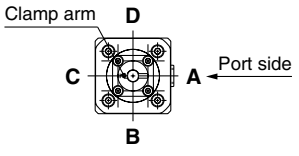



**Mounting surface position**




**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 | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø8 | 6 | ø20 | ø7.5 | ≈10 | 3.5 | 3.5 | 075 |
| | | | ø7.6 | ≈9.8 | | | 076 |
| | | | ø7.7 | ≈9.2 | | | 077 |
| | | | ø7.8 | ≈8.8 | | | 078 |
| | | | ø7.9 | ≈8.4 | | | 079 |
| | | | ø8.0 | ≈8 | | | 080 |
| ø10 | 7.5 | ø20 | ø9.5 | ≈10 | 4 | 4.5 | 095 |
| | | | ø9.6 | ≈9.8 | | | 096 |
| | | | ø9.7 | ≈9.2 | | | 097 |
| | | | ø9.8 | ≈8.8 | | | 098 |
| | | | ø9.9 | ≈8.4 | | | 099 |
| | | | ø10.0 | ≈8 | | | 100 |
| ø12 | 8.5 | ø20 | ø11.5 | ≈10 | 5 | 5 | 115 |
| | | | ø11.6 | ≈9.8 | | | 116 |
| | | | ø11.7 | ≈9.2 | | | 117 |
| | | | ø11.8 | ≈8.8 | | | 118 |
| | | | ø11.9 | ≈8.4 | | | 119 |
| | | | ø12.0 | ≈8 | | | 120 |
| ø14 | 10.5 | ø25 | ø13.5 | ≈10 | 6 | 5.5 | 135 |
| | | | ø13.6 | ≈9.8 | | | 136 |
| | | | ø13.7 | ≈9.2 | | | 137 |
| | | | ø13.8 | ≈8.8 | | | 138 |
| | | | ø13.9 | ≈8.4 | | | 139 |
| | | | ø14.0 | ≈8 | | | 140 |

| Hole diameter of workpiece | C | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø15 | 10.5 | ø25 | ø14.5 | ≈10 | 6 | 6 | 145 |
| | | | ø14.6 | ≈9.8 | | | 146 |
| | | | ø14.7 | ≈9.2 | | | 147 |
| | | | ø14.8 | ≈8.8 | | | 148 |
| | | | ø14.9 | ≈8.4 | | | 149 |
| | | | ø15.0 | ≈8 | | | 150 |
| ø16 | 11.5 | ø25 | ø15.5 | ≈10 | 6 | 6.5 | 155 |
| | | | ø15.6 | ≈9.8 | | | 156 |
| | | | ø15.7 | ≈9.2 | | | 157 |
| | | | ø15.8 | ≈8.8 | | | 158 |
| | | | ø15.9 | ≈8.4 | | | 159 |
| | | | ø16.0 | ≈8 | | | 160 |
| ø18 | 13 | ø27 | ø17.5 | ≈9.3 | 6 | 7.5 | 175 |
| | | | ø17.6 | ≈9.1 | | | 176 |
| | | | ø17.7 | ≈8.8 | | | 177 |
| | | | ø17.8 | ≈8.5 | | | 178 |
| | | | ø17.9 | ≈8.3 | | | 179 |
| | | | ø18.0 | ≈8 | | | 180 |
| ø20 | 13 | ø27 | ø19.5 | ≈9.3 | 6 | 8 | 195 |
| | | | ø19.6 | ≈9.1 | | | 196 |
| | | | ø19.7 | ≈8.8 | | | 197 |
| | | | ø19.8 | ≈8.5 | | | 198 |
| | | | ø19.9 | ≈8.3 | | | 199 |
| | | | ø20.0 | ≈8 | | | 200 |

# Pin Clamp Cylinder Plate Cylinder Type

# Series CKU32

## How to Order

**Clamping Height LOW type** CKU32-075RAL-C□-X2091

**Clamping Height HIGH type** CKU32-075RAH-C□-X2092

**Bore size**

| | |
|---|---|
| 32 | Equiv. ø32 piston area |

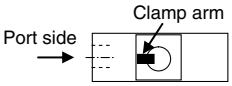
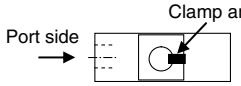
**Guide pin diameter**

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

**Guide pin shape**

| | |
|---|---|
| R | Round type  |

**Clamp arm position (viewed from top)**

| Symbol | Clamp arm position |
|---|---|
| A | Same direction as the port side   |
| B | Opposite direction of the port side   |

**Number of auto switches**

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

**Auto switch type**

| | |
|---|---|
| Nil | Without auto switch (Built-in magnet) |
| C | D-P3DWSC |
| E | D-P3DWSE |
| N | D-P3DW |
| L | D-P3DWL |
| Z | D-P3DWZ |

∗ Auto switches and mounting brackets 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 a most sensitive position.

**Table 1. Guide Pin Diameter**

| Symbol | 075 | 076 | 077 | 078 | 079 | 080 | 095 | 096 | 097 | 098 | 099 | 100 | 115 | 116 | 117 | 118 | 119 | 120 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guide pin diameter [mm] | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 | 8.0 | 9.5 | 9.6 | 9.7 | 9.8 | 9.9 | 10.0 | 11.5 | 11.6 | 11.7 | 11.8 | 11.9 | 12.0 |
| Applicable hole diameter of workpiece [mm] | For ø8 | | | | | | For ø10 | | | | | | For ø12 | | | | | |
| Guide pin shape | Round type | | | | | | | | | | | | | | | | | |

| Symbol | 135 | 136 | 137 | 138 | 139 | 140 | 145 | 146 | 147 | 148 | 149 | 150 | 155 | 156 | 157 | 158 | 159 | 160 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guide pin diameter [mm] | 13.5 | 13.6 | 13.7 | 13.8 | 13.9 | 14.0 | 14.5 | 14.6 | 14.7 | 14.8 | 14.9 | 15.0 | 15.5 | 15.6 | 15.7 | 15.8 | 15.9 | 16.0 |
| Applicable hole diameter of workpiece [mm] | For ø14 | | | | | | For ø15 | | | | | | For ø16 | | | | | |
| Guide pin shape | Round type | | | | | | | | | | | | | | | | | |

| Symbol | 175 | 176 | 177 | 178 | 179 | 180 | 195 | 196 | 197 | 198 | 199 | 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guide pin diameter [mm] | 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 ø18 | | | | | | For ø20 | | | | | |
| Guide pin shape | Round type | | | | | | | | | | | |

**Applicable Auto Switches** / Refer to Best Pneumatics No. 3 for further information on 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** | **D-P3DWSC** | 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 Note) |
| | **D-P3DWSE** | | | | 2-wire (1 – 4) | | | |
| | **D-P3DW** | | Grommet | | 2-wire | | 0.5 m | |
| | **D-P3DWL** | | | | | | 3 m | |
| | **D-P3DWZ** | | | | | | 5 m | |

Note) PLC: Programmable Logic Controller

## Basic Specifications

| Model | CKU32 |
|---|---|
| **Action** | Double acting |
| **Bore size (mm)** | 32 equivalent |
| **Cylinder stroke/Clamp stroke (mm)** | 12.5 mm (Without workpiece)/10 mm |
| **Fluid** | Air |
| **Minimum operating pressure** | 0.1 MPa |
| **Maximum operating pressure** | 0.7 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 |

## Clamping Force

(N)

| Model | Guide pin diameter (mm) | Operating pressure (MPa) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 |
| **CKU32** | ø7.5 to ø20.0 | 130 | 195 | 260 | 325 | 390 | 455 |

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.

## Clamp Specifications

| Model | CKU32 |
|---|---|
| **Clamp stroke** | 10 mm |
| **Clamp arm** | 1 pc. |
| **Guide pin shape** | Round type |

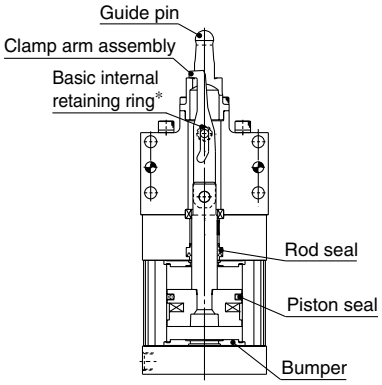
∗ Refer to the above “Clamping Force” for detailed specifications of the clamping force, etc.

## Weight

Unit: g

| Model | | CKU32 | |
|---|---|---|---|
| | | **-X2091** | **-X2092** |
| Guide pin diameter (mm) | ø7.5 to ø8.0 | 740 | 910 |
| | ø9.5 to ø10.0 | | |
| | ø11.5 to ø12.0 | | |
| | ø13.5 to ø14.0 | 780 | 950 |
| | ø14.5 to ø15.0 | | |
| | ø15.5 to ø16.0 | | |
| | ø17.5 to ø18.0 | 790 | 960 |
| | ø19.5 to ø20.0 | | |

## Replacement Parts




**CKU32-120R□L-X2091**

### ■ Guide pin order no.

**CKQG32X – 075 R**

**Guide pin diameter**
∗ Refer to Table 1 (Symbol 2) below

**Guide pin**

### ■ 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

| Kit No. | Contents |
|---|---|
| MUB32-PS | ①Piston seal<br>②Rod seal<br>③Bumper |

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

### ■ Grease Pack

| Kit No. | Contents |
|---|---|
| GR-S-010 | Grease 10 g |

∗ Consult with SMC when replacing the actuating cylinders.

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

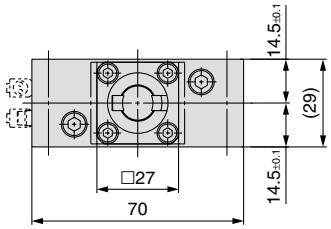
| Symbol 1 | Applicable hole diameter of workpiece | Symbol 2 | Guide pin diameter |
|---|---|---|---|
| **08** | 8 | **075** | 7.5 |
| | | **076** | 7.6 |
| | | **077** | 7.7 |
| | | **078** | 7.8 |
| | | **079** | 7.9 |
| | | **080** | 8.0 |
| **10** | 10 | **095** | 9.5 |
| | | **096** | 9.6 |
| | | **097** | 9.7 |
| | | **098** | 9.8 |
| | | **099** | 9.9 |
| | | **100** | 10.0 |
| **12** | 12 | **115** | 11.5 |
| | | **116** | 11.6 |
| | | **117** | 11.7 |
| | | **118** | 11.8 |
| | | **119** | 11.9 |
| | | **120** | 12.0 |
| **14** | 14 | **135** | 13.5 |
| | | **136** | 13.6 |
| | | **137** | 13.7 |
| | | **138** | 13.8 |
| | | **139** | 13.9 |
| | | **140** | 14.0 |
| **15** | 15 | **145** | 14.5 |
| | | **146** | 14.6 |
| | | **147** | 14.7 |
| | | **148** | 14.8 |
| | | **149** | 14.9 |
| | | **150** | 15.0 |
| **16** | 16 | **155** | 15.5 |
| | | **156** | 15.6 |
| | | **157** | 15.7 |
| | | **158** | 15.8 |
| | | **159** | 15.9 |
| | | **160** | 16.0 |
| **18** | 18 | **175** | 17.5 |
| | | **176** | 17.6 |
| | | **177** | 17.7 |
| | | **178** | 17.8 |
| | | **179** | 17.9 |
| | | **180** | 18.0 |
| **20** | 20 | **195** | 19.5 |
| | | **196** | 19.6 |
| | | **197** | 19.7 |
| | | **198** | 19.8 |
| | | **199** | 19.9 |
| | | **200** | 20.0 |

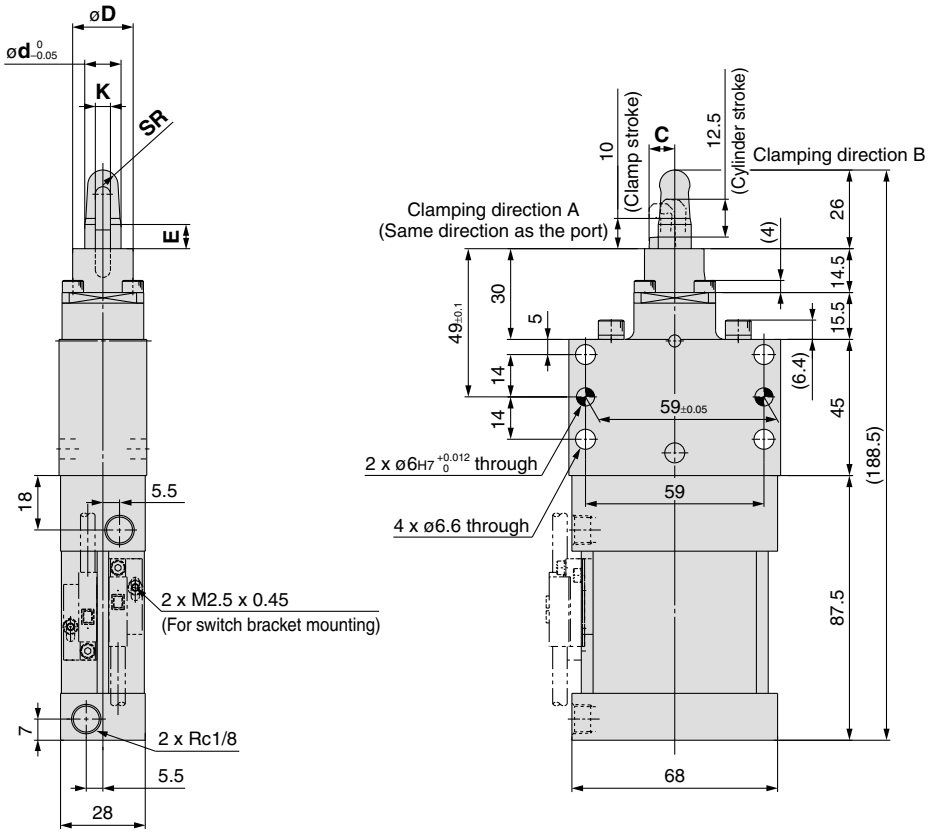
## Dimensions

### CKU32 (Clamping height LOW type)

∗ Refer to “How to Order” for relationship between the mounting surface and a port location.

∗ The figures below indicate the CKU32-□RAL-X2091.




| Hole diameter of workpiece | C | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø8 | 6 | ø20 | ø7.5 | ≈10 | 3.5 | 3.5 | 075 |
| | | | ø7.6 | ≈9.8 | | | 076 |
| | | | ø7.7 | ≈9.2 | | | 077 |
| | | | ø7.8 | ≈8.8 | | | 078 |
| | | | ø7.9 | ≈8.4 | | | 079 |
| | | | ø8.0 | ≈8 | | | 080 |
| ø10 | 7.5 | ø20 | ø9.5 | ≈10 | 4 | 4.5 | 095 |
| | | | ø9.6 | ≈9.8 | | | 096 |
| | | | ø9.7 | ≈9.2 | | | 097 |
| | | | ø9.8 | ≈8.8 | | | 098 |
| | | | ø9.9 | ≈8.4 | | | 099 |
| | | | ø10.0 | ≈8 | | | 100 |
| ø12 | 8.5 | ø20 | ø11.5 | ≈10 | 5 | 5 | 115 |
| | | | ø11.6 | ≈9.8 | | | 116 |
| | | | ø11.7 | ≈9.2 | | | 117 |
| | | | ø11.8 | ≈8.8 | | | 118 |
| | | | ø11.9 | ≈8.4 | | | 119 |
| | | | ø12.0 | ≈8 | | | 120 |
| ø14 | 10.5 | ø25 | ø13.5 | ≈10 | 6 | 5.5 | 135 |
| | | | ø13.6 | ≈9.8 | | | 136 |
| | | | ø13.7 | ≈9.2 | | | 137 |
| | | | ø13.8 | ≈8.8 | | | 138 |
| | | | ø13.9 | ≈8.4 | | | 139 |
| | | | ø14.0 | ≈8 | | | 140 |

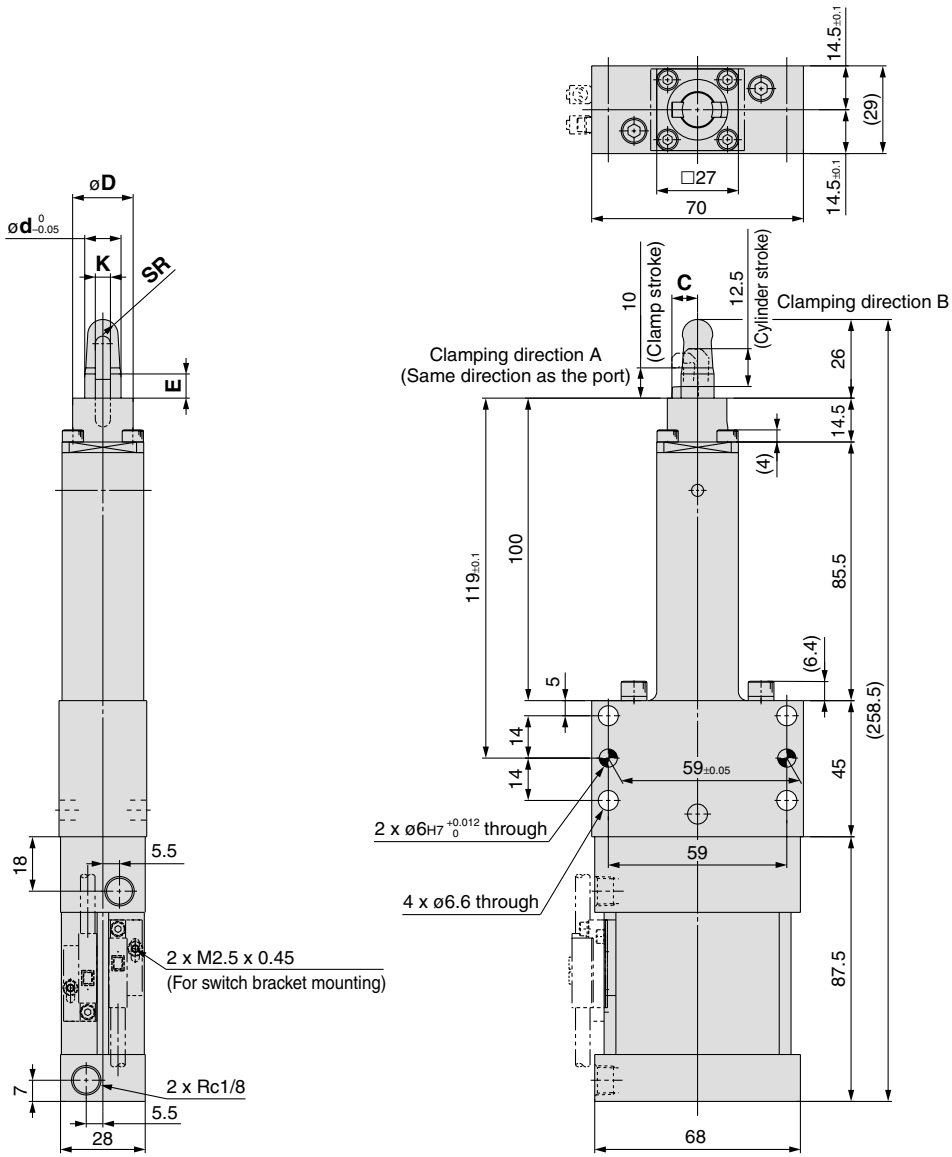
| Hole diameter of workpiece | C | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø15 | 10.5 | ø25 | ø14.5 | ≈10 | 6 | 6 | 145 |
| | | | ø14.6 | ≈9.8 | | | 146 |
| | | | ø14.7 | ≈9.2 | | | 147 |
| | | | ø14.8 | ≈8.8 | | | 148 |
| | | | ø14.9 | ≈8.4 | | | 149 |
| | | | ø15.0 | ≈8 | | | 150 |
| ø16 | 11.5 | ø25 | ø15.5 | ≈10 | 6 | 6.5 | 155 |
| | | | ø15.6 | ≈9.8 | | | 156 |
| | | | ø15.7 | ≈9.2 | | | 157 |
| | | | ø15.8 | ≈8.8 | | | 158 |
| | | | ø15.9 | ≈8.4 | | | 159 |
| | | | ø16.0 | ≈8 | | | 160 |
| ø18 | 13 | ø27 | ø17.5 | ≈9.3 | 6 | 7.5 | 175 |
| | | | ø17.6 | ≈9.1 | | | 176 |
| | | | ø17.7 | ≈8.8 | | | 177 |
| | | | ø17.8 | ≈8.5 | | | 178 |
| | | | ø17.9 | ≈8.3 | | | 179 |
| | | | ø18.0 | ≈8 | | | 180 |
| ø20 | 13 | ø27 | ø19.5 | ≈9.3 | 6 | 8 | 195 |
| | | | ø19.6 | ≈9.1 | | | 196 |
| | | | ø19.7 | ≈8.8 | | | 197 |
| | | | ø19.8 | ≈8.5 | | | 198 |
| | | | ø19.9 | ≈8.3 | | | 199 |
| | | | ø20.0 | ≈8 | | | 200 |

## Dimensions

### CKU32 (Clamping height HIGH type)

∗ Refer to “How to Order” for relationship between the mounting surface and a port location.

∗ The figures below indicate the CKU32-□RAH-X2092.

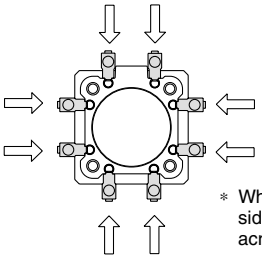
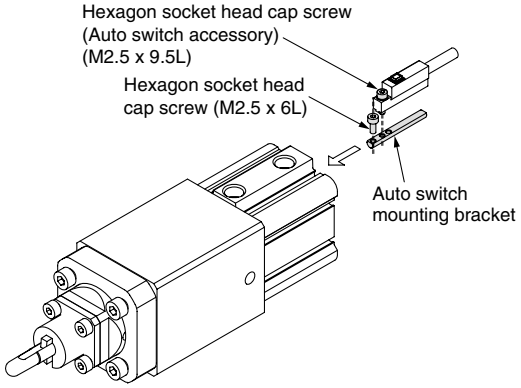
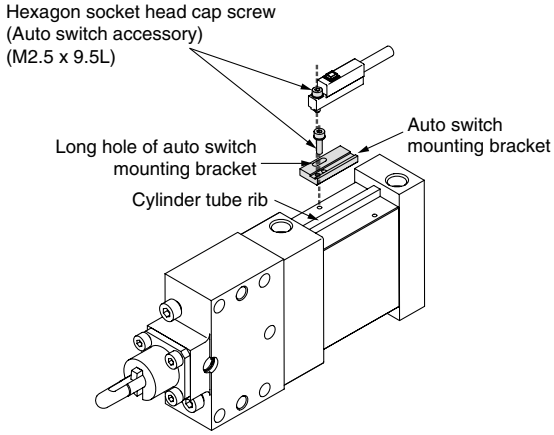



| Hole diameter of workpiece | C | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø8 | 6 | ø20 | ø7.5 | ≈10 | 3.5 | 3.5 | 075 |
| | | | ø7.6 | ≈9.8 | | | 076 |
| | | | ø7.7 | ≈9.2 | | | 077 |
| | | | ø7.8 | ≈8.8 | | | 078 |
| | | | ø7.9 | ≈8.4 | | | 079 |
| | | | ø8.0 | ≈8 | | | 080 |
| ø10 | 7.5 | ø20 | ø9.5 | ≈10 | 4 | 4.5 | 095 |
| | | | ø9.6 | ≈9.8 | | | 096 |
| | | | ø9.7 | ≈9.2 | | | 097 |
| | | | ø9.8 | ≈8.8 | | | 098 |
| | | | ø9.9 | ≈8.4 | | | 099 |
| | | | ø10.0 | ≈8 | | | 100 |
| ø12 | 8.5 | ø20 | ø11.5 | ≈10 | 5 | 5 | 115 |
| | | | ø11.6 | ≈9.8 | | | 116 |
| | | | ø11.7 | ≈9.2 | | | 117 |
| | | | ø11.8 | ≈8.8 | | | 118 |
| | | | ø11.9 | ≈8.4 | | | 119 |
| | | | ø12.0 | ≈8 | | | 120 |
| ø14 | 10.5 | ø25 | ø13.5 | ≈10 | 6 | 5.5 | 135 |
| | | | ø13.6 | ≈9.8 | | | 136 |
| | | | ø13.7 | ≈9.2 | | | 137 |
| | | | ø13.8 | ≈8.8 | | | 138 |
| | | | ø13.9 | ≈8.4 | | | 139 |
| | | | ø14.0 | ≈8 | | | 140 |

| Hole diameter of workpiece | C | øD | ød | E | K | SR | Model number |
|---|---|---|---|---|---|---|---|
| ø15 | 10.5 | ø25 | ø14.5 | ≈10 | 6 | 6 | 145 |
| | | | ø14.6 | ≈9.8 | | | 146 |
| | | | ø14.7 | ≈9.2 | | | 147 |
| | | | ø14.8 | ≈8.8 | | | 148 |
| | | | ø14.9 | ≈8.4 | | | 149 |
| | | | ø15.0 | ≈8 | | | 150 |
| ø16 | 11.5 | ø25 | ø15.5 | ≈10 | 6 | 6.5 | 155 |
| | | | ø15.6 | ≈9.8 | | | 156 |
| | | | ø15.7 | ≈9.2 | | | 157 |
| | | | ø15.8 | ≈8.8 | | | 158 |
| | | | ø15.9 | ≈8.4 | | | 159 |
| | | | ø16.0 | ≈8 | | | 160 |
| ø18 | 13 | ø27 | ø17.5 | ≈9.3 | 6 | 7.5 | 175 |
| | | | ø17.6 | ≈9.1 | | | 176 |
| | | | ø17.7 | ≈8.8 | | | 177 |
| | | | ø17.8 | ≈8.5 | | | 178 |
| | | | ø17.9 | ≈8.3 | | | 179 |
| | | | ø18.0 | ≈8 | | | 180 |
| ø20 | 13 | ø27 | ø19.5 | ≈9.3 | 6 | 8 | 195 |
| | | | ø19.6 | ≈9.1 | | | 196 |
| | | | ø19.7 | ≈8.8 | | | 197 |
| | | | ø19.8 | ≈8.5 | | | 198 |
| | | | ø19.9 | ≈8.3 | | | 199 |
| | | | ø20.0 | ≈8 | | | 200 |

# *Series CKQG32/CKU32*
# How to Mount the Auto Switch

## Auto Switch Mounting Bracket No./Mounting Method

| Applicable cylinder | CKQG32 | CKU32 |
|---|---|---|
| Applicable auto switch | **D-P3DW□** | **D-P3DW□** |
| Bore size (mm) | **ø32** | **ø32** |
| Auto switch mounting bracket part no. | BQ6-032S | CKU32-42-088EN-R |
| Auto switch mounting bracket fitting parts lineup/Weight | ① Hexagon socket head cap screw (M2.5 x 6L)<br>② Auto switch mounting bracket (nut)<br>Weight: 2.5 g | ① Hexagon socket head cap screw (M2.5 x 9.5L)<br>② Auto switch mounting bracket<br>Weight: 4 g |
| Auto switch mounting surface | Surfaces with auto switch mounting slot<br>  <br>* When mounting on the port side, select fittings with width across 12 mm or less. | Surfaces with auto switch mounting slot<br>  |
| How to mount the auto switch | ① Fix the auto switch and the auto switch mounting bracket temporarily by tightening the hexagon socket head cap screw (M2.5 x 9.5L) attached to the auto switch 1 to 2 turns.<br>② Insert the temporarily tightened mounting bracket into the mating groove of the cylinder tube, and slide the auto switch onto the cylinder tube through the groove.<br>③ Check the detecting position of the auto switch and fix the auto switch firmly with the hexagon socket head cap screw (M2.5 x 6L, M2.5 x 9.5L).*<br>④ If the detecting position is changed, go back to step ②.<br>* The hexagon socket head cap screw (M2.5 x 6L) is used to fix the mounting bracket and cylinder tube. This enables the replacement of the auto switch without adjusting the auto switch position.<br>Note 1) Ensure that the auto switch is covered with the mating groove to protect the auto switch.<br>Note 2) The tightening torque of the hexagon socket head cap screw (M2.5 x 6L, M2.5 x 9.5L) must be 0.2 to 0.3 N·m.<br>Note 3) Tighten the hexagon socket head cap screws evenly.<br>  | ① Fix the auto switch and the auto switch mounting bracket with the hexagon socket head cap screw attached to the auto switch (M2.5 x 9.5L).<br>② Check the detecting position of the auto switch by sliding it along the cylinder tube rib, before fixing the auto switch on the cylinder tube threaded portion by inserting the hexagon socket head cap screw (M2.5 x 9.5L) into a long hole of the auto switch mounting bracket.<br>Note) The tightening torque of the hexagon socket head cap screw (M2.5 x 9.5L) must be 0.2 to 0.3 N·m.<br>  |