Distance accuracy from the reference hole to the lower surface of the clamp arm is assured in a range of ±0.1 mm. A hard stop such as V catcher is not required.

Use of plate cylinder (flat piston) makes it possible to achieve the space saving. Torch can enter easily.

A high clamping force is generated through the toggle mechanism.

Unclamped position

Clamped position

Clamping force 4,400 N (Clamped at a position 200 mm far from the fulcrum.)
**Slim-line Power Clamp Cylinder**

**CKZ2N-X2346**

Ø50, Ø63, Ø80

### How to Order

<table>
<thead>
<tr>
<th>CKZ2N</th>
<th>63</th>
<th>-</th>
<th>120</th>
<th>-</th>
<th>P4DWSC</th>
<th>-</th>
<th>X2346</th>
</tr>
</thead>
</table>

- **Bore size**
  - 50 mm equivalent
  - 63 mm equivalent
  - 80 mm equivalent

- **Arm opening angle**
  - 30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°

- **Cushion**
  - Unclamping side rubber bumper

- **Max. operating pressure**
  - 0.8 MPa

- **Operating temperature range**
  - −10 to 60°C (No freezing)

- **Operating time**
  - 1 sec. or more to clamp or unclamp

- **Weight**
  - 6.3 kg, 8.4 kg, 21.0 kg

### Maximum Clamping Moment

<table>
<thead>
<tr>
<th>Bore size</th>
<th>Max. clamping moment (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.3 MPa</td>
</tr>
<tr>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>63</td>
<td>300</td>
</tr>
<tr>
<td>80</td>
<td>560</td>
</tr>
</tbody>
</table>

### Cylinder Specifications

<table>
<thead>
<tr>
<th>Bore size</th>
<th>Arm opening angle</th>
<th>Cushion</th>
<th>Max. operating pressure</th>
<th>Operating pressure range</th>
<th>Operating temperature range</th>
<th>Operating time</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°</td>
<td>Unclamping side rubber bumper</td>
<td>0.8 MPa</td>
<td>0.3 to 0.8 MPa</td>
<td>−10 to 60°C (No freezing)</td>
<td>1 sec. or more to clamp or unclamp</td>
<td>6.3 kg, 8.4 kg, 21.0 kg</td>
</tr>
<tr>
<td>63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Switch Mounting Bracket

<table>
<thead>
<tr>
<th>Bore size</th>
<th>Set part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>CKZ50-42ADCL218CL-R</td>
</tr>
<tr>
<td>63</td>
<td>CKZ63-42ADCL517AL-R</td>
</tr>
<tr>
<td>80</td>
<td>CKZ80-42ADCL518AL-R</td>
</tr>
</tbody>
</table>

- Screws are included with the switch mounting bracket.
- Auto switches and spatter covers should be ordered separately.

### Magnetic Field Resistant Auto Switches

- **Solid state auto switch**
  - Magnetic field resistant (2-color indicator)
  - Pre-wired connector
  - Grommet

- **P4DWSC**
- **P4DWSE**
- **P4DWL**
- **P4DWZ**

- **Wiring**
  - 2-wire (3−4)
  - 2-wire (1−4)

- **Load voltage**
  - 24 VDC

- **Lead wire length**
  - 0.3 m
  - 3 m

- **Applicable load**
  - Relay, PLC

Note: When only one switch is provided, it is mounted on the unclamping side.
Dimensions

CKZ2N50-□-□-□-X2346

CKZ2N63-□-□-□-X2346

Note 1) For the 30° arm opening angle, the electrical entry direction of the auto switch is different.

Note 2) When only one auto switch is provided, it is mounted on the unclamping side.

Note 3) The dimensional tolerance when at 0.5 MPa

Open the metal cover when operating the manual release.

Manual release point

Rc 1/4

Switch on the clamping side
With spatter cover (D-P5DWL-491)

D-P4DW

Switch on the unclamping side
For the 30° arm opening angle
With spatter cover (D-P5DWL-491)

D-P4DW

Switch on the unclamping side
With spatter cover (D-P5DWL-491)

Rc 1/4

(Clamping side)

Open the metal cover when operating the manual release.

Manual release point

2 x Hexagon socket head plug
(Rc 1/4)

Rc 1/4

(UNclamping side)

D-P4DW

Switch on the clamping side
With spatter cover (D-P5DWL-491)

D-P4DW

Switch on the unclamping side
For the 30° arm opening angle
With spatter cover (D-P5DWL-491)

D-P4DW

Switch on the unclamping side
With spatter cover (D-P5DWL-491)

Rc 1/4

(Clamping side)

Note 1) For the 30° arm opening angle, the electrical entry direction of the auto switch is different.

Note 2) When only one auto switch is provided, it is mounted on the unclamping side.

Note 3) The dimensional tolerance when at 0.5 MPa
Note 1) When only one auto switch is provided, it is mounted on the unclamping side.

Note 2) The dimensional tolerance when at 0.5 MPa
Precautions * In this cylinder, the shim is pulled out to increase the clamping force.

1. Since the distance accuracy from the reference hole to the lower surface of the clamp arm is ±0.1 mm at the stroke end as shown in the figure on the left side, a hard stop is not required on the clamping side. When a clamp arm deflection lock is required, install the side guides.
2. For clamping force adjustment, be sure to install a shim around 3 mm in size.
3. Even when the clamp arm operates to the clamp end, the internal toggle mechanism does not enter the dead point (2° short of the dead point). Therefore, clamping cannot be held during air exhaust.

Setup procedure

**Step 1** Exhaust the air to switch to the unclamped state.

**Step 2** Manually place the arm on workpieces. Adjust with the shim so that the arrow is located between the workpiece contact mark and clamp end mark.

**Step 3** Supply air to the clamp side and adjust with the shim so that the arrow mark is located at a position close to the clamp end mark.

**Caution**

1. Be sure to install a speed controller and adjust it so that it takes at least 1 second to clamp or unclamp. (Operating the cylinder in less than 1 second may cause damage to the product.)
2. In some cases, the clamp arm may be hard to open even when the product is in a clamped state with the air being exhausted. In such cases, opening the metal cover and hitting the manual release point with a plastic hammer, etc., will result in the clamp arm opening with ease.
Clamping force characteristics

Clamping force characteristics by bore size, arm length, and operating pressure

Arm length

Max. clamping force (N)

Clamp arm

Extension arm

Shim

Clamping block

Fulcrum

Load cell

ø50

ø63

ø80

Max. clamping force (N)

Arm length (mm)

0.8 MPa

0.5 MPa

0.3 MPa

100 150 200 250

100 150 200 250 300

150 200 250 300 350 400

10 000

8 000

6 000

4 000

2 000

0 000

0

0

0

0 000

0

0

0

0.8 MPa

0.5 MPa

0.3 MPa

0.8 MPa

0.5 MPa

0.3 MPa

0.8 MPa

0.5 MPa

0.3 MPa
The allowable load mass of the extension arm and clamping block to be mounted on the clamp arm may vary depending on the unclamping angle. Be sure to use the product within the allowable values in the graphs shown below.

* The load indicates the total weight of the extension arm and clamping block.

**Calculation procedure of allowable load mass**
1. Calculate the distance $L$ from the fulcrum to the center of gravity of the extension arm + clamping block.
2. Check the unclamping angle of the product.
3. Obtain the allowable load mass from the graph, and use the product within the allowable range.

**Calculation example**
For bore size 63, when the unclamping angle is $90^\circ$ and the load center of gravity position of the extension arm + clamping block is 250 mm.

When the center of gravity position of the load mass of the extension arm + clamping block is 250 mm on the diagram at an unclamping angle of $90^\circ$ in the size ø63 graph, the total allowable load mass of the extension arm + clamping block is to 1.2 kg.
Related Products
Power Clamp Cylinder Variations

**CKZ Series**

**Micro Clamp Cylinder: CKZM16-X2800/X2900**
- Compact: Width 20 mm, Lightweight: 250 g
- Maximum clamping force: 200 N, Maximum holding force: 300 N
- Flat clamping characteristics
  - Outputs constant clamping force for workpiece thicknesses up to 3.5 mm
- Reduction of design/assembly labor by unitization
  - Arm assembly and mounting assembly have been added to the clamp cylinder.

<table>
<thead>
<tr>
<th>Type</th>
<th>Series</th>
<th>Action</th>
<th>Bore size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base type</td>
<td>CKZM16-X2800</td>
<td>Double acting</td>
<td>16</td>
</tr>
<tr>
<td>Tandem type</td>
<td>CKZM16-X2900</td>
<td>Double acting</td>
<td>16</td>
</tr>
</tbody>
</table>

**Power Clamp Cylinder Compact Type: CKZT-X2797/X2798**
- Lightweight: Weight 580 g (ø25)
- Compact: Width 34 mm, Height: 192.4 mm (ø25, Arm opening angle: 90°)
- Clamping force: 1100 N (ø32, Arm length: 50 mm, 0.5 MPa pressure)
- Force amplification with a toggle mechanism and lock function
- A model with a manually operated handle is available.

<table>
<thead>
<tr>
<th>Series</th>
<th>Arm opening angle</th>
<th>Switch</th>
<th>Bore size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZT-X2797</td>
<td>90°, 105°</td>
<td>SENSTRONIC</td>
<td>25, 32</td>
</tr>
<tr>
<td>With manually operated handle</td>
<td>90°, 105°</td>
<td>SENSTRONIC</td>
<td>25, 32</td>
</tr>
</tbody>
</table>

**Power Clamp Cylinder: CKZ3T-X2734/X2568**
- Simple switch adjustment greatly reduces work hours.
  - Switch can be adjusted easily when changing the arm opening angle.
  - With metal switch cassette cover
  - Weight reduced by up to 39%
  - High clamping force: 4000 N
  - Spatter-proof construction
  - Select from 2 types of top cover
  - A model with a manually operated handle is available.

<table>
<thead>
<tr>
<th>Series</th>
<th>Arm opening angle</th>
<th>Switch</th>
<th>Bore size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZ3T-X2734</td>
<td>15°, 30°, 45°, 60°, 75°</td>
<td>TURCK/P&amp;F</td>
<td>50, 63</td>
</tr>
<tr>
<td>With manually operated handle</td>
<td>15°, 30°, 45°, 60°, 75°</td>
<td>TURCK/P&amp;F</td>
<td>50, 63</td>
</tr>
</tbody>
</table>

**NAAMS Standards Compliant Power Clamp Cylinder: CKZ3N-X2742A/X2568**
- Weight reduced by up to 38%
- Simple switch adjustment greatly reduces work hours.
  - Switch can be adjusted easily when changing the arm opening angle.
  - High clamping force: 4000 N
  - Spatter-proof construction
  - Metal switch cassette cover (Option)
  - Select from 2 types of top cover
  - A model with a manually operated handle is available.

<table>
<thead>
<tr>
<th>Series</th>
<th>Arm opening angle</th>
<th>Switch</th>
<th>Bore size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZ3N-X2742A</td>
<td>15°, 30°, 45°, 60°, 75°</td>
<td>TURCK/P&amp;F</td>
<td>50, 63</td>
</tr>
<tr>
<td>With manually operated handle</td>
<td>15°, 30°, 45°, 60°, 75°</td>
<td>TURCK/P&amp;F</td>
<td>50, 63</td>
</tr>
</tbody>
</table>

**Power Clamp Cylinder: CKZT**
- Spatter-proof construction

<table>
<thead>
<tr>
<th>Series</th>
<th>Arm opening angle</th>
<th>Switch</th>
<th>Bore size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZT</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°</td>
<td>TURCK/P&amp;F</td>
<td>40, 50, 63, 80</td>
</tr>
</tbody>
</table>

**NAAMS Standards Compliant Power Clamp Cylinder: CKZ2N**
- Spatter-proof construction

<table>
<thead>
<tr>
<th>Series</th>
<th>Arm opening angle</th>
<th>Switch</th>
<th>Bore size (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZ2N</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°</td>
<td>TURCK/P&amp;F</td>
<td>50, 63, 80</td>
</tr>
</tbody>
</table>