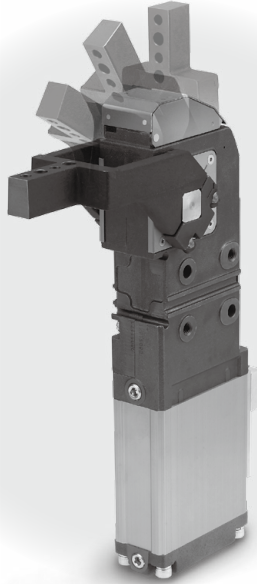


# Slim-line Power Clamp Cylinder

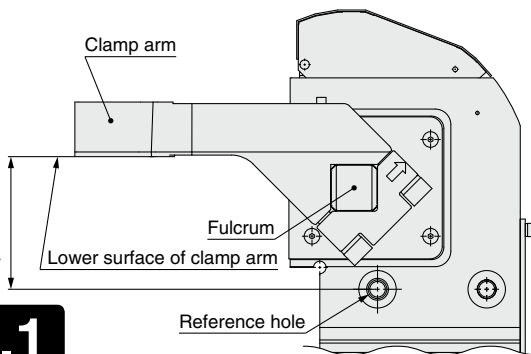
## CKZ2N-X2346

ø50, ø63, ø80



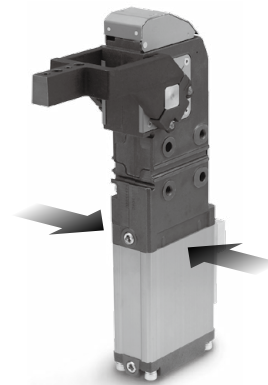
### Mounting reproducibility

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



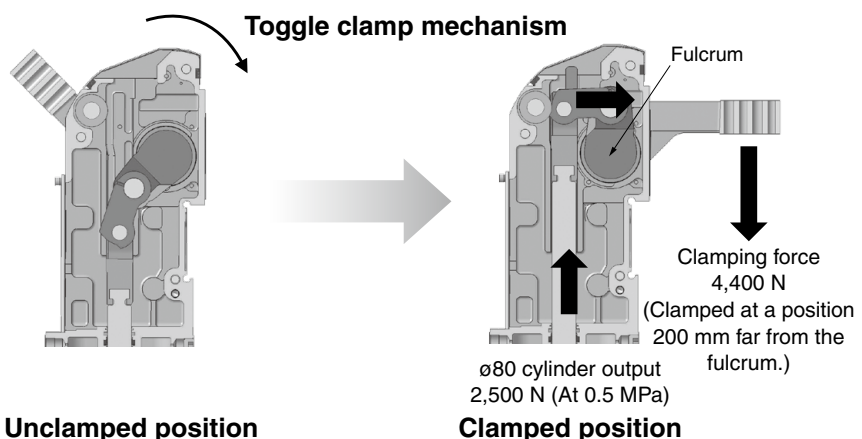
### Compact

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



### High clamping force

A high clamping force is generated through the toggle mechanism.



# Slim-line Power Clamp Cylinder

# CKZ2N-X2346

∅50, ∅63, ∅80



## How to Order

CKZ2N **63** - **120** - **P4DWSC** - **X2346**

### Bore size

|    |                  |
|----|------------------|
| 50 | 50 mm equivalent |
| 63 | 63 mm equivalent |
| 80 | 80 mm equivalent |

### Arm opening angle

|     |      |
|-----|------|
| 30  | 30°  |
| 45  | 45°  |
| 60  | 60°  |
| 75  | 75°  |
| 90  | 90°  |
| 105 | 105° |
| 120 | 120° |
| 135 | 135° |

### X part no.

X2346

- Clamp arm (fixed on the product) accuracy adjustment spec.
- Applicable to magnetic field resistant auto switches
- Toggle angle: 2° short of the dead point
- With metal cover

### Number of auto switches

|     |        |
|-----|--------|
| Nil | 2 pcs. |
| S   | 1 pc.  |

### Applicable auto switch

|        |  |
|--------|--|
| Nil    | Without auto switch<br>(Without switch mounting bracket) |
| P4DW   | D-P4DW   |
| P4DWL  | D-P4DWL  |
| P4DWZ  | D-P4DWZ  |
| P4DWSC | D-P4DWSC   |
| P4DWSE | D-P4DWSE   |

## Maximum Clamping Moment

| Bore size | Max. clamping moment (N·m) |         |         |         |         |         |
|-----------|----------------------------|---------|---------|---------|---------|---------|
|           | 0.3 MPa                    | 0.4 MPa | 0.5 MPa | 0.6 MPa | 0.7 MPa | 0.8 MPa |
| 50        | 100                        | 130     | 160     | 190     | 220     | 250     |
| 63        | 300                        | 350     | 400     | 450     | 500     | 550     |
| 80        | 560                        | 720     | 880     | 1040    | 1200    | 1360    |

## Cylinder Specifications

| Bore size                   | 50  | 63     | 80      |
|-----------------------------|---|--------|---------|
| Arm opening angle           | 30°, 45°, 60°, 75°, 90°, 105°, 120°, 135° |        |         |
| Cushion                     | Unclamping side rubber bumper             |        |         |
| Max. operating pressure     | 0.8 MPa                                   |        |         |
| Operating pressure range    | 0.3 to 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 |

## Switch Mounting Bracket

| Bore size | Set part no.        |
|-----------|---------------------|
| 50        | CKZ50-42ADCL218CL-R |
| 63        | CKZ63-42ADCL517AL-R |
| 80        | CKZ80-42ADCL518AL-R |

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

## Magnetic Field Resistant Auto Switches/Refer to the Web Catalog for further information on auto switches.

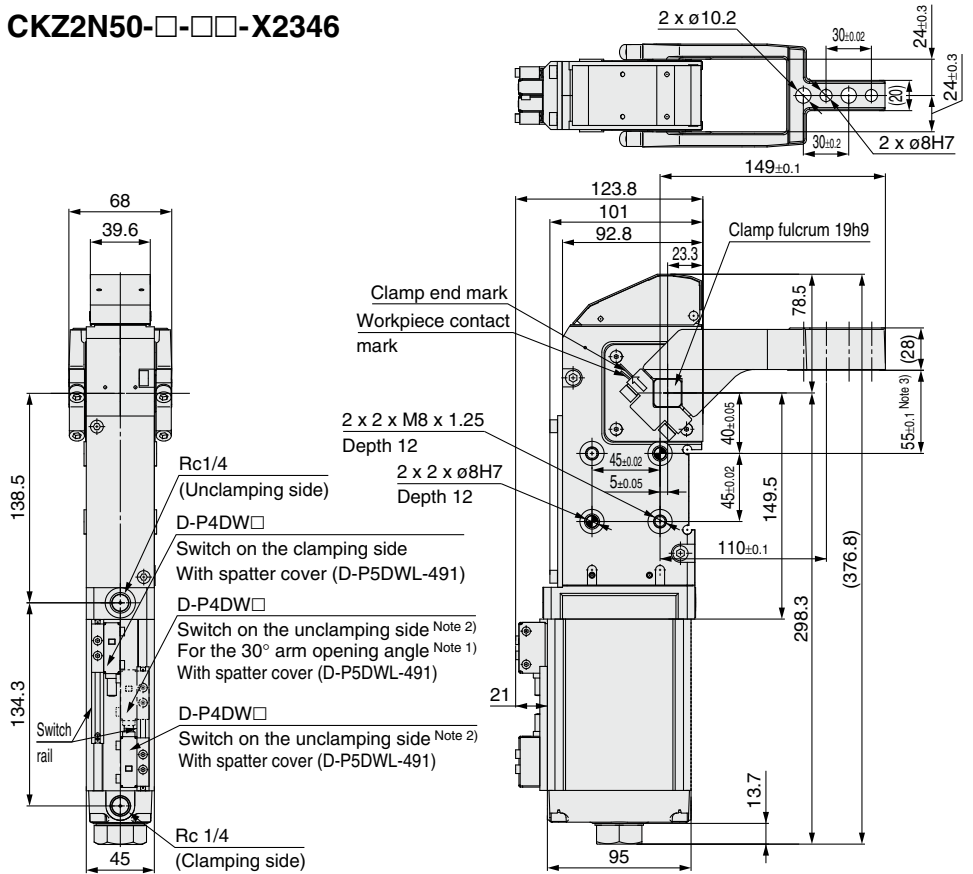
| Type                    | Special function                             | Auto switch model | Electrical entry    | Indicator light | Wiring (Pin no. in use) | Load voltage | Lead wire length | Applicable load |
|-------------------------|--|-------------------|---------------------|-----------------|-------------------------|--------------|------------------|-----------------|
| Solid state auto switch | Magnetic field resistant (2-color indicator) | P4DWSC            | Pre-wired connector | Yes             | 2-wire (3-4)            | 24 VDC       | 0.3 m            | Relay, PLC      |
|                         |  | P4DWSE            |                     |                 | 2-wire (1-4)            |              | 3 m              |                 |
|                         |  | P4DWL             | Grommet             |                 | 2-wire                  |              | 5 m              |                 |
|                         |  | P4DWZ             |                     |                 |                         |              |                  |                 |

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

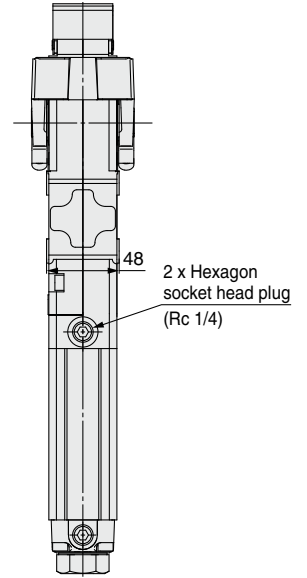
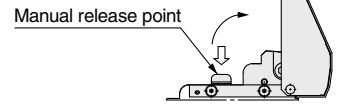
# CKZ2N-X2346

## Dimensions

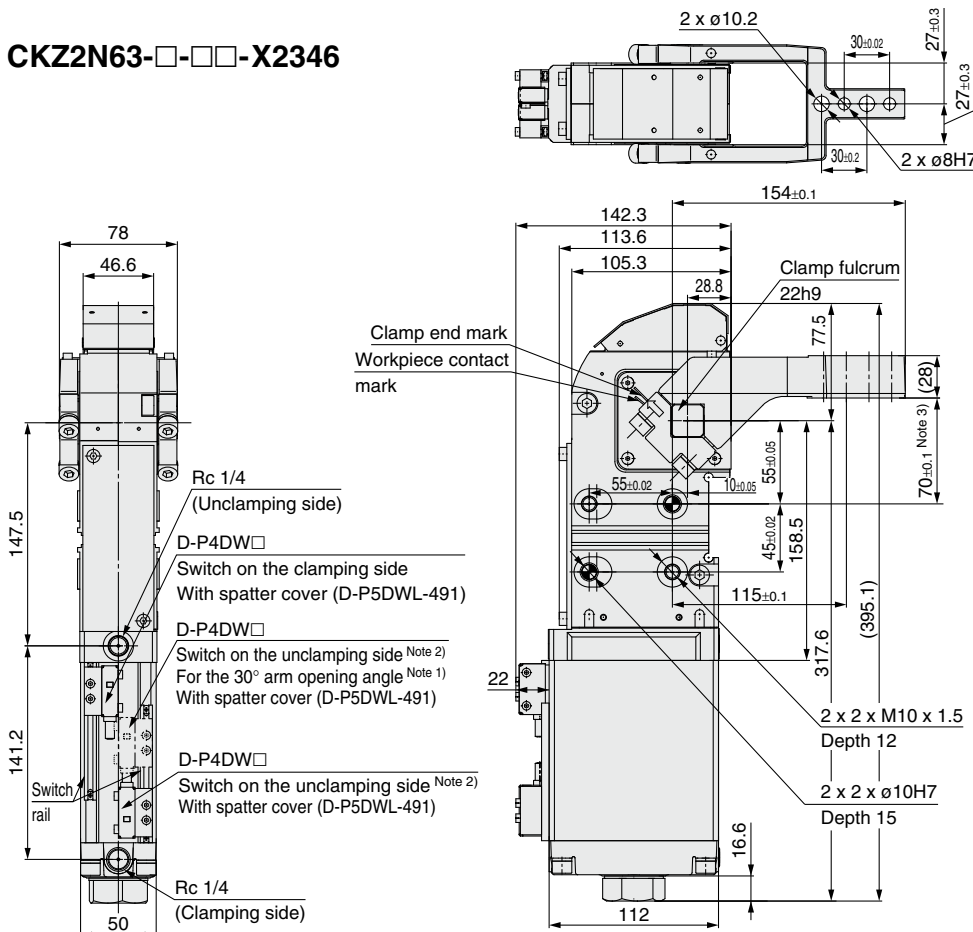
### CKZ2N50-□-□□-X2346



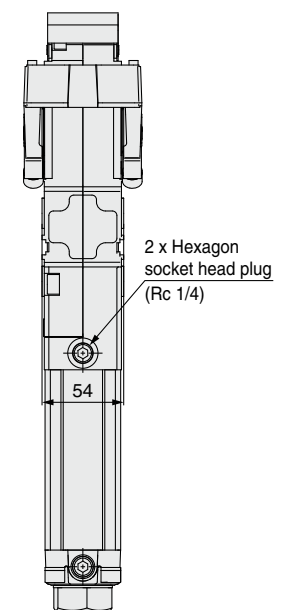
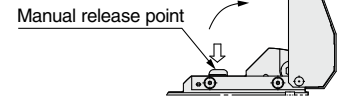
Open the metal cover when operating the manual release.



### CKZ2N63-□-□□-X2346



Open the metal cover when operating the manual release.



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

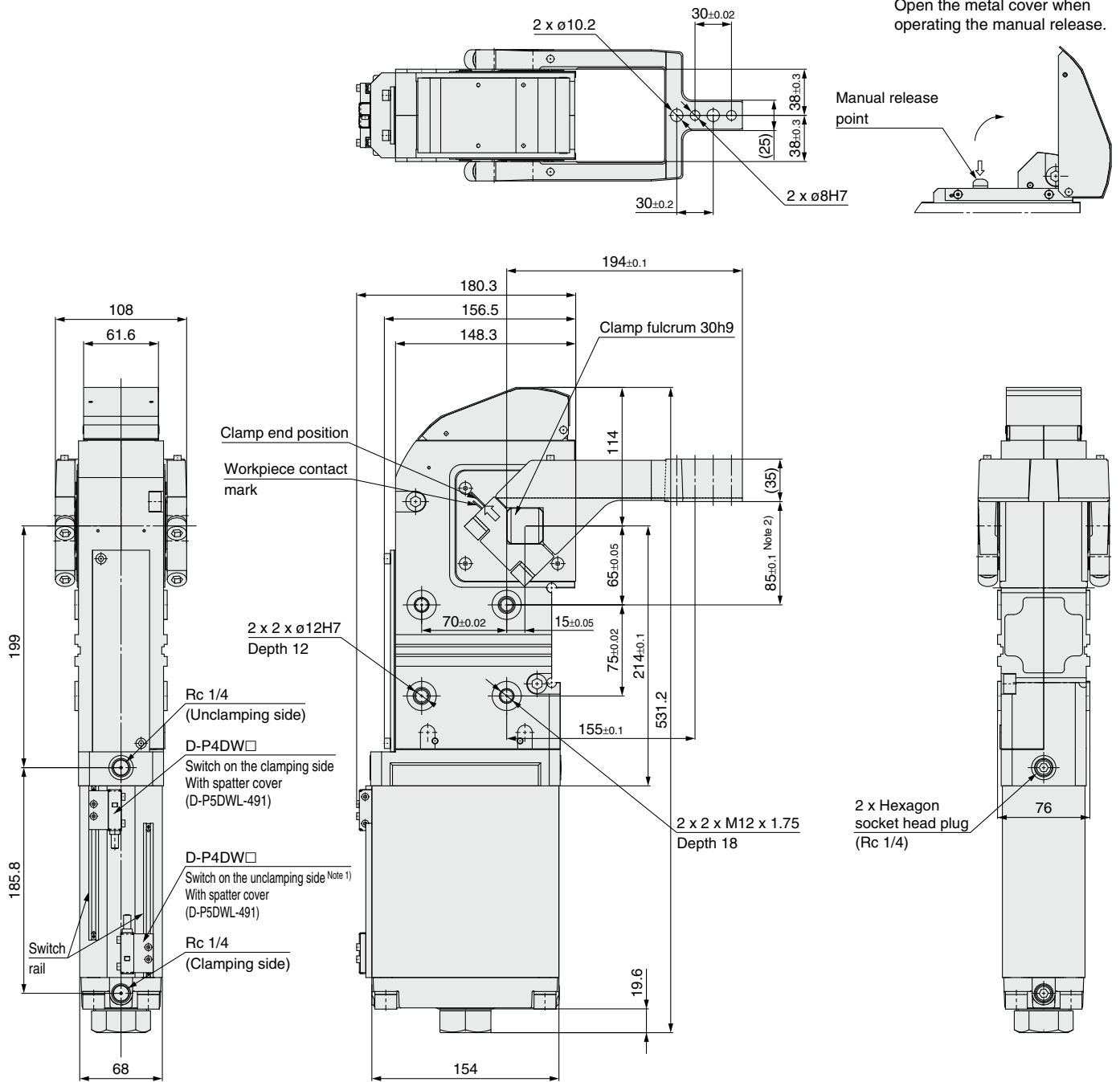
Note 2) When only one auto switch is provided, it is mounted on the unclamping side.

Note 3) The dimensional tolerance when at 0.5 MPa

# Slim-line Power Clamp Cylinder CKZ2N-X2346

## Dimensions

CKZ2N80-□-□□-X2346



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

Spatter Resistant Cylinders for Arc Welding

Specialty Cylinders

Gas/Air Switching Valve

Detection Switches

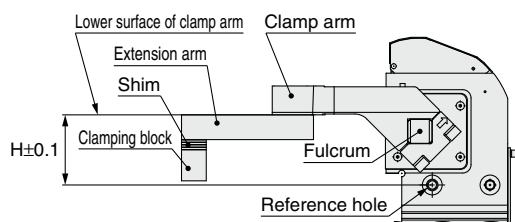
Tubing

Fittings

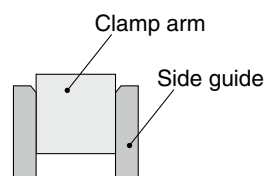
Flow Control Equipment

# Slim-line Power Clamp Cylinder CKZ2N-X2346 Setup Procedure

**Precautions** \* In this cylinder, the shim is pulled out to increase the clamping force.

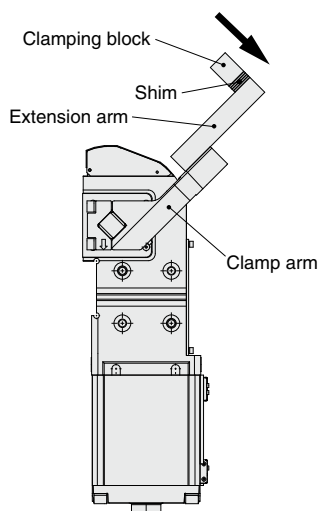


1. Since the distance accuracy from the reference hole to the lower surface of the clamp arm is  $\pm 0.1$  mm at the stroke end as shown in the figure on the left side, a hard stop is not required on the clamping side. When a clamp arm deflection lock is required, install the side guides.
2. For clamping 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 ( $2^\circ$  short of the dead point). Therefore, clamping cannot be held during air exhaust.



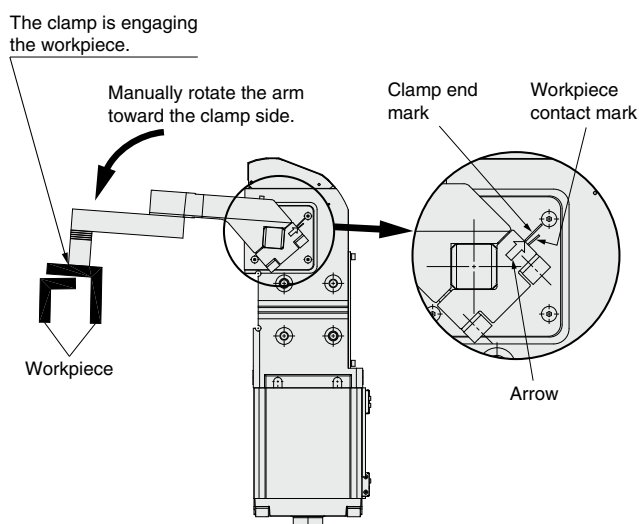
## Setup procedure

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

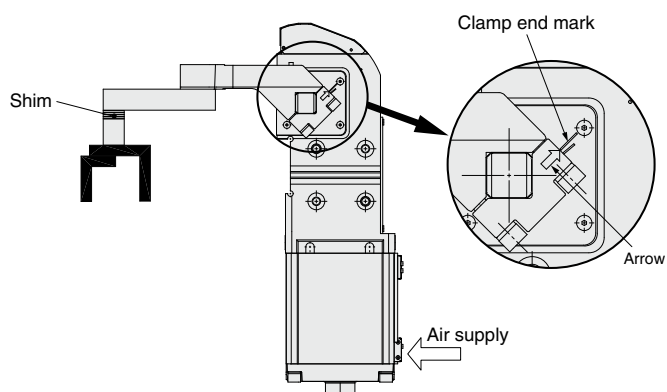


**Step 2** Manually place the arm on workpieces.

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.

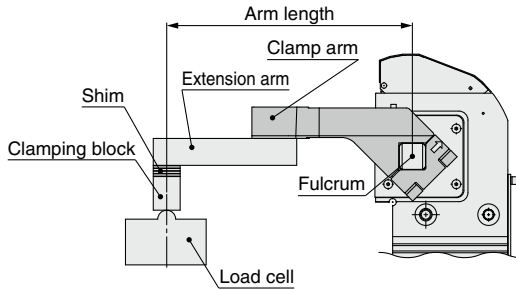


### ⚠ Caution

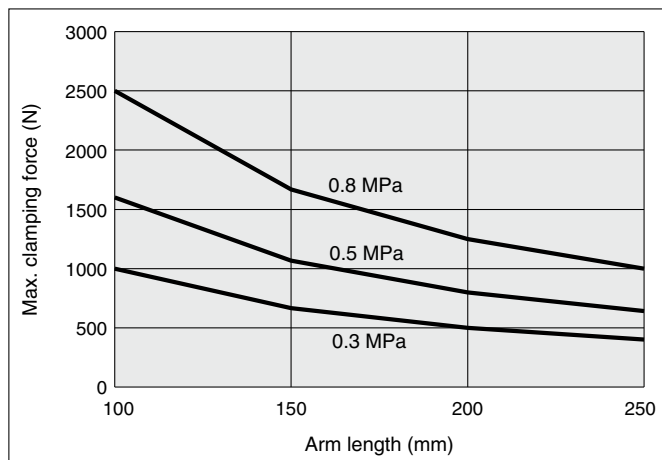
1. Be sure to install a speed controller and adjust it so that it takes **at least 1 second** to clamp or unclamp. (Operating the cylinder in less than 1 second may cause damage to the product.)
2. In some cases, the clamp arm may be hard to open even when the product is in a clamped state with the air 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**

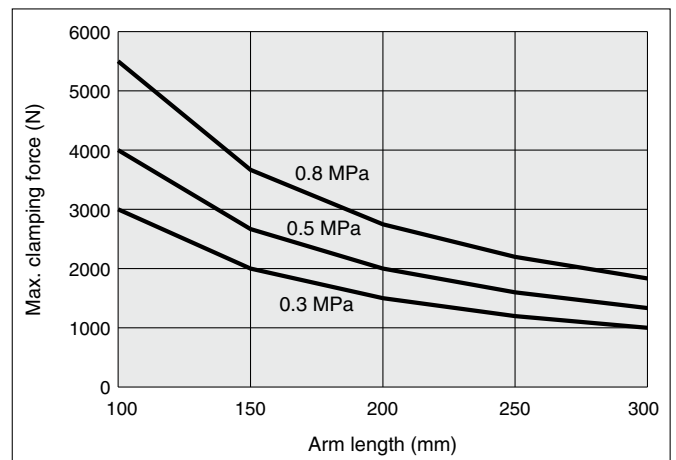
**Clamping force characteristics by bore size, arm length, and operating pressure**



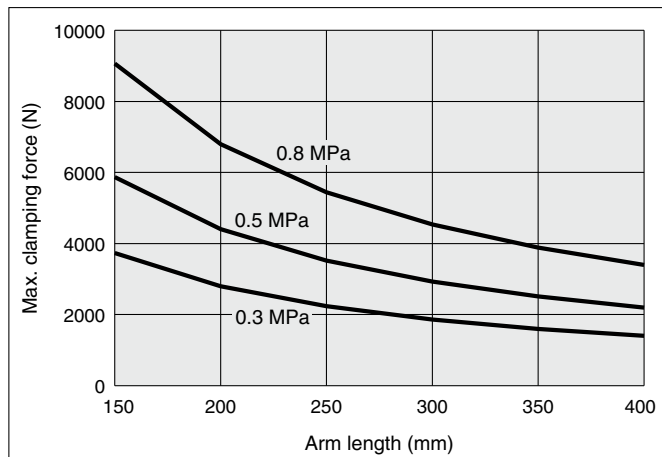
**ø50**



**ø63**



**ø80**



Spatter Resistant Cylinders  
for Arc Welding

Specialty Cylinders

Gas/Air Switching Valve

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Tubing

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# CKZ2N-X2346

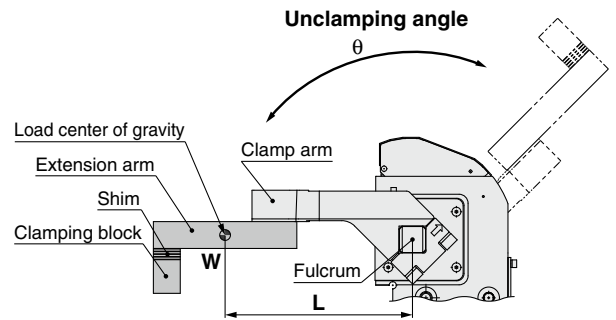
## Allowable load mass

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.

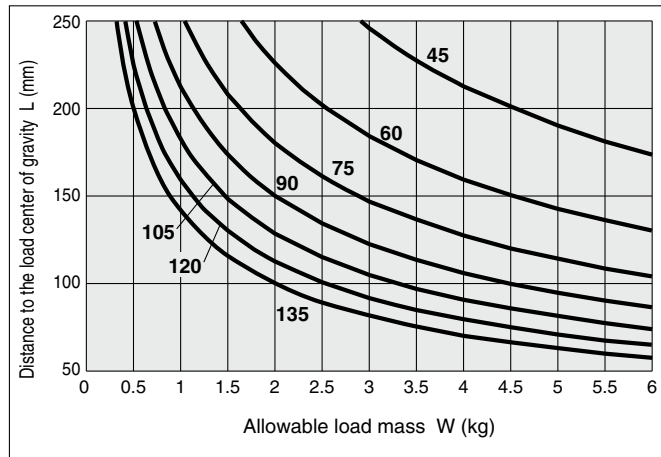
\* The load indicates the total weight of the extension arm and clamping block.

### Calculation procedure of allowable load mass

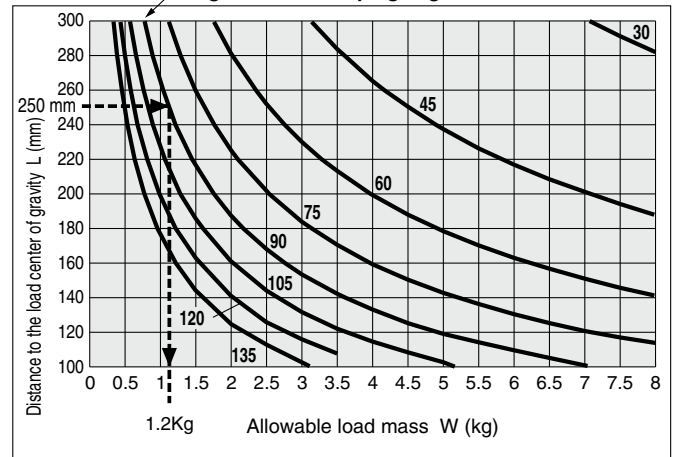
1. Calculate the distance  $L$  from the fulcrum to the center of gravity of the extension arm + clamping block.
2. Check the unclamping angle of the product.
3. Obtain the allowable load mass from the graph, and use the product within the allowable range.



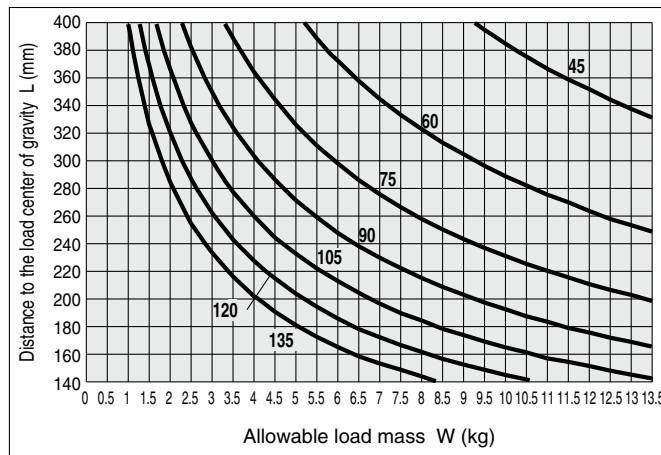
### ø50



### ø63



### ø80



### 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  $\phi 63$  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

Spatter Resistant Cylinders  
for Arc Welding

Specialty Cylinders

Gas/Air Switching Valve

Detection Switches

Tubing

Fittings

Flow Control Equipment

### 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.

| Type        | Series       | Action        | Bore size (mm) |
|-------------|--------------|---------------|----------------|
| Base type   | CKZM16-X2800 | Double acting | 16             |
| Tandem type | CKZM16-X2900 | Double acting | 16             |

### 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
- Spatter-proof construction
- Equipped with a proximity switch that can be used in welding magnetic fields
- A model with a manually operated handle is available.

| Series                                      | Arm opening angle | Switch     | Bore size (mm) |
|---|-------------------|------------|----------------|
| CKZT-X2797<br>Base type                     | 90°, 105°         | SENSTRONIC | 25, 32         |
| CKZT-X2798<br>With manually operated handle | 90°, 105°         | SENSTRONIC | 25, 32         |

### 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.

| Series                                       | Arm opening angle                                | Switch    | Bore size (mm) |
|--|--|-----------|----------------|
| CKZ3T-X2734<br>Base type                     | 15°, 30°, 45°, 60°, 75°<br>90°, 105°, 120°, 135° | TURCK/P&F | 50, 63         |
| CKZ3T-X2568<br>With manually operated handle | 15°, 30°, 45°, 60°, 75°<br>90°, 105°, 120°, 135° | TURCK/P&F | 50, 63         |

### 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.

| Series                                       | Arm opening angle                                | Switch    | Bore size (mm) |
|--|--|-----------|----------------|
| CKZ3N-X2742A<br>Base type                    | 15°, 30°, 45°, 60°, 75°<br>90°, 105°, 120°, 135° | TURCK/P&F | 50, 63         |
| CKZ3N-X2568<br>With manually operated handle | 15°, 30°, 45°, 60°, 75°<br>90°, 105°, 120°, 135° | TURCK/P&F | 50, 63         |

### Power Clamp Cylinder: CKZT



- Spatter-proof construction

| Series | Arm opening angle                           | Switch    | Bore size (mm) |
|--------|---|-----------|----------------|
| CKZT   | 30°, 45°, 60°, 75°, 90°<br>105°, 120°, 135° | TURCK/P&F | 40, 50, 63, 80 |

### NAAMS Standards Compliant Power Clamp Cylinder: CKZ2N



- Spatter-proof construction

| Series | Arm opening angle                           | Switch    | Bore size (mm) |
|--------|---|-----------|----------------|
| CKZ2N  | 30°, 45°, 60°, 75°, 90°<br>105°, 120°, 135° | TURCK/P&F | 50, 63, 80     |