Power Clamp Cylinder

New

Series CKZ3T

ø50, ø63

Aluminium body reduces weight by up to 39%

Weight reduced by up to 39%

New CKZ3T63-135T

7.16 kg

4.34 kg

Unclamping angle 15° as standard

15° angle shortens clamping time and improves cycle time.

European type

Series CKZ3T
Power Clamp Cylinder

European Type

Series **CKZ3T** ø50, ø63

12 arm variations available for each size.
Spatter proof construction

**Metal cover as standard option**
- Suitable for arc welding lines
- Protects the cylinder from unexpected external impact.

**Unclamping**
Unclamping angle 15° as standard

**Aluminium clamping body adopted**
Product weight reduced by up to **39%**

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Arm opening angle</th>
<th>New CKZ3T</th>
<th>Conventional model CKZT</th>
<th>Reduction rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>50–135°</td>
<td></td>
<td>3.14 kg</td>
<td>5.06 kg</td>
<td>37%</td>
</tr>
<tr>
<td>63–135°</td>
<td></td>
<td>4.34 kg</td>
<td>7.16 kg</td>
<td>39%</td>
</tr>
</tbody>
</table>

**Rounded cover design reduces weld spatter accumulation.**

**Proximity cassette installation and removal easily accomplished by unfastening a single bolt.**

**New** Without switch can also be selected as standard.

**New** Rc port thread as standard

**Cover: Metal**
Open/close type metal cover

**Cover: Rubber**
Equivalent to UL94 standard V0: Flame resistant

**Manual toggle release point**

**Hexagon socket head cover cap screw**

**Switch cassette**

**Metal cover as standard option**

**Hexagon socket head cover cap screw**

**Rounded cover design reduces weld spatter accumulation.**

**Proximity cassette installation and removal easily accomplished by unfastening a single bolt.**

**New** Without switch can also be selected as standard.

**New** Rc port thread as standard

**New**

**Features**

<table>
<thead>
<tr>
<th>Series</th>
<th>Clamp body</th>
<th>Bore size</th>
<th>Cylinder port</th>
<th>Unclamped opening angle</th>
<th>Proximity switch</th>
<th>Made to Order specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CKZ3T</strong></td>
<td>Aluminium</td>
<td>40</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>50</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>63</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>80</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>CKZT</strong></td>
<td>Aluminium</td>
<td>40</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>50</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>63</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>80</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
Power Clamp Cylinder

Series CKZ3T

Manual release
Either rubber cover (equivalent to V0 of UL94) or metal cover can be selected.

Toggle link mechanism
Maintains secure and powerful support.

Proximity switch
Both TURCK and P&F switches are available. Without switch can also be selected.

Bumper
Reduces the effects of impact from unclamping the cylinder.

Software
- CATIA
- UNIGRAPHICS
- FIDES
- AUTO CAD
- SOLID WORKS

3D CAD

<table>
<thead>
<tr>
<th>Software</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CATIA</td>
<td></td>
</tr>
<tr>
<td>UNIGRAPHICS</td>
<td></td>
</tr>
<tr>
<td>FIDES</td>
<td></td>
</tr>
<tr>
<td>AUTO CAD</td>
<td></td>
</tr>
<tr>
<td>SOLID WORKS</td>
<td></td>
</tr>
</tbody>
</table>

Series Variations

<table>
<thead>
<tr>
<th>Series</th>
<th>CKZ3T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore size (mm)</td>
<td>Ø50 Equivalent</td>
</tr>
<tr>
<td>Arm opening angle</td>
<td>15°, 30°, 45°, 60°, 75°</td>
</tr>
<tr>
<td></td>
<td>90°, 105°, 120°, 135°</td>
</tr>
<tr>
<td>Switch</td>
<td>TURCK/P&amp;F</td>
</tr>
<tr>
<td>Port thread type</td>
<td>NPT/G/Rc</td>
</tr>
</tbody>
</table>

* For additional formats, please log on to the SMC web site www.smc.eu
1 Common precautions for each size

1) Use air filtered through a 5-µm-element filter.
2) Before piping is connected to the power clamp cylinder it should be thoroughly flushed with air.
3) Only use the clamp arm in our catalogue. Do not weld an arm to the cylinder.
4) Always use a speed controller, and set it so that it takes at least 1 second from unclamped to clamped, and at least 1 second from clamped to unclamped.
5) This product is designed to be used after being adjusted using a shim. For this reason, it is set to between 0° to +0.5° at the clamping end as shown in Fig. 1.

Figure 1

2 Power clamp cylinder mounting

When clamping by using clamping force only

Example)

Mounting process

<table>
<thead>
<tr>
<th>Workpiece setting</th>
<th>Air supply</th>
<th>Operate to the end of clamp</th>
<th>Install a block at clamp side</th>
<th>Block contact adjustment (clamp side)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td>Shim adjustment</td>
<td>Shim adjustment</td>
</tr>
</tbody>
</table>

Procedure

A) Place the workpiece, supply air at clamp side without installing clamping block, operate the clamp arm to the end of clamp.
B) Under the above conditions, adjust shim so that the space between the workpiece and the clamping block is about 0 mm. Theoretically there is no clamping force for holding a workpiece under this condition.
C) In order to generate clamping force from the state described in step B, insert additional shim. The thickness of the shim differs depending on the arm length and pressure, so please refer to the graph on front matter 3 as a guide. About 10% error may occur due to the difference in tolerance of the clamp cylinder body.
2 Power clamp cylinder mounting

- **Relation between shim thickness and clamping force**

  Note) When a shim that exceeds the clamping force peak plotted on the graph is inserted, the self-locking mechanism doesn’t work. Insert a shim with appropriate thickness.

  * Arm length “L” indicates the distance between the clamp arm shaft and the clamping position.
  * For distance “A” between knock positioning pinhole and clamp arm shaft, refer to the Table 1.

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZ3T50</td>
<td>10</td>
</tr>
<tr>
<td>CKZ3T63</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 1

---

Front matter 3
2 Power clamp cylinder mounting

- When using a hard stop

Mounting process

- Hard stop set
- Air supply
- Operate to the end of clamp
- Install the upper hard stop
- Upper hard stop contact adjustment
- Workpiece setting
- Block contact adjustment (clamp side)

Procedure

A) Supply air at clamp side without installation of upper hard stop, and operate the clamp arm to the end of clamp.
B) Under the above conditions, adjust shim ① so that the space between the upper hard stop and the lower hard stop is about 0 mm. Theoretically there is no clamping force to the lower hard stop under this condition.
C) In order to generate clamping force from the state described in step B, insert additional shim. The thickness of the shim differs depending on the arm length and pressure, so please refer to the graph on front matter 3 as a guide. About 10% error may occur due to the difference in tolerance of the power clamp cylinder body.
D) Under the state described in step C, adjust shim ② so there is contact between the clamping block and the workpiece.

When using the side guide

Precaution

When using the side guide to the clamp arm to prevent lateral motion, make sure not to apply a lateral load or galling to the clamp arm.
3 Clamp arm

Use the clamp arm in the catalogue.

The length of the clamp arm “L” should be the length given below or less.

<table>
<thead>
<tr>
<th>Model</th>
<th>Arm length L</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZ3T50</td>
<td>150 mm</td>
</tr>
<tr>
<td>CKZ3T63</td>
<td>300 mm</td>
</tr>
</tbody>
</table>

Allowable load for clamp arm end
Refer to the graph on front matter 6 for parts weight of the arm.
Note) The value shows parts weight only, it does not include arm weight.
3 Clamp arm

Leave sufficient space in order to release by hitting with a plastic hammer.

Leave sufficient space in the below position.

4 Space in design

Leave sufficient space for wiring a proximity switch.

Leave sufficient space to open and close the metal cover when operating the manual release.

Bore size (mm) | Y
---|---
50 | 132
63 | 138
5 Arm opening angle change

9 types of arm opening angles (unclamping angles) 15°, 30°, 45°, 60°, 75°, 90°, 105°, 120° and 135° are available for each standard size.

- **Arm opening angle change procedure**
  1) When changing the arm opening angle, be sure to operate the cylinder to the clamping end, and confirm that the air inside the cylinder has been exhausted.
  2) Loosen the switch cassette mounting screw, and remove the switch cassette.
  3) Remove the hexagon socket head cap screw (part A), and change the position of the screw to the required angle position, and tighten it to the tightening torque shown below.
  4) Mount the switch cassette to the body, and tighten the switch cassette mounting bolt to the tightening torque shown below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Bore size (mm)</th>
<th>Tightening torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexagon socket head cap screw</td>
<td>50</td>
<td>0.6 to 1.0</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>0.6 to 1.0</td>
</tr>
<tr>
<td>Switch cassette mounting bolt</td>
<td>50</td>
<td>2.6 to 3.5</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>2.6 to 3.5</td>
</tr>
</tbody>
</table>

5) Remove the stopper bolt of the head cover, and mount a different stopper bolt for other angles using the tightening torque below. When replacing the stopper bolt, fix the head cover securely. If the stopper bolt is replaced without fixing the head cover, the head cover may be displaced, causing air leakage. (Confirm the direction of the angle display.)

For the applicable stopper bolt part numbers, refer to page 3.

<table>
<thead>
<tr>
<th>Description</th>
<th>Bore size (mm)</th>
<th>Tightening torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stopper bolt</td>
<td>50</td>
<td>130 to 150</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>160 to 200</td>
</tr>
</tbody>
</table>

6 Vertical clamping

When mounting the clamping arm in a vertical clamping position, note that the maximum angle will change.

<table>
<thead>
<tr>
<th>Maximum angle θ</th>
<th>Model</th>
<th>Type A</th>
<th>Type B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CKZ3T50</td>
<td>75°</td>
<td>105°</td>
</tr>
<tr>
<td></td>
<td>CKZ3T63</td>
<td>60°</td>
<td>105°</td>
</tr>
</tbody>
</table>
Power Clamp Cylinder

Series CKZ3T

Φ50, Φ63

How to Order

Clamp Cylinder (Without Arm)

CKZ3T 63 - 120 T M

- Top cover
  - Rubber cover
  - M Metal cover

- Proximity switch
  - T TURCK
  - P P&F
  - W None

- Arm opening angle
  - 15°
  - 30°
  - 45°
  - 60°
  - 75°
  - 90°
  - 105°
  - 120°
  - 135°

Arm

CKZT 63 - A015 C S

- Mounting hole
  - Symbol
  - D1 D2
  - S 6 9
  - B 8 10.2

- Arm mounting position
  - Centre
    - C
  - Right
    - R
  - Left
    - L

Arm mounted
Series CKZ3T

Cylinder Specifications

<table>
<thead>
<tr>
<th>Bore size</th>
<th>ø50 Equivalent</th>
<th>ø63 Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>Double acting</td>
<td></td>
</tr>
<tr>
<td>Fluid</td>
<td>Air</td>
<td></td>
</tr>
<tr>
<td>Proof pressure</td>
<td>1.2 MPa</td>
<td></td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>0.8 MPa</td>
<td></td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>0.3 MPa</td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–10 to 60° (No freezing)</td>
<td></td>
</tr>
<tr>
<td>Cushion</td>
<td>Clamping side: None</td>
<td>Unclamping side: Rubber bumper</td>
</tr>
<tr>
<td>Min. operating time</td>
<td>1.0 second to clamp, 1.0 second to unclamp</td>
<td></td>
</tr>
</tbody>
</table>

Weight (Cylinder Without Arm)

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>15°</th>
<th>30°</th>
<th>45°</th>
<th>60°</th>
<th>75°</th>
<th>90°</th>
<th>105°</th>
<th>120°</th>
<th>135°</th>
</tr>
</thead>
<tbody>
<tr>
<td>63</td>
<td>4.56</td>
<td>4.53</td>
<td>4.50</td>
<td>4.47</td>
<td>4.44</td>
<td>4.41</td>
<td>4.38</td>
<td>4.36</td>
<td>4.34</td>
</tr>
</tbody>
</table>

Switch Specifications

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>TURCK</th>
<th>P&amp;F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating range</td>
<td>2 mm ±10%</td>
<td>2 mm ±10%</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>10 to 30 VDC</td>
<td>10 to 30 VDC</td>
</tr>
<tr>
<td>Output</td>
<td>N.O., PNP</td>
<td>N.O., PNP</td>
</tr>
<tr>
<td>Continuous load current</td>
<td>150 mA</td>
<td>100 mA</td>
</tr>
<tr>
<td>Response frequency</td>
<td>30 Hz</td>
<td>25 Hz</td>
</tr>
<tr>
<td>Housing material</td>
<td>PBT</td>
<td>PA6, PBT</td>
</tr>
<tr>
<td>Output indication</td>
<td>Clamping side: Red</td>
<td>Clamping side: Red</td>
</tr>
<tr>
<td></td>
<td>Unclamping side: Yellow</td>
<td>Unclamping side: Yellow</td>
</tr>
<tr>
<td>Voltage indication</td>
<td>Green</td>
<td>Green</td>
</tr>
</tbody>
</table>

Note) Switch specifications are corresponding to manufacturer’s technical information.

Wiring Diagram

Black
Blue
White
Brown

S1 Lood S2 Lood
Sensor on the unclamping side Sensor on the clamping side

(-) (+)

Note) Both TURCK and P&F are common.
Construction

Component parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Detection plate</td>
</tr>
<tr>
<td>2</td>
<td>Stopper bolt</td>
</tr>
<tr>
<td>3</td>
<td>Switch holder</td>
</tr>
<tr>
<td>4</td>
<td>Bumper</td>
</tr>
<tr>
<td>5</td>
<td>Top cover</td>
</tr>
<tr>
<td>6</td>
<td>Metal cover</td>
</tr>
<tr>
<td>7</td>
<td>Proximity switch</td>
</tr>
<tr>
<td>8</td>
<td>Helical torsion spring</td>
</tr>
<tr>
<td>9</td>
<td>Hexagon nut type 3</td>
</tr>
<tr>
<td>10</td>
<td>Switch holder gasket</td>
</tr>
<tr>
<td>11</td>
<td>Hexagon socket head cover cap screw</td>
</tr>
<tr>
<td>12</td>
<td>Hexagon socket head cover cap screw</td>
</tr>
<tr>
<td>13</td>
<td>Hexagon socket head cap screw</td>
</tr>
<tr>
<td>14</td>
<td>Small round flat washer</td>
</tr>
<tr>
<td>15</td>
<td>Switch holder cover</td>
</tr>
<tr>
<td>16</td>
<td>Hexagon socket head cap screw</td>
</tr>
<tr>
<td>17</td>
<td>Spacer</td>
</tr>
<tr>
<td>18</td>
<td>Short head cap screw</td>
</tr>
<tr>
<td>19</td>
<td>Metal washer</td>
</tr>
<tr>
<td>20</td>
<td>Short head cap screw</td>
</tr>
<tr>
<td>21</td>
<td>Seal washer</td>
</tr>
<tr>
<td>22</td>
<td>Bumper stopper</td>
</tr>
</tbody>
</table>

Table 1

<table>
<thead>
<tr>
<th>Opening angle</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>15°</td>
<td>J</td>
</tr>
<tr>
<td>30°</td>
<td>H</td>
</tr>
<tr>
<td>45°</td>
<td>G</td>
</tr>
<tr>
<td>60°</td>
<td>F</td>
</tr>
<tr>
<td>75°</td>
<td>E</td>
</tr>
<tr>
<td>90°</td>
<td>D</td>
</tr>
<tr>
<td>105°</td>
<td>C</td>
</tr>
<tr>
<td>120°</td>
<td>B</td>
</tr>
<tr>
<td>135°</td>
<td>A</td>
</tr>
</tbody>
</table>

Replaceable kits list

<table>
<thead>
<tr>
<th>Description</th>
<th>Bore size (mm)</th>
<th>Kit no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Contents</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>CKZ3N-S050T Note 1)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-S063T Note 1)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>CKZ3N-S050P Note 1)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-S063P Note 1)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>CKZ3N-S063W Note 1)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-S0633W Note 1)</td>
</tr>
<tr>
<td>Switch kits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>CKZ3N-S050P Note 1)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-S063P Note 1)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>CKZ3N-S063W Note 1)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-S0633W Note 1)</td>
</tr>
<tr>
<td>Stopper bolt kits</td>
<td>50</td>
<td>CKZ3N-B050L50132 Note 2)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-B063L50132 Note 2)</td>
</tr>
<tr>
<td>Top cover kits</td>
<td>50</td>
<td>CKZ3N-T050</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-T063</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>CKZ3N-T050M</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>CKZ3N-T063M</td>
</tr>
</tbody>
</table>

Note 1) T=TURCK, P=P&F, W=Without switch  Note 2) Please specify the opening angle by the code in Table 1.
### Series CKZ3T

#### Allowable Locking Moment

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Allowable locking moment N·m</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>800</td>
</tr>
<tr>
<td>63</td>
<td>1500</td>
</tr>
</tbody>
</table>

* The moment when the clamp arm is locked at the time of air release in the clamped state.

#### Maximum Clamping Moment

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Max. clamping moment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.3 MPa 0.4 MPa 0.5 MPa 0.6 MPa 0.7 MPa 0.8 MPa</td>
</tr>
<tr>
<td>50</td>
<td>100 130 160 190 220 250</td>
</tr>
<tr>
<td>63</td>
<td>300 350 400 450 500 550</td>
</tr>
</tbody>
</table>

#### Cylinder Stroke

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Arm opening angle 15° 30° 45° 60° 75° 90° 105° 120° 135°</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>22.7 31.9 39.7 47.2 54.8 62.7 70.4 77.2 82.1</td>
</tr>
<tr>
<td>63</td>
<td>24.2 34.2 42.6 50.6 58.7 66.9 74.8 81.6 86.4</td>
</tr>
</tbody>
</table>
Power Clamp Cylinder Series CKZ3T

Dimensions

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>GA</th>
<th>GB</th>
<th>GC</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>LA</th>
<th>LB</th>
<th>MM</th>
<th>N</th>
<th>NA</th>
<th>NB</th>
<th>NC</th>
<th>NN</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>92</td>
<td>48</td>
<td>12</td>
<td>13.7</td>
<td>95</td>
<td>166</td>
<td>95.5</td>
<td>10</td>
<td>12</td>
<td>55</td>
<td>376.6</td>
<td>155.5</td>
<td>78.4</td>
<td>M10 x 1.5</td>
<td>19</td>
<td>13</td>
<td>36.5</td>
<td>9.5</td>
<td>M8 x 1.25</td>
<td>10</td>
</tr>
<tr>
<td>63</td>
<td>110</td>
<td>54</td>
<td>12</td>
<td>16.6</td>
<td>99</td>
<td>171.5</td>
<td>100.5</td>
<td>10</td>
<td>12</td>
<td>55</td>
<td>391.6</td>
<td>161</td>
<td>78</td>
<td>M10 x 1.5</td>
<td>22</td>
<td>13</td>
<td>36.5</td>
<td>15</td>
<td>M8 x 1.25</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>PA</th>
<th>PB</th>
<th>PC</th>
<th>PD</th>
<th>R</th>
<th>RA</th>
<th>RB</th>
<th>RR</th>
<th>S</th>
<th>V</th>
<th>VA</th>
<th>VB</th>
<th>VC</th>
<th>VD</th>
<th>VE</th>
<th>VF</th>
<th>W</th>
<th>XA</th>
<th>XB</th>
<th>XC</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>50</td>
<td>45</td>
<td>10</td>
<td>55</td>
<td>46</td>
<td>68</td>
<td>46</td>
<td>48</td>
<td>11</td>
<td>8</td>
<td>30</td>
<td>32</td>
<td>63.5</td>
<td>71.5</td>
<td>12</td>
<td>3.5</td>
<td>78.4</td>
<td>138.5</td>
<td>134</td>
<td>92</td>
</tr>
<tr>
<td>63</td>
<td>50</td>
<td>45</td>
<td>10</td>
<td>55</td>
<td>52</td>
<td>78</td>
<td>52</td>
<td>54</td>
<td>11</td>
<td>8</td>
<td>30</td>
<td>32</td>
<td>63.5</td>
<td>71.5</td>
<td>12</td>
<td>3.5</td>
<td>78</td>
<td>151</td>
<td>146.5</td>
<td>104.5</td>
</tr>
</tbody>
</table>

- Bore size (mm): Dimensions for different bore sizes are listed.
- Hexagon socket head plug: Indicated for specific dimensions.
- Pivot point with square flats Nh9: Noted for certain dimensions.
- Release point: Highlighted for specific measurements.
- 2 x ø V H7 Depth S: Listed for relevant dimensions.
- 4 x NN Depth S: Mentioned for dimensions.
- 2 x 2 x ø V H7 Depth D: Included for specific dimensions.
- 2 x 2 x MM Depth J: Specified for certain dimensions.

Series CKZ3T

5
**Series CKZ3T**

**Dimensions**

**Without switch**

Leave sufficient space to open and close the metal cover when operating the manual release.

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>XA</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>100.5</td>
</tr>
<tr>
<td>63</td>
<td>107.5</td>
</tr>
</tbody>
</table>

**Metal cover type**

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>LB</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>78.4</td>
<td>132</td>
</tr>
<tr>
<td>63</td>
<td>78.4</td>
<td>138</td>
</tr>
</tbody>
</table>
Power Clamp Cylinder *Series CKZ3T*

### Dimensions (Clamp Arm: Offset 15)

#### Ø50

![Diagram of CKZ50-A015 CS with dimensions and symbols]

**How to Order**

**CKZT50—A015 CS**

<table>
<thead>
<tr>
<th>Arm position</th>
<th>Symbol</th>
<th>D1</th>
<th>D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Centre</td>
<td>S</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>R Right</td>
<td>B</td>
<td>8</td>
<td>10.2</td>
</tr>
</tbody>
</table>

**Weight**

- CKZT50-A015CS: 0.79 kg
- CKZT50-A015CB: 0.78 kg
- CKZT50-A015RS: 0.90 kg
- CKZT50-A015RB: 0.89 kg
- CKZT50-A015LS: 0.90 kg
- CKZT50-A015LB: 0.89 kg

#### Ø63

![Diagram of CKZ63-A015 CS with dimensions and symbols]

**How to Order**

**CKZT63—A015 CS**

<table>
<thead>
<tr>
<th>Arm position</th>
<th>Symbol</th>
<th>D1</th>
<th>D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Centre</td>
<td>S</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>R Right</td>
<td>B</td>
<td>8</td>
<td>10.2</td>
</tr>
</tbody>
</table>

**Weight**

- CKZT63-A015CS: 1.02 kg
- CKZT63-A015CB: 1.01 kg
- CKZT63-A015RS: 1.10 kg
- CKZT63-A015RB: 1.08 kg
- CKZT63-A015LS: 1.10 kg
- CKZT63-A015LB: 1.08 kg
Series CKZ3T

Dimensions (Clamp Arm: Offset 45)

**How to Order**

**CKZT50—A045**

- **Arm position**
  - C: Centre
  - R: Right
  - L: Left
- **Mounting hole**
  - Symbol: D1, D2, B
  - S: 6, 9
  - B: 8, 10.2

**Weight**

- CKZT50-A045CS: 0.93 kg
- CKZT50-A045CB: 0.92 kg
- CKZT50-A045RS: 1.02 kg
- CKZT50-A045RB: 1.01 kg
- CKZT50-A045LS: 1.02 kg
- CKZT50-A045LB: 1.01 kg

**How to Order**

**CKZT63—A045**

- **Arm position**
  - C: Centre
  - R: Right
  - L: Left
- **Mounting hole**
  - Symbol: D1, D2, B
  - S: 6, 9
  - B: 8, 10.2

**Weight**

- CKZT63-A045CS: 1.19 kg
- CKZT63-A045CB: 1.18 kg
- CKZT63-A045RS: 1.25 kg
- CKZT63-A045RB: 1.23 kg
- CKZT63-A045LS: 1.25 kg
- CKZT63-A045LB: 1.23 kg
1 Small bore size power clamp cylinder

Applicable model: CKZT25

Features:
- Small bore type is available mainly for robot hand applications.
- Lowest weight ø25 power clamp cylinder among all pneumatic manufacturers (less than 1kg)
- Arm can be selected from centre, left or right type.

<table>
<thead>
<tr>
<th>Series</th>
<th>Angle</th>
<th>Special product number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZT25</td>
<td>105°</td>
<td>CKZT25-105-DCL781EL</td>
</tr>
</tbody>
</table>

Cylinder Specifications

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>ø25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>105°</td>
</tr>
<tr>
<td>Cushion</td>
<td>Unclamping side: Rubber bumper</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>−10 to 60° (No freezing)</td>
</tr>
<tr>
<td>Minimum operating time</td>
<td>1.0 sec. to clamp, 1.0 sec. to unclamp</td>
</tr>
<tr>
<td>Weight (without arm)</td>
<td>0.58 kg</td>
</tr>
</tbody>
</table>

2 Power clamp cylinder with angle adjustment

Applicable model: CKZT40, 50, 63, 80

Features:
- Unclamped opening angle can be adjusted by one process. (no need to adjust the proximity switch)
- Adjustable range: 30° to 135°
- With angle scale

<table>
<thead>
<tr>
<th>Series</th>
<th>Angle</th>
<th>Special product number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZT40</td>
<td>30° to 135°</td>
<td>CKZT40-135-DCJ2144J</td>
</tr>
<tr>
<td>CKZT50</td>
<td></td>
<td>CKZT50-135-DCJ2145J</td>
</tr>
<tr>
<td>CKZT63</td>
<td></td>
<td>CKZT63-135-DCJ2146J</td>
</tr>
<tr>
<td>CKZT80</td>
<td></td>
<td>CKZT80-135-DCJ2147J</td>
</tr>
</tbody>
</table>

Cylinder Specifications

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>ø40</th>
<th>ø50 Equivalent</th>
<th>ø63 Equivalent</th>
<th>ø80 Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>30° to 135°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cushion</td>
<td>Unclamping side: Rubber bumper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.8 MPa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>−10 to 60° (No freezing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum operating time</td>
<td>1.0 sec. to clamp, 1.0 sec. to unclamp</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Power clamp cylinder with manually operated handle

Applicable model: CKZT25, 40, 50, 63, 80

<Features>
- Applicable to equipment requiring manual clamps.
- Handle unit R/L is replaceable.
- Self-weight drop prevention when unclamping (excluding ø25 and ø40)

<table>
<thead>
<tr>
<th>Series</th>
<th>Angle</th>
<th>Special product number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZT25</td>
<td>105°</td>
<td>Handle unit R: CKZT25-105-DCL752EL Handle unit L: CKZT25-105-DCN1935N</td>
</tr>
<tr>
<td>CKZT40</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°</td>
<td>Handle unit R: CKZT40-DCN9476N Handle unit L: CKZT40-DCN9992N</td>
</tr>
<tr>
<td>CKZT50</td>
<td>30°, 45°, 60°, 75°, 90°, 105°</td>
<td>Handle unit R: CKZT50-DCN017AN Handle unit L: CKZT50-DCN018AN</td>
</tr>
<tr>
<td>CKZT63</td>
<td>30°, 45°, 60°, 75°, 90°, 105°</td>
<td>Handle unit R: CKZT63-DCN019AN Handle unit L: CKZT63-DCN020AN</td>
</tr>
<tr>
<td>CKZT80</td>
<td>30°, 45°, 60°, 75°, 90°, 105°</td>
<td>Handle unit R: CKZT80-DCN021AN Handle unit L: CKZT80-DCN022AN</td>
</tr>
</tbody>
</table>

Cylinder Specifications

- Bore size (mm)
  - ø25
  - ø40
  - ø50
  - ø63
  - ø80

- Angle: 105°
- Special product number: Equivalent
- Specification: Equivalent

<table>
<thead>
<tr>
<th>Angle</th>
<th>Bore size (mm)</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>105°</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°</td>
<td>Equivalent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cushion</th>
<th>Clamping/Unclamping side: Rubber bumper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>−10 to 60° (No freezing)</td>
</tr>
<tr>
<td>Minimum operating time</td>
<td>1.0 sec. to clamp, 1.0 sec. to unclamp</td>
</tr>
</tbody>
</table>

4 Power clamp cylinder with pneumatic sensor

Applicable model: CKZT50, 63, 80

<Features>
- Applicable to all air circuit equipment.
- Built-in mechanical valve.
- Position detection is possible at clamping or unclamping according to the signal received from the mechanical valve.

<table>
<thead>
<tr>
<th>Series</th>
<th>Angle</th>
<th>Special product number</th>
</tr>
</thead>
<tbody>
<tr>
<td>CKZT50</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°</td>
<td>CKZT50-DCK9388K</td>
</tr>
<tr>
<td>CKZT63</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°</td>
<td>CKZT63-DCK9390K</td>
</tr>
<tr>
<td>CKZT80</td>
<td>30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°</td>
<td>CKZT80-DCK9390K</td>
</tr>
</tbody>
</table>

Cylinder Specifications

- Bore size (mm)
  - ø50 Equivalent
  - ø63 Equivalent
  - ø80 Equivalent

- Angle: 30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°
- Clamping/Unclamping side: Rubber bumper
- Maximum operating pressure: 0.8 MPa
- Ambient and fluid temperature: −10 to 60° (No freezing)
- Minimum operating time: 1.0 sec. to clamp, 1.0 sec. to unclamp
Other Clamp Cylinders

Product Lineup

Ø40, Ø80 Clamp body type power clamp cylinder

Features • 3 arm variations for each size
• Spatter proof construction

How to Order

Clamp Cylinder (Without Arm)  CKZT 40 TN - 120 T

Power clamp cylinder
European type
Iron clamp body type (Ø80)
Aluminium clamp body type (Ø40)

Bore size
40  Ø40
80  Ø80 Equivalent

Cylinder port
G
TN
NPT

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

Proximity switch
T  TURCK
P  P&F

Clamp Arm  CKZT 40 - A015 C S

Power clamp cylinder
European type

Bore size
40  Ø40
80  Ø80 Equivalent

Offset
A015 Offset 15
A045 Offset 45

Arm mounting position

Mounting hole

Bore size
ØD1  H  ØD2  H
S  6  7  16  6  9  25
B  8  10.2  20  8  10.2  25

Only S type is available for A015 of Ø40.

Cylinder Specifications

<table>
<thead>
<tr>
<th>Bore size</th>
<th>Ø40</th>
<th>Ø80 Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>30° to 135°</td>
<td></td>
</tr>
<tr>
<td>Cushion</td>
<td>Unclamping side: Rubber bumper</td>
<td></td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.8 MPa</td>
<td></td>
</tr>
<tr>
<td>Minimum operating pressure</td>
<td>0.3 MPa</td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>-10 to 60°C (No freezing)</td>
<td></td>
</tr>
<tr>
<td>Minimum operating time</td>
<td>1.0 sec. to clamp, 1.0 sec. to unclamp</td>
<td></td>
</tr>
<tr>
<td>Proximity switch</td>
<td>TURCK/P&amp;F</td>
<td></td>
</tr>
<tr>
<td>Port thread type</td>
<td>NPT/G</td>
<td></td>
</tr>
</tbody>
</table>

Consult SMC Sales for details.
1. Manual toggle release
For a product with rubber cover, the toggle link mechanism can easily be released by hitting the round tab on the cover with a plastic hammer (made of soft material). Always confirm safety before operating the manual toggle release. The clamp arm may suddenly operate during manual release.
For a product with metal cover, the toggle link mechanism can easily be released by hitting the tab of the knuckle joint with a plastic hammer (made of soft material) after opening the cover.

2. Do not disassemble the power clamp
No special maintenance is necessary because the power clamp has a fully enclosed design to protect the clamp against welding spatter, and also the power clamp has a contamination resistant construction.
Do not disassemble any parts other than replaceable parts, otherwise it may reduce the performance of the clamp cylinder.

3. Tightening torque of spare parts
Please make sure to tighten spare parts recommended in accordance with the following torque shown in the table.

<table>
<thead>
<tr>
<th>Description</th>
<th>Bore size (mm)</th>
<th>Tightening torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch kit</td>
<td>50</td>
<td>2.6 to 3.5</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>2.6 to 3.5</td>
</tr>
<tr>
<td>Stopper bolt kit</td>
<td>50</td>
<td>130 to 150</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>160 to 200</td>
</tr>
<tr>
<td>Top cover kit</td>
<td>50</td>
<td>1.5 to 2.0</td>
</tr>
<tr>
<td>(Rubber cover)</td>
<td>63</td>
<td>1.5 to 2.0</td>
</tr>
<tr>
<td>Top cover kit</td>
<td>50</td>
<td>1.5 to 2.0</td>
</tr>
<tr>
<td>(Metal cover)</td>
<td>63</td>
<td>1.5 to 2.0</td>
</tr>
</tbody>
</table>

Note) Please make sure that the switch cassette is tightly secured to the body when it has been replaced with a new one.

4. Clamp arm tightening torque

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Tightening torque (N·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>12 to 15</td>
</tr>
<tr>
<td>63</td>
<td>15 to 20</td>
</tr>
</tbody>
</table>
1. Manual toggle release
   For a product with rubber cover, the toggle link mechanism can easily be released by hitting the round tab on the cover with a plastic hammer (made of soft material).
   Always confirm safety before operating the manual toggle release. The clamp arm may suddenly operate during manual release.
   For a product with metal cover, the toggle link mechanism can easily be released by hitting the tab of the knuckle joint with a plastic hammer (made of soft material) after opening the cover.

2. Do not disassemble the power clamp
   No special maintenance is necessary because the power clamp has a fully enclosed design to protect the clamp against welding spatter, and also the power clamp has a contamination resistant construction.
   Do not disassemble any parts other than replaceable parts, otherwise it may reduce the performance of the clamp cylinder.

3. Tightening torque of spare parts
   Please make sure to tighten spare parts recommended in accordance with the following torque shown in the table.

<table>
<thead>
<tr>
<th>Bore size (mm)</th>
<th>Tightening torque (N·m)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50</td>
<td>Switch kit</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>Stopper bolt kit</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>Top cover kit (Rubber cover)</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>Top cover kit (Metal cover)</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>Release point</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>Tab of the knuckle joint</td>
</tr>
</tbody>
</table>

   Note) Please make sure that the switch cassette is tightly secured to the body when it has been replaced with a new one.

4. Clamp arm tightening torque
   2.6 to 3.5
   130 to 150
   1.5 to 2.0

Specific Product Precautions
   Be sure to read this before handling. Refer to back cover for Safety Instructions, “Handling Precautions for SMC Products” (M-E03-3) for Actuator Precautions.
3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions:
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air transport, and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible system failure and disconnection checks to confirm proper operation.

### Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) and other safety regulations.

### Caution:

- **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

### Warning:

- **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

### Danger:

- **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

### Safety Instructions

**Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.**

### Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

#### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered. Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.

2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.

3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

#### Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.

2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

### SMC Corporation (Europe)

- **Austria**: +43 (0)2262628000
- **Belgium**: +32 (0)33551464
- **Bulgaria**: +359 (0)2867670
- **Croatia**: +385 (81307288
- **Czech Republic**: +420 641424611
- **Denmark**: +45 70529000
- **Estonia**: +372 50137010
- **Finland**: +358 07551513
- **France**: +33 (0)164761000
- **Germany**: +49 (0)160304020
- **Greece**: +30 210 2712260
- **Hungary**: +36 23511390
- **Ireland**: +353 (0)14030900
- **Italy**: +39 09027111
- **Lithuania**: +370 52308181
- **Luxembourg**: +352 (0)228051200
- **Netherlands**: +31 (0)205318888
- **Norway**: +47 67129020
- **Poland**: +48 (0)221119616
- **Portugal**: +351 226165570
- **Romania**: +40 23205111
- **Russia**: +7 82717185445
- **Slovakia**: +421 (0)141213212
- **Slovenia**: +386 (0)3886412
- **Spain**: +34 945184100
- **Sweden**: +46 (0)86031200
- **Switzerland**: +41 (0)229633131
- **Turkey**: +90 (0)212469144
- **UK**: +44 (0)208512152

**SMC CORPORATION**

Akihabara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249 FAX: 03-5298-5362

Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.