

Power Clamp Cylinder **New**

Ø50, Ø63

► **Aluminium body reduces weight by up to **39%****

Weight reduced
by up to
39%

New CKZ3T63-135T

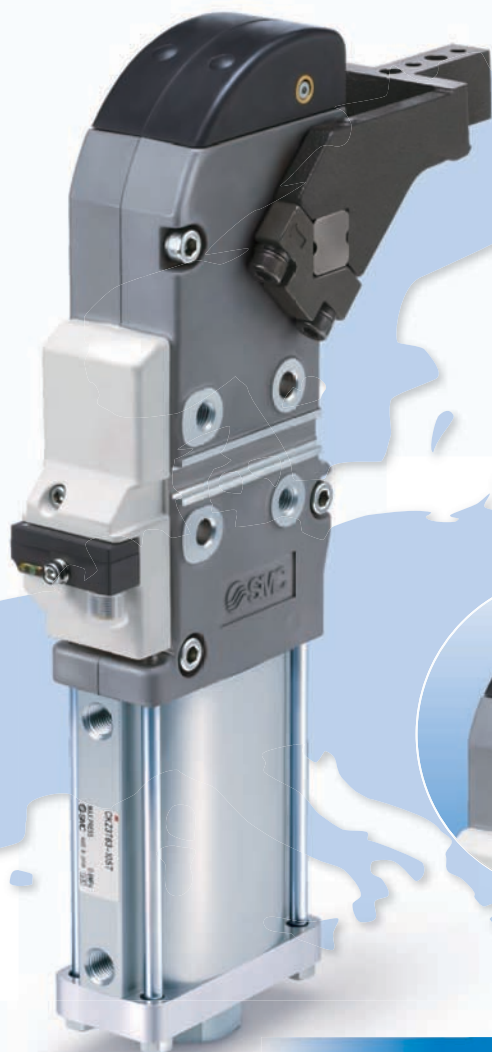
4.34kg

Conventional model CKZT63-135T

7.16kg

► **Unclamping angle **15°** as standard**

15° angle shortens clamping time and improves cycle time.



European type

Series **CKZ3T**

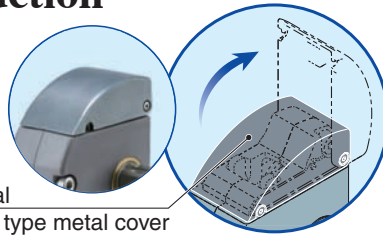
Series CKZ3T



CAT.EUS20-202A-UK



12 arm variations available for each size.
Spatter proof construction



Cover: Metal
Open/close type metal cover

New

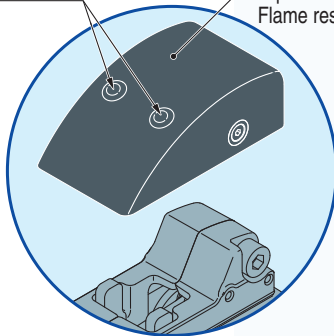
Metal cover as standard option

- Suitable for arc welding lines
- Protects the cylinder from unexpected external impact.

Rounded cover design reduces weld spatter accumulation.

Manual toggle release point

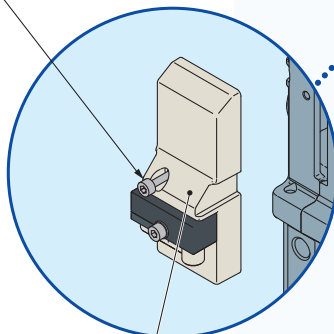
Cover: Rubber
Equivalent to UL94 standard V0:
Flame resistant



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

New Without switch can also be selected as standard.

Hexagon socket head cover cap screw



Switch cassette

New

Rc port thread as standard

New

Unclamping

Unclamping angle 15° as standard

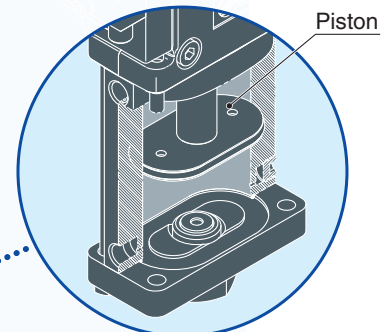
New

Aluminium clamping body adopted

Product weight reduced by up to **39%**

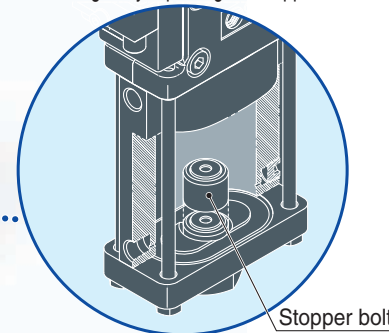
Bore size – opening angle (mm)	New CKZ3T	Conventional model CKZT	Reduction rate
50–135°	3.14kg	5.06kg	37%
63–135°	4.34kg	7.16kg	39%

Oval shaped piston makes space saving possible.



Piston

Simple arm opening angle changes.
Cylinder disassembly is not necessary. The arm opening angle can be changed by replacing the stopper bolt.

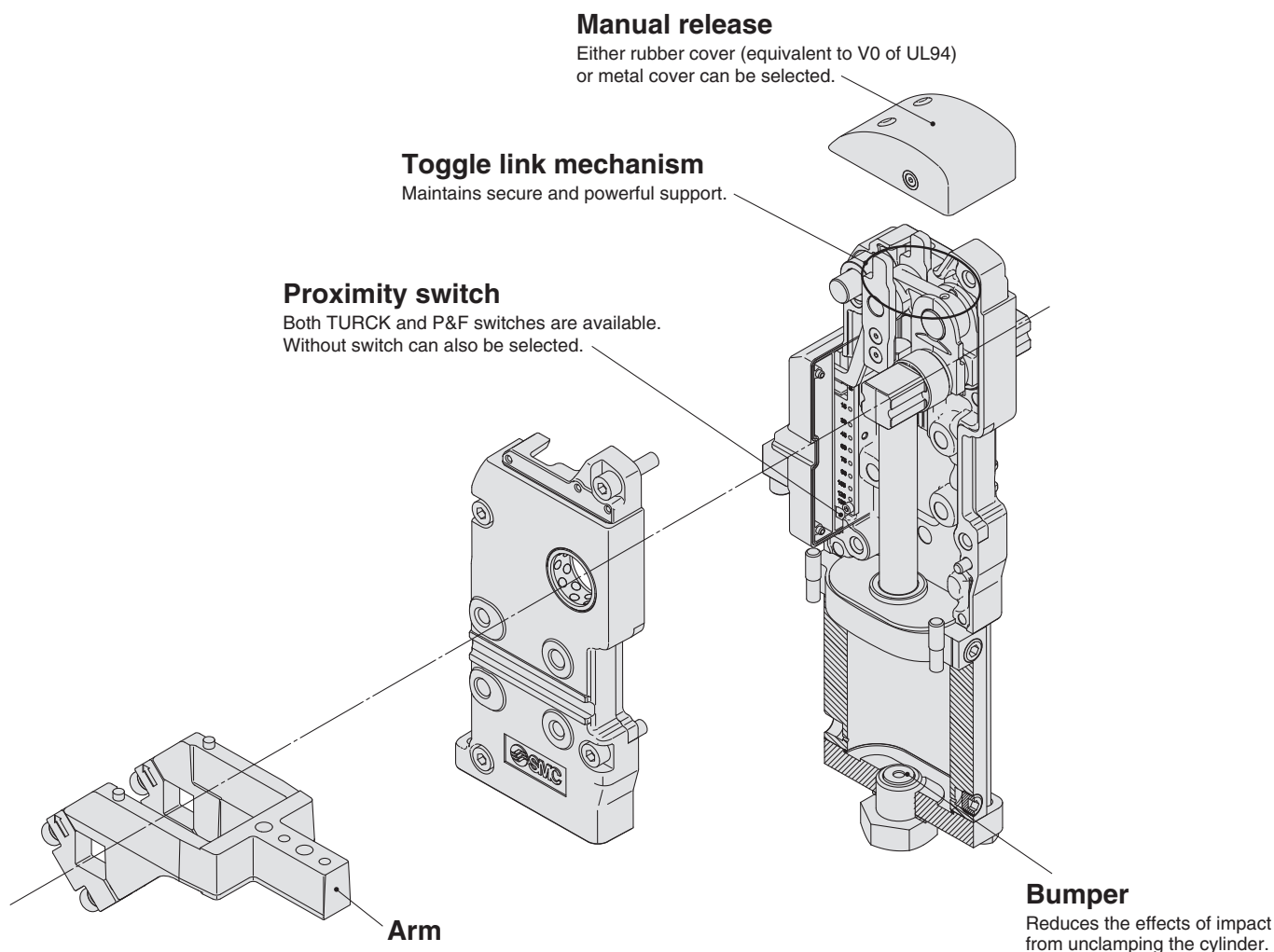


Stopper bolt

Series	Clamp body	Bore size				Cylinder port	Unclamped opening angle	Proximity switch	Made to Order specifications						
		40	50	63	80				Small bore size (ø25) clamp cylinder	With angle adjustment	With manually operated handle	With pneumatic sensor	Metal cover	Unclamped opening angle 15°	Without switch
New CKZ3T	Aluminium	—	●	●	—	G,NPT,Rc	15° to 135°	• TURCK • P&F	—	—	—	—	Standard	Standard	Standard
CKZT	Aluminium	●	—	—	—	G,NPT	30° to 135°		●	●	●	●	●	●	●
	Iron	—	●	●	●										

Power Clamp Cylinder

Series CKZ3T



■ 3D CAD

Software
CATIA
UNIGRAPHICS
FIDES
AUTO CAD
SOLID WORKS

* For additional formats, please log on to the SMC web site www.smc.eu

■ Series Variations

Series	CKZ3T	
Bore size (mm)	ø50 Equivalent	ø63 Equivalent
Arm opening angle	15°, 30°, 45°, 60°, 75° 90°, 105°, 120°, 135°	
Switch	TURCK/P&F	
Port thread type	NPT/G/Rc	

Series CKZ3T

Model Selection 1

1 Common precautions for each size

- 1) Use air filtered through a 5- μ m-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 $+0.5^\circ$ at the clamping end as shown in Fig. 1.

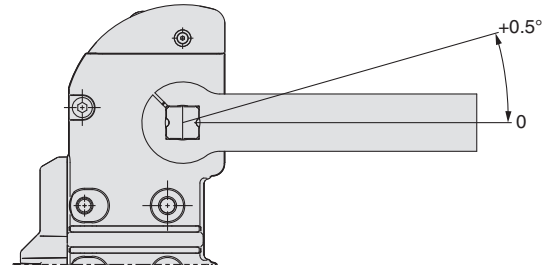
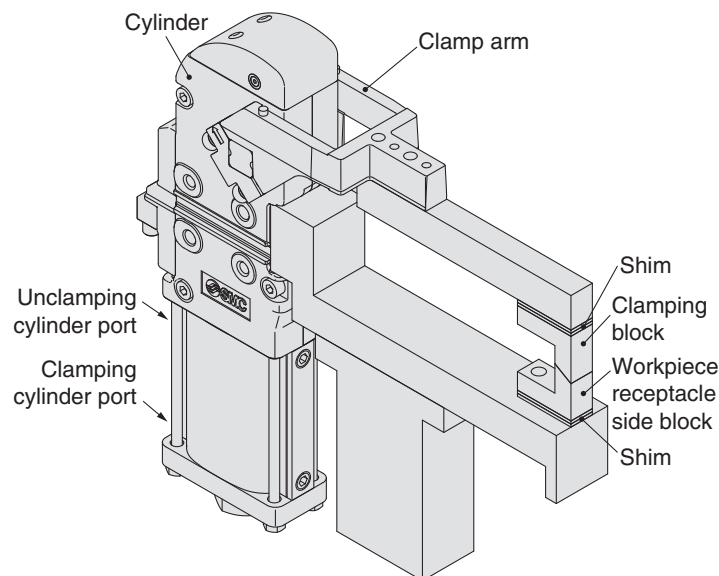


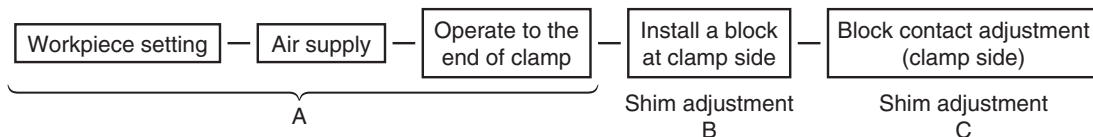
Figure 1

2 Power clamp cylinder mounting

- When clamping by using clamping force only
Example)



■ Mounting process



■ 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.

Series CKZ3T

Model Selection 2

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.

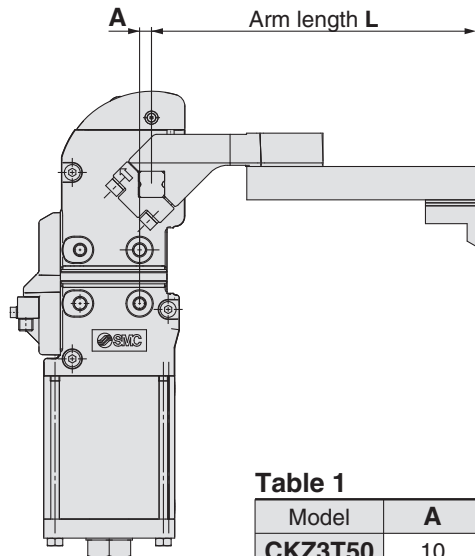
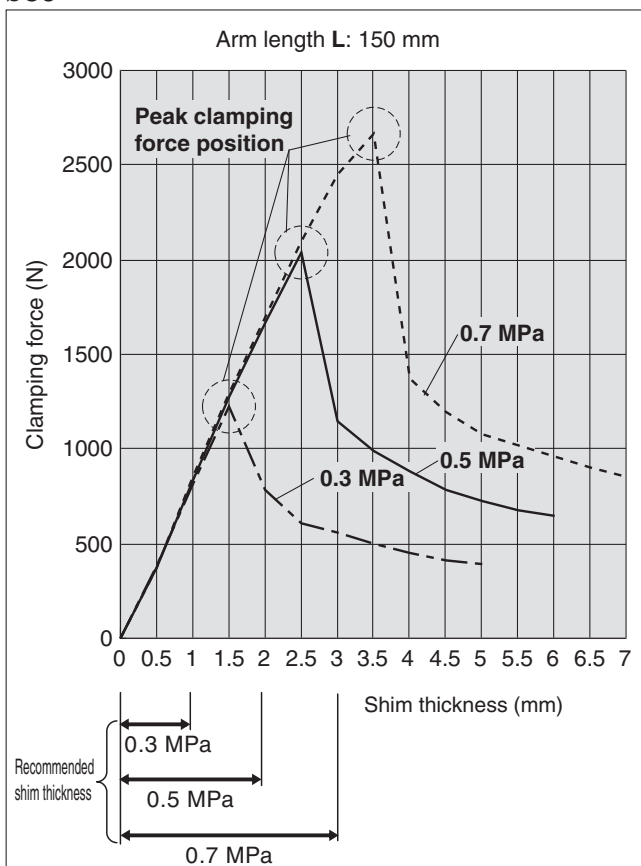


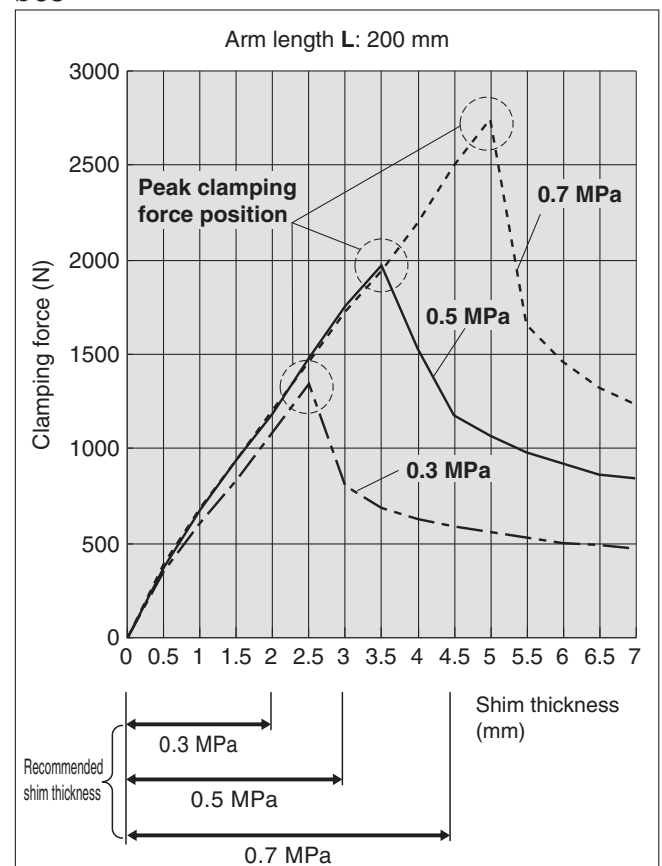
Table 1

Model	A
CKZ3T50	10
CKZ3T63	10

ø50

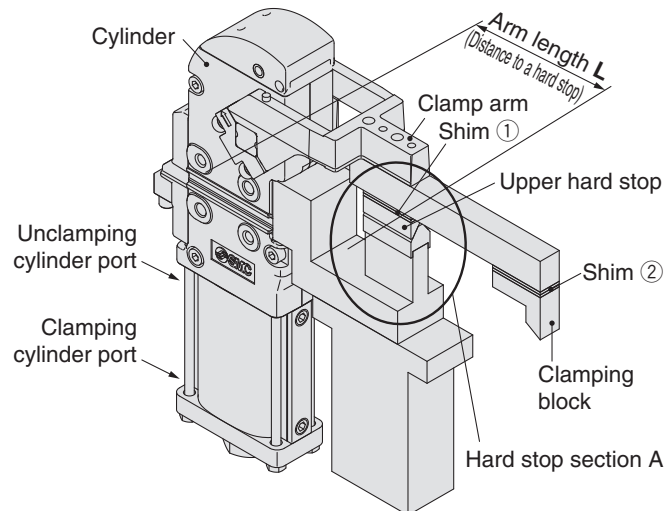


ø63

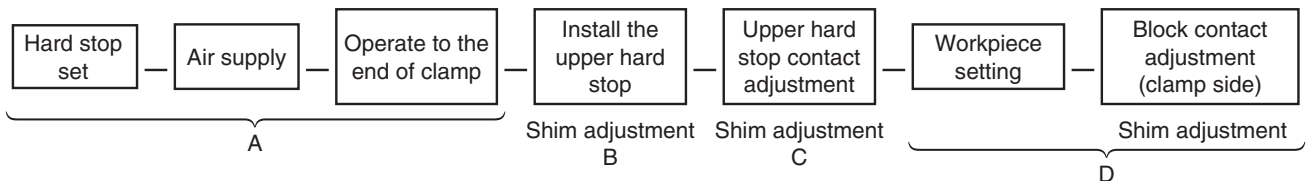


2 Power clamp cylinder mounting

■ When using a hard stop



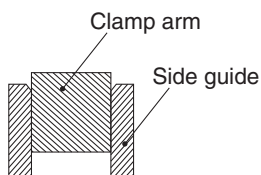
■ Mounting process



■ Procedure

- Supply air at clamp side without installation of upper hard stop, and operate the clamp arm to the end of clamp.
- 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.
- 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.
- 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.

Series CKZ3T

Model Selection 3

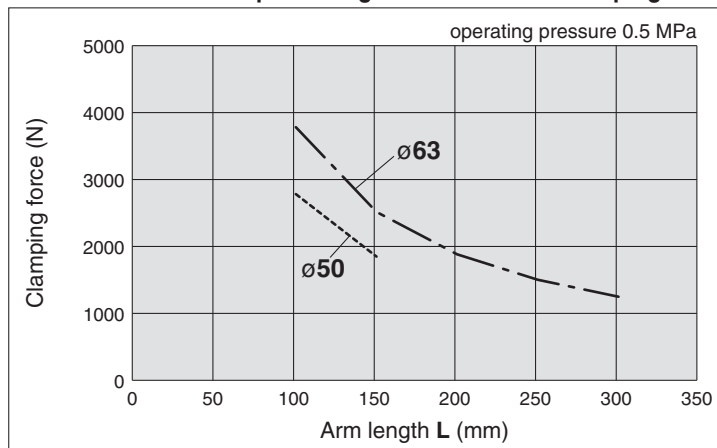
3 Clamp arm

Use the clamp arm in the catalogue.

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

Model	Arm length L
CKZ3T50	150 mm
CKZ3T63	300 mm

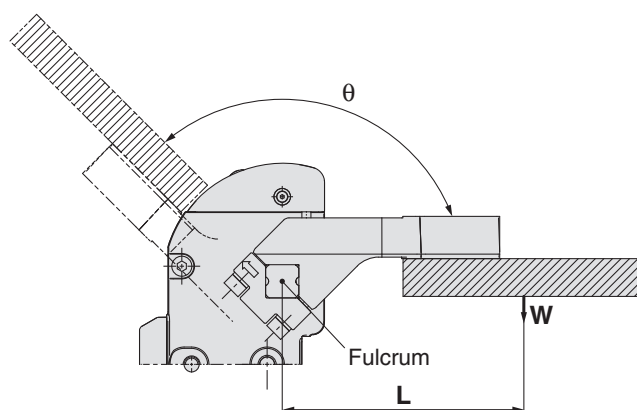
Relation between clamp arm length and maximum clamping force



Allowable load for clamp arm end

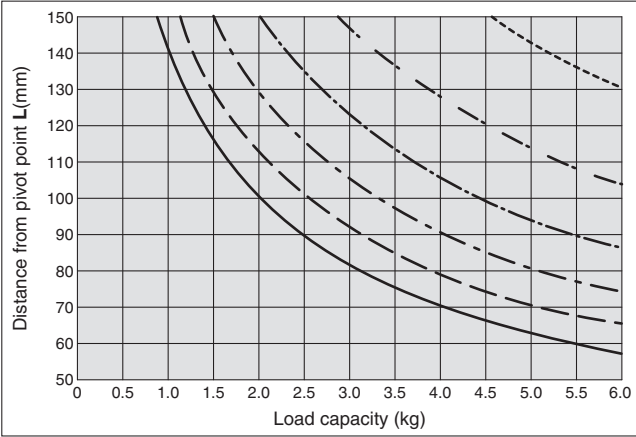
Refer to the graph on front matter 6 for parts weight of the arm.

Note) The value shows parts weight only, it does not include arm weight.

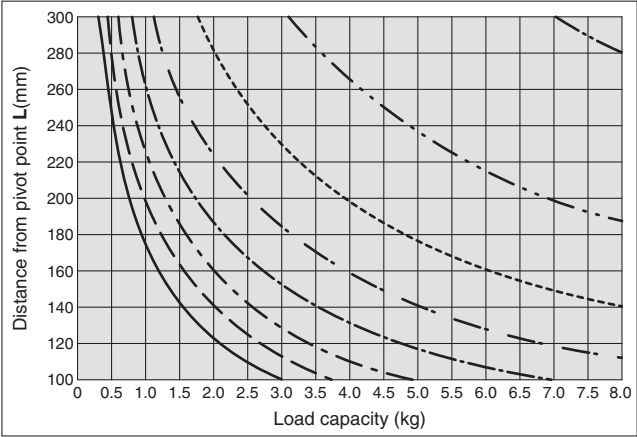


3 Clamp arm

ø50



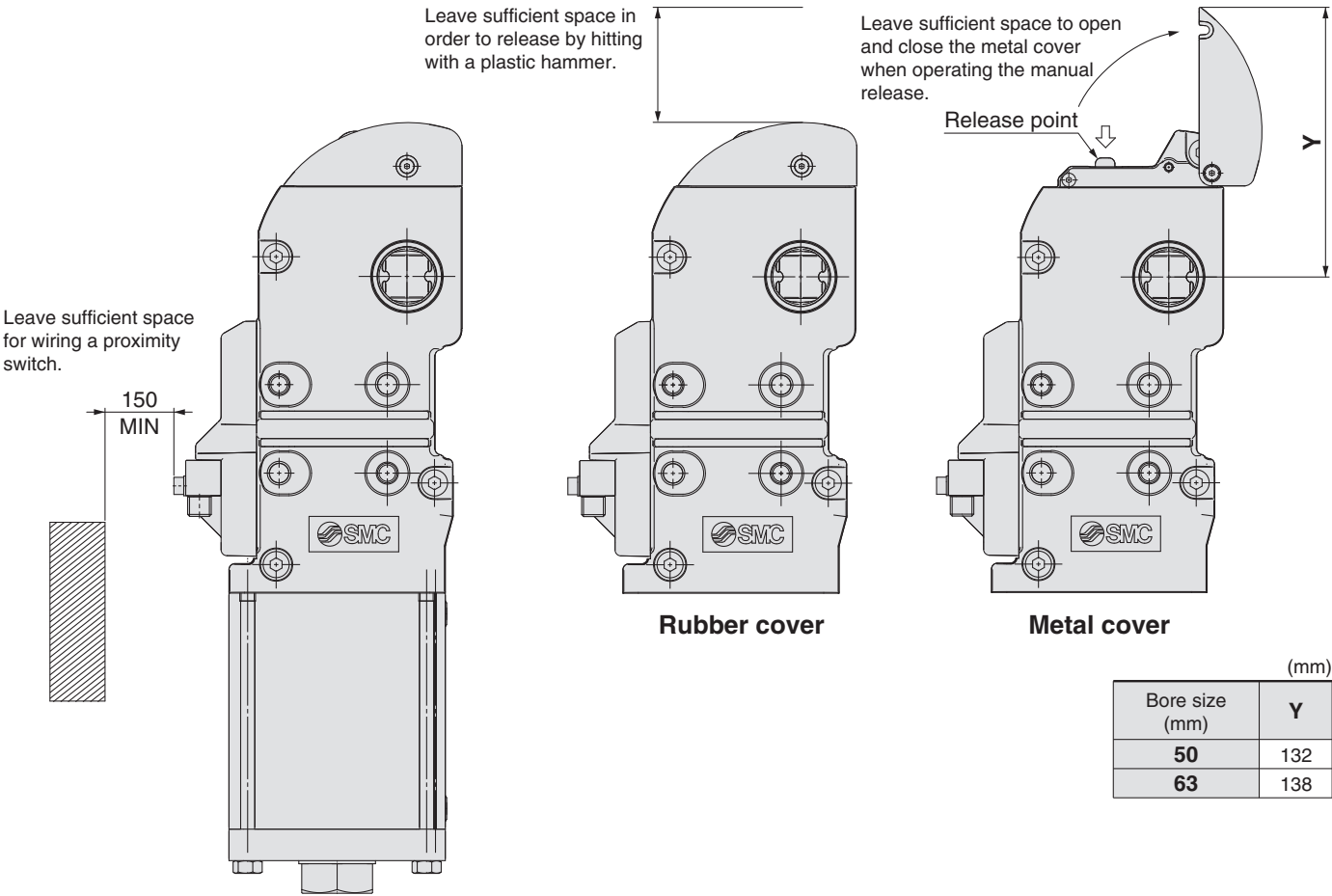
ø63



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

4 Space in design

Leave sufficient space in the below position.



(mm)	
Bore size (mm)	Y
50	132
63	138

Series CKZ3T

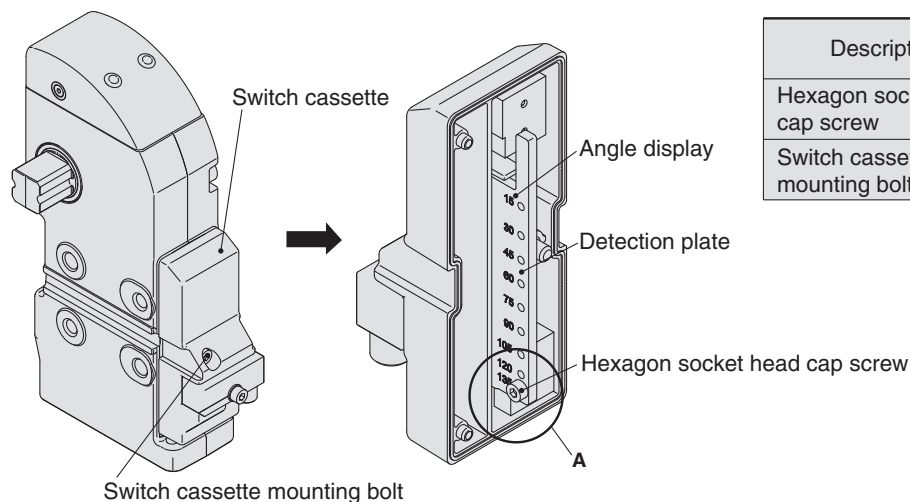
Model Selection 4

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.

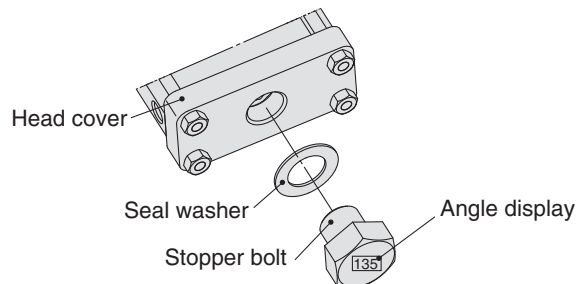
■ Arm opening angle change procedure

- 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.



Description	Bore size (mm)	Tightening torque (N·m)
Hexagon socket head cap screw	50	0.6 to 1.0
	63	0.6 to 1.0
Switch cassette mounting bolt	50	2.6 to 3.5
	63	2.6 to 3.5

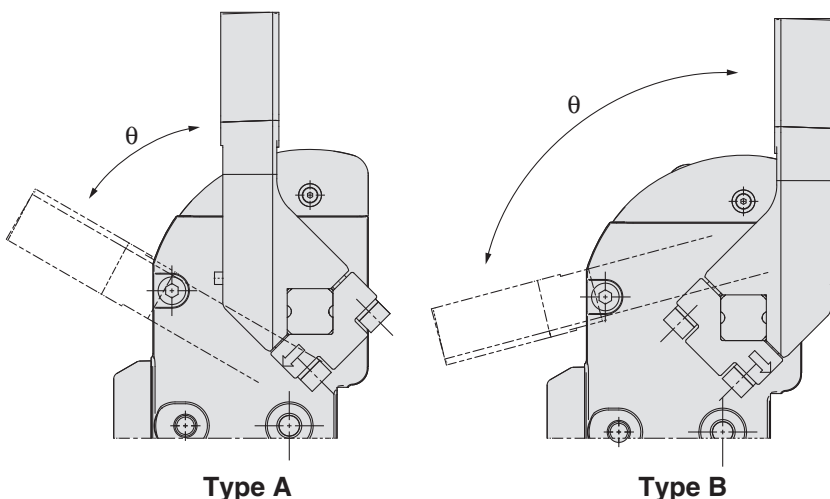
- 5) Remove the stopper bolt of the head cover, and mount a different stopper bolt for other angles using the tightening torque below. When replacing the stopper bolt, fix the head cover securely. If the stopper bolt is replaced without fixing the head cover, the head cover may be displaced, causing air leakage. (Confirm the direction of the angle display.) For the applicable stopper bolt part numbers, refer to page 3.



Description	Bore size (mm)	Tightening torque (N·m)
Stopper bolt	50	130 to 150
	63	160 to 200

6 Vertical clamping

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



Maximum angle θ

Model	Type A	Type B
CKZ3T50	75°	105°
CKZ3T63	60°	105°

Power Clamp Cylinder

Series CKZ3T

ø50, ø63

How to Order



Clamp Cylinder (Without Arm)

CKZ3T 63 **-120 T M**

Power clamp cylinder
European type
Aluminium clamp body type

Bore size

50	ø50 Equivalent
63	ø63 Equivalent

Cylinder port

—	G
TN	NPT
TP	Rc

Top cover

—	Rubber cover
M	Metal cover

Proximity switch

T	TURCK
P	P&F
W	None

Arm opening angle

15	15°
30	30°
45	45°
60	60°
75	75°
90	90°
105	105°
120	120°
135	135°

Arm

CKZT 63 **-A015 C S**

Power clamp cylinder
European type

Bore size

50	ø50 Equivalent
63	ø63 Equivalent

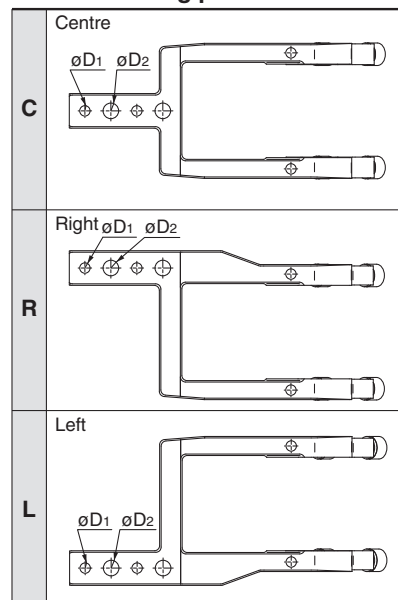
Offset

A015	Offset 15
A045	Offset 45

Mounting hole

Symbol	D1	D2
S	6	9
B	8	10.2

Arm mounting position



Arm mounted

Series CKZ3T

Cylinder Specifications

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

Weight (Cylinder Without Arm)

Unit: kg

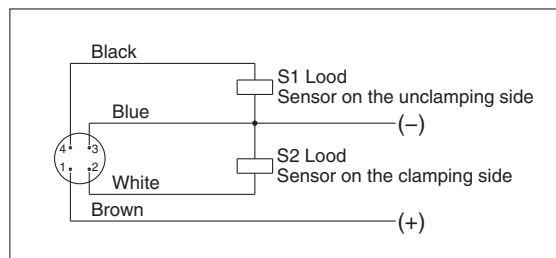
Bore size (mm)	Arm angle								
	15°	30°	45°	60°	75°	90°	105°	120°	135°
50	3.29	3.26	3.25	3.23	3.21	3.19	3.17	3.15	3.14
63	4.56	4.53	4.50	4.47	4.44	4.41	4.38	4.36	4.34

Switch Specifications

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

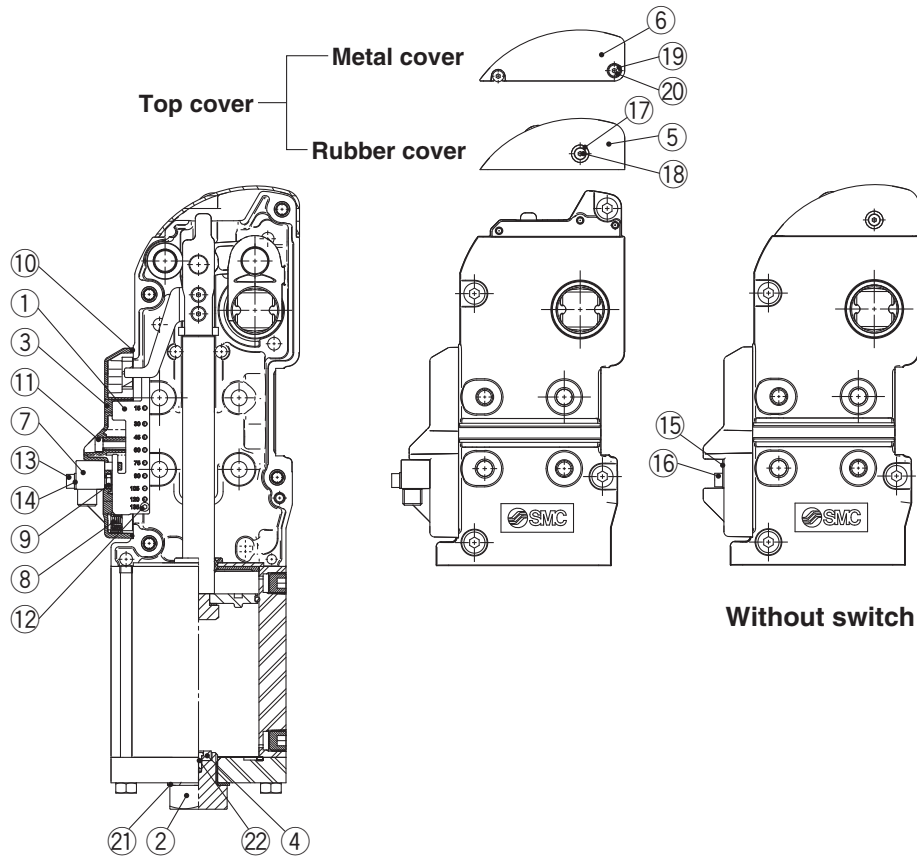
Note) Switch specifications are corresponding to manufacturer's technical information.

Wiring Diagram



Note) Both TURCK and P&F are common.

Construction



Component parts

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

Table 1

Opening angle	Code
15°	J
30°	H
45°	G
60°	F
75°	E
90°	D
105°	C
120°	B
135°	A

Replaceable kits list

Description	Bore size (mm)	Kit no.	Contents
Switch kits	50	CKZ3N-S050T <small>Note 1)</small>	③Switch holder ⑦Proximity switch (TURCK) ⑧Helical torsion spring ⑨Hexagon nut type 3 ⑩Switch holder gasket ⑪Hexagon socket head cover cap screw ①Detection plate ⑫Hexagon socket head cover cap screw ⑬Hexagon socket head cap screw ⑭Small round flat washer
	63	CKZ3N-S063T <small>Note 1)</small>	③Switch holder ⑦Proximity switch (P&F) ⑧Helical torsion spring ⑨Hexagon nut type 3 ⑩Switch holder gasket ⑪Hexagon socket head cover cap screw ①Detection plate ⑫Hexagon socket head cover cap screw ⑬Hexagon socket head cap screw ⑭Small round flat washer
	50	CKZ3N-S050P <small>Note 1)</small>	③Switch holder ⑦Proximity switch (P&F) ⑧Helical torsion spring ⑨Hexagon nut type 3 ⑩Switch holder gasket ⑪Hexagon socket head cover cap screw ①Detection plate ⑫Hexagon socket head cover cap screw ⑬Hexagon socket head cap screw ⑭Small round flat washer
	63	CKZ3N-S063P <small>Note 1)</small>	③Switch holder ⑦Proximity switch (P&F) ⑧Helical torsion spring ⑨Hexagon nut type 3 ⑩Switch holder gasket ⑪Hexagon socket head cover cap screw ①Detection plate ⑫Hexagon socket head cover cap screw ⑬Hexagon socket head cap screw ⑭Small round flat washer
	50	CKZ3N-S050W <small>Note 1)</small>	③Switch holder ⑮Switch holder cover ⑨Hexagon nut type 3 ⑩Switch holder gasket ⑪Hexagon socket head cover cap screw ⑫Hexagon socket head cap screw ⑬Hexagon socket head cap screw ⑭Small round flat washer
	63	CKZ3N-S063W <small>Note 1)</small>	③Switch holder ⑮Switch holder cover ⑨Hexagon nut type 3 ⑩Switch holder gasket ⑪Hexagon socket head cover cap screw ⑫Hexagon socket head cap screw ⑬Hexagon socket head cap screw ⑭Small round flat washer
Stopper bolt kits	50	CKZ3N-B050 <small>Note 2)</small>	②Stopper bolt ②①Seal washer ④Bumper ②②Bumper stopper
	63	CKZ3N-B063 <small>Note 2)</small>	②Stopper bolt ②①Seal washer ④Bumper ②②Bumper stopper
Top cover kits	50	CKZ2N-T050	⑤Rubber cover ⑮Spacer ⑮⑧Short head cap screw
	63	CKZ2N-T063	⑤Rubber cover ⑮Spacer ⑮⑧Short head cap screw
	50	CKZ3N-T050M	⑥Metal cover ⑮⑨Metal washer ⑮⑨Short head cap screw
	63	CKZ3N-T063M	⑥Metal cover ⑮⑨Metal washer ⑮⑨Short head cap screw

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

Bore size (mm)	Allowable locking moment N·m
50	800
63	1500

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

Maximum Clamping Moment

Unit: N·m

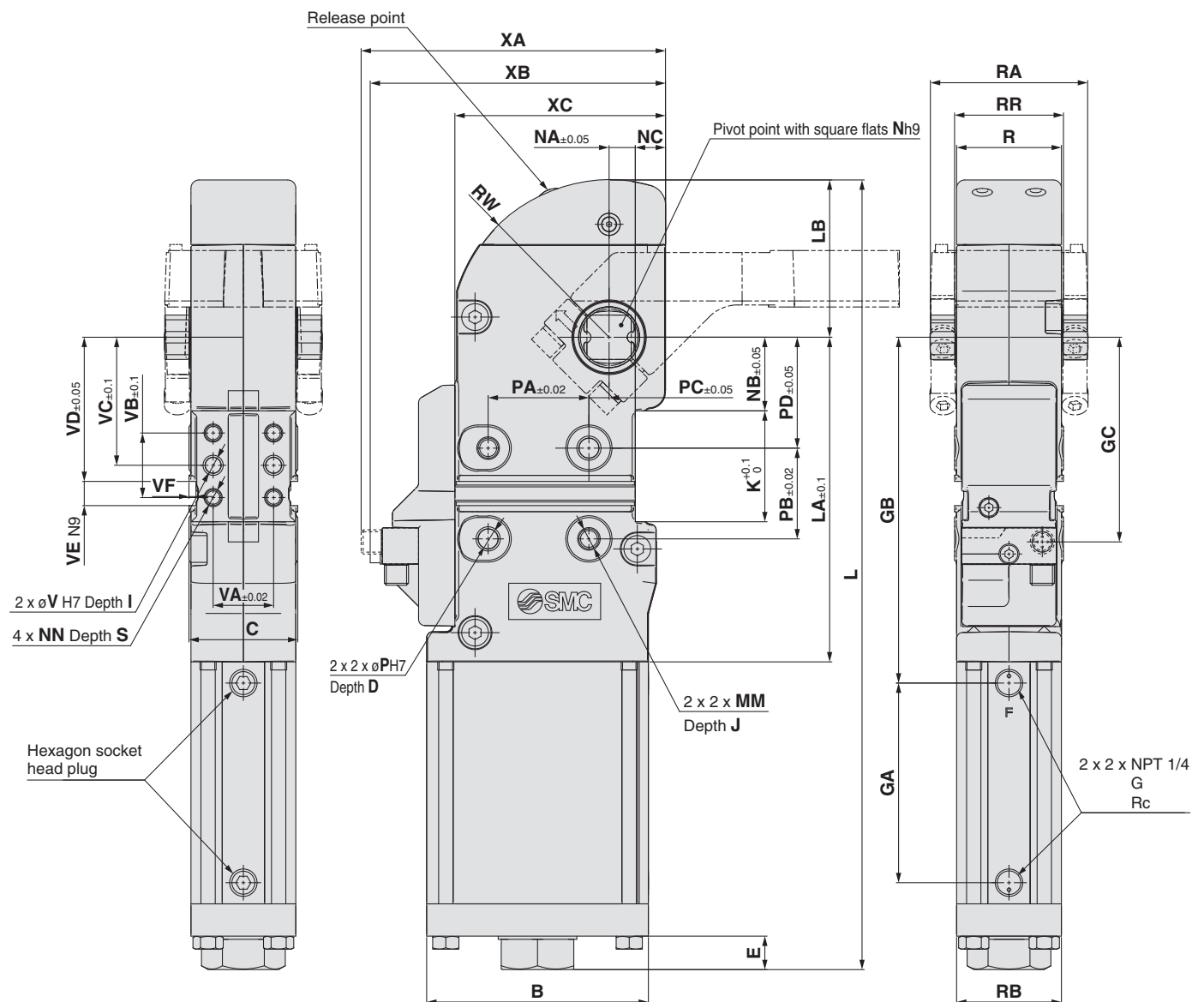
Bore size (mm)	Max. clamping moment					
	0.3 MPa	0.4 MPa	0.5 MPa	0.6 MPa	0.7 MPa	0.8 MPa
50	100	130	160	190	220	250
63	300	350	400	450	500	550

Cylinder Stroke

Unit: mm

Bore size (mm)	Arm opening angle								
	15°	30°	45°	60°	75°	90°	105°	120°	135°
50	22.7	31.9	39.7	47.2	54.8	62.7	70.4	77.2	82.1
63	24.2	34.2	42.6	50.6	58.7	66.9	74.8	81.6	86.4

Dimensions



(mm)

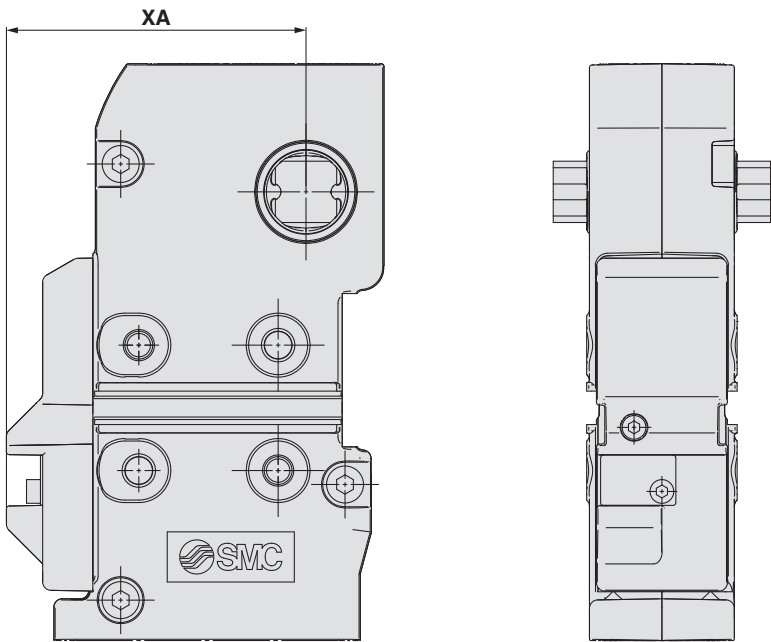
Bore size (mm)	B	C	D	E	GA	GB	GC	I	J	K	L	LA	LB	MM	N	NA	NB	NC	NN	P
50	92	48	12	13.7	95	166	95.5	10	12	55	376.6	155.5	78.4	M10 x 1.5	19	13	36.5	9.5	M8 x 1.25	10
63	110	54	12	16.6	99	171.5	100.5	10	12	55	391.6	161	78	M10 x 1.5	22	13	36.5	15	M8 x 1.25	10

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

Series CKZ3T

Dimensions

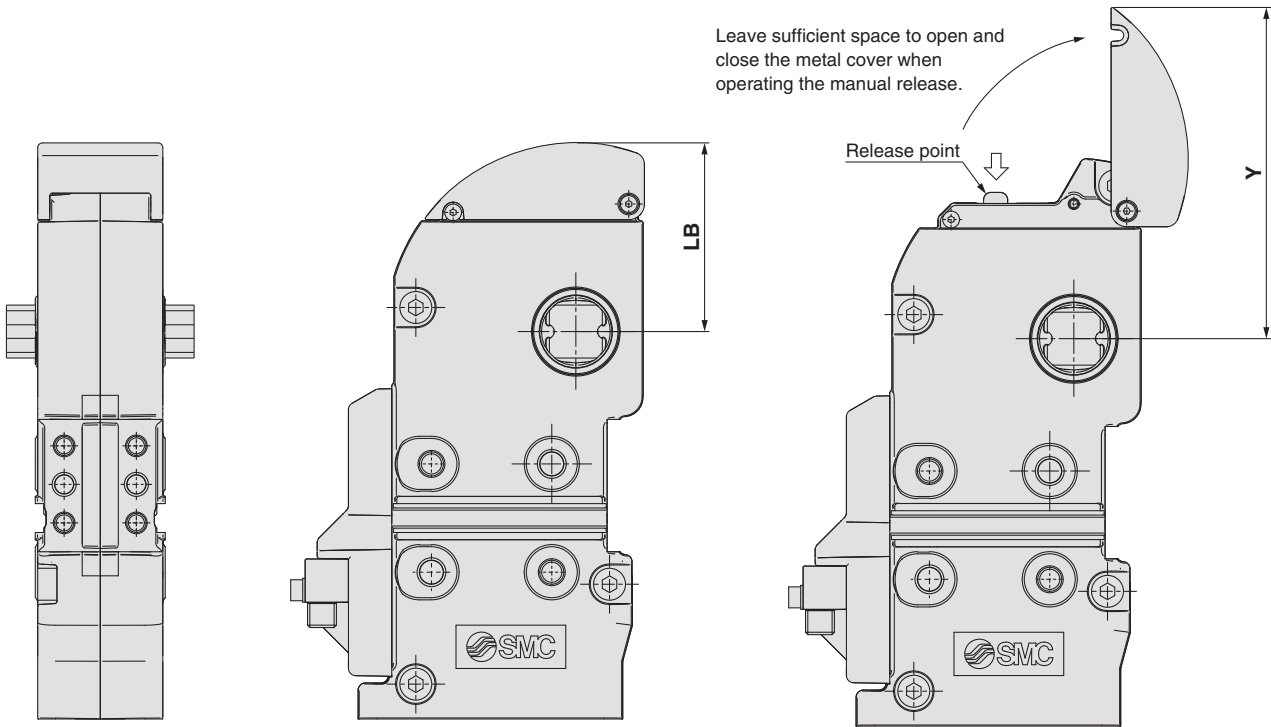
Without switch



(mm)

Bore size (mm)	XA
50	100.5
63	107.5

Metal cover type



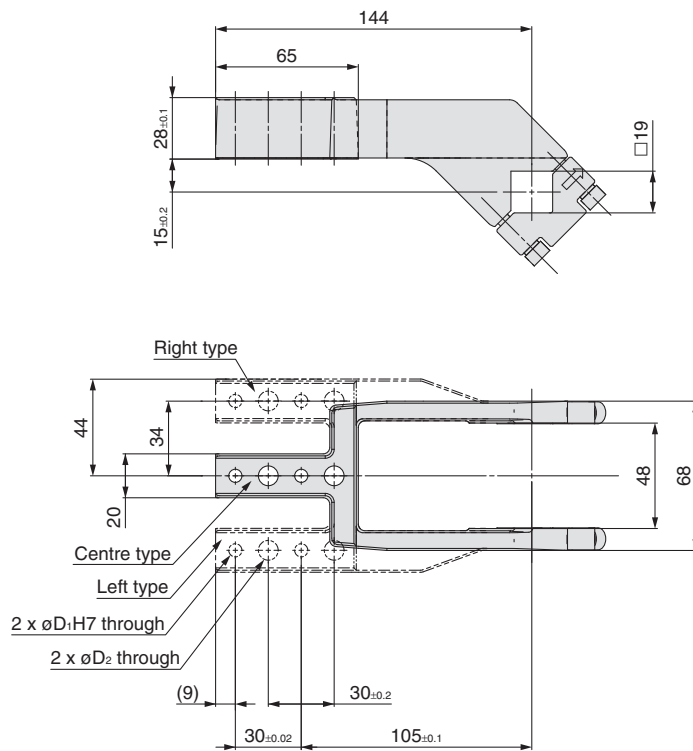
Cover open

(mm)

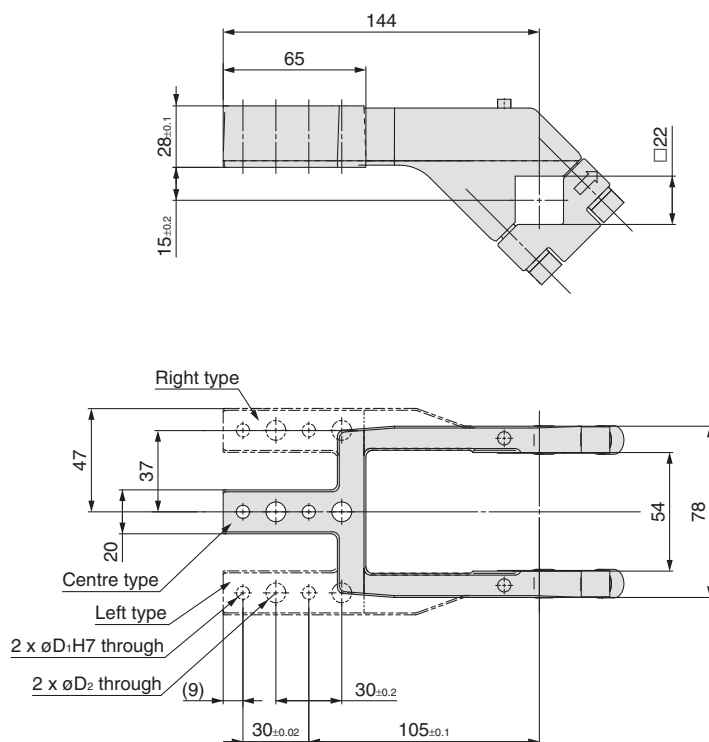
Bore size (mm)	LB	Y
50	78.4	132
63	78.4	138

Dimensions (Clamp Arm: Offset 15)

Ø50



Ø63



How to Order

CKZT50—A015 **C** **S**

Arm position ●

C	Centre
R	Right
L	Left

Mounting hole ●

Symbol	D ₁	D ₂
S	6	9
B	8	10.2

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

How to Order

CKZT63—A015 **C** **S**

Arm position ●

C	Centre
R	Right
L	Left

Mounting hole ●

Symbol	D ₁	D ₂
S	6	9
B	8	10.2

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

Power Clamp Cylinder / Series **CKZ3T** Made to Order 1

Contact SMC for detailed dimensions, specifications and delivery.



1 Small bore size power clamp cylinder



Applicable model : **CKZT25**

<Features>

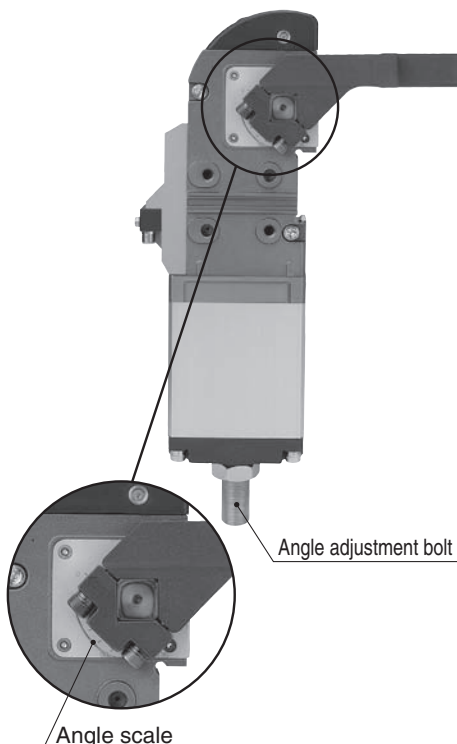
- Small bore type is available mainly for robot hand applications.
- Lowest weight ø25 power clamp cylinder among all pneumatic manufacturers (less than 1kg)
- Arm can be selected from centre, left or right type.

Series	Angle	Special product number
CKZT25	105°	CKZT25-105-DCL781EL

Cylinder Specifications

Bore size (mm)	ø25
Angle	105°
Cushion	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
Weight (without arm)	0.58 kg

2 Power clamp cylinder with angle adjustment



Applicable model : **CKZT40, 50, 63, 80**

*1 ø50, ø63 and ø80 types have the iron clamp body.

*2 Rubber cover specification

<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

Series	Angle	Special product number
CKZT40	30° to 135°	CKZT40-135-DCJ2144J
CKZT50		CKZT50-135-DCJ2145J
CKZT63		CKZT63-135-DCJ2146J
CKZT80		CKZT80-135-DCJ2147J

Cylinder Specifications

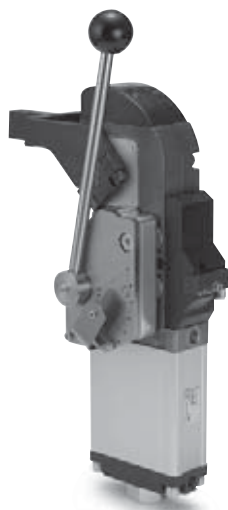
Bore size (mm)	ø40	ø50 Equivalent	ø63 Equivalent	ø80 Equivalent
Angle	30° to 135°			
Cushion	Unclamping side: Rubber bumper			
Maximum operating pressure	0.8 MPa			
Ambient and fluid temperature	-10 to 60° (No freezing)			
Minimum operating time	1.0 sec. to clamp, 1.0 sec. to unclamp			

Power Clamp Cylinder / Series **CKZ3T** Made to Order 2

Contact SMC for detailed dimensions, specifications and delivery.



3 Power clamp cylinder with manually operated handle



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

*1 ø50, ø63 and ø80 types have the iron clamp body.

*2 Rubber cover specification

<Features>

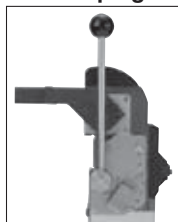
- Applicable to equipment requiring manual clamps.
- Handle unit R/L is replaceable.
- Self-weight drop prevention when unclamping (excluding ø25 and ø40)

Series	Angle	Special product number	
		Handle unit R	Handle unit L
CKZT25	105°	CKZT25-105-DCL752EL	CKZT25-105-DCN1935N
CKZT40	30°, 45°, 60°, 75° 90°, 105°, 120°	CKZT40-□-DCN9476N	CKZT40-□-DCN9992N
CKZT50		CKZT50-□-DCN017AN	CKZT50-□-DCN018AN
CKZT63		CKZT63-□-DCN019AN	CKZT63-□-DCN020AN
CKZT80	30°, 45°, 60°, 75°, 90°, 105°	CKZT80-□-DCN021AN	CKZT80-□-DCN022AN

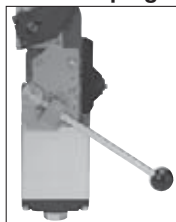
Cylinder Specifications

Bore size (mm)	ø25	ø40	ø50 Equivalent	ø63 Equivalent	ø80 Equivalent
Angle	105°	30°, 45°, 60°, 75° 90°, 105°, 120°			30°, 45°, 60° 75°, 90°, 105°
Cushion	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				

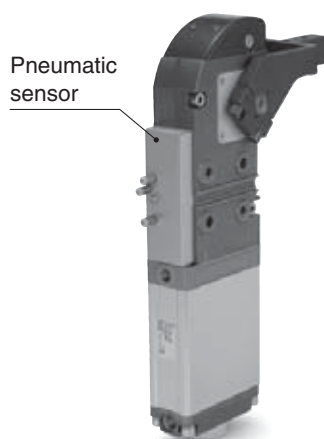
Clamping



Unclamping



4 Power clamp cylinder with pneumatic sensor



Pneumatic sensor

Applicable model : **CKZT50, 63, 80**

* Iron clamp body and rubber cover specifications

<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.

Series	Angle	Special product number
CKZT50	30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°	CKZT50-□-DCK9388K
CKZT63		CKZT63-□-DCK9389K
CKZT80		CKZT80-□-DCK9390K

Cylinder Specifications

Bore size (mm)	ø50 Equivalent	ø63 Equivalent	ø80 Equivalent
Angle	30°, 45°, 60°, 75°, 90°, 105°, 120°, 135°		
Cushion	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		

Mechanical valve

Clamping output signal pressure port

Signal pressure supply port

Unclamping output signal pressure port

Clamping

Unclamping

With cover removed

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)

Power clamp cylinder
European type
Iron clamp body type (ø80)
Aluminium clamp body type (ø40)

CKZT 40 TN - 120 T

Bore size

40	ø40
80	ø80 Equivalent

Cylinder port

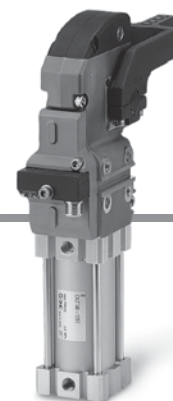
—	G
TN	NPT

Proximity switch

T	TURCK
P	P&F

Arm opening angle

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



Clamp Arm

Power clamp cylinder
European type

CKZT 40 - A015 C S

Bore size

40	ø40
80	ø80 Equivalent

Offset

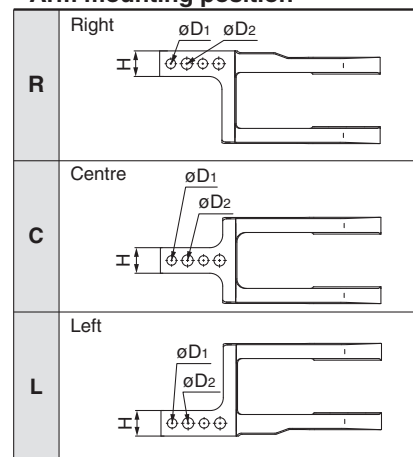
A015	Offset 15
A045	Offset 45

Mounting hole

Bore size symbol	ø40			ø80 Equivalent		
	D ₁	D ₂	H	D ₁	D ₂	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.

Arm mounting position



Cylinder Specifications

Bore size	ø40	ø80 Equivalent
Angle	30° to 135°	
Cushion	Unclamping side: Rubber bumper	
Maximum operating pressure	0.8 MPa	
Minimum operating pressure	0.3 MPa	
Ambient and fluid temperature	-10 to 60°C (No freezing)	
Minimum operating time	1.0 sec. to clamp, 1.0 sec. to unclamp	
Proximity switch	TURCK/P&F	
Port thread type	NPT/G	

Consult SMC Sales for details.



Series CKZ3T

Specific Product Precautions

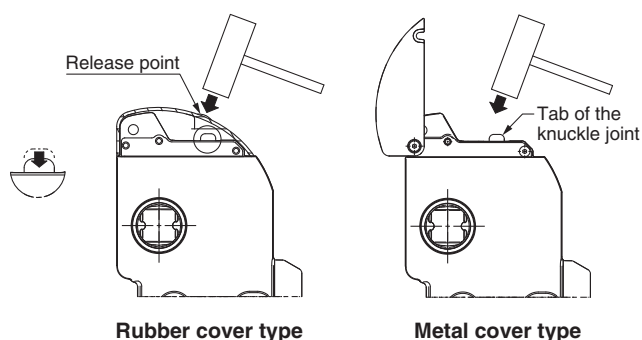
Be sure to read this before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for Actuator Precautions.

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.



Rubber cover type

Metal cover type

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.

Description	Bore size (mm)	Tightening torque (N·m)
Switch kit	50	2.6 to 3.5
	63	2.6 to 3.5
Stopper bolt kit	50	130 to 150
	63	160 to 200
Top cover kit (Rubber cover)	50	1.5 to 2.0
	63	1.5 to 2.0
Top cover kit (Metal cover)	50	1.5 to 2.0
	63	1.5 to 2.0




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

Bore size (mm)	Tightening torque (N·m)
50	12 to 15
63	15 to 20

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)*1), 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.

- *1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

Warning

- The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
- Only personnel with appropriate training should operate machinery and equipment.**
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
- Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
 - 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.
 - 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.
 - Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
 - Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion 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.
 - An application which could have negative effects on people, property, or animals requiring special safety analysis.
 - Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

- The product is provided for use in manufacturing industries.**
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

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

Read and accept them before using the product.

Limited warranty and Disclaimer

- The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
- For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

*2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

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

Safety Instructions

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

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