Swing clamp

Single acting 7 MPa

model CTT

Single acting Swing clamp
model CTT06-L

Standard model

model CTT□-□

Clamp arm

Positioning pin groove
for clamp arm

Hydraulic pressure
(G port piping)

Hydraulic pressure
(manifold piping)

Cam shaft
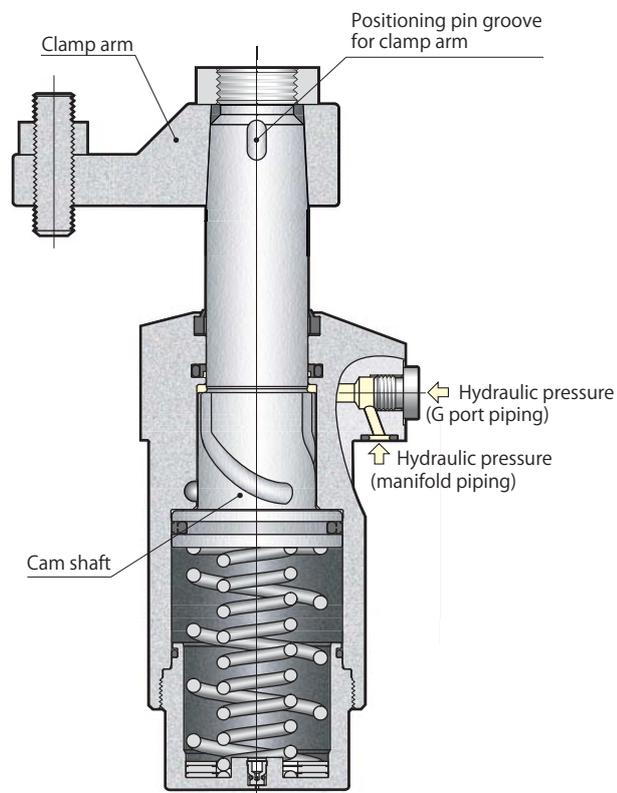
Hydraulic circuit diagram
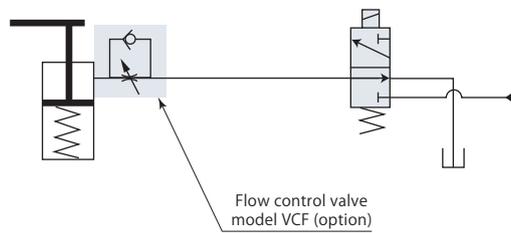
Use flow control valve for
meter-in control.

Flow control valve
model VCF (option)

Specifications

| Size | Swing direction (when clamping) | Variation code* |

01	
02	
04	**L** : Counter-clockwise
CTT 06 —	
10	
16	**R** : Clockwise
25	

(Nil) : Standard

P : Pin rod

N□ : Swing angle 30°, 45°, 60°

▨ indicates made to order.

＊：Contact Pascal for the details of variation codes (models) that are not described in the catalog.

Model		CTT01	CTT02	CTT04	CTT06	CTT10	CTT16	CTT25
Cylinder force (hydraulic pressure 7MPa)*1	kN	2.0	2.4	3.4	5.1	8.1	13.3	20.5
Cylinder inner diameter	mm	25	29	36	42	52	65	82
Rod diameter	mm	14	18	22.4	25	30	35.5	45
Effective area (clamp)	cm²	3.4	4.1	6.2	8.9	14.2	23.3	36.9
Swing angle		90° ±3°						
Positioning pin groove position accuracy		±1°						
Repeated clamp positioning accuracy		±0.5°						
Full stroke	mm	16	18	20.5	23.5	26.5	28.5	36
90°swing stroke	mm	8	10	12.5	13.5	16.5	18.5	23
Clamp stroke	mm	8	8	8	10	10	10	13
Max. swing torque*2	N·m	0.15	0.2	0.6	1.0	1.8	3.6	5.4
Cylinder capacity (clamp)	cm³	5.4	7.3	12.8	21.0	37.5	66.4	132.9
Return spring force — Unclamp	kN	0.23	0.29	0.50	0.74	1.13	1.79	2.92
Return spring force — Clamp stroke central position	kN	0.37	0.47	0.94	1.12	1.79	2.99	5.32
Return spring force — Clamp end	kN	0.42	0.52	1.05	1.22	1.94	3.25	5.85
Recommended piping inner diameter*3	mm	ø6	ø6	ø6	ø6	ø8	ø8	ø10
Mass	kg	0.7	1.0	1.5	2.0	3.3	5.5	10.4
Recommended tightening torque of mounting screws*4	N·m	3.5	7	7	12	29	57	77
Recommended tightening torque of nut	N·m	12	26	51	60	86	120	180

● Pressure range：2.5–7 MPa　　● Proof pressure：10.5 MPa　　● Operating temperature：0–70 ℃

● Fluid used：General mineral based hydraulic oil (ISO-VG32 equivalent)

● Seals are resistant to chlorine-based cutting fluid. (not thermal resistant specification)

＊1：This is value for central position of clamp stroke.

＊2：This is the limit value for lifting arm with spring force (unclamp) when mounted vertically.

＊3：Care must be taken when numerous clamps are used or when hydraulic piping is long.　　＊4：ISO R898 class 12.9

## Manifold piping and G port piping are available.

Manifold piping

When choosing manifold piping, a flow control valve (model VCF) and an air bleeding valve (model VCE) are mountable on the G ports of the clamp.

Plug
O-ring
⇧ Hydraulic pressure
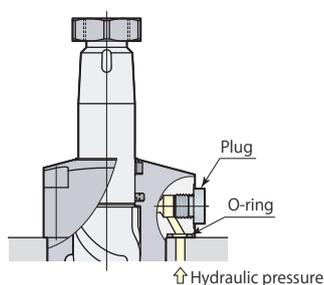
G port piping

Remove plug when choosing G port piping. (O-ring must be used.) Refer to **page →174** for details on G port piping flareless fitting. The flow control valve and the air bleeding valve should be installed in the middle of oil path.

Parallel thread connector
⇦ Hydraulic pressure
O-ring
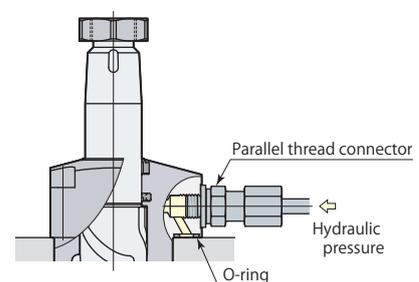
Performance table

Clamping force varies depending on the clamp arm length (LH) and hydraulic pressure (P).

Clamping force calculation formula
F = (P - Coefficient 1)/(Coefficient 2 + Coefficient 3 × LH)
F：Clamping force　P：Hydraulic pressure　LH：Clamp arm length

CTT06 with clamp arm length (LH) = 60 mm at hydraulic pressure of 7 MPa, Clamping force F is calculated by
(7-1.25)/(1.12+0.00422×60)＝4.2 kN

Do not use the clamp in the nonusable range.
It may cause damage to the cylinder and rod.

Clamp arm length LH (mm)
Cylinder force (kN)
Clamping force F (kN)
Hydraulic pressure P (MPa)
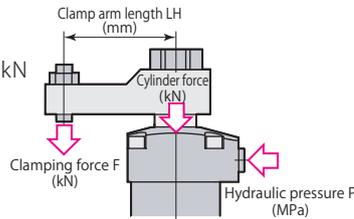
model CTT01　Clamping force　$F=(P-1.10)/(2.97+0.0153\times LH)$

Hydraulic pressure MPa	Cylinder force kN	Clamping force kN Clamp arm length LH mm								Max. arm length Max. LH mm
		30	35	40	50	60	80	100	120	
7	2.0	1.7	1.7	1.6						49
6.5	1.8	1.6	1.5	1.5	1.4		Nonusable range			55
6	1.6	1.4	1.4	1.4	1.3	1.3				62
5.5	1.5	1.3	1.3	1.2	1.2	1.1				73
5	1.3	1.1	1.1	1.1	1.0	1.0	0.9			87
4.5	1.1	1.0	1.0	0.9	0.9	0.9	0.8	0.8		107
4	1.0	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6	139
3.5	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	↑
3	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	↑
2.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	139

model CTT02　Clamping force　$F=(P-1.16)/(2.46+0.0116\times LH)$

Hydraulic pressure MPa	Cylinder force kN	Clamping force kN Clamp arm length LH mm								Max. arm length Max. LH mm
		35	40	50	60	80	100	120	140	
7	2.4	2.0	2.0	1.9	1.9					78
6.5	2.2	1.9	1.8	1.8	1.7	1.6	Nonusable range			89
6	2.0	1.7	1.7	1.6	1.5	1.4	1.3			104
5.5	1.8	1.5	1.5	1.4	1.4	1.3	1.2	1.1		123
5	1.6	1.3	1.3	1.3	1.2	1.1	1.1	1.0	0.9	152
4.5	1.4	1.2	1.1	1.1	1.1	1.0	0.9	0.9	0.8	↑
4	1.2	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	↑
3.5	1.0	0.8	0.8	0.8	0.7	0.7	0.6	0.6	0.6	↑
3	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	↑
2.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	152

model CTT04　Clamping force　$F=(P-1.51)/(1.60+0.00664\times LH)$

Hydraulic pressure MPa	Cylinder force kN	Clamping force kN Clamp arm length LH mm								Max. arm length Max. LH mm
		40	50	60	80	100	120	140	160	
7	3.4	2.9	2.8	2.7	2.6	2.4	Nonusable range			116
6.5	3.1	2.7	2.6	2.5	2.3	2.2	2.1			135
6	2.8	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.7	161
5.5	2.5	2.1	2.1	2.0	1.9	1.8	1.7	1.6	1.5	199
5	2.2	1.9	1.8	1.7	1.6	1.5	1.5	1.4	1.3	↑
4.5	1.9	1.6	1.5	1.5	1.4	1.3	1.2	1.2	1.1	↑
4	1.6	1.3	1.3	1.2	1.2	1.1	1.0	1.0	0.9	↑
3.5	1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.7	↑
3	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	↑
2.5	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	199

model CTT06　Clamping force　$F=(P-1.25)/(1.12+0.00422\times LH)$

Hydraulic pressure MPa	Cylinder force kN	Clamping force kN Clamp arm length LH mm								Max. arm length Max. LH mm
		50	60	80	100	120	140	160	180	
7	5.1	4.3	4.2	3.9	3.7					111
6.5	4.7	3.9	3.8	3.6	3.4	3.2	Nonusable range			127
6	4.2	3.6	3.5	3.3	3.1	2.9	2.8			149
5.5	3.8	3.2	3.1	2.9	2.8	2.6	2.5	2.4	2.3	180
5	3.3	2.8	2.7	2.6	2.4	2.3	2.2	2.1	2.0	226
4.5	2.9	2.4	2.4	2.2	2.1	2.0	1.9	1.8	1.7	↑
4	2.5	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.5	↑
3.5	2.0	1.7	1.6	1.5	1.5	1.4	1.3	1.3	1.2	↑
3	1.6	1.3	1.3	1.2	1.1	1.1	1.0	1.0	0.9	↑
2.5	1.1	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.7	226

model CTT10　Clamping force　$F=(P-1.26)/(0.706+0.00228\times LH)$

Hydraulic pressure MPa	Cylinder force kN	Clamping force kN Clamp arm length LH mm								Max. arm length Max. LH mm
		60	80	100	120	140	160	180	200	
7	8.1	6.8	6.5	6.1	5.9					135
6.5	7.4	6.2	5.9	5.6	5.3	5.1	Nonusable range			155
6	6.7	5.6	5.3	5.1	4.8	4.6	4.4	4.2		182
5.5	6.0	5.0	4.8	4.5	4.3	4.1	4.0	3.8	3.6	221
5	5.3	4.4	4.2	4.0	3.8	3.6	3.5	3.4	3.2	↑
4.5	4.6	3.8	3.6	3.5	3.3	3.2	3.0	2.9	2.8	↑
4	3.9	3.3	3.1	2.9	2.8	2.7	2.6	2.5	2.4	↑
3.5	3.2	2.7	2.5	2.4	2.3	2.2	2.1	2.0	1.9	↑
3	2.5	2.1	2.0	1.9	1.8	1.7	1.6	1.6	1.5	↑
2.5	1.8	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.1	221

model CTT16　Clamping force　$F=(P-1.28)/(0.429+0.00128\times LH)$

Hydraulic pressure MPa	Cylinder force kN	Clamping force kN Clamp arm length LH mm								Max. arm length Max. LH mm
		70	80	100	120	140	160	180	200	
7	13.3	11.0	10.8	10.3	9.8					132
6.5	12.2	10.1	9.8	9.4	9.0	8.6	Nonusable range			151
6	11.0	9.1	8.9	8.5	8.1	7.8	7.4			176
5.5	9.8	8.1	7.9	7.6	7.2	6.9	6.7	6.4	6.2	212
5	8.7	7.2	7.0	6.7	6.4	6.1	5.9	5.6	5.4	264
4.5	7.5	6.2	6.1	5.8	5.5	5.3	5.1	4.9	4.7	↑
4	6.3	5.2	5.1	4.9	4.7	4.5	4.3	4.1	4.0	↑
3.5	5.2	4.3	4.2	4.0	3.8	3.7	3.5	3.4	3.2	↑
3	4.0	3.3	3.2	3.1	3.0	2.8	2.7	2.6	2.5	↑
2.5	2.8	2.4	2.3	2.2	2.1	2.0	1.9	1.9	1.8	264

model CTT25　Clamping force　$F=(P-1.44)/(0.271+0.000658\times LH)$

Hydraulic pressure MPa	Cylinder force kN	Clamping force kN Clamp arm length LH mm								Max. arm length Max. LH mm
		90	100	120	140	160	180	200	240	
7	20.5	16.8	16.5	15.9	15.3	14.8	14.3	Nonusable range		180
6.5	18.7	15.3	15.0	14.5	13.9	13.4	13.0	12.6		208
6	16.8	13.8	13.5	13.0	12.6	12.1	11.7	11.3	10.6	246
5.5	15.0	12.3	12.1	11.6	11.2	10.8	10.4	10.1	9.5	300
5	13.1	10.8	10.6	10.2	9.8	9.5	9.1	8.8	8.3	↑
4.5	11.3	9.3	9.1	8.7	8.4	8.1	7.9	7.6	7.1	↑
4	9.4	7.8	7.6	7.3	7.1	6.8	6.6	6.4	6.0	↑
3.5	7.6	6.2	6.1	5.9	5.7	5.5	5.3	5.1	4.8	↑
3	5.8	4.7	4.6	4.5	4.3	4.1	4.0	3.9	3.6	↑
2.5	3.9	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	300

● See the formula shown on **page →35** for clamping force calculation when pin rod type (CTT□-□P) is selected.

Swing speed adjustment

Swing time is restricted by the mass and length of the clamp arm (moment of inertia) since the 90° swing action impacts the cam shaft.

1. Calculate the moment of inertia according to the arm length and mass.

2. Adjust swing speed with flow control valve to ensure that 90° swing time of the clamp arm is greater than the shortest swing time in the graph shown below.

● The cam groove may be damaged in case the swing speed is set at the nonusable range in the graph.

90°swing stroke

### Example of calculation for moment of inertia

$$I = \frac{1}{12} m_1(4A_1^2 + B^2) + \frac{1}{12} m_2(4A_2^2 + B^2)$$

I : Moment of inertia (kg·m²)

m: Mass (kg)

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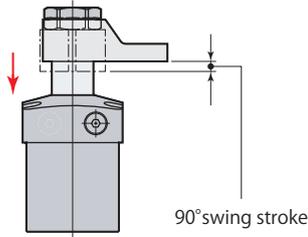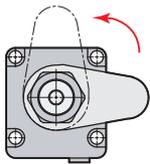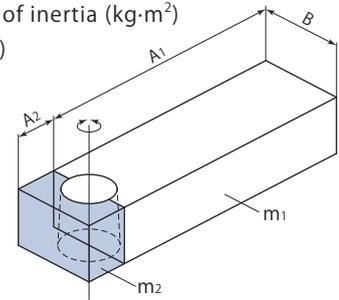
model CTT01

Shortest swing time calculation formula $t = \sqrt{\dfrac{I}{0.0270}}$

Shortest swing time
Nonusable range
Swing time (s)
Moment of inertia (kg·m²)
0.00108

---
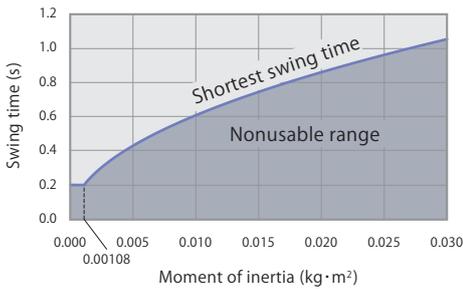
model CTT02

Shortest swing time calculation formula $t = \sqrt{\dfrac{I}{0.0305}}$

Shortest swing time
Nonusable range
Swing time (s)
Moment of inertia (kg·m²)
0.00122

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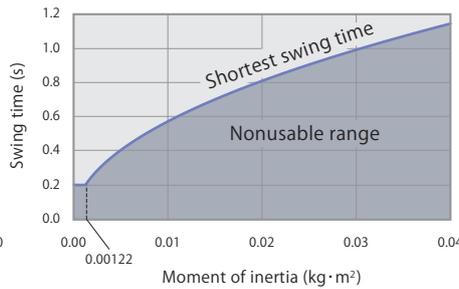
model CTT04

Shortest swing time calculation formula $t = \sqrt{\dfrac{I}{0.0668}}$

Shortest swing time
Nonusable range
Swing time (s)
Moment of inertia (kg·m²)
0.00267

---
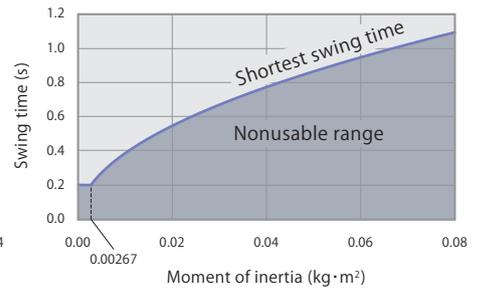
model CTT06

Shortest swing time calculation formula $t = \sqrt{\dfrac{I}{0.0730}}$

Shortest swing time
Nonusable range
Swing time (s)
Moment of inertia (kg·m²)
0.00292

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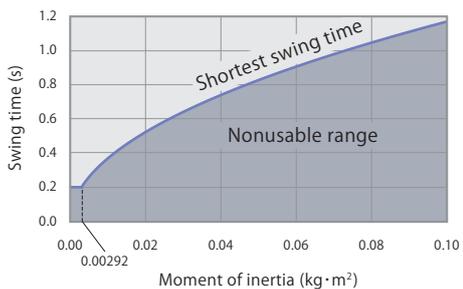
model CTT10

Shortest swing time calculation formula $t = \sqrt{\dfrac{I}{0.141}}$

Shortest swing time
Nonusable range
Swing time (s)
Moment of inertia (kg·m²)
0.00564

---
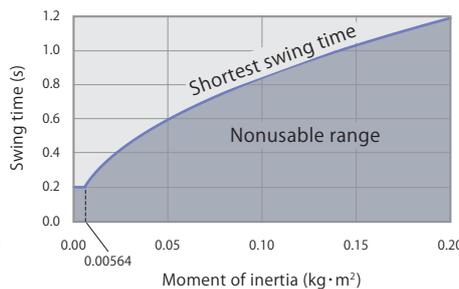
model CTT16

Shortest swing time calculation formula $t = \sqrt{\dfrac{I}{0.233}}$

Shortest swing time
Nonusable range
Swing time (s)
Moment of inertia (kg·m²)
0.00932

---
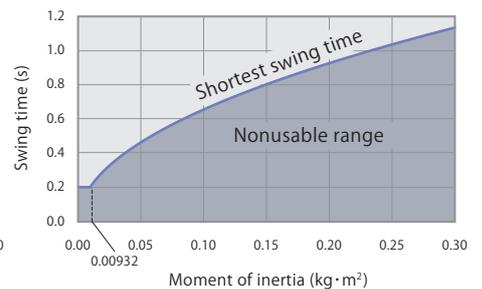
model CTT25

Shortest swing time calculation formula $t = \sqrt{\dfrac{I}{0.389}}$

Shortest swing time
Nonusable range
Swing time (s)
Moment of inertia (kg·m²)
0.0156

CTT□-□ Single acting Swing clamp Standard model 7MPa Single acting

Dimensions

Unclamp

4–Z

Clamping hydraulic port Y1

øAA H8

Clamp

øAA H8

Clamp

T

R4

□F

B

E

D

C

Y2 (plug projection depth)

Unclamp

This diagram indicates the arm positioning pin groove at unclamped condition.
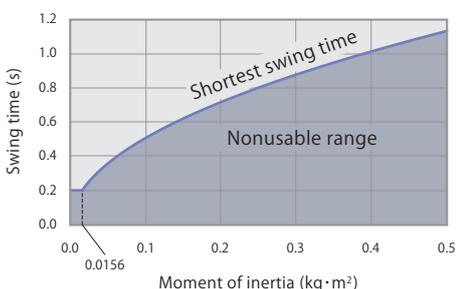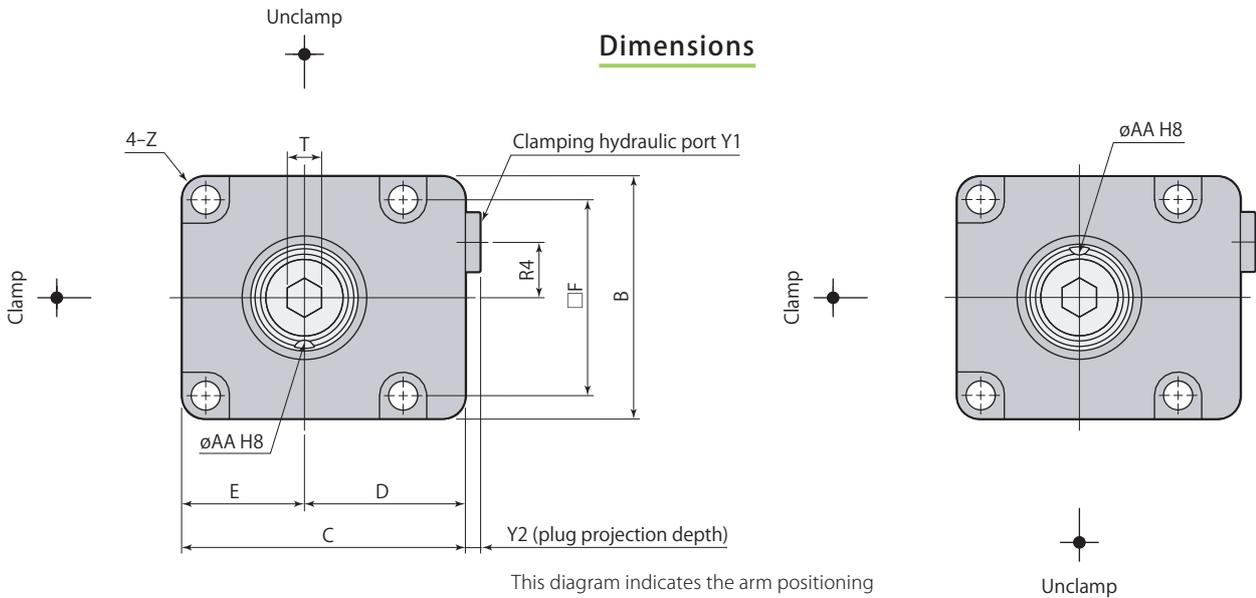
Swing direction L (counter-clockwise)

Swing direction R (clockwise)

Full stroke

AC

U

Positioning pin groove
for clamp arm

Taper 1/10

N

4-øX

øH

M

J

15°

øY3

L

V

R0.4

R1

4-øW

O-ring

A

K±0.4

J1

G1

øG2

øG 0 −0.2

Unclamp

Stroke end

S

P

Hex nut for arm mount

R2

Clamping hydraulic port

R3
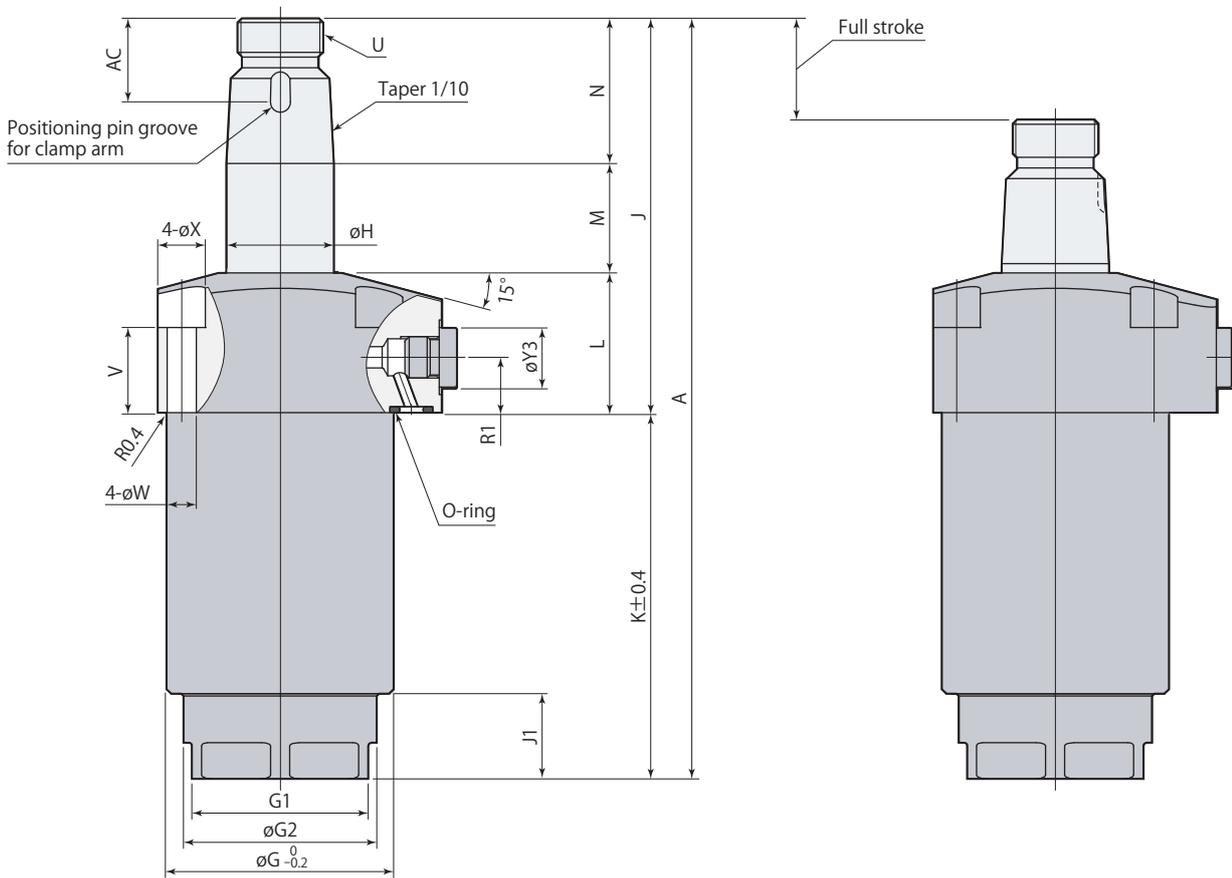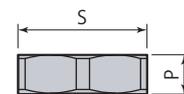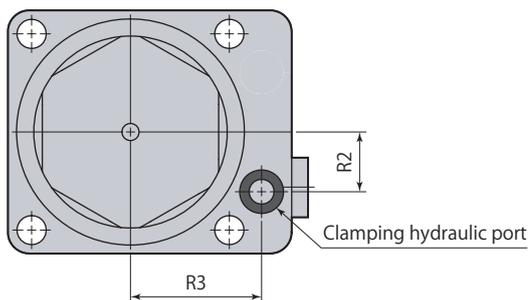
- Hex nut for arm mount is included.
- Refer to **page →40** for the details of perfect nut.
- Clamp arm, positioning pin and mounting screws are not included.

CTT□-□	Single acting Swing clamp Standard model	7MPa	Single acting

mm

| Model	CTT01-□	CTT02-□	CTT04-□	CTT06-□	CTT10-□	CTT16-□	CTT25-□
A	129	136	161.5	178.5	203.5	231.5	284
B	38	45	50	57	70	86	108
C	48	55	60	66	82	96	120
D	29	32.5	35	37.5	47	53	66
E	19	22.5	25	28.5	35	43	54
F	30.5	35	40	46	56	68	88
øG	35	39	47	53	63	78	100
G1 (width across flats)	24	30	36	41	50	60	75
øG2	26	33	40	45	55	66	85
øH	14	18	22.4	25	30	35.5	45
J	68.5	77	87.5	92.5	101.5	117.5	147
J1	12	5	13	20	25	30	40
K	60.5	59	74	86	102	114	137
L	28.5	29	31	33	36	40.5	51.5
M	17.5	20	22.5	25.5	28.5	30	37.5
N	22.5	28	34	34	37	47	58
P	6.5	8	9	9	10	12	13
R1	12.5	12.5	12.5	12.5	14	14	21
R2	9	11	12	14	18	22.5	25
R3	22.5	25	28	30.5	36	42	57
R4	8.1	10	11	13	15	19	25
S (nut width across flats)	19	22	27	30	36	46	55
T (hex socket)	5	6	6	8	8	10	14
U	M12×1.5	M14×1.5	M18×1.5	M20×1.5	M24×1.5	M30×1.5	M39×1.5
V	20	19.5	20	20	19.5	20	26
øW	4.3	5.5	5.5	6.8	9	11	14
øX	8	9.5	9.5	11	14	17.5	20
Y1	G1/8	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8
Y2	3.8	3.8	3.8	3.8	4.8	4.8	4.8
øY3	14	14	14	14	19	19	22
Z	R3	R3	R3	R5	R6	R7	R10
øAA (pin groove diameter)	$3^{+0.014}_{0}$	$4^{+0.018}_{0}$	$4^{+0.018}_{0}$	$5^{+0.018}_{0}$	$6^{+0.018}_{0}$	$6^{+0.018}_{0}$	$6^{+0.018}_{0}$
AC	15.5	18.5	19.5	19.5	22.5	24.5	27.5
Positioning pin (dowel pin)	ø3(h8)×8	ø4(h8)×10	ø4(h8)×10	ø5(h8)×10	ø6(h8)×12	ø6(h8)×12	ø6(h8)×14
O-ring (fluorocarbon hardness Hs90)	P7	P7	P7	P7	P8	P8	P10
Taper sleeve	CTH01-TS	CTH02-TS	CTH04-TS	CTH06-TS	CTH10-TS	CTH16-TS	CTH25-TS
Flow control valve (meter-in)*	VCF01	VCF01	VCF01	VCF01	VCF02	VCF02	VCF03
Air bleeding valve*	VCE01	VCE01	VCE01	VCE01	VCE02	VCE02	VCE03

＊：Select the right model of VCF and VCE according to the size of the clamp.

Refer to each page for the details of options.

● Taper sleeve **page →39**　　● Flow control valve **page →52**　　● Air bleeding valve **page →54**

Mounting details
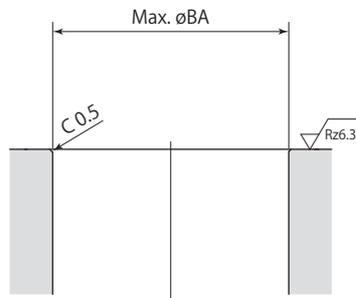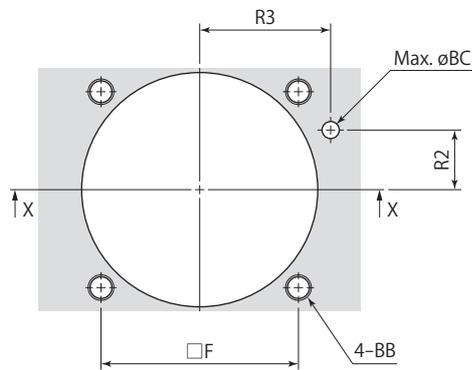
X-X

Rz: ISO4287(1997)

mm

Model	CTT01-□	CTT02-□	CTT04-□	CTT06-□	CTT10-□	CTT16-□	CTT25-□
F	30.5	35	40	46	56	68	88
R2	9	11	12	14	18	22.5	25
R3	22.5	25	28	30.5	36	42	57
øBA	36	40	48	54	64	79	101
BB	M4	M5	M5	M6	M8	M10	M12
øBC	4	4	4	4	6	6	8

CTT□-□P	Single acting Swing clamp Pin rod	7MPa	Single acting

Size
01
02
04
CTT 06 —
10
16
25

Swing direction (when clamping)

L : Counter-clockwise

P : Pin rod

R : Clockwise

□ indicates made to order.

Dimensions

Usage example

LH
HK
HG

Clamp arm   Screw   Leveling spring for holding

Pin   Snap ring

F1   F2

Unclamp   Clamp
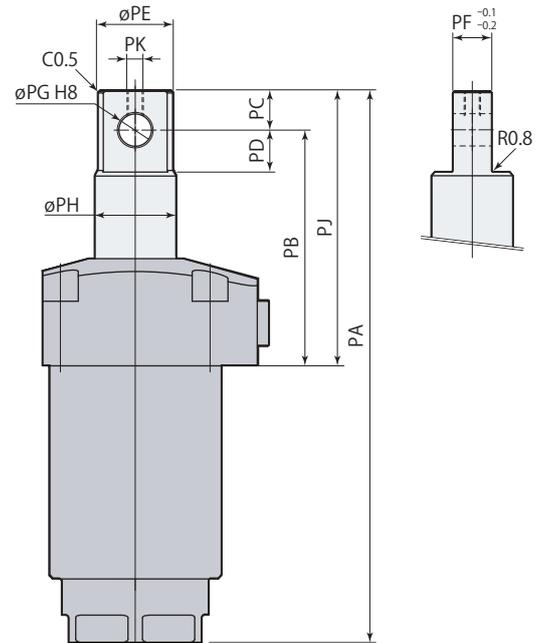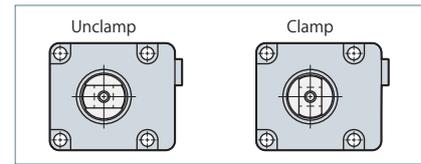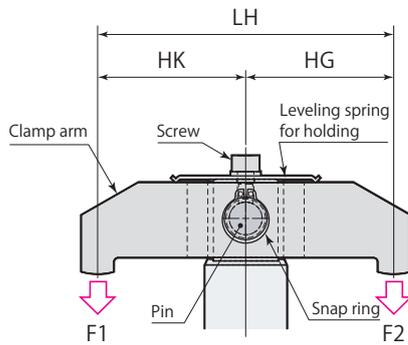
Clamping performance

Clamping force calculation formula

$$F1 = \frac{HG}{LH} \times \frac{P \text{-} n1}{n2}$$

$$F2 = \frac{HK}{LH} \times \frac{P \text{-} n1}{n2}$$

F1, F2＝Clamping force (kN),
$n1$, $n2$＝Coefficient (refer to right table),
P＝ Hydraulic pressure (MPa),
HG, HK＝Distance from center of piston to clamping point (mm), LH＝(mm)

| Model	Coefficient $n1$	Coefficient $n2$
CTT01-□P	1.10	2.97
CTT02-□P	1.16	2.46
CTT04-□P	1.51	1.60
CTT06-□P	1.25	1.12
CTT10-□P	1.26	0.706
CTT16-□P	1.28	0.429
CTT25-□P	1.44	0.271

● This diagram indicates unclamped condition. Direction of pin hole will be hydraulic port side at the time of clamping.

● Clamp arm, pin and snap ring are not included. Customers must arrange for them.

● Thread at top portion of the rod is for attaching a leveling spring. Screw and leveling spring are not included.

● Refer to specifications (**page →29**), dimensions (**page →32**) for other specifications and dimensions that are not shown in the diagram.

mm

Model	CTT01-□P	CTT02-□P	CTT04-□P	CTT06-□P	CTT10-□P	CTT16-□P	CTT25-□P
PA	125	126.5	150	171	197	225	276.5
PB	56.5	59.5	66	73	81	92	115.5
PC	8	8	10	12	14	19	24
PD	9	9	11	13	15	20	25
øPE	12	16	20.4	23	28	33.5	43
PF	8	8	10	12	16	18	22
øPG	$6^{+0.018}_{0}$	$6^{+0.018}_{0}$	$8^{+0.022}_{0}$	$10^{+0.022}_{0}$	$12^{+0.027}_{0}$	$16^{+0.027}_{0}$	$20^{+0.033}_{0}$
øPH	14	18	22.4	25	30	35.5	45
PJ	64.5	67.5	76	85	95	111	139.5
PK	M3×0.5	M3×0.5	M4×0.7	M5×0.8	M6×1	M6×1	M8×1.25
Mass	0.7 kg	0.8 kg	1.3 kg	1.8 kg	3.0 kg	4.9 kg	9.5 kg

CTT□-□N□	Single acting　Swing clamp　Swing angle 30°, 45°, 60°	7MPa	Single acting

Size

01
02
04
CTT 06 —
10
16
25

Swing direction
(when clamping)

L : Counter-clockwise

R : Clockwise

N30 : Swing angle 30°

N45 : Swing angle 45°

N60 : Swing angle 60°

Swing angle

CTT□-□N30

Swing angle 30°

R：Clockwise　　L：Counter-clockwise

CTT□-□N45

Swing angle 45°

R：Clockwise　　L：Counter-clockwise

CTT□-□N60

Swing angle 60°

R：Clockwise　　L：Counter-clockwise
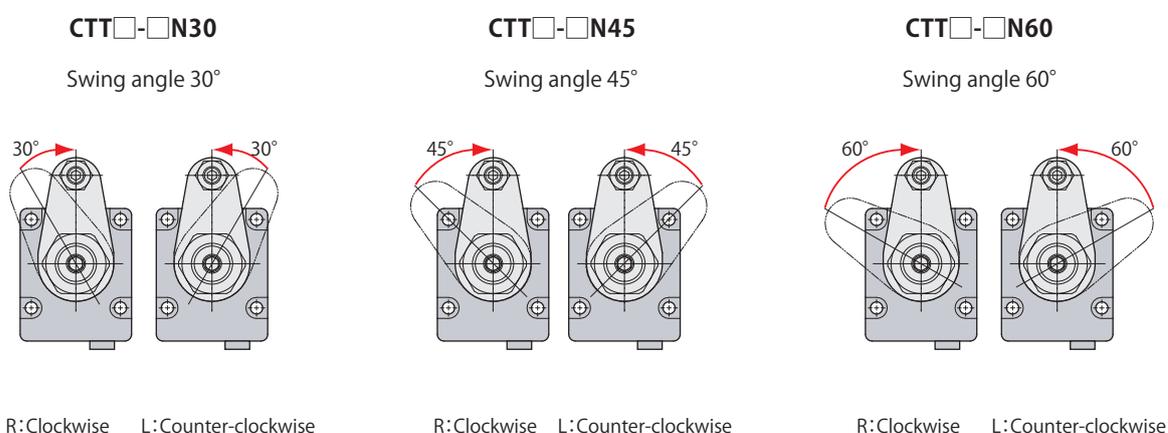
Specifications

Model		CTT01-□N□			CTT02-□N□			CTT04-□N□			CTT06-□N□		
Swing angle		30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°
Full stroke	mm	11.8	12.7	13.7	13.0	14.3	15.5	14.3	15.8	17.4	16.8	18.4	20.1
Swing stroke	mm	3.8	4.7	5.7	5.0	6.3	7.5	6.3	7.8	9.4	6.8	8.4	10.1
Clamp stroke	mm	8			8			8			10		
Cylinder capacity (clamp)	cm³	4.0	4.3	4.6	5.3	5.8	6.3	8.9	9.9	10.8	15.0	16.5	18.0
Return spring force (unclamp)	kN	0.28	0.27	0.26	0.36	0.34	0.32	0.66	0.62	0.58	0.88	0.85	0.81

Model		CTT10-□N□			CTT16-□N□			CTT25-□N□		
Swing angle		30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°
Full stroke	mm	18.3	20.3	22.4	19.3	21.6	23.9	24.5	27.4	30.3
Swing stroke	mm	8.3	10.3	12.4	9.3	11.6	13.9	11.5	14.4	17.3
Clamp stroke	mm	10			10			13		
Cylinder capacity (clamp)	cm³	25.9	28.8	31.7	44.8	50.2	55.6	90.4	101.0	111.6
Return spring force (unclamp)	kN	1.38	1.32	1.25	2.26	2.15	2.03	3.86	3.62	3.39

● Refer to **page →29** for the specifications of products that are not listed on this page.

CTT□-□N□	Single acting Swing clamp Swing angle 30°, 45°, 60°	7MPa	Single acting

Dimensions

Swing direction L
(counter-clockwise)

Positioning pin groove
Clamp
Unclamp

Swing direction R
(clockwise)

Unclamp
Clamp
Positioning pin groove
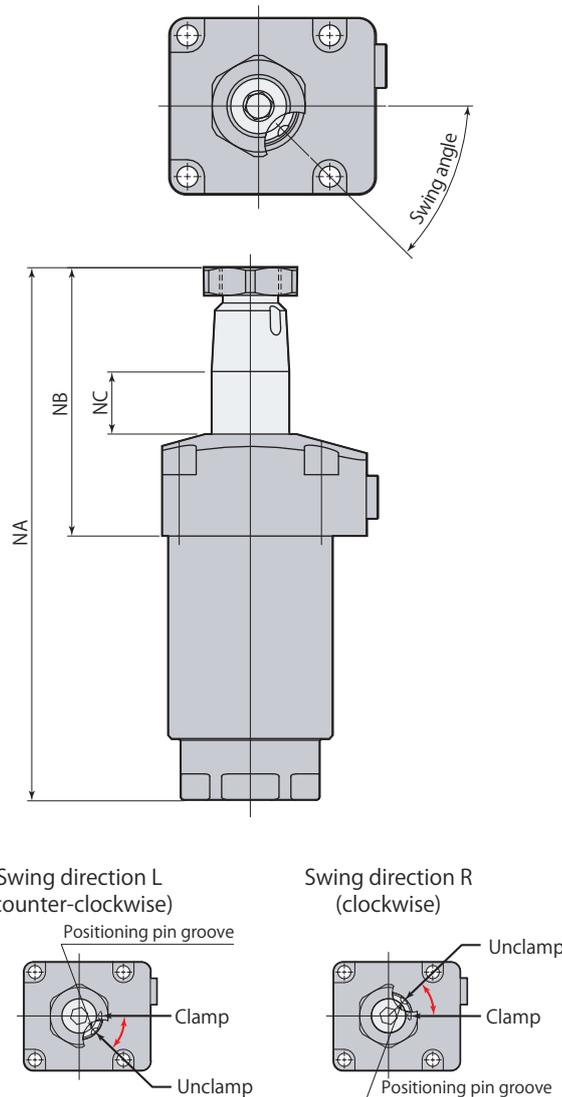
● This diagram indicates unclamped condition of swing direction L (L stands for counter-clockwise).
  Direction of positioning pin groove will be hydraulic port side at the time of clamping.

● Refer to **page →32** for the dimensions of products that are not listed on this page.

mm

Model	CTT01-□N□			CTT02-□N□			CTT04-□N□			CTT06-□N□		
Swing angle	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°
NA	124.8	125.7	126.7	131.0	132.3	133.5	155.3	156.8	158.4	171.8	173.4	175.1
NB	64.3	65.2	66.2	72.0	73.3	74.5	81.3	82.8	84.4	85.8	87.4	89.1
NC	13.3	14.2	15.2	15.0	16.3	17.5	16.3	17.8	19.4	18.8	20.4	22.1

mm

Model	CTT10-□N□			CTT16-□N□			CTT25-□N□		
Swing angle	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°	30°±3°	45°±3°	60°±3°
NA	195.3	197.3	199.4	222.3	224.6	226.9	272.5	275.4	278.3
NB	93.3	95.3	97.4	108.3	110.6	112.9	135.5	138.4	141.3
NC	20.3	22.3	24.4	20.8	23.1	25.4	26.0	28.9	31.8

Clamp arm mounting details

Clamp arm is not included. Manufacture a clamp arm with the dimensions shown in the table below.

*：No need to machine the pin groove (E, øF, G) unless positioning pin is used for the arm.
The positioning pin enables a clamp arm to locate on the clamp firmly and easily.

mm

Swing clamp	CTT01	CTT02	CTT04	CTT06	CTT10	CTT16	CTT25
øA	$14\ ^{-0.016}_{-0.034}$	$18\ ^{-0.016}_{-0.034}$	$22.4\ ^{-0.020}_{-0.041}$	$25\ ^{-0.020}_{-0.041}$	$30\ ^{-0.020}_{-0.041}$	$35.5\ ^{-0.025}_{-0.050}$	$45\ ^{-0.025}_{-0.050}$
øB	12.4	16	19.9	22.5	27.3	32	40.5
C	16	20	25	25	27	35	45
E	9	10.5	10.5	10.5	12.5	12.5	14.5
øF (pin groove diameter)	$3\ ^{+0.014}_{0}$	$4\ ^{+0.018}_{0}$	$4\ ^{+0.018}_{0}$	$5\ ^{+0.018}_{0}$	$6\ ^{+0.018}_{0}$	$6\ ^{+0.018}_{0}$	$6\ ^{+0.018}_{0}$
G	7.55	9.1	11.1	12.6	15.1	18.1	22.6

CTH□-TS	Taper sleeve	Option

Taper sleeve

Size

| 01 |
| 02 |
| 04 |
CTH 06 — TS : Taper sleeve
| 10 |
| 16 |
| 25 |
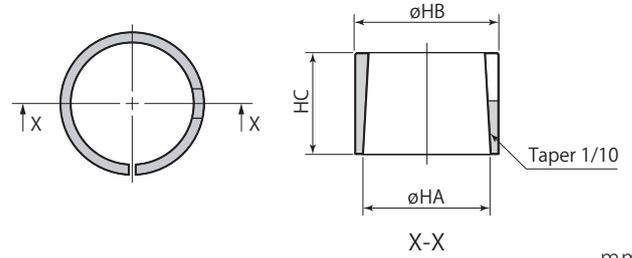
Taper 1/10

X-X

mm

Taper sleeve	CTH01-TS	CTH02-TS	CTH04-TS	CTH06-TS	CTH10-TS	CTH16-TS	CTH25-TS
Applicable swing clamp	CTT01	CTT02	CTT04	CTT06	CTT10	CTT16	CTT25
øHA	14	18	22.4	25	30	35.5	45
øHB	16	20	25	28	34	40	49
HC	13	16	21	20	22	29	38

Clamp arm mounting details

(Using taper sleeve)

Clamp arm is not included. Manufacture a clamp arm with the dimensions shown in the table below.

*G±0.05   *øF H8

Positioning pin groove *

Y-Y

∗：No need to machine the pin groove (E, øF, G) unless positioning pin is used for the arm. The positioning pin enables a clamp arm to locate on the clamp firmly and easily.

mm

Taper sleeve	CTH01-TS	CTH02-TS	CTH04-TS	CTH06-TS	CTH10-TS	CTH16-TS	CTH25-TS
Applicable swing clamp	CTT01	CTT02	CTT04	CTT06	CTT10	CTT16	CTT25
øA	$16^{+0.027}_{0}$	$20^{+0.033}_{0}$	$25^{+0.033}_{0}$	$28^{+0.033}_{0}$	$34^{+0.039}_{0}$	$40^{+0.039}_{0}$	$49^{+0.039}_{0}$
øB	13	17	21	24	28.5	34	42
C	16	20	25	25	27	35	45
D	13	16	21	20	22	29	38
E	9	10.5	10.5	10.5	12.5	12.5	14.5
øF (pin groove diameter)	$3^{+0.014}_{0}$	$4^{+0.018}_{0}$	$4^{+0.018}_{0}$	$5^{+0.018}_{0}$	$6^{+0.018}_{0}$	$6^{+0.018}_{0}$	$6^{+0.018}_{0}$
G	7.55	9.1	11.1	12.6	15.1	18.1	22.6