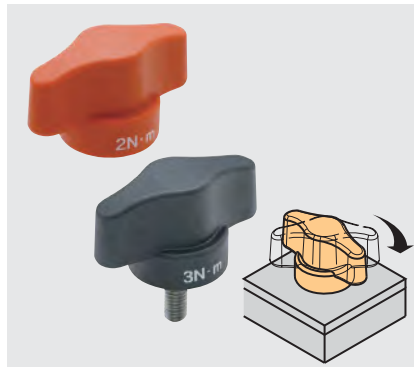


Torque Limiting Knobs & Handles



Knobs



TORQUE LIMITING KNOBS

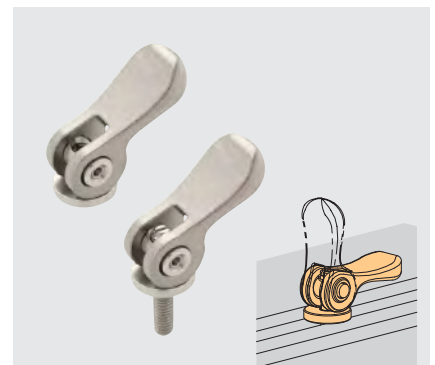
Part No. CTK

Clamping Handles



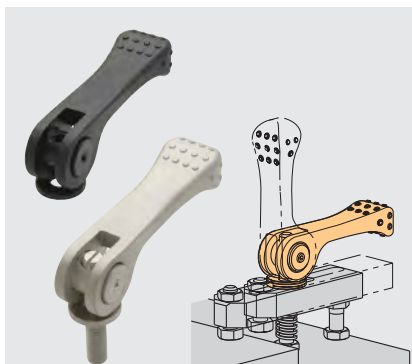
ADJUSTABLE-TORQUE
HANDLES

Part No. ATCL



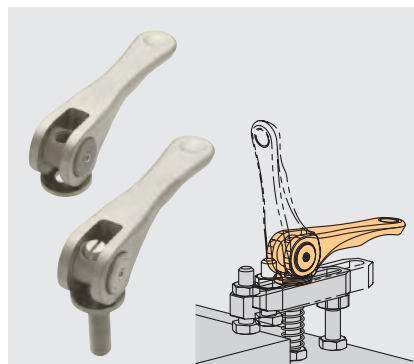
COMPACT CAM HANDLES

Part No. QLCCS



CAM HANDLES

Part No. QLCA



CAM HANDLES

Part No. QLCL

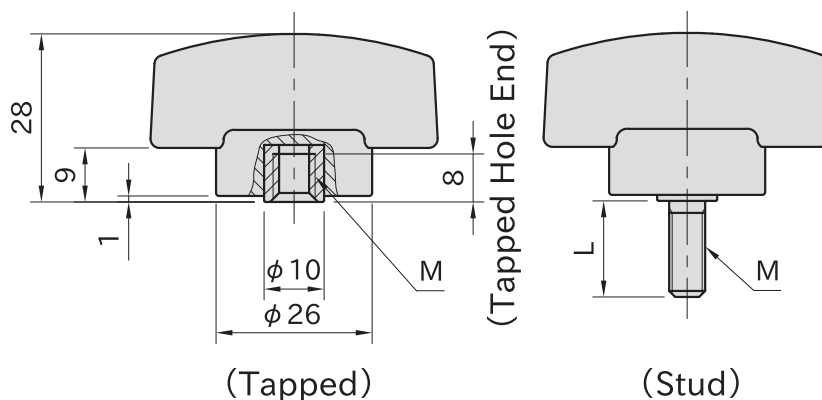
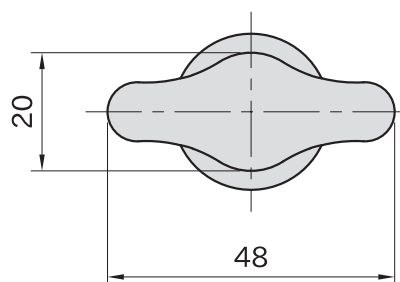




(Tapped)



(Stud)



★ **Key Point** — Tightening end is detectable by sound and touch of a click.

Knob	Insert
Polyamide (glass-fiber reinforced)	S45C steel
Black matte	Electroless nickel plated
Orange matte	

Type	M	Torque (N·m) *	Tightening Force (kN) **
CTK48-5-2	M5×0.8	2	2
CTK48-5-3		3	3
CTK48-6-2	M6×1	2	1.7
CTK48-6-3		3	2.5

*) Torque can vary ±15% (Max).

**) Use these values only as a guide. <Tightening force (kN) = Torque(N·m)/{0.2×d(mm)} d:Nominal diameter of the stud>

■ Tapped

Part Number		Weight (g)
Black	Orange	
CTK48-5-2BK	CTK48-5-2OG	35
CTK48-5-3BK	CTK48-5-3OG	36
CTK48-6-2BK	CTK48-6-2OG	34
CTK48-6-3BK	CTK48-6-3OG	35

■ Stud

Part Number		L	Weight (g)
Black	Orange		
CTK48-5×10-2BK	CTK48-5×10-2OG	10	37
CTK48-5×10-3BK	CTK48-5×10-3OG		38
CTK48-5×16-2BK	CTK48-5×16-2OG	16	38
CTK48-5×16-3BK	CTK48-5×16-3OG		39
CTK48-6×16-2BK	CTK48-6×16-2OG	16	39
CTK48-6×16-3BK	CTK48-6×16-3OG		40
CTK48-6×25-2BK	CTK48-6×25-2OG	25	41
CTK48-6×25-3BK	CTK48-6×25-3OG		42

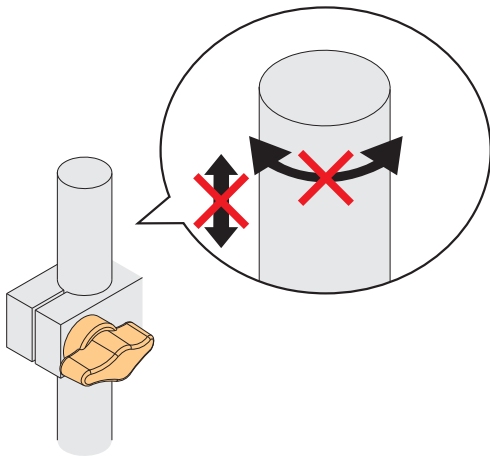
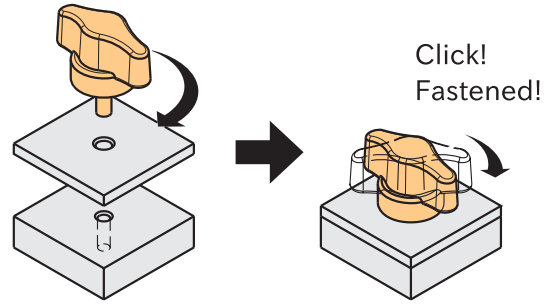
Feature

- Can be tightened with the specified torque.
- The spring and the balls inside provide a touch of click when the knob reaches to the specified torque at the tightening end.
- The knob can keep rotated to the desired position after reaching to the specified torque.

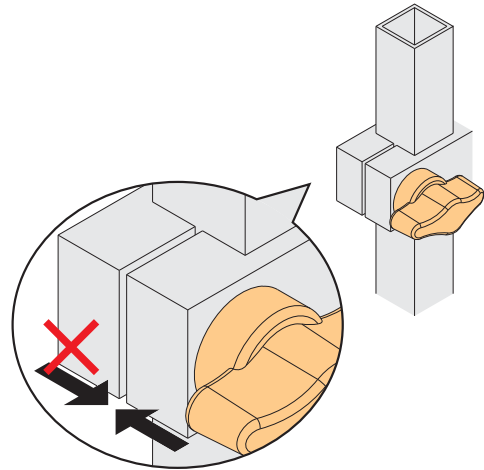
Technical Information

Working temperature : Between 0°C and 80 °C

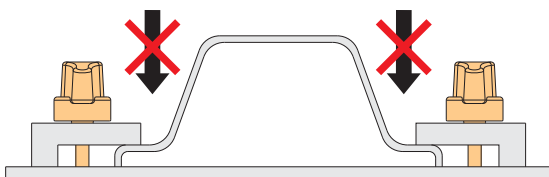
How To Use



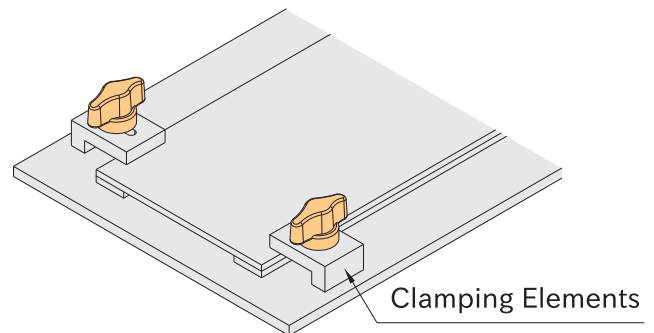
Prevent rotation or slippage.



Prevent deformation or scratch.



Prevent deformation of workpiece.



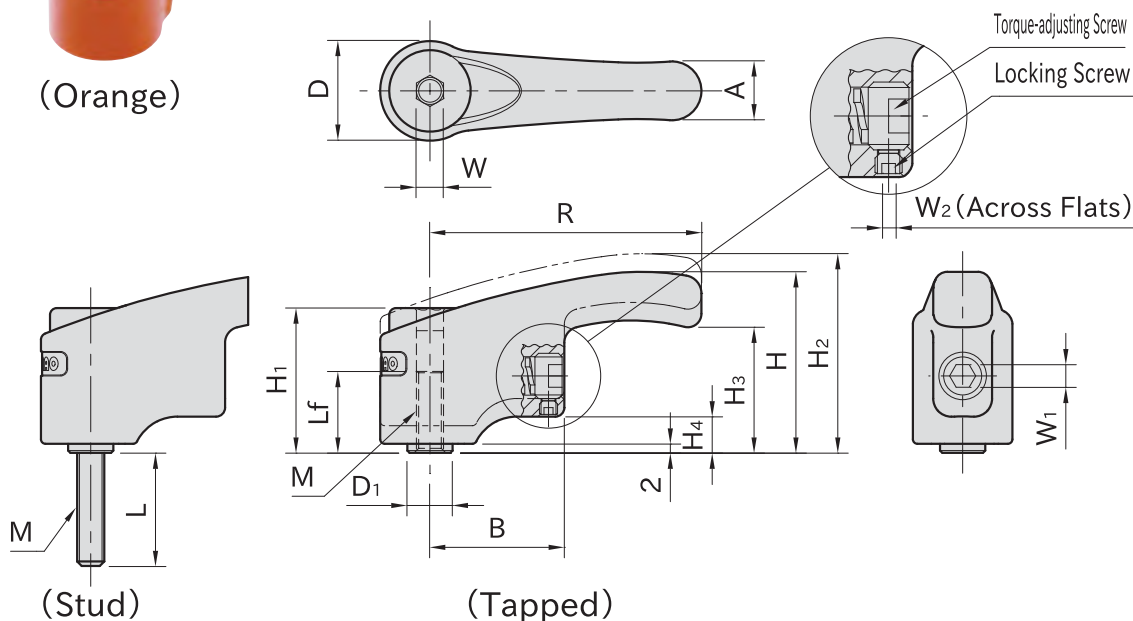
Can be used with clamping elements.

Related Product

ATCL Adjustable-Torque Handles



Handle	Ratchet	Stud
SCM440 steel Quenched and tempered Painted Black, Orange	SCM415 steel Carburized-hardened Black oxide finished	SCM435 steel Quenched and tempered Black oxide finished



Type/Size	R	M	H	D	H ₁	H ₂	D ₁	H ₃	H ₄	A	B	W	W ₁	W ₂	Teeth	Torque Range (N·m)	Tightening Force(kN·*)
ATCL 6	60	M 6X1	40	22	32	44	10	27.5	8	13	30	6	5	2	12	1~3.5	0.8~2.9
ATCL 8	75	M 8X1.25	48	26	38	52.5	13	33	9	15	37	8	6	2.5		2~5.4	1.3~3.4
ATCL10	90	M10X1.5	57	32	45	62.5	16	39.5	10.5	18	39	10				3~8	1.5~4

*) Use this tightening force information as an indication. (Tightening Force(kN) = Torque(N·m) / {0.2×d(mm)} d: nominal screw diameter)

■ Tapped

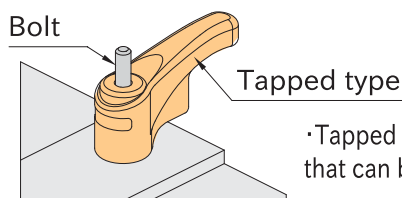
Part Number		Lf	Weight (g)
Black	Orange		
ATCL 6-BK	ATCL 6-OG	18	160
ATCL 8-BK	ATCL 8-OG	22	270
ATCL10-BK	ATCL10-OG	25	445

■ Stud

Part Number		L	Weight (g)
Black	Orange		
ATCL 6X15-BK	ATCL 6X15-OG	15	167
ATCL 6X20-BK	ATCL 6X20-OG	20	168
ATCL 6X25-BK	ATCL 6X25-OG	25	169
ATCL 6X30-BK	ATCL 6X30-OG	30	170
ATCL 8X20-BK	ATCL 8X20-OG	20	282
ATCL 8X25-BK	ATCL 8X25-OG	25	284
ATCL 8X30-BK	ATCL 8X30-OG	30	286
ATCL 8X40-BK	ATCL 8X40-OG	40	290
ATCL10X20-BK	ATCL10X20-OG	20	464
ATCL10X25-BK	ATCL10X25-OG	25	467
ATCL10X30-BK	ATCL10X30-OG	30	470
ATCL10X40-BK	ATCL10X40-OG	40	475

Feature

- The handle is adjustable.
- Handle that allows setting a desired tightening torque.
- When the desired torque is reached, the handle clicks to indicate completed tightening.



• Tapped type has a through hole that can be used with bolts.

How To Use



1. Lift the handle to disengage the teeth from the locking element.



2. Turn the handle to a desired position.



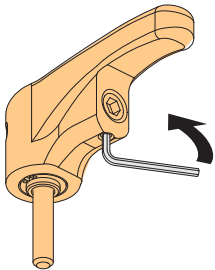
3. When the handle is released, the return spring automatically engages the teeth again for further tightening. The handle can be positioned every 30 degrees.



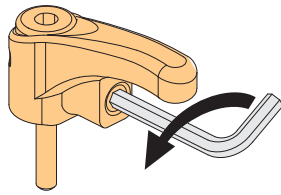
4. Turn the handle to clamp. The handle clicks to indicate completed tightening at desired tightening torque.

How To Set Torque

The preset torque is roughly its maximum tightening torque.

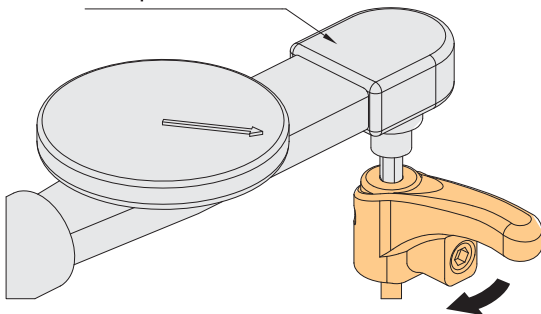


1. Loosen the locking screw by inserting a hex. wrench into the underside of the body.



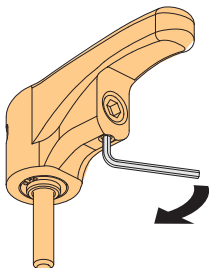
2. Adjust the torque by turning the torque-adjusting screw in the side of the body.

Torque Wrench



3. Measure the torque with a torque wrench.

- Connect a torque wrench to the Adjustable-Torque Handle.
- Apply a load in the tightening direction, and fine adjust the depth of torque-adjusting screw to reach the desired torque when the handle clicks.



4. When the desired torque is reached, tighten the locking screw.

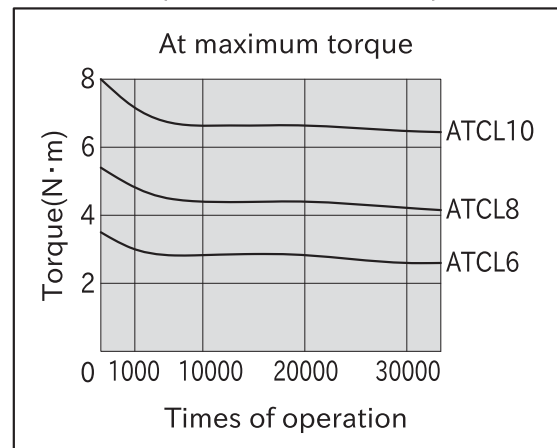
Related Product

- **CTK** Torque Limiting Knobs
- **CP-TCW** ADJUSTABLE-TORQUE WRENCHES

Torque Performance

- For initial several thousand operations, the tightening torque decreases. (See the graph below.) Measure the torque regularly, and fine adjust the depth of torque-adjusting screw when needed.
- The tightening torque can vary. (Max. $\pm 15\%$)
- Not recommended for applications where precise tightening torque is required.

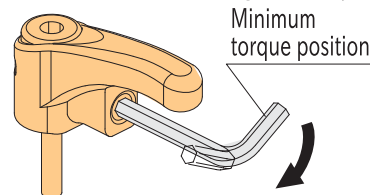
Torque Performance Graph



Note

Adjust the torque-adjusting screw within the torque range. Do not overtighten or overloosen the screw.

Guide for Torque Adjusting



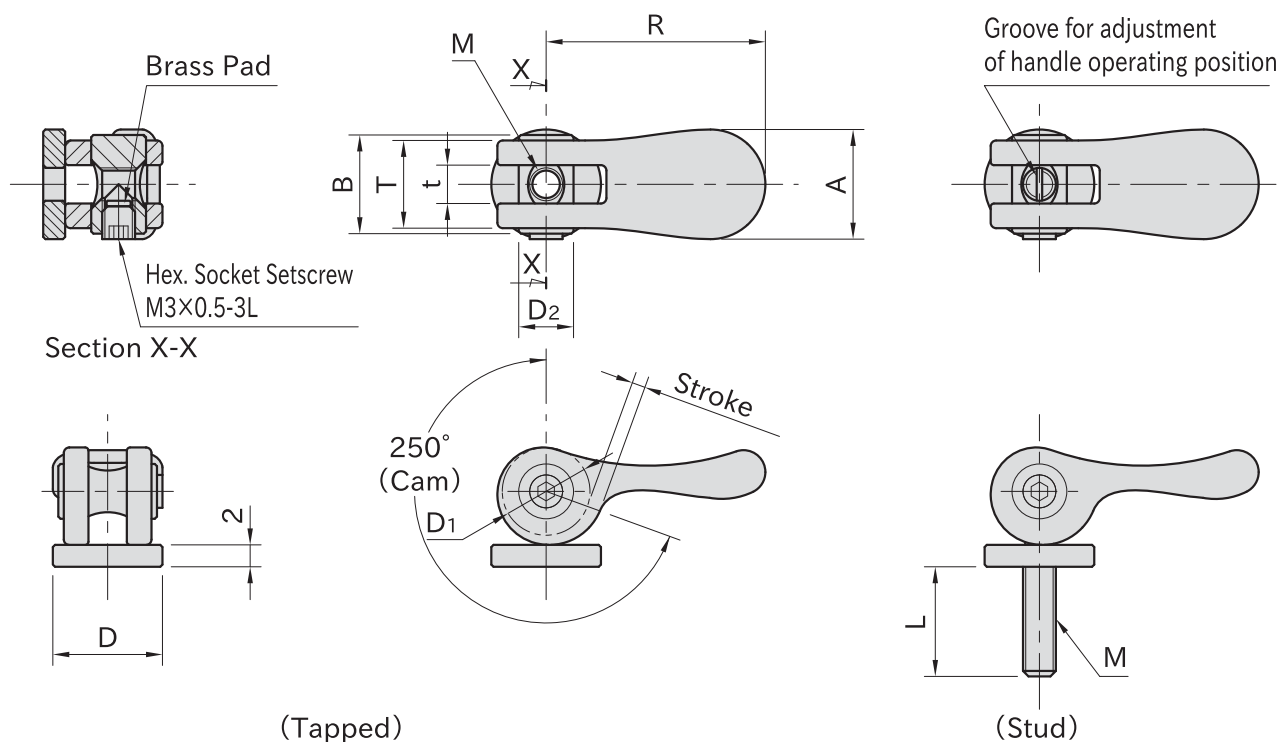
Size	Rotation
ATCL 6	3/4
ATCL 8	1
ATCL10	3/4

- To reach approx. the min torque, loosen the torque adjusting screw to the same end surface level of the body, then tighten it until you feel light touch of stop. (Ensure that the torque adjusting screw does not protrude from the body when loosening it.)
- To reach approx. the max torque, rotate the torque adjusting screw depending on the above table from the approx. min torque as instructed previously.



★ **Key Point** —
Easy clamping and unclamping.

Handle	Ring Nut / Stud	Washer
SCS13 stainless steel (Equivalent to SUS304)	SUS303 stainless steel	SUS304 stainless steel



Size		D ₁	R	A	D	M	T	t	B	D ₂
QLCCS	03	8	20	10	10	M3×0.5	8	3.5	9	5
	04	10	25	13	12	M4×0.7	10	4.5	11	6
	05	12	32	16	14	M5×0.8	12	5.5	13	8

Size		Clamping Stroke	Allowable Operating Load (N)	Clamping Force (N)	Clamping Mechanism
QLCCS	03	1.2	30	400	Spiral Cam Cam Angle : 4°
	04	1.5	40	500	
	05	1.8	50	700	

QLCCS (Tapped)

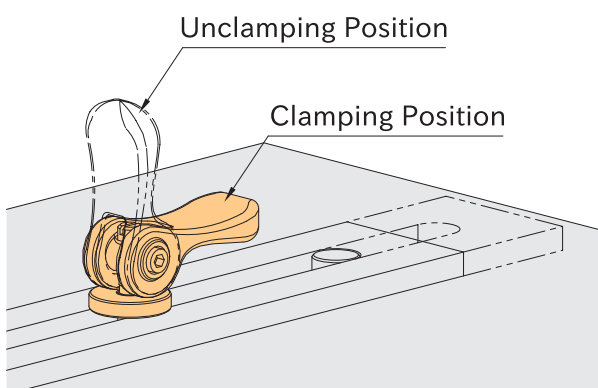
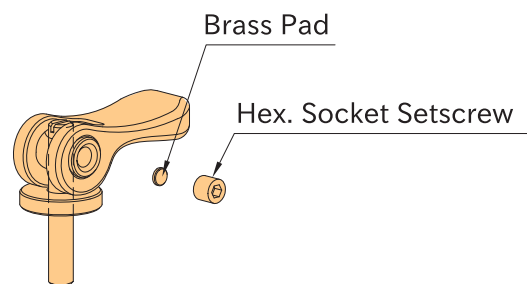
Part Number	Weight (g)
QLCCS-03	7
QLCCS-04	13
QLCCS-05	23

QLCCS (Stud)

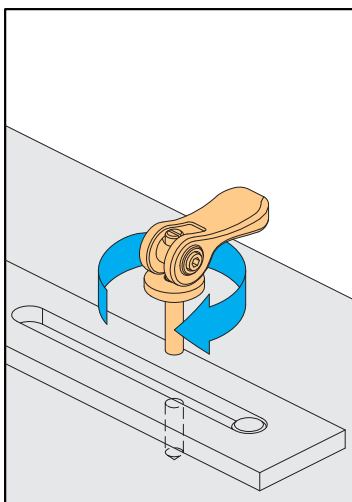
Part Number	L	Weight (g)
QLCCS-03×10	10	8
QLCCS-03×15	15	
QLCCS-04×15	15	16
QLCCS-04×20	20	
QLCCS-04×30	30	17
QLCCS-04×40	40	18
QLCCS-05×20	20	28
QLCCS-05×30	30	30
QLCCS-05×40	40	31
QLCCS-05×50	50	33

Feature

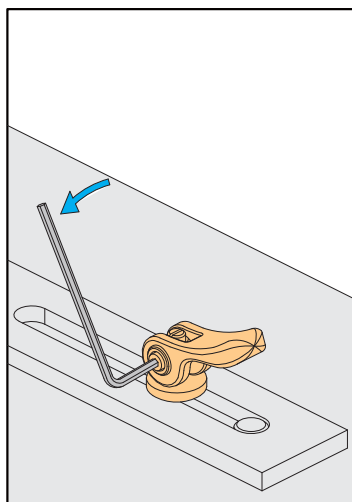
The handle position of Stud-type Compact Cam Handles can be set to a desired direction.

How To Use**Application Example****Fixing the Cam Handle**

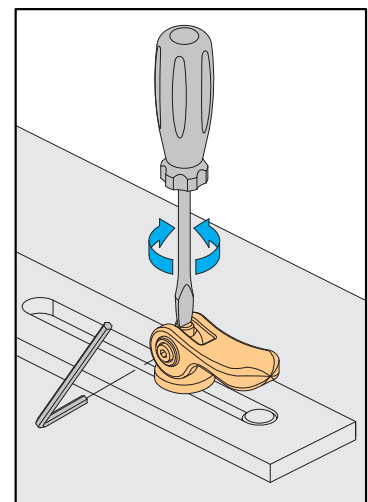
Use a brass pad and a hex. socket setscrew included to fix the handle.

How to Mount Stud-type Cam Handles

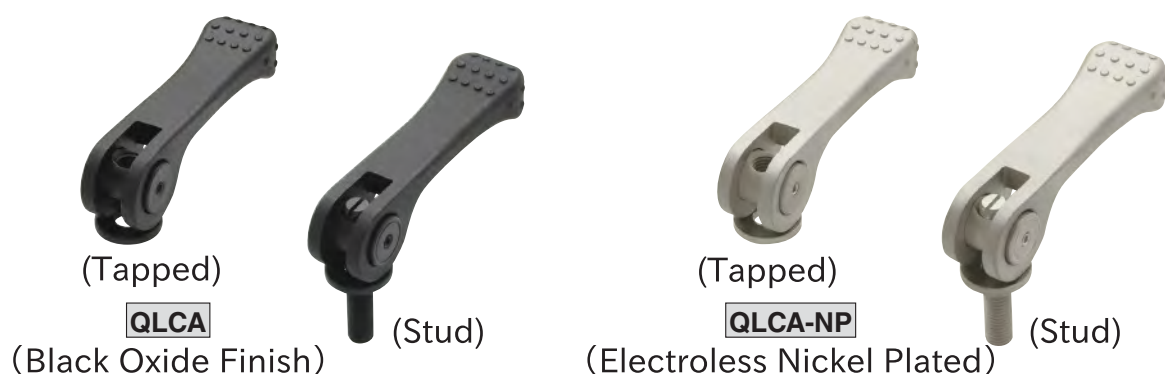
1. Fix the stud to the handle with a brass pad and a hex socket setscrew and screw the Compact Cam Handle to the counterpart.



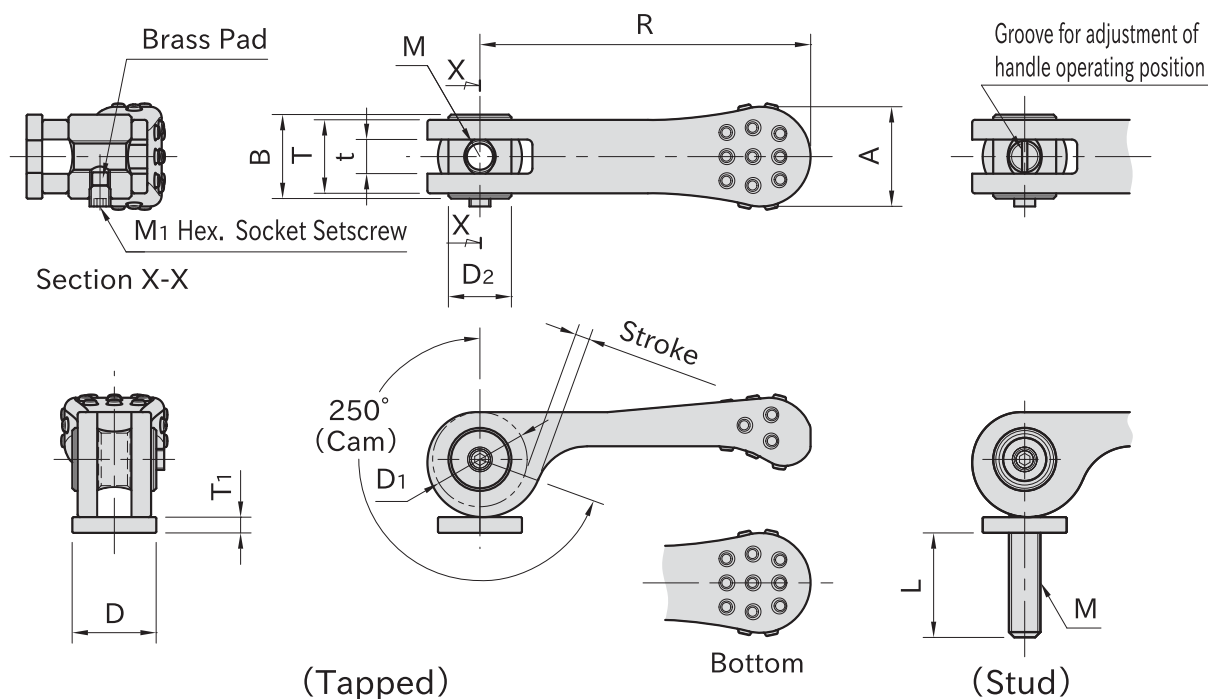
2. Turn the handle to a desired direction and loosen the setscrew.



3. With a flathead screwdriver, adjust the handle to a desired clamping height and the load to fold the handle. Then fix the stud with the setscrew.



Style	Handle	Ring Nut / Washer	Stud
QLCA	SCM440 steel Quenched and tempered Black Oxide Finish	S45C steel Quenched and tempered Black Oxide Finish	SCM435 steel Quenched and tempered Black Oxide Finish
QLCA-NP	SCM440 steel Quenched and tempered Electroless Nickel Plated	S45C steel Quenched and tempered Electroless Nickel Plated	SCM435 steel Quenched and tempered Electroless Nickel Plated



Size	D ₁	R	A	D	T ₁	M	T	t	B	D ₂	M ₁
QLCA QLCA-NP	04	12	40	14	12	M 4×0.7	10	4.5	12	8	M3×0.5-3L
	05	15	50	16	14	M 5×0.8	12	5.5	14	10	
	06	18	63	19	16	M 6×1	14	6.5	16	12	M4×0.7-4L
	08	22	80	24	20	M 8×1.25	18	9	20	15	
	10	28	100	30	25	M10×1.5	23	11	25	18	M5×0.8-5L

Size	Clamping Stroke	Allowable Operating Load (N)	Clamping Force (kN)	Clamping Mechanism
QLCA QLCA-NP	04	1.8	80	Spiral Cam Cam Angle : 4°
	05	2.3	100	
	06	2.7	150	
	08	3.3	200	
	10	4.3	300	

QLCA QLCA-NP (Tapped)

Black Oxide Finish	Electroless Nickel Plated	Weight (g)
Part Number	Part Number	
QLCA-04	QLCA-04-NP	26
QLCA-05	QLCA-05-NP	46
QLCA-06	QLCA-06-NP	80
QLCA-08	QLCA-08-NP	154
QLCA-10	QLCA-10-NP	318

QLCA QLCA-NP (Stud)

Black Oxide Finish	Electroless Nickel Plated	L	Weight (g)
Part Number	Part Number		
QLCA-04×15	QLCA-04×15-NP	15	28
QLCA-04×20	QLCA-04×20-NP	20	29
QLCA-04×30	QLCA-04×30-NP	30	30
QLCA-04×40	QLCA-04×40-NP	40	31
QLCA-05×20	QLCA-05×20-NP	20	51
QLCA-05×30	QLCA-05×30-NP	30	52
QLCA-05×40	QLCA-05×40-NP	40	54
QLCA-05×50	QLCA-05×50-NP	50	55
QLCA-06×20	QLCA-06×20-NP	20	89
QLCA-06×30	QLCA-06×30-NP	30	91
QLCA-06×40	QLCA-06×40-NP	40	93
QLCA-06×50	QLCA-06×50-NP	50	96
QLCA-08×25	QLCA-08×25-NP	25	176
QLCA-08×30	QLCA-08×30-NP	30	178
QLCA-08×40	QLCA-08×40-NP	40	182
QLCA-08×50	QLCA-08×50-NP	50	186
QLCA-10×25	QLCA-10×25-NP	25	351
QLCA-10×30	QLCA-10×30-NP	30	354
QLCA-10×40	QLCA-10×40-NP	40	360
QLCA-10×50	QLCA-10×50-NP	50	366

Feature

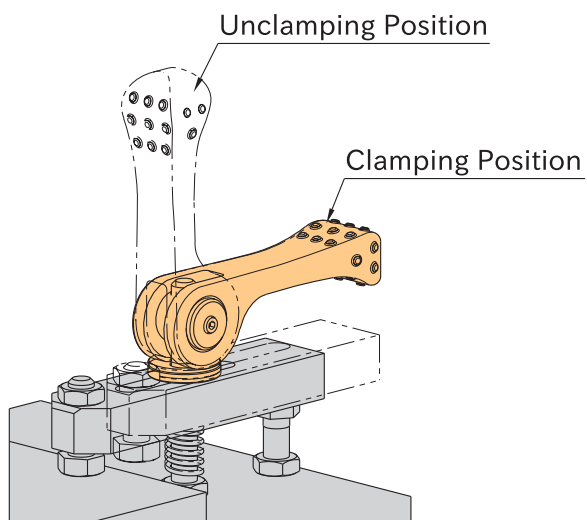
The handle position of Stud-type Cam Handles can be set to a desired direction.



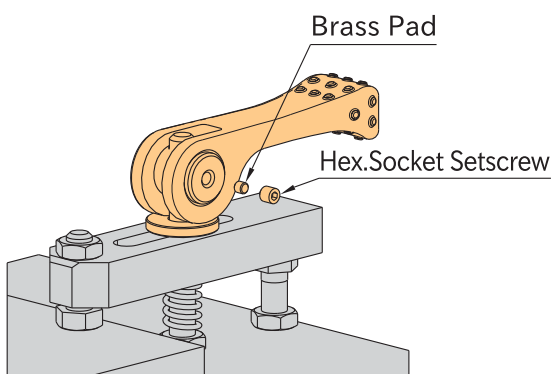
Continuing on Next Page

How To Use

■ Application Example

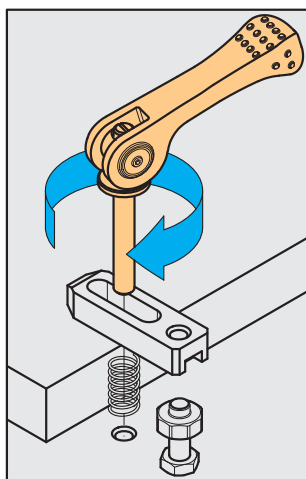


■ Fixing the Cam Handle

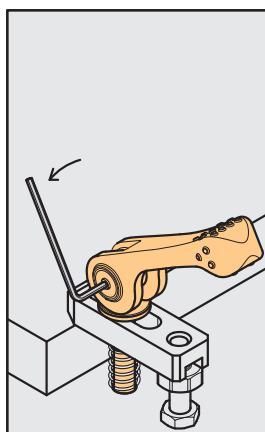


Use a brass pad and a hex. socket setscrew included.

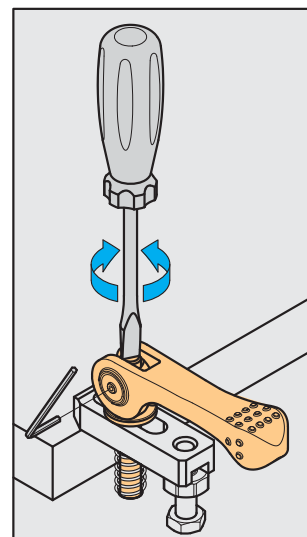
■ How to Mount Stud-type Cam Handles



1. Fix the stud to the handle with a brass pad and a hex socket setscrew and screw the Cam Handle to the counterpart.



2. Turn the handle to a desired direction and loosen the setscrew.



3. With a flathead screwdriver, adjust the handle to a desired clamping height and the load to fold the handle. Then fix the stud with the setscrew.

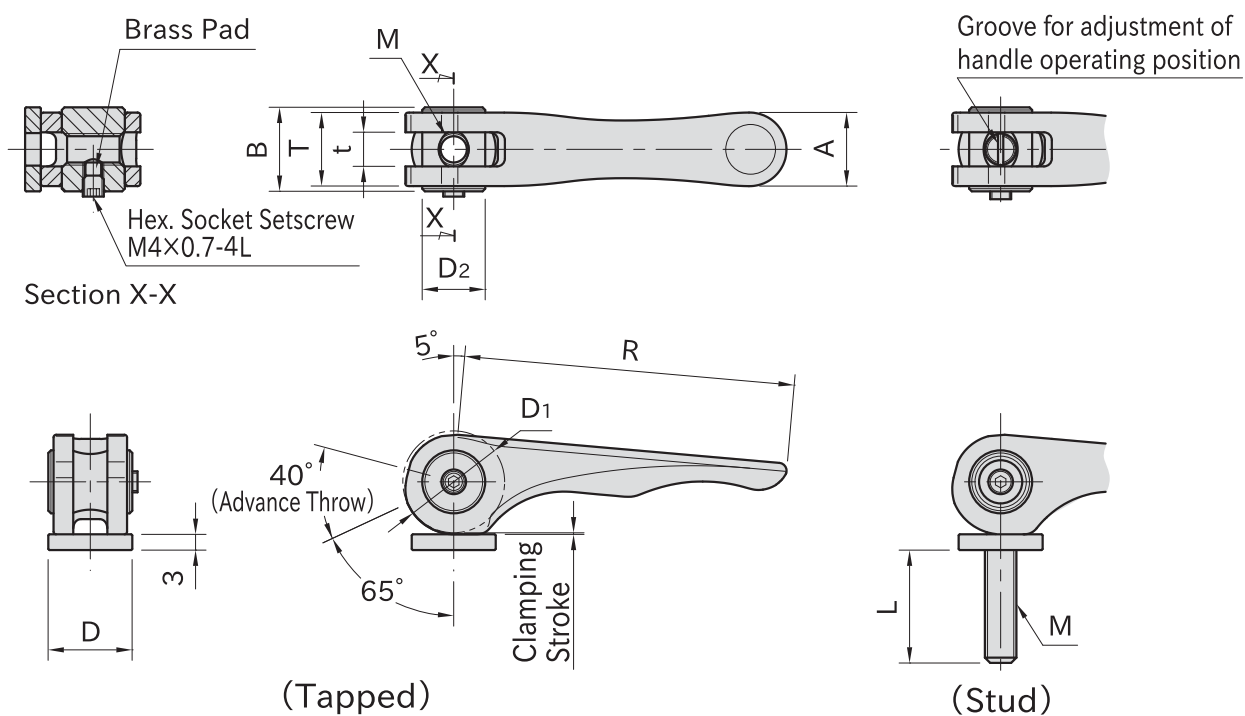




★Key Point

Easy clamping and unclamping.
Handle clicks at clamping end.

Handle	Ring Nut / Washer	Stud
SCM440 steel Quenched and tempered Electroless nickel plated	S45C steel Quenched and tempered Electroless nickel plated	SCM435 steel Quenched and tempered Electroless nickel plated



Type		D ₁	R	A	D	M	T	t	B	D ₂	Clamping Stroke
QLCL-NP	06	19.4	63	14	16	M6X1	14	6.5	16	12	0.3
	08	23.2	80	18	20	M8X1.25	18	9	20	15	0.4

Type		Advance Stroke	Allowable Operating Load (N)	Clamping Force (kN)	Clamping Mechanism
QLCL-NP	06	0.8	40	0.7	Spiral Cam Cam Angle : 2°
	08		50	1.4	

QLCL-NP (Tapped)

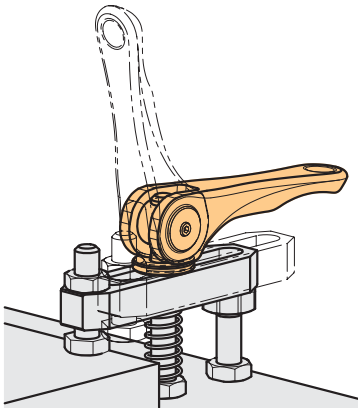
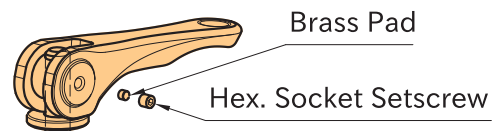
Part Number	Weight (g)
QLCL-06-NP	64
QLCL-08-NP	121

QLCL-NP (Stud)

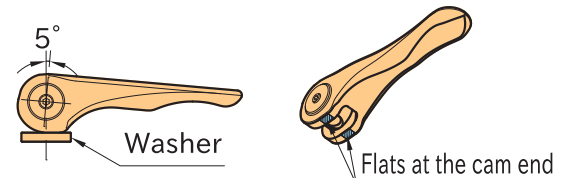
Part Number	L	Weight (g)
QLCL-06×20-NP	22	72
QLCL-06×30-NP	32	75
QLCL-06×40-NP	42	77
QLCL-06×50-NP	52	79
QLCL-08×25-NP	27	139
QLCL-08×30-NP	32	141
QLCL-08×40-NP	42	145
QLCL-08×50-NP	52	149

Feature

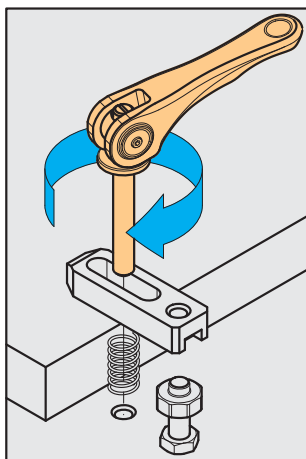
- By its unique cam design, the handle clicks at clamping end.
- Compared to conventional cam handles, this product has higher resistance against vibration.
- The handle position of Stud-type Cam Handles can be set to a desired direction.

How To Use**Application Example****Fixing the Cam Handle**

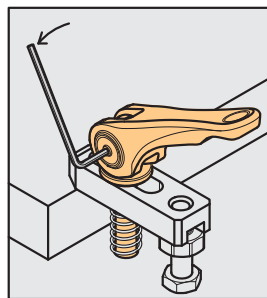
Use a brass pad and a hex. socket setscrew included to fix the handle.



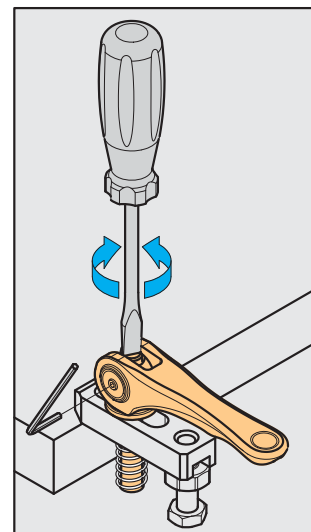
Note: Top surface of washer and flats at the cam end should align at the clamping position.

Mounting Stud-type Cam Handles

1. Fix the stud to the handle with a brass pad and a hex socket setscrew and screw the Cam Handle to the counterpart.



2. Turn the handle to a desired direction and loosen the setscrew.



3. With a flathead screwdriver, adjust the handle to a desired clamping height and the load to fold the handle. Then fix the stud with the setscrew.



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