IMAO® fixtureworks®

One Touch Clamps

ONE-TOUCH CLAMPS

One-Touch Clamps Reduce Workpiece Setup Time to 1/3!

Manual quick clamps for machining fixture

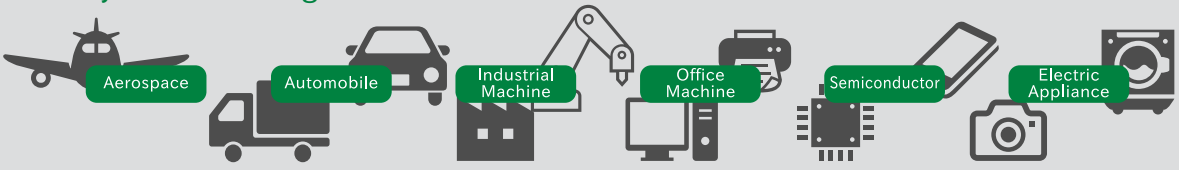
Tool-less Quick Clamping Reduces Workpiece Setup Times!

Quick, tool-less clamping results in 1/3 of the workpiece setup time compared to old-style mechanical clamps that require cumbersome tightening of screws.

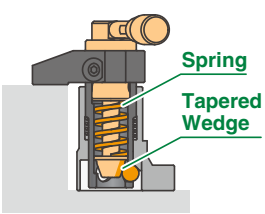
Mechanically designed One-Touch Clamps Simplify Fixture Design.

Fixture with one-touch clamps eliminates the need for piping and maintenance, resulting in a reduction in the overall labor cost.

One-Touch Clamps provide a workholding solution for machining, assembly and checking fixtures.



Stablelock Series for Constant Clamping Force!



Spring-loaded constant clamping with mechanical positive locking

Stable & Constant Clamping Force

Clamping force is constant and strong, no matter who performs the operation.

Clear Clamping Completion

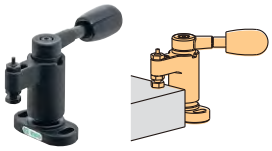
StableLock Series features a click when clamping to ensure secure operation.

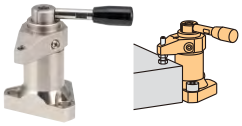
Operation by Robots

Constant clamping force at a uniform position enables work with robots.

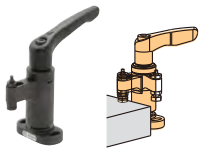
One-Touch Clamps are available in a wide variety of sizes, clamping forces, and clamping directions.

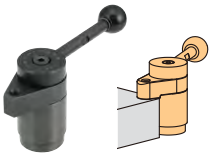
Push Down

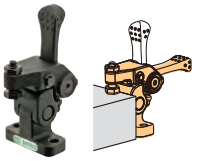

SWING CLAMPS

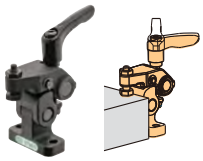

STABLELOCK SWING CLAMPS

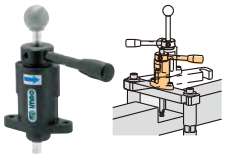

SWING CLAMPS WITH CAM HANDLE


SWING CLAMPS WITH ADJUSTABLE HANDLE

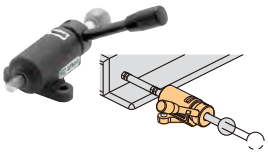

SWING CLAMPS

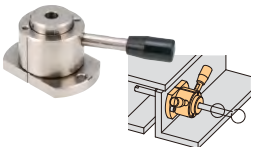

RETRACTABLE CLAMPS WITH CAM HANDLE

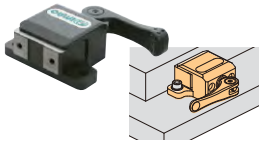

RETRACTABLE CLAMPS WITH ADJUSTABLE HANDLE

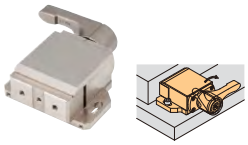

THRUST CLAMPS (Vertical)

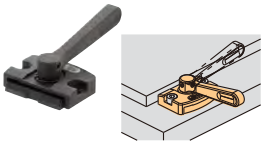
Side Push

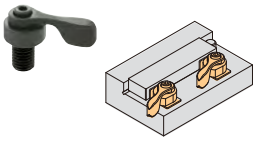

THRUST CLAMPS

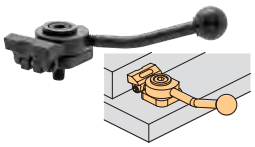

STABLELOCK THRUST CLAMPS

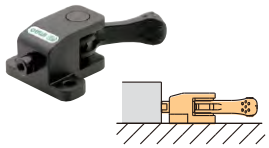

CAM EDGE CLAMPS

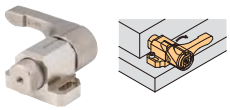

STABLELOCK SIDE CLAMPS


LOW-PROFILE CAM EDGE CLAMPS

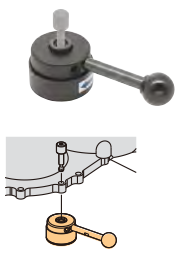

SPIRAL CAM CLAMPS


CAM EDGE CLAMPS

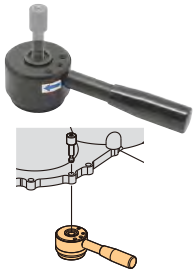

CAM PUSH CLAMPS


STABLELOCK PUSH CLAMPS

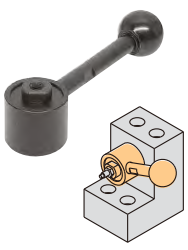
Pull Down


PULL CLAMPS

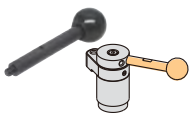

STABLELOCK PULL CLAMPS


PULL CLAMPS (Heavy)

Push Up

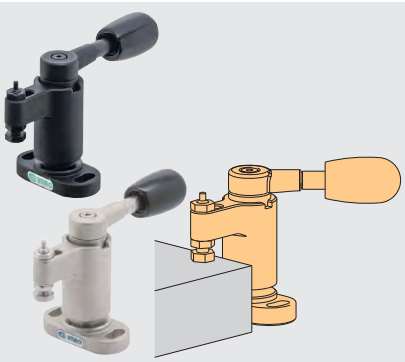

PUSH CLAMPS

Handles


STANDARD HANDLES

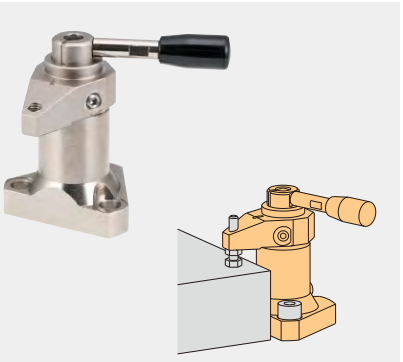

ADJUSTABLE-TORQUE HANDLES

Push Down



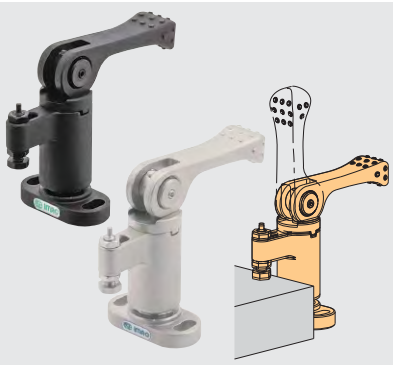
SWING CLAMPS

Part No. QLSWC



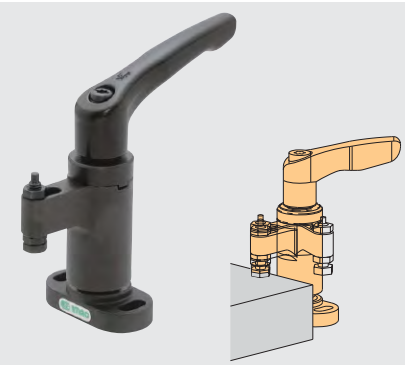
STABLELOCK SWING CLAMPS

Part No. QLSWW



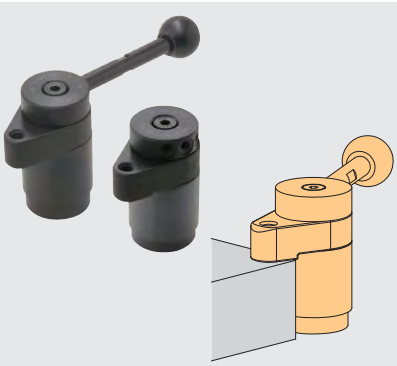
SWING CLAMPS WITH CAM HANDLE

Part No. QLSWC



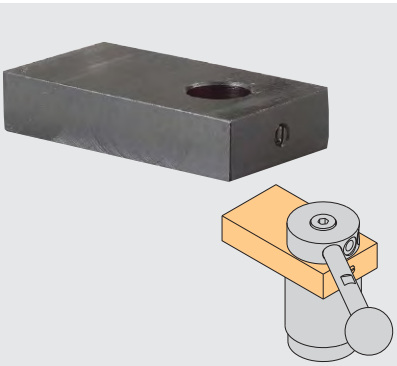
SWING CLAMPS WITH ADJUSTABLE HANDLE

Part No. QLSWC



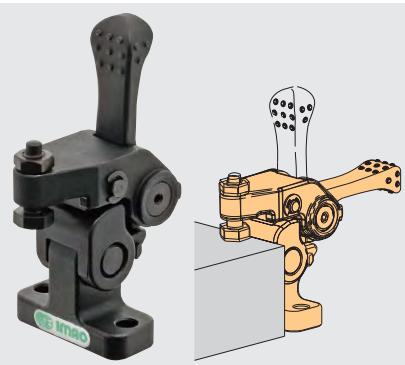
SWING CLAMPS (Standard)

Part No. QLSW



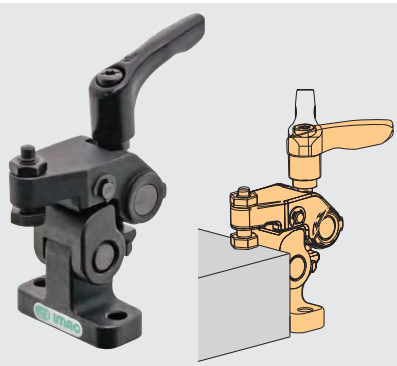
MACHINABLE CLAMP ARMS FOR STANDARD SWING CLAMPS

Part No. QLSW-SH



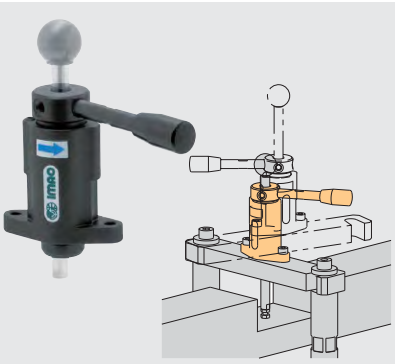
RETRACTABLE CLAMPS WITH CAM HANDLE

Part No. QLRE



RETRACTABLE CLAMPS WITH ADJUSTABLE HANDLE

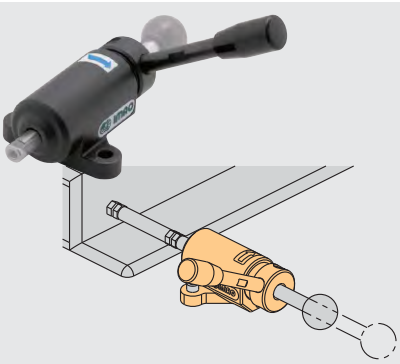
Part No. QLRE



THRUST CLAMPS (Vertical)

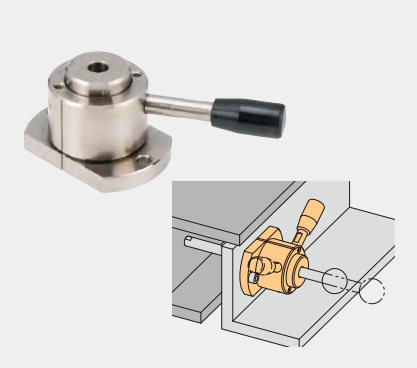
Part No. QLRCF

Side Push



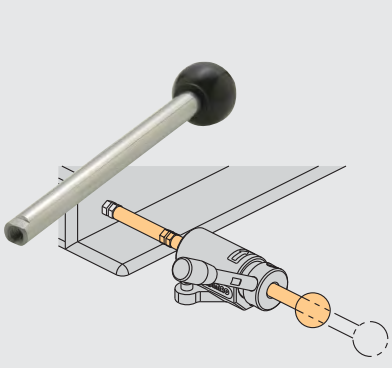
THRUST CLAMPS

Part No. QLRC



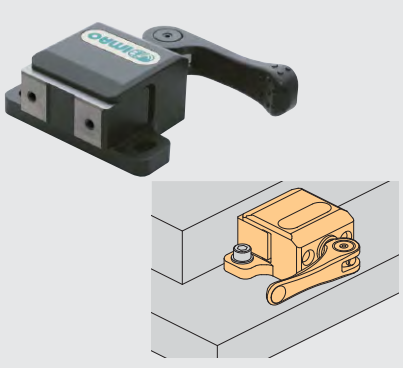
STABLELOCK THRUST CLAMPS

Part No. QLRCW



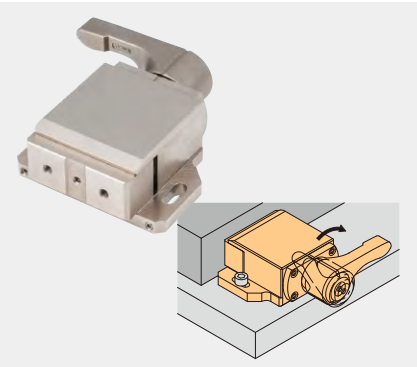
CLAMPING BARS

Part No. QLRCS



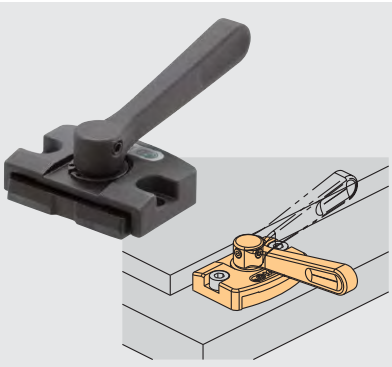
CAM EDGE CLAMPS

Part No. QLSCH



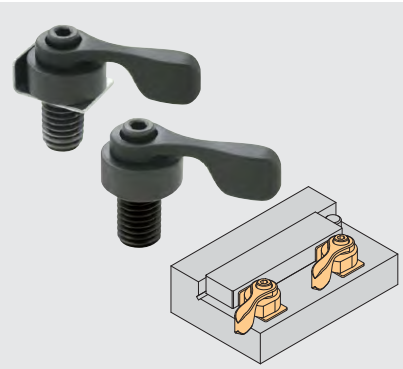
STABLELOCK SIDE CLAMPS

Part No. QLSCW



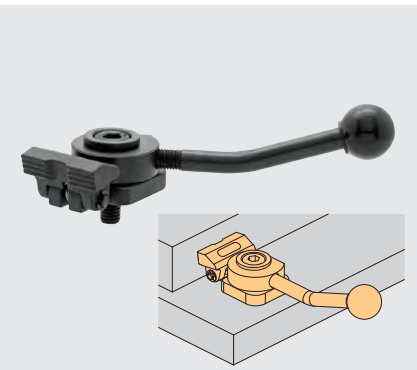
LOW-PROFILE CAM EDGE CLAMPS

Part No. QLSCL-R



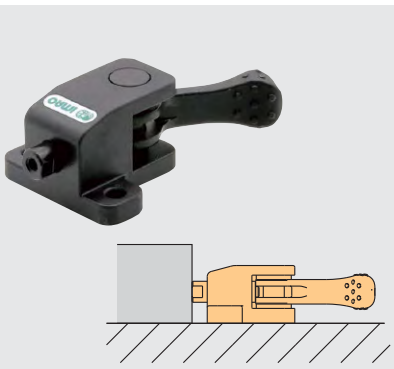
SPIRAL CAM CLAMPS

Part No. CP135-L



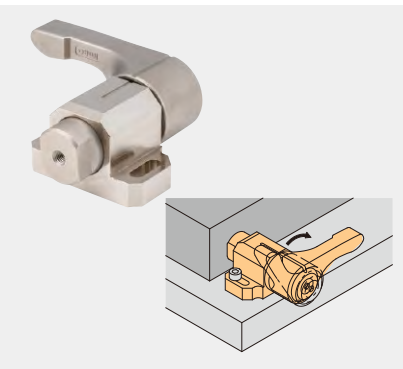
CAM EDGE CLAMPS

Part No. QLSC



CAM PUSH CLAMPS

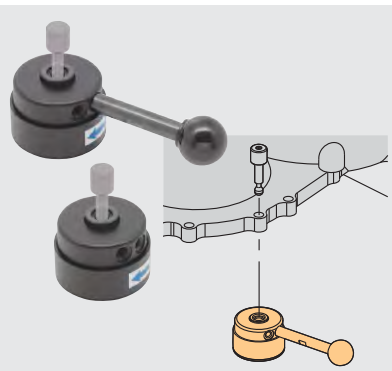
Part No. QLCP



STABLELOCK PUSH CLAMPS

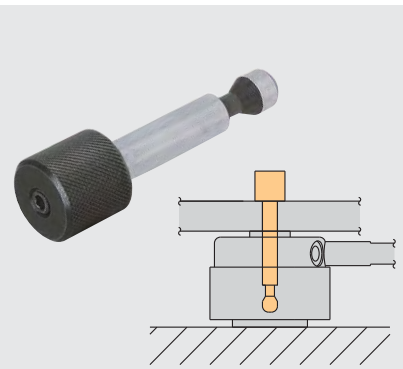
Part No. QLPUW

Pull Down



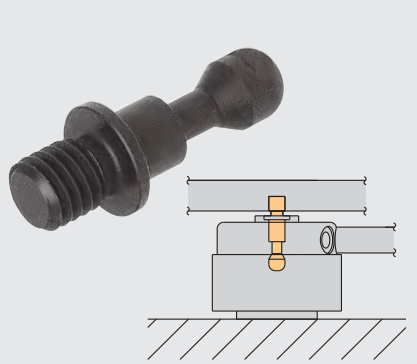
PULL CLAMPS (Standard)

Part No. QLPD



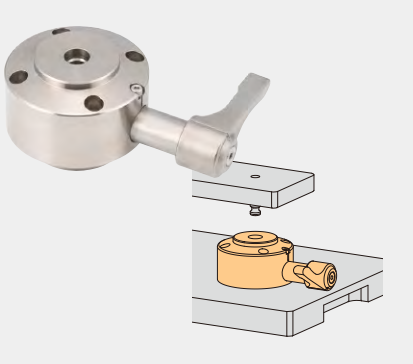
CLAMPING PINS (Standard)

Part No. QLPD-X



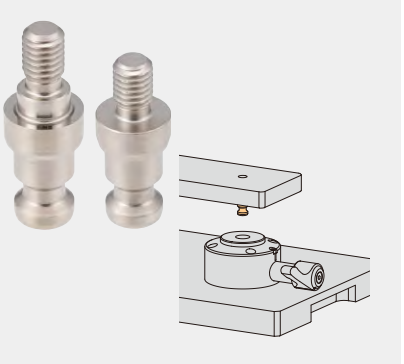
CLAMPING SCREWS (Standard)

Part No. QLPD-M



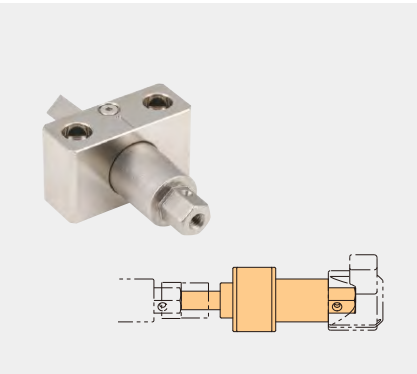
STABLELOCK PULL CLAMPS

Part No. QLPDW



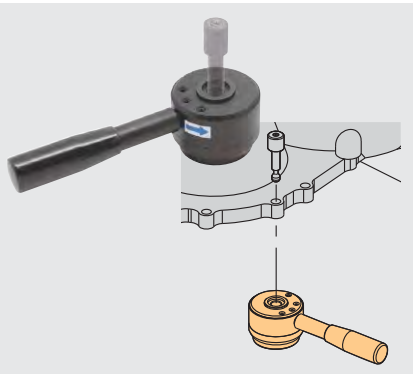
CLAMPING SCREWS

Part No. QLPDW-M



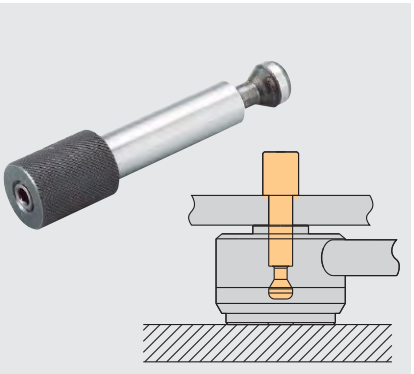
EXTENSION UNITS

Part No. QLPDW-RC



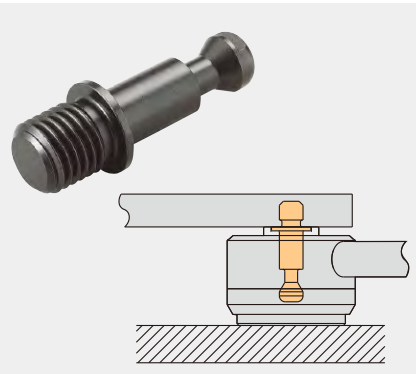
PULL CLAMPS (Heavy)

Part No. QLPDH



CLAMPING PINS (Heavy)

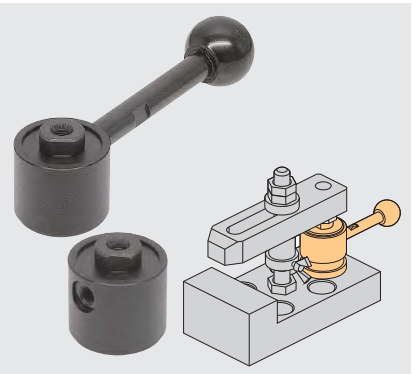
Part No. QLPDH-X



CLAMPING SCREWS (Heavy)

Part No. QLPDH-M

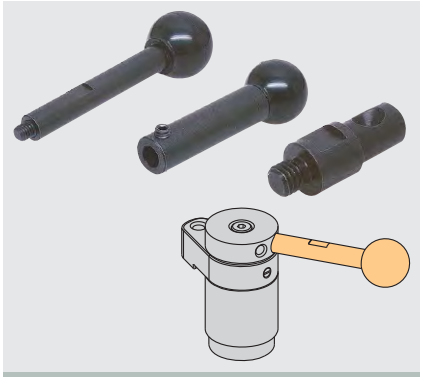
Push Up



PUSH CLAMPS (Standard)

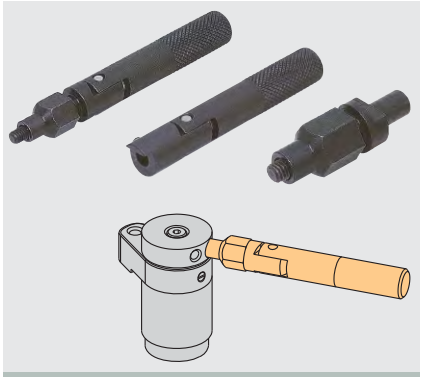
Part No. QLPU

Handles



STANDARD HANDLES

Part No. QLSL



ADJUSTABLE-TORQUE HANDLES

Part No. QLTL

IMAO® fixtureworks®

QLSWC SWING CLAMPS

RoHS

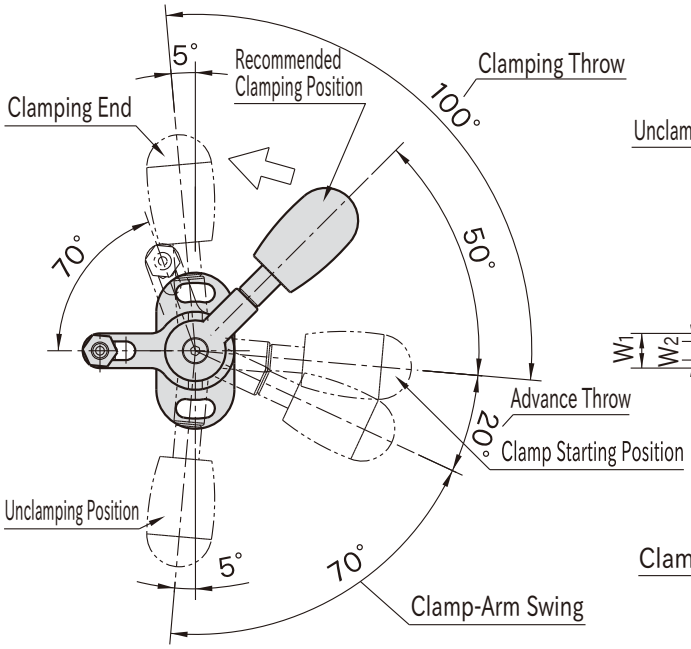
(Black Oxide Finish)

(Electroless Nickel Plated)

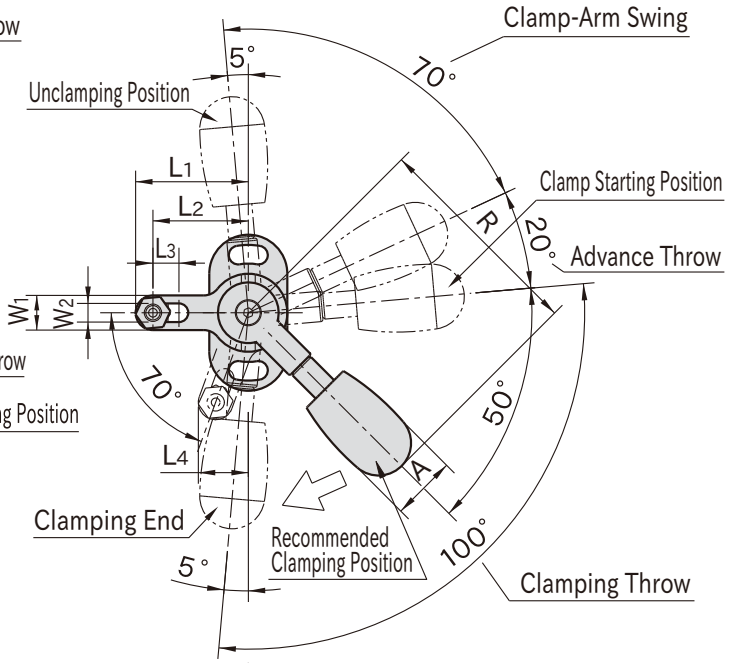
On Request

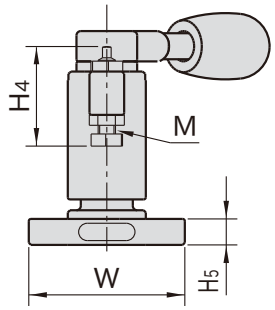
Type	Body/Handle/Clamping Spindle	Arm	Cam Shaft	Knob
QLSWC	S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish	SCM415 steel Quenched and tempered Black oxide finish	Phenolic plastic Black
QLSWC-NP	S45C steel Quenched and tempered Electroless nickel plated	SCM440 steel Quenched and tempered Electroless nickel plated	SCM415 steel Quenched and tempered Electroless nickel plated	

Counterclockwise Clamping

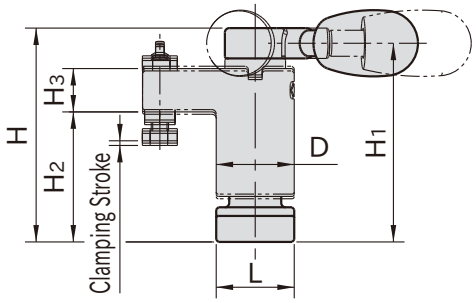


Clockwise Clamping

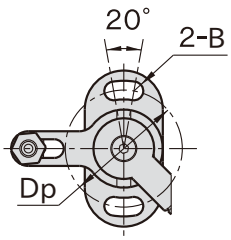




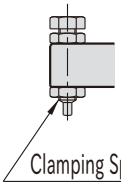
Rough Surface Contact

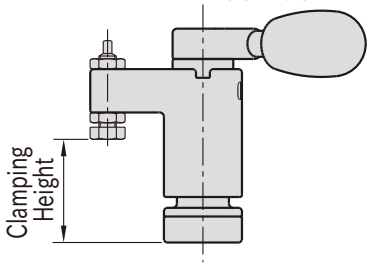


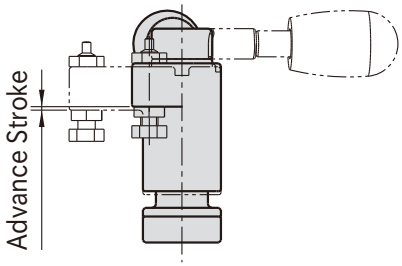
Finished Surface Contact



Mounting Holes







Part Number	Clamping Direction	Clamping Height *) Finished Surface Contact Min.	Finished Surface Contact Max.	Rough Surface Contact Min.	Rough Surface Contact Max.	Clamping Stroke	Advance Stroke	L_2	L_3	L_1	L_4	W	L	H_5	B
QLSWC100R	CW	22.8 (22.3~23.3)	24.8 (24.3~25.3)	22.4 (21.9~22.9)	24.4 (23.9~24.9)	1	0.8	22	6	26	11.5	36	18	6	4.3
QLSWC100L	CCW														
QLSWC150R	CW	31.3 (30.6~32)	33.3 (32.6~34)	32.2 (31.5~32.9)	34.2 (33.5~34.9)	1.4	1.1	30	8	35	15.3	45	23	8	5.3
QLSWC150L	CCW														
QLSWC200R	CW	32.5 (31.7~33.2)	39 (38.2~39.7)	33.5 (32.7~34.2)	40 (39.2~40.7)	1.5	1.4	37		45	20.7	65	30	12	8.4
QLSWC200L	CCW														
QLSWC300R	CW	36.5 (35.5~37.4)	46 (45~46.9)	39 (38~39.9)	48.5 (47.5~49.4)	1.9	1.7	45		55	25.4	85	40	15	10.5
QLSWC300L	CCW														

Part Number	Dp	H	D	W_1	W_2	H_3	H_2	M	H_4	R	A	H_1	Allowable Operating Load (N) **)	Clamping Force (kN)	Clamping Mechanism
QLSWC100R	27	49	18	8	4.3	10	30	M 4X0.7	22.8	50	15	45.8	100	1.1	Spiral Cam Cam Angle: 5°
QLSWC100L															
QLSWC150R	34	66	23	10	5.3	14	40	M 5X0.8	28.5	63	20	61.3	150	1.8	
QLSWC150L															
QLSWC200R	48	82	30	16	8.4	18	50	M 8X1.25	45.5	80	26	76.5	200	2.2	Spiral Cam Cam Angle: 4°
QLSWC200L															
QLSWC300R	64	100	40	20	10.4	22	60	M10X1.5	57	100	33	93	300	3.5	
QLSWC300L															

QLSWC (Black oxide finish)

Part Number	Weight (g)
QLSWC100R	112
QLSWC100L	
QLSWC150R	250
QLSWC150L	
QLSWC200R	570
QLSWC200L	
QLSWC300R	1200
QLSWC300L	

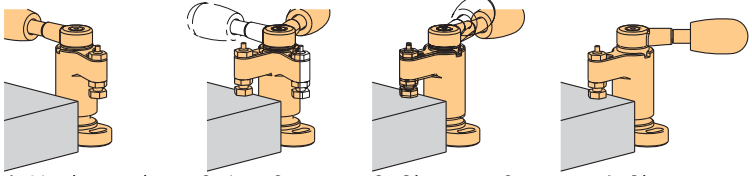
QLSWC-NP (Electroless nickel) On Request

Part Number	Weight (g)
QLSWC100R-NP	112
QLSWC100L-NP	
QLSWC150R-NP	250
QLSWC150L-NP	
QLSWC200R-NP	570
QLSWC200L-NP	
QLSWC300R-NP	1200
QLSWC300L-NP	

*) Clamping height can be adjusted. The parenthesised values denote clamping height range.
**) Allowable load to operate the handle.

How To Use

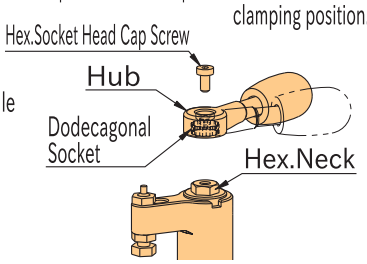
Operation of CW Type (Invert the operation for CCW type.)



1. Unclamped Load or unload a part.
2. Arm Swing Turn the handle to set the clamp arm in position.
3. Clamping Setup Continue turning the handle to set the spindle close to the part.
4. Clamping Turn the handle to the recommended clamping position.

How to Change Handle Position

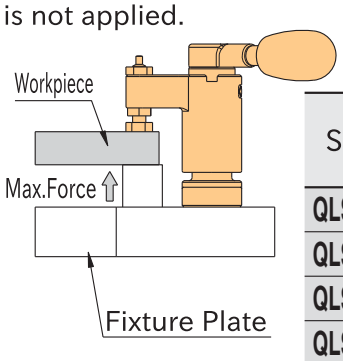
The dodecagonal socket in the hub of the handle allows changing the handle position by 30°.



Technical Information

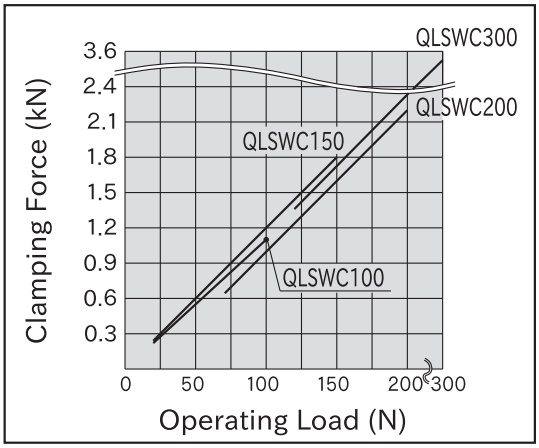
Allowable Loads in Machining of Workpiece Bottom

Ensure that any force more than stated below is not applied.



Series	Allowable Force To Workpiece Bottom (Per Clamp)
QLSWC100	max.2.3kN
QLSWC150	max.3.6kN
QLSWC200	max.3.7kN
QLSWC300	max.5.6kN

Performance Curve



QLSWW STABLELOCK SWING CLAMPS

RoHS

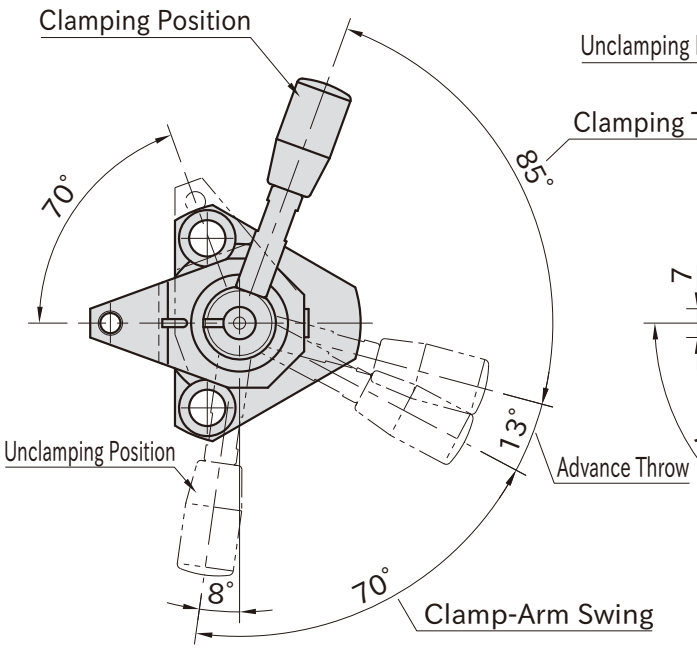
Wedge

IMAO

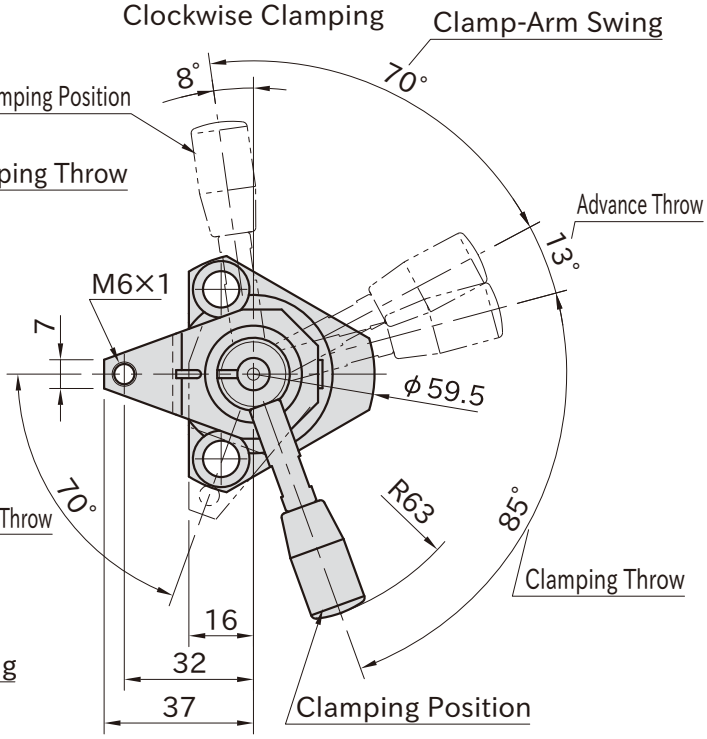
★Key Point
Click to confirm consistent clamping

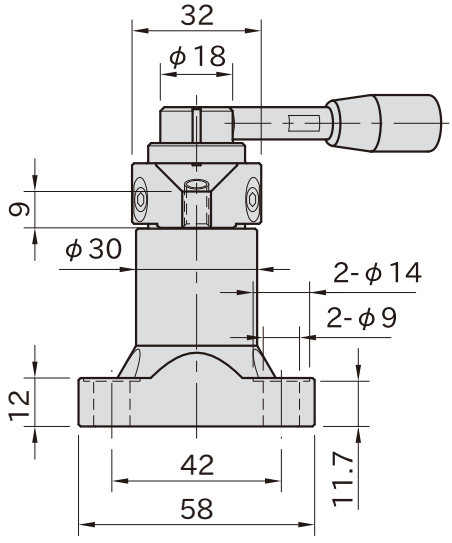
Body, Lever Arm	Cylinder	Arm
S45C steel Electroless nickel plated	SCM440 steel Electroless nickel plated	S45C steel Quenched & tempered Electroless nickel plated
Cam Shaft	**Handle**	
SCM415 steel Carburized-hardened Electroless nickel plated	Phenolic plastic Black	

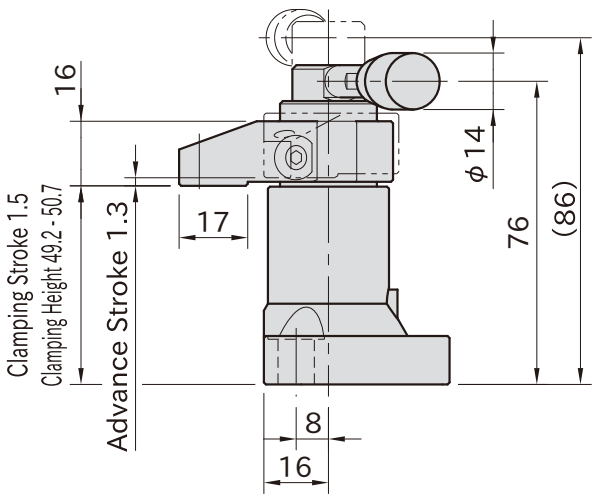
Counterclockwise Clamping



Clockwise Clamping





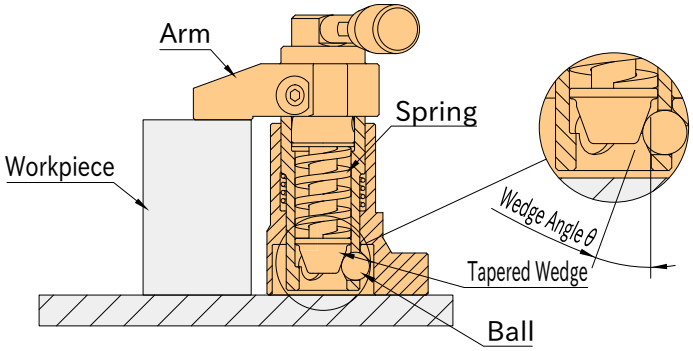


Part Number	Clamping Direction	Operating Load (N)	Clamping Force (kN)	Weight (g)
QLSWW30R-100	CW	80	1 (0.5~1.5)	480
QLSWW30L-100	CCW			

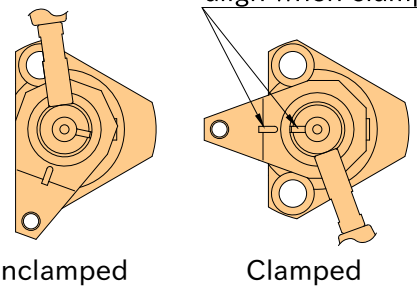
Note : The above operating load and clamping force are obtained when clamping the workpiece at the midpoint of the clamping stroke.
The clamping force varies within the above range depending on the amount of compression of the spring.

Feature

・Turning the handle swings the arm into position. As the arm contacts the workpiece, the spring is compressed and the tapered surface pushes the balls out to clamp the workpiece.
・Provides constant clamping force with mechanical positive locking and spring force.



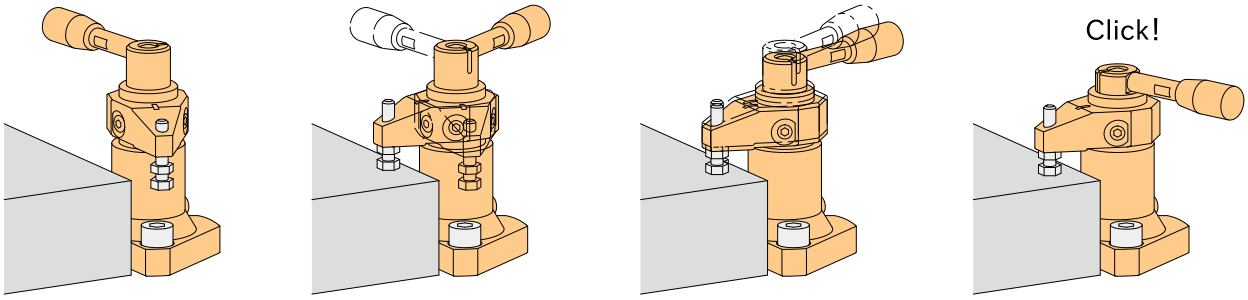
The indication lines align when clamped.



・The indication line clearly shows clamping/unclamping position.

How To Use

Operation of CW Type ※Invert the operation for CCW type.



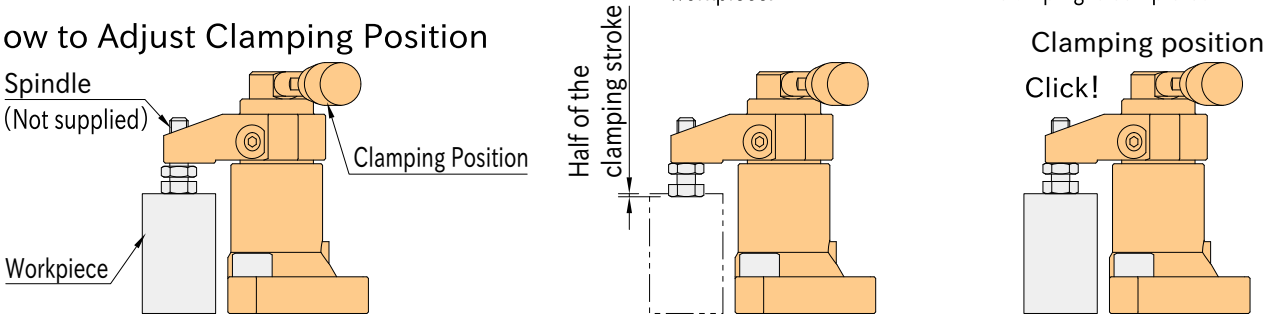
1. Unclamped
Load a workpiece.

2. Arm Swing
Turn the handle to set the arm in position.

3. Clamping Setup
Continue turning the handle to set the arm close to the workpiece.

4. Clamping
Turn the handle to the clamping position. The handle clicks when clamping is completed.

How to Adjust Clamping Position



1. Make the spindle contact the workpiece fully at clamping position.

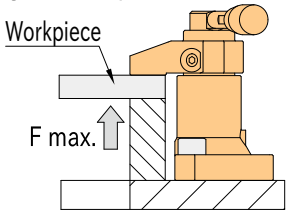
2. Project the clamping spindle by roughly half of the clamping stroke and fix it with the nut.

3. Adjustment is done.

Technical Information

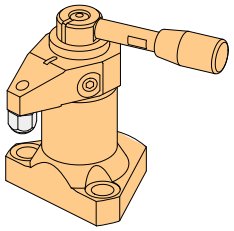
■Allowable Loads in Machining of Workpiece Bottom

Ensure that any force more than 1.8kN is not applied to the workpiece bottom.



Related Products

A gripper or a screw can be attached to the M6 threaded hole on the arm. Such clamping screws are also available from us.



QLSWC SWING CLAMPS WITH CAM HANDLE

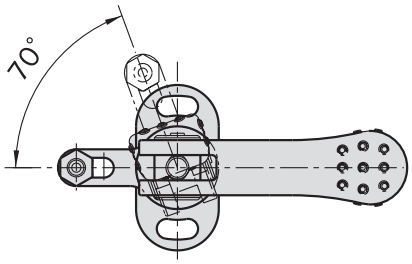
(Black Oxide Finish)

(Electroless Nickel Plated)

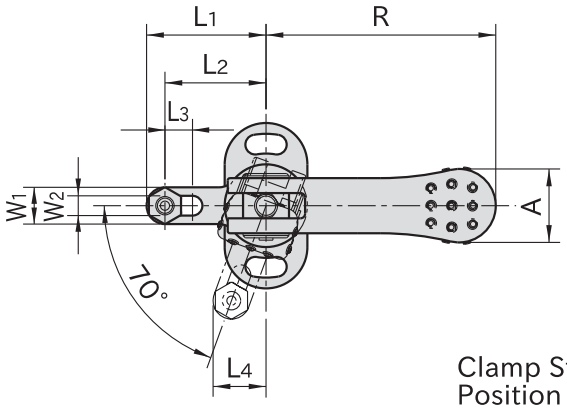
Style	Body/Washer/Clamping Spindle	Arm/Handle
QLSWC	S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish
QLSWC-NP	S45C steel Quenched and tempered Electroless nickel plated	SCM440 steel Quenched and tempered Electroless nickel plated

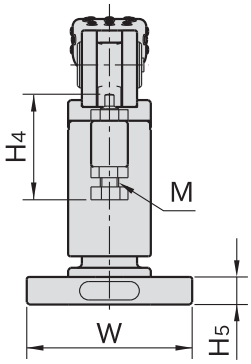
On Request

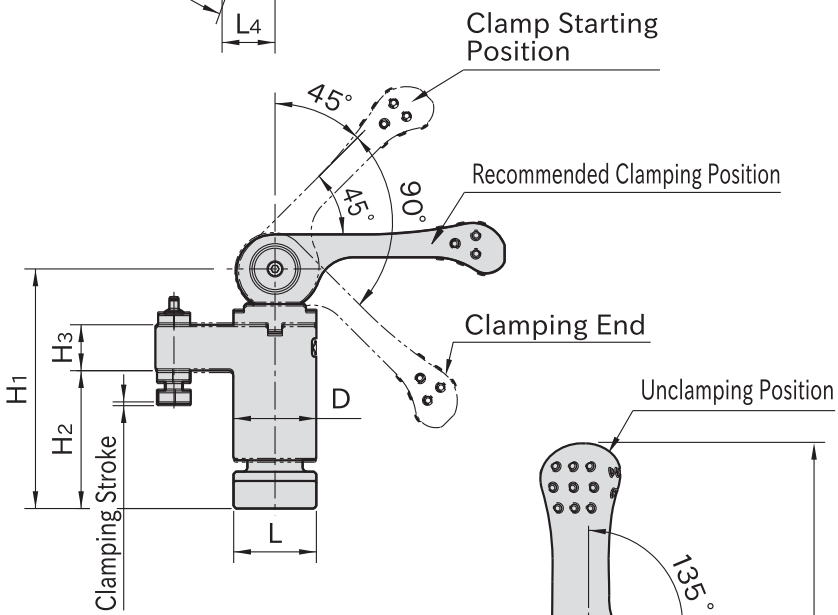
Counterclockwise Clamping

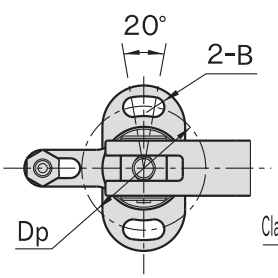


Clockwise Clamping

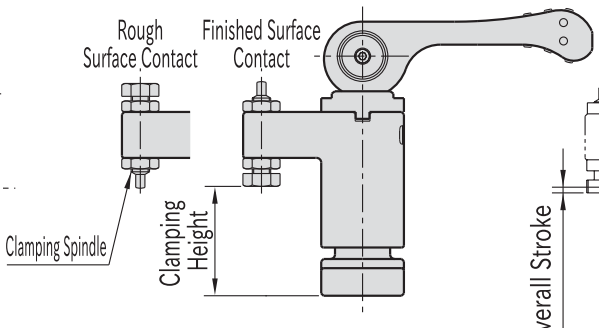


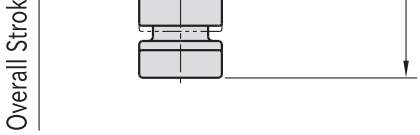






Mounting Holes





Part Number	Clamping Direction	Clamping Height *) Finished Surface Contact Min.	Finished Surface Contact Max.	Rough Surface Contact Min.	Rough Surface Contact Max.	Clamping Stroke	Overall Stroke	L_2	L_3	L_1	L_4	W	L	H_5	B
QLSWC100VR	CW	22.8 (22.4~23.2)	24.8 (24.4~25.2)	22.4 (22~22.8)	24.4 (24~24.8)	0.8	1.2	22	6	26	11.5	36	18	6	4.3
QLSWC100VL	CCW														
QLSWC150VR	CW	31.3 (30.8~31.8)	33.3 (32.8~33.8)	32.2 (31.7~32.7)	34.2 (33.7~34.7)	1	1.5	30		35	15.3	45	23	8	5.3
QLSWC150VL	CCW														
QLSWC200VR	CW	32.5 (31.9~33.1)	39 (38.4~39.6)	33.5 (32.9~34.1)	40 (39.4~40.6)	1.2	1.8	37	8	45	20.7	65	30	12	8.4
QLSWC200VL	CCW														
QLSWC300VR	CW	36.5 (35.7~37.2)	46 (45.2~46.7)	39 (38.2~39.7)	48.5 (47.7~49.2)	1.5	2.3	45		55	25.4	85	40	15	10.5
QLSWC300VL	CCW														

*) Clamping height can be adjusted. The parenthesized values denotes clamping height range.

Part Number	Dp	H	D	W_1	W_2	H_3	H_2	M	H_4	R	A	H_1	Cam Handles Part Number	Allowable Operating Load (N) **)	Clamping Force (kN)	Clamping Mechanism
QLSWC100VR	27	102	18	8	4.3	10	30	M 4X0.7	22.8	50	16	52	QLCA-05	100	0.8	Spiral Cam Cam Angle: 4°
QLSWC100VL																
QLSWC150VR	34	131	23	10	5.3	14	40	M 5X0.8	28.5	63	19	68	QLCA-06	150	1.5	
QLSWC150VL																
QLSWC200VR	48	167	30	16	8.4	18	50	M 8X1.25	45.5	80	24	87	QLCA-08	200	2.1	
QLSWC200VL																
QLSWC300VR	64	207	40	20	10.4	22	60	M10X1.5	57	100	30	107	QLCA-10	300	2.8	
QLSWC300VL																

**) Allowable load to operate the handle

QLSWC (Black Oxide Finish)

Part Number	Weight (g)
QLSWC100VR	134
QLSWC100VL	
QLSWC150VR	272
QLSWC150VL	
QLSWC200VR	625
QLSWC200VL	
QLSWC300VR	1340
QLSWC300VL	

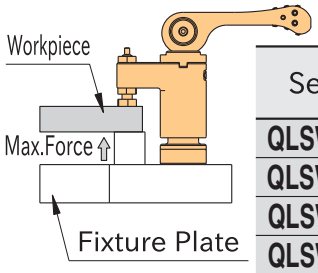
QLSWC-NP (Electroless Nickel Plated) On Request

Part Number	Weight (g)
QLSWC100VR-NP	134
QLSWC100VL-NP	
QLSWC150VR-NP	272
QLSWC150VL-NP	
QLSWC200VR-NP	625
QLSWC200VL-NP	
QLSWC300VR-NP	1340
QLSWC300VL-NP	

Technical Data

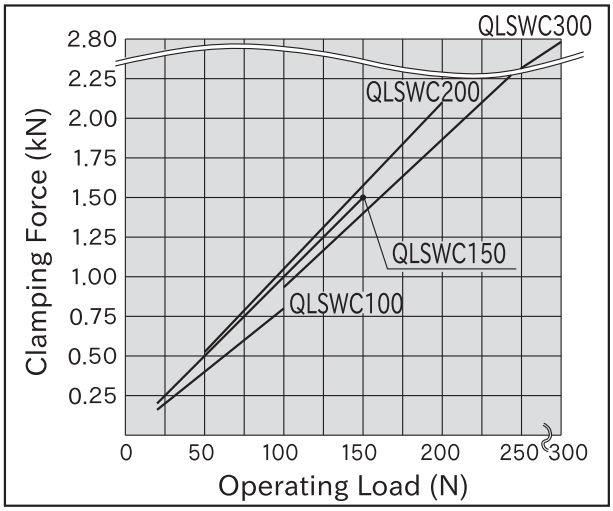
■Allowable Loads in Machining of Workpiece Bottom

Ensure that any force more than stated below is not applied.



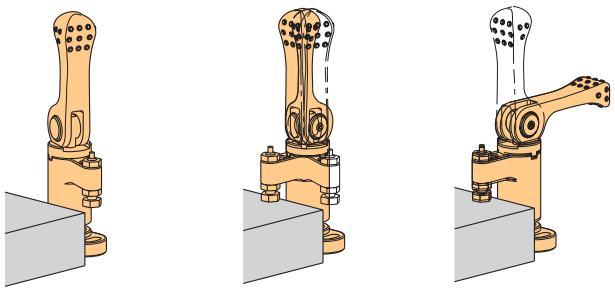
Series	Allowable Force To Workpiece Bottom (Per Clamp)
QLSWC100	max.2.3kN
QLSWC150	max.3.6kN
QLSWC200	max.3.7kN
QLSWC300	max.5.6kN

Performance Curve



How To Use

■Operation of CW Type (Invert the operation for CCW type.)



1. Unclamped Load or unlaod a workpiece.

2. Arm Swing
Turn the handle to set the clamp arm in position.

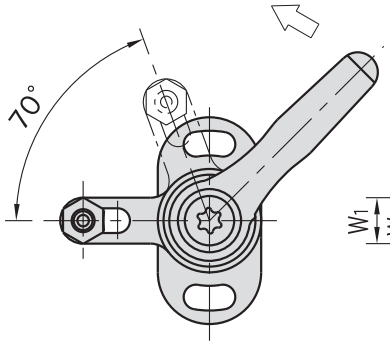
3. Clamping
Set the handle down to clamp the workpiece.

QLSWC SWING CLAMPS WITH ADJUSTABLE HANDLE

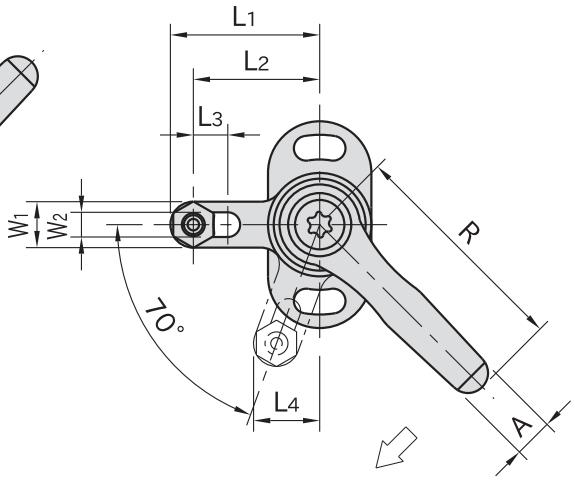
Base/Washer/Clamping Spindle	Body	Handle
S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish	ZDC1 die cast zinc Coated with paint Black

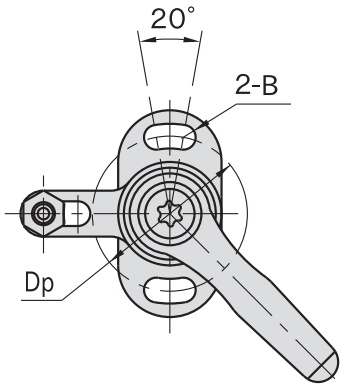
- Clamp worked by a screw-locking mechanism which allows providing longer clamping stroke and greater clamping force than a cam-locking mechanism.
- Operated by an adjustable handle that allows for flexible handle positioning.

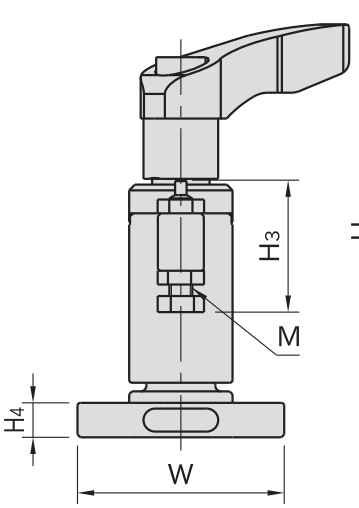
Counterclockwise Clamping

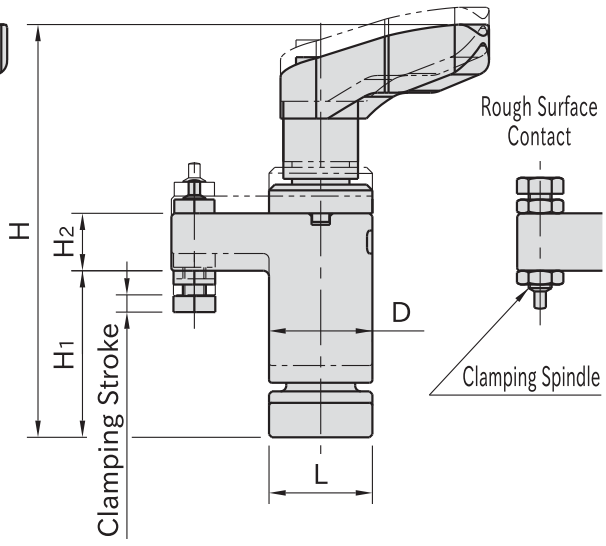


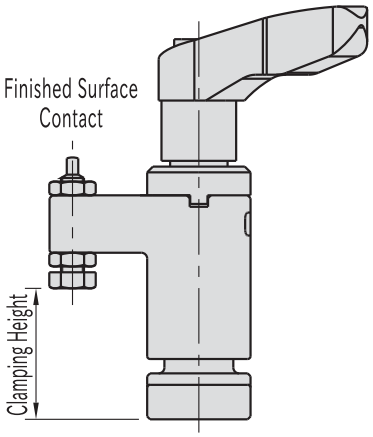
Clockwise Clamping











Part Number	Clamping Direction	Clamping Height *)				Clamping Stroke	L_2	L_3	L_1	L_4	W	L	H_4	B	Dp
		Finished Surface Contact		Rough Surface Contact											
		Min.	Max.	Min.	Max.										
QLSWC-0618KR	CW	21.8 (21.8~24.8)	23.8 (23.8~26.8)	21.4 (21.4~24.4)	23.4 (23.4~26.4)	3	22	6	26	11.5	36	18	6	4.3	27
QLSWC-0618KL	CCW														
QLSWC-0823KR	CW	30.3 (30.3~34.3)	32.3 (32.3~36.3)	31.2 (31.2~35.2)	33.2 (33.2~37.2)	4	30	8	35	15.3	45	23	8	5.3	34
QLSWC-0823KL	CCW														
QLSWC-1030KR	CW	30.5 (30.5~34.5)	37 (37~41)	31.5 (31.5~35.5)	38 (38~42)		37		45	20.7	65	30	12	8.4	48
QLSWC-1030KL	CCW														
QLSWC-1240KR	CW	34.5 (34.5~39.5)	44 (44~49)	37 (37~42)	46.5 (46.5~51.5)	5	45		55	25.4	85	40	15	10.5	64
QLSWC-1240KL	CCW														

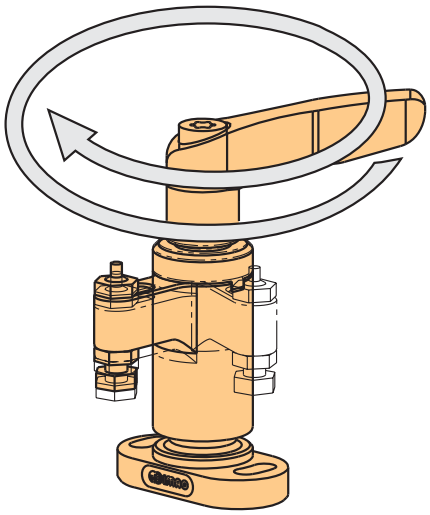
*) Clamping height can be adjusted. The parenthesised values denote clamping height range.

Part Number	H	D	W_1	W_2	H_2	H_1	M	R	A	H_3	Adjustable Handles **)	Allowable Operating Load (N) ***)	Clamping Force (kN)	Weight (g)
QLSWC-0618KR	71.9	18	8	4.3	10	29	M 4X0.7	40	7	22.8	FKF 6-BR	170	2	121
QLSWC-0618KL														
QLSWC-0823KR	97.3	23	10	5.3	14	39	M 5X0.8	65	9.5	28.5	FKF 8-BR		3.2	276
QLSWC-0823KL														
QLSWC-1030KR	122.3	30	16	8.4	18	48	M 8X1.25	80	11	45.5	FKF10-BR	350	4.5	600
QLSWC-1030KL														
QLSWC-1240KR	145.7	40	20	10.4	22	58	M10X1.5	95	13	57	FKF12-BR	410	6	1225
QLSWC-1240KL														

**) Studs are bonded with FKF handles.
***) Allowable load to operate the handle.

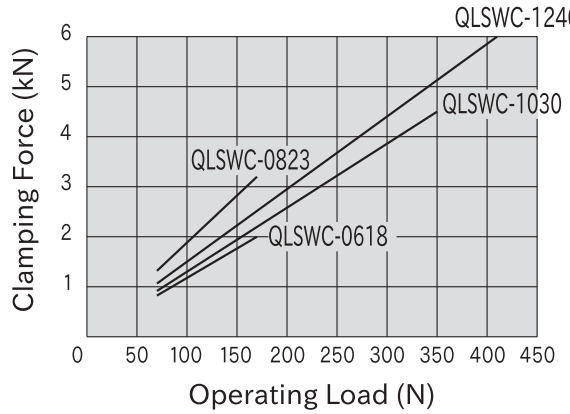
How To Use

- Turning the handle allows the clamp arm to swing for clamping.
- Lifting the handle allows the handle to be disengaged from the teeth of the locking element and then be turned to a desired position.



Note: The above indicates the handle operation of CW type. Invert the operation for CCW type.

Performance Curve



QLSWC — SWING CLAMPS FOR TORQUE CONTROL

Stronger type without handle is available.

QLSW SWING CLAMPS (Standard)

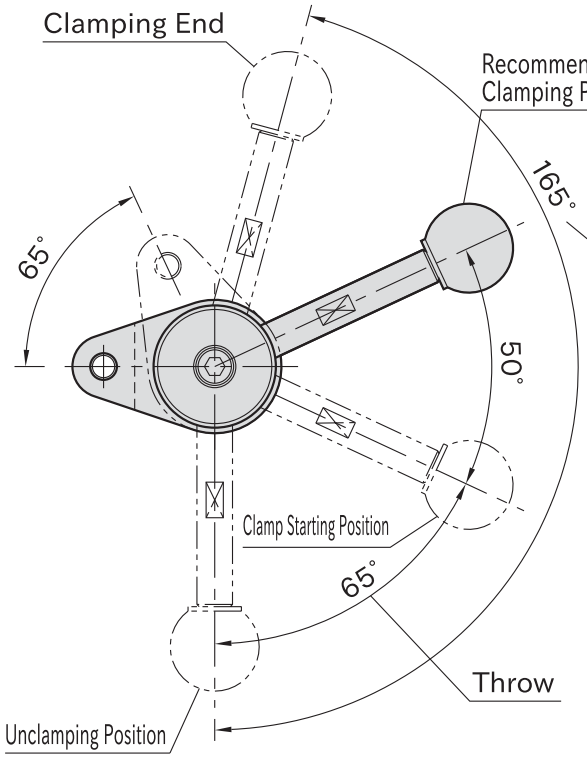
RoHS

With Handle

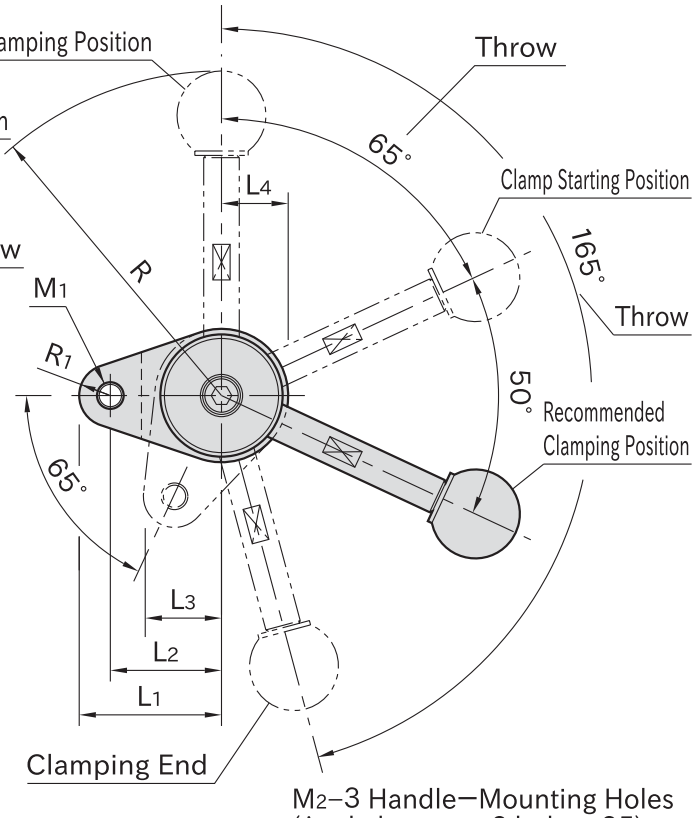
Without Handle

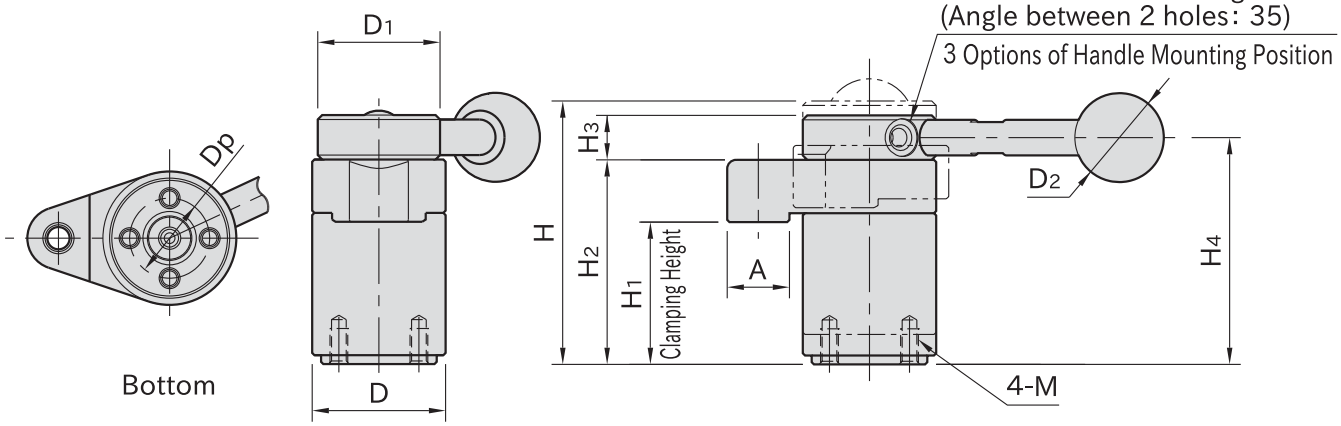
Body / Shaft	Clamp Arm / Adaptor Head	Handle	Ball Knob
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish	S45C steel Black oxide finish	ABS resin Black

Counterclockwise Clamping



Clockwise Clamping





Bottom

Size/Type	Clamping Direction	H_1	A	R_1	M_1	L_2	L_1	L_3	D	M	Dp
QLSW150R	CW	32 *)	14	7	M6×1	25	32	17.5	30	M4×0.7 Depth 8	18
QLSW150L	CCW										
QLSW200R	CW	45 **)	16	8	M8×1.25	32	40	21.5	40	M6×1 Depth 12	25
QLSW200L	CCW										

*) Actual clamping height: 31.4 to 32.6 (clamping stroke: 1.2)
**) Actual clamping height: 44.1 to 45.9 (clamping stroke: 1.8)

Size/Type	H	D_1	H_3	H_2	M_2	H_4	L_4	Clamping Force (kN)	Clamping Mechanism
QLSW150R	57.5	30	10	46	M5×0.8	51	15	0.8	Spiral Cam Cam Angle: 4°
QLSW150L									
QLSW200R	78.1	38	13	63	M6×1	69.5	20	1.2	
QLSW200L									

■With Handle

Part Number	R	D_2	Allowable Operating Load (N) ***)	Weight (g)
QLSW150R	73	20	150	320
QLSW150L				
QLSW200R	107	25	200	710
QLSW200L				

***) Allowable load to operate the handle

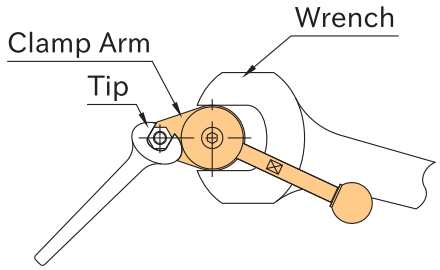
■Without Handle

Part Number	Weight (g)
QLSW150NR	295
QLSW150NL	
QLSW200NR	660
QLSW200NL	

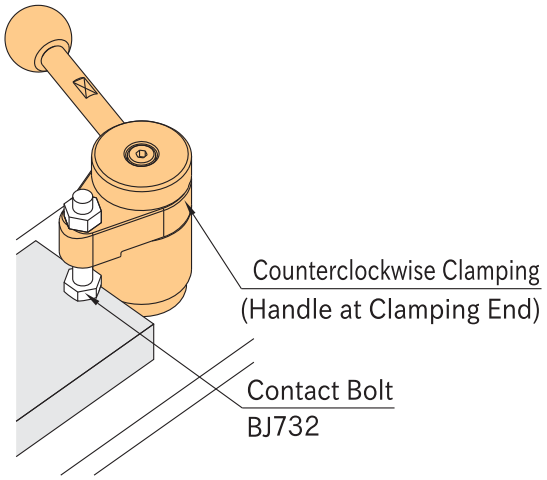
Note : The handle must be ordered separately.
- QLSL STANDARD HANDLES
- QLTL ADJUSTABLE-TORQUE HANDLES

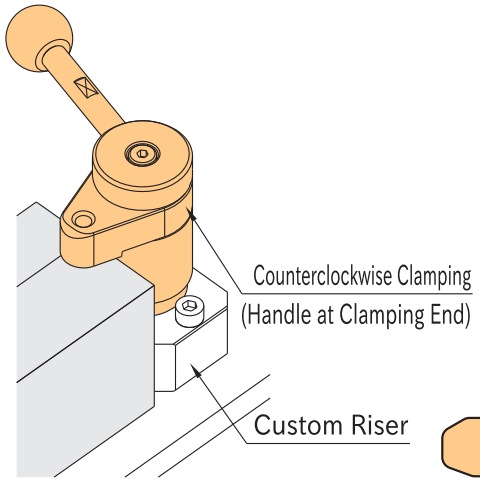
■Tip Installation

When installing a tip on the clamp arm, lock the clamp arm using a wrench to prevent the clamp from receiving any torque.



How To Use



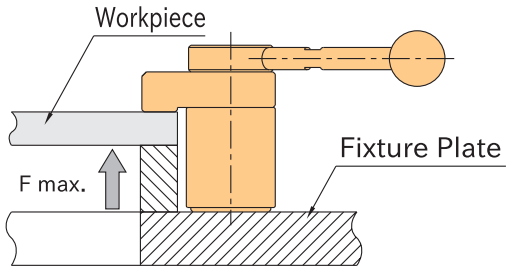


Continuing to next page

Technical Infomation

■Allowable Loads in Machining of Workpiece Bottom

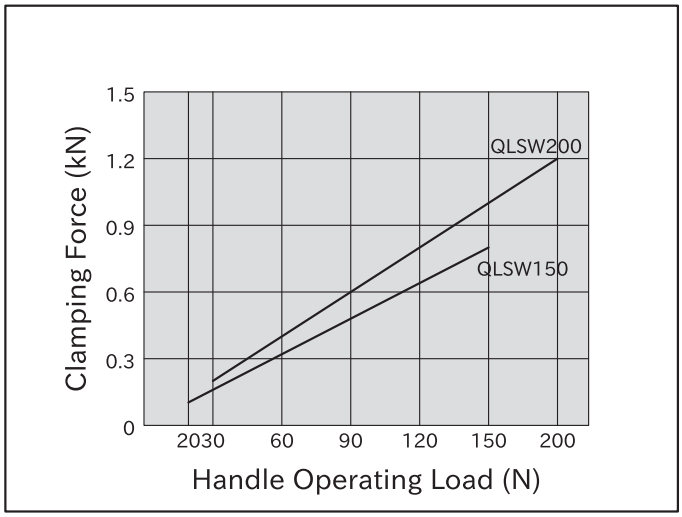
Type	Allowable Force To Workpiece Bottom (Per Clamp)
QLSW150	max. 2.1kN
QLSW200	max. 2.7kN



Performance Curve

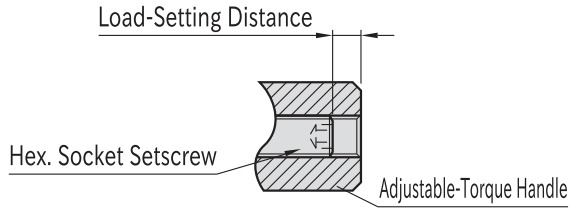
■QLSL STANDARD HANDLES

⚠ The performance curves shown below do not denote the guaranteed performance.

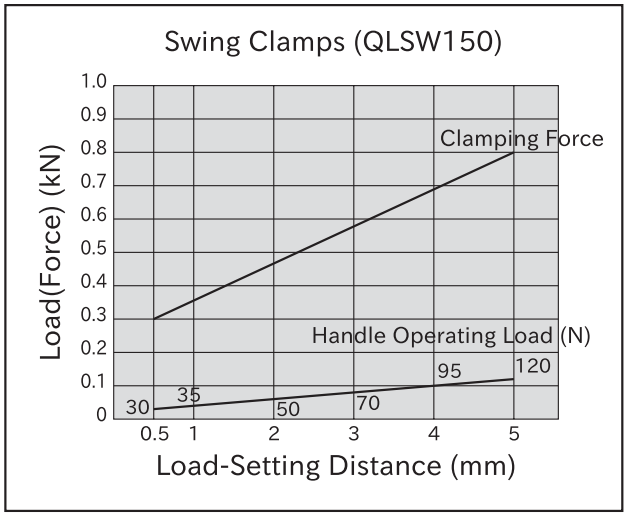


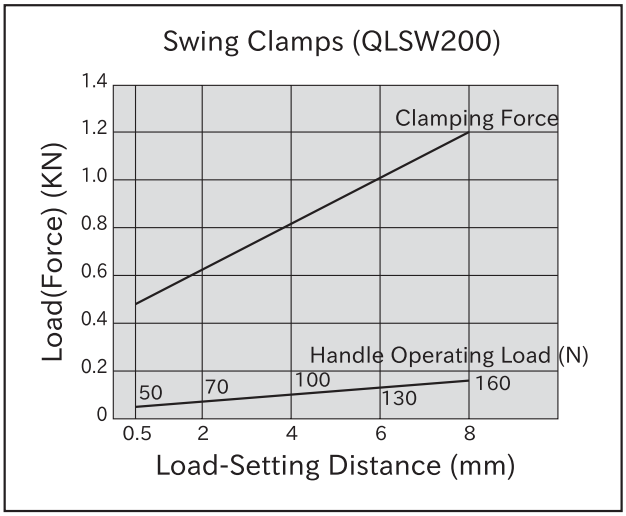
■QLTL ADJUSTABLE-TORQUE HANDLES

Use a force gauge when measuring handle-operating loads.



⚠ The performance curves shown below do not denote the guaranteed performance.





Clamp Arm

■Custom Clamp Arm

Recommeded Dimensions

Type	L_5 (Max.) *)	L_6	W	H_6	L_7	d (F8)	R_2	B	H_7	M_3	C
QLSW150	45	15	30	12	32	10	11	1.5	5	M4×0.7	C5
QLSW200	55	20	40	16	42	16	15	2	6	M5×0.8	C8

*) See page QLSW-SH clamping force vs. clamp - arm length

■Installation / Removal

To install a clamp arm,

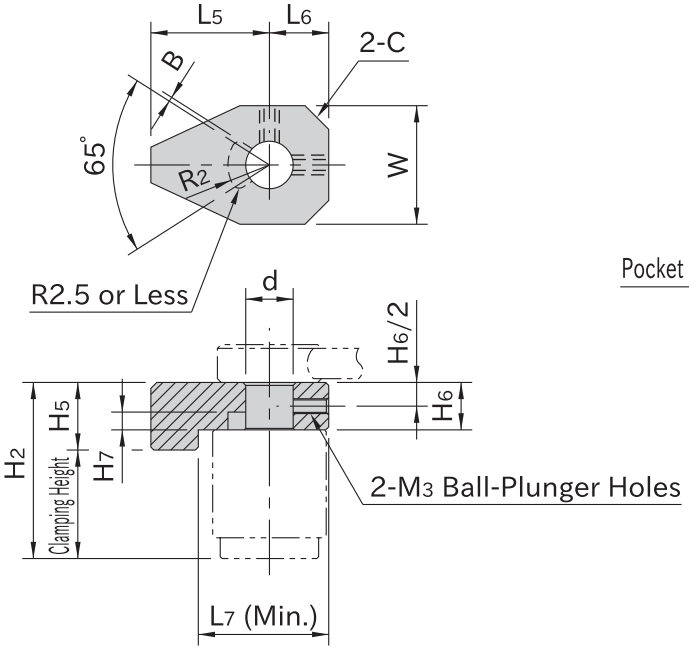
1. Fit it onto the shaft getting the stop pin received in the stop-pin slot provided on the clamp-arm bottom.
2. Place the adaptor head onto the shaft getting the shaft fitted into the shaft-receiving pocket in the adaptor head, and then lock the adaptor head using a hex. socket head cap screw.
3. Tighten the ball plungers inside the clamp arm.
   To remove the clamp arm, follow the above steps back.

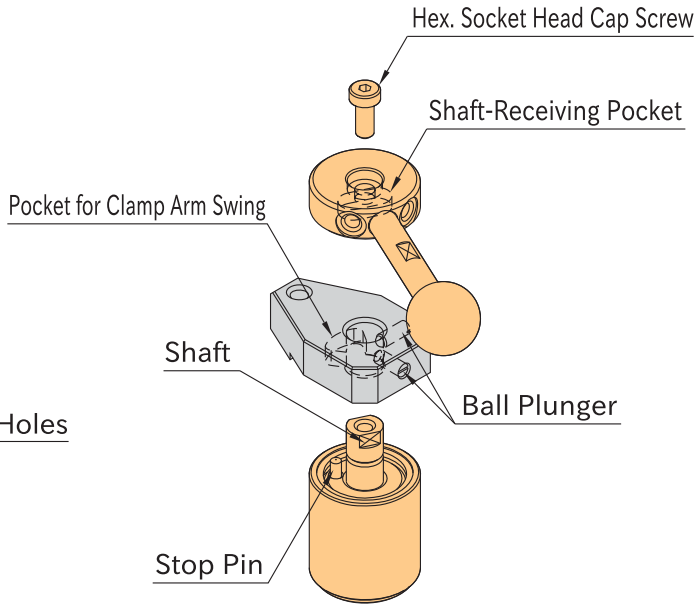
How to Determine H_5 Dimensions

Type	H_2	H_5
QLSW150	46	46−Clamping Height
QLSW200	63	63−Clamping Height

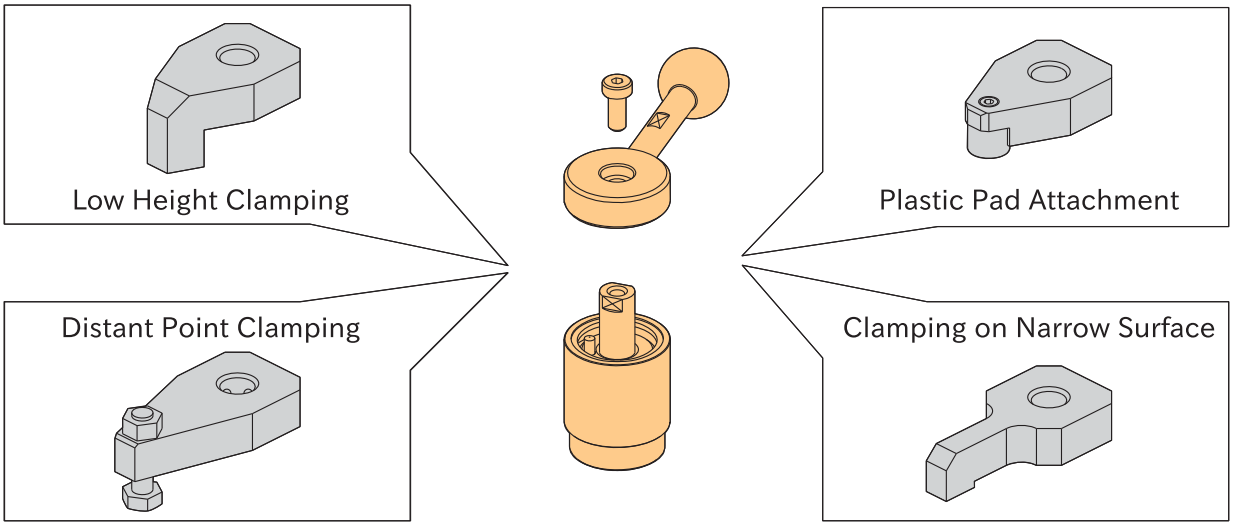
Ball Plunger

Type	Part Number
QLSW150	LBSTH4
QLSW200	LBSTH5

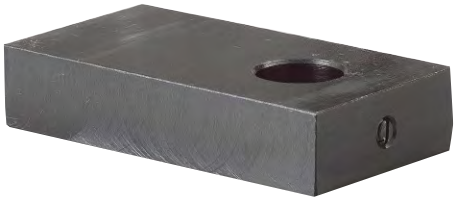


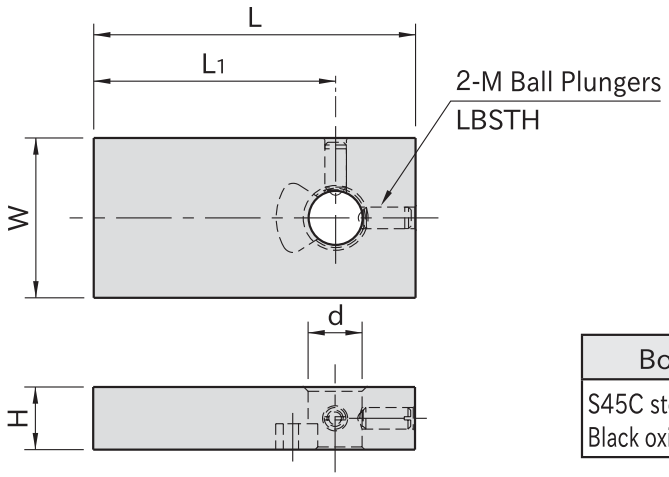


■Clamp Arm Customization Examples



QLSW-SH MACHINABLE CLAMP ARMS FOR STANDARD SWING CLAMPS



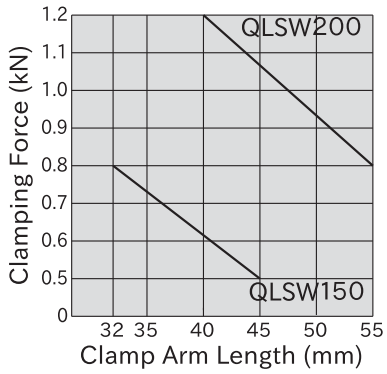


Body
S45C steel Black oxide finish

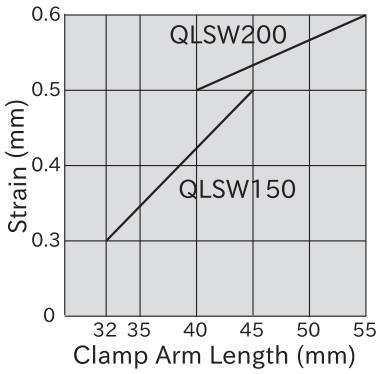
Part Number	L	W	H	d (F8)	L_1	M	Allowable Weight of Clamping Tip (g) *)	Weight (g)	Swing Clamps
QLSW150-SH	60	30	12	10	45	M4	100	150	QLSW150Series
QLSW200-SH	75	40	16	16	55	M5		330	QLSW200Series

*) A clamping tip to mount on the end of the clamp arm must not weigh over 100g.

■Clamp Arm Length Vs. Clamping Force



■Clamp Arm Length Vs. Strain During Clamping



Notes:
- Clamp arm length denotes L_1 dimensions below.
- Clamping force and strain during clamping denote values gained when the max. allowable load is applied to the handle.

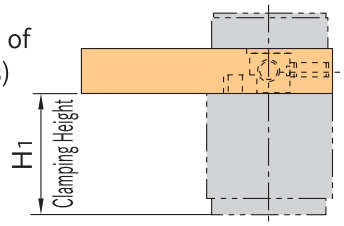
Note

Use within smaller clamping stroke when the clamp arm becomes longer than standard one.

How To Use

- Use for QLSW clamp arm customization
- Machine to your clamping requirements

(Clamping Height in Use of Machinable Clamp Arms)



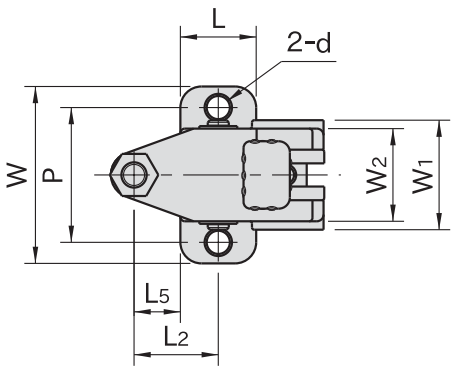
Part Number	H_1
QLSW150-SH	34 **)
QLSW200-SH	47 ***)

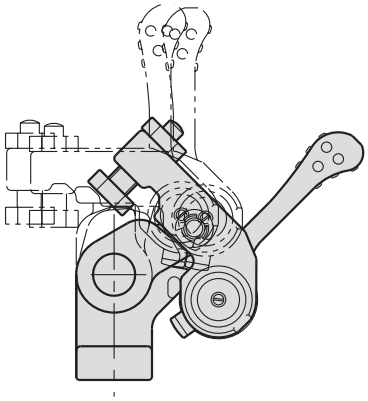
**) Actual clamping height: 33.4 to 34.6 (clamping stroke: 1.2)
***) Actual clamping height: 46.1 to 47.9 (clamping stroke: 1.8)

IMAO® fixtureworks®

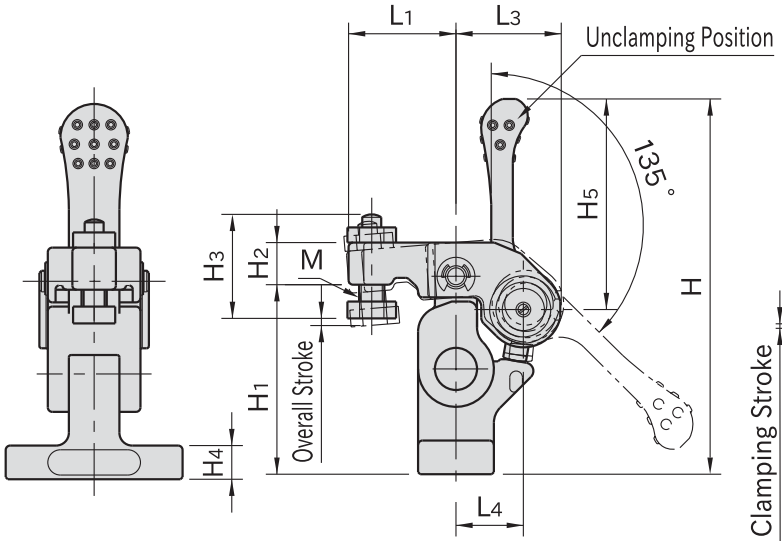
QLRE RETRACTABLE CLAMPS WITH CAM HANDLE

Body/Spindle	Arm/Joint	Cam Handle
S45C steel Quenched and tempered Black oxide finish	SCM435 steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish

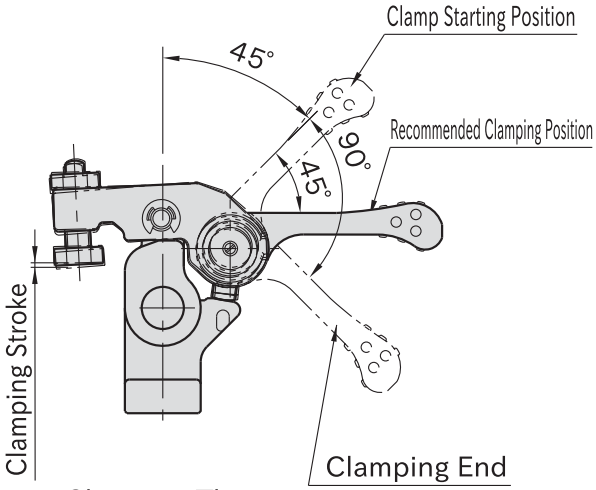




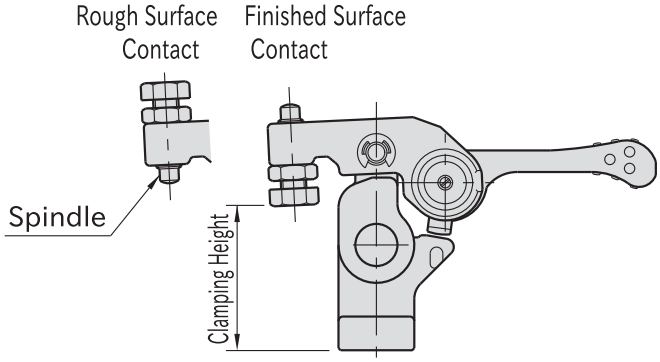
Unclamped



Clamping Position



Clamping Throw



Part Number	Clamping Height *)				Clamping Stroke	Overall Stroke	L_2	L_5	W	L	H_4	d	P	H	L_1	L_3
	Finished Surface Contact		Rough Surface Contact													
	min.	max.	min.	max.												
QLRE100	32 (31.5~32.5)	40 (39.5~40.5)	35 (34.5~35.5)	43 (42.5~43.5)	1	1.5	20	11	42	18	8	5.5	32	89	25.5	25
QLRE150	37 (36.4~37.6)	48 (47.4~48.6)	42 (41.4~42.6)	53 (52.4~53.6)	1.2	1.8	25	14	52	22	10	6.6	40	109	32	31

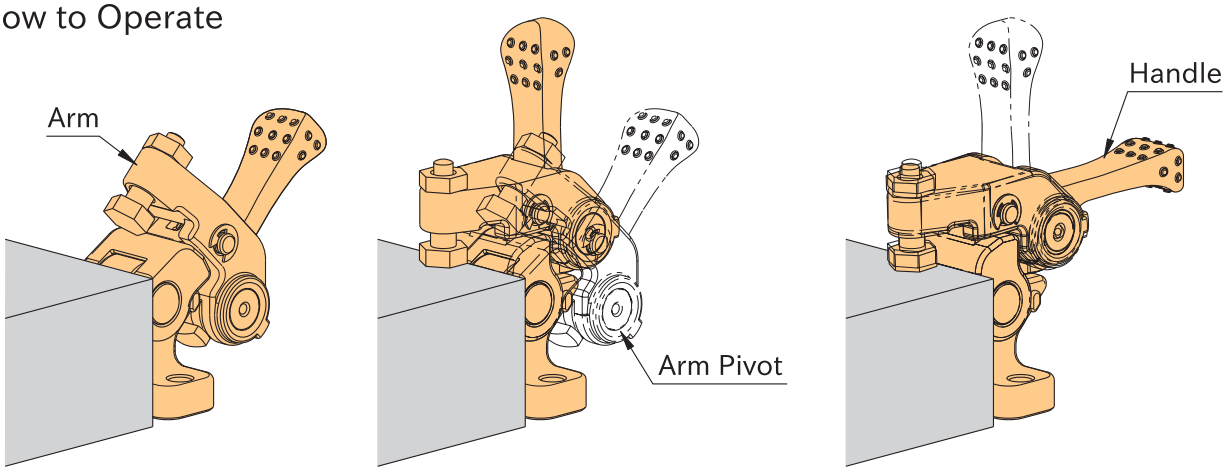
*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

Part Number	W_1	W_2	H_2	H_1	M	H_3	H_5	L_4	Cam Handles Part Number	Allowable Operating Load (N) **)	Clamping Force (kN)	Clamping Mechanism	Weight (g)
QLRE100	26	22	10	45	M6×1	24	50	16	QLCA-05	100	0.7	Spiral Cam	244
QLRE150	32	28	12	55	M8×1.25	30.5	63	20	QLCA-06	150	1.1	Cam Angle: 4°	468

**) Allowable load to operate the handle

How To Use

How to Operate



1. Unclamped
Load a workpiece.

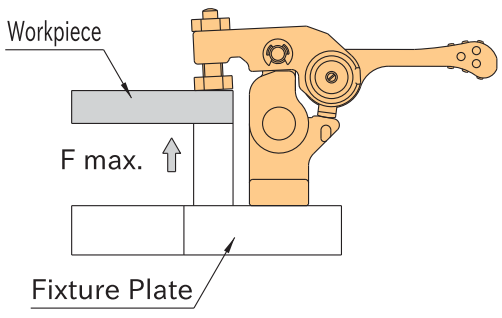
2. Clamping Setup
Set the arm in clamping position holding it at the arm pivot.

3. Clamping
Set the handle down to clamp the workpiece.
(For unclamping, follow the above steps back.)

Technical Information

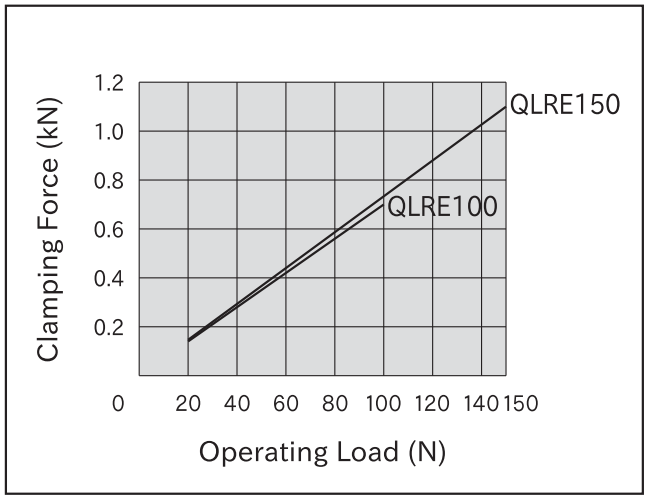
Allowable Loads in Machining of Workpiece Bottom

Ensure that any force more than stated below is not applied.



Part Number	Allowable Force to Workpiece Bottom (per Clamp)
QLRE100	max. 5kN
QLRE150	max. 6kN

Performance Curve

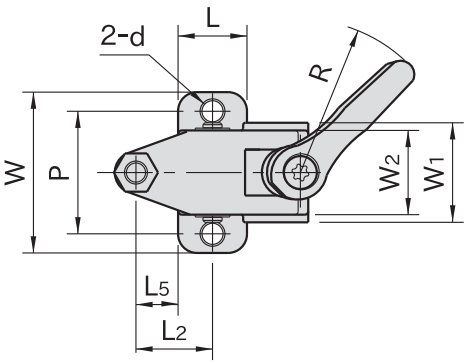


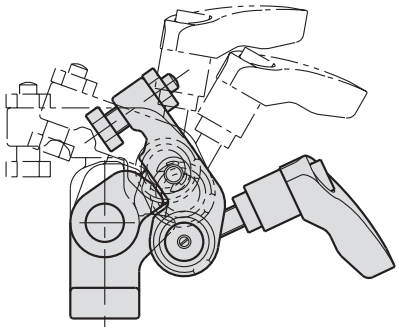
QLRE

RETRACTABLE CLAMPS WITH ADJUSTABLE HANDLE

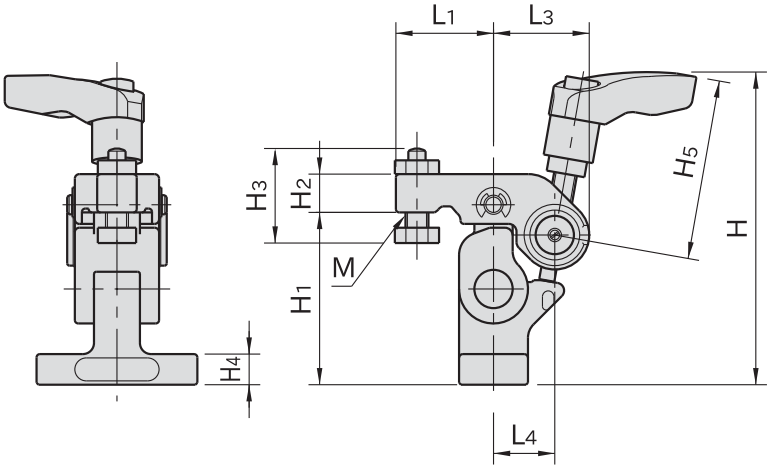
Body/Spindle	Arm/Joint
S45C steel Quenched and tempered Black oxide finish	SCM435 steel Quenched and tempered Black oxide finish

Screw clamping mechanism allows for longer clamping stroke and greater clamping force.

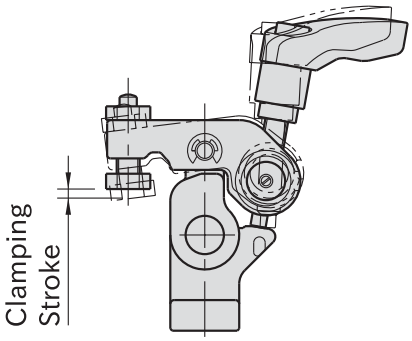




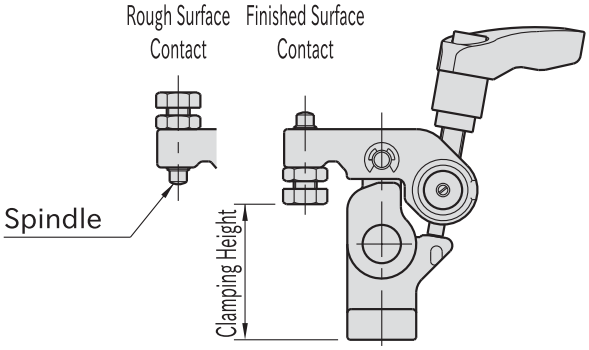
Unclamped



Clamping Position



Clamping Throw



Part Number	Clamping Height *)				Clamping Stroke	L_2	L_5	W	L	H_4	d	P	H	L_1	L_3	W_1
	Finished Surface Contact		Rough Surface Contact													
	min.	max.	min.	max.												
QLRE-06	32 (32~29.5)	40 (40~37.5)	35 (35~32.5)	43 (43~40.5)	2.5	20	11	42	18	8	5.5	32	81	25.5	25	26
QLRE-08	37 (37~33.5)	48 (48~44.5)	42 (42~38.5)	53 (53~49.5)	3.5	25	14	52	22	10	6.6	40	100	32	31	32

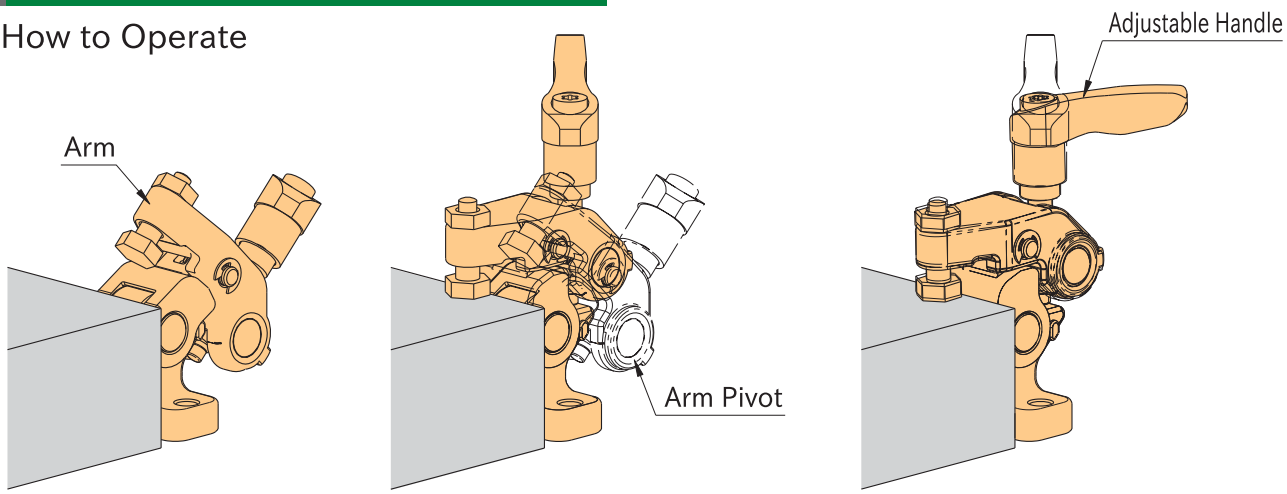
*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

Part Number	W_2	H_2	H_1	M	H_3	R	H_5	L_4	Adjustable Handles **)	Allowable Operating Load (N) ***)	Clamping Force (kN)	Clamping Mechanism	Weight (g)
QLRE-06	22	10	45	M6×1	24	40	47	16	FKF6-BR	170	2.4	Screw	242
QLRE-08	28	12	55	M8×1.25	30.5	65	63	20	FKF8-BR	210	4.2		490

**) Studs are bonded with FKF handles.
***) Allowable load to operate the handle.

How To Use

How to Operate



1. Unclamped
Load a workpiece.

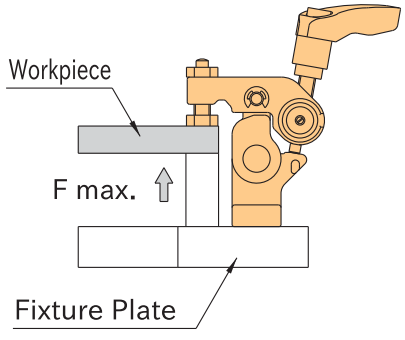
2. Clamping Setup
Set the arm in clamping position holding it at the arm pivot.

3. Clamping
Tighten the adjustable handle to clamp the workpiece.
(For unclamping, follow the above steps back.)

Technical Information

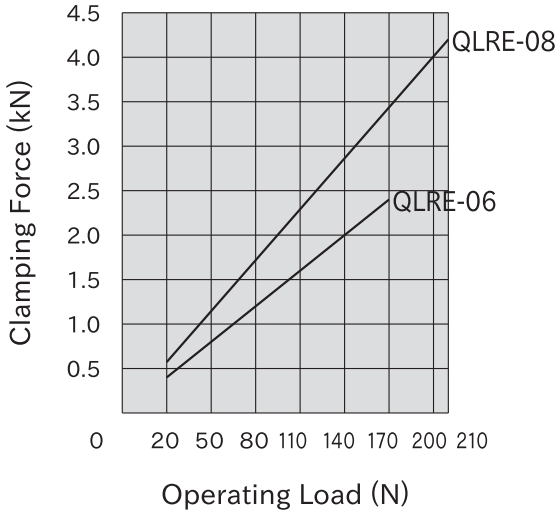
Allowable Loads in Machining of Workpiece Bottom

Ensure that any force more than stated below is not applied.



Part Number	Allowable Force to Workpiece Bottom (per Clamp)
QLRE-06	max. 5kN
QLRE-08	max. 6kN

Performance Curve



QLRCF THRUST CLAMPS (Vertical)

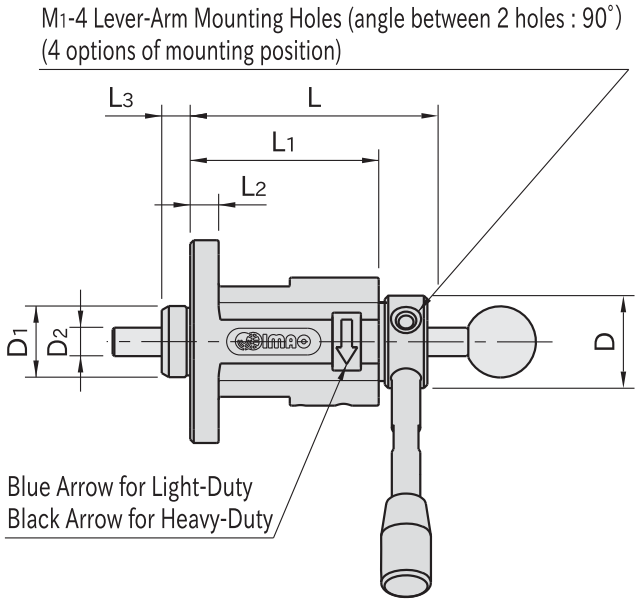
RoHS

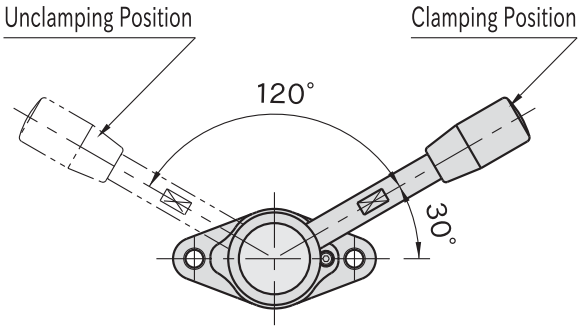
Light-Duty
(Marked with Blue Arrow)

Heavy-Duty
(Marked with Black Arrow)

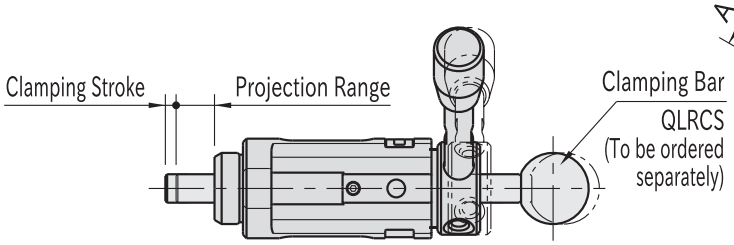
Note: Clamping bar is not included.

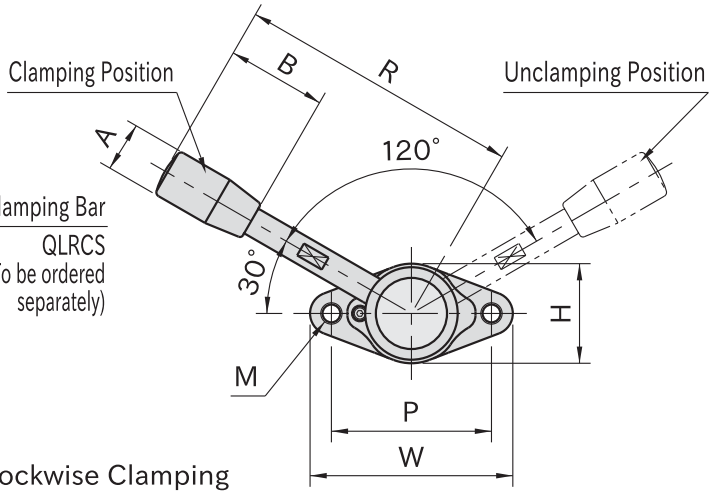
Body/Lever Arm	Cam	Handle
S45C steel Black oxide finish	SCM415 steel Carburized-hardened Black oxide finish	Phenolic plastic Black matte





Clockwise Clamping





Counterclockwise Clamping

Type	Clamping Stroke	D_2	W	H	L_2	M	P	L	L_1	L_3	D	D_1 $(^{-0.04}_{-0.08})$	R	B	A	M_1
QLRCF-08	1.5	8	57	28	8	M 6×1 (Prepared Hole 5.2)	45	68.5	53	8	26	20	80	28	14	M5×0.8
QLRCF-12	2.3	12	85	40	12	M10×1.5 (Prepared Hole 8.5)	65	90.7	72	12	36	30	132	50	21	M6×1

QLRCF-L (Light-Duty)

Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range
QLRCF-08R-L	CW	40	0.2	330	QLRCS-08100 0~22 QLRCS-08125 0~47 QLRCS-08150 0~72
QLRCF-08L-L	CCW				
QLRCF-12R-L	CW	100	0.7	930	QLRCS-12125 0~20 QLRCS-12150 0~45 QLRCS-12200 0~95
QLRCF-12L-L	CCW				

QLRCF (Heavy-Duty)

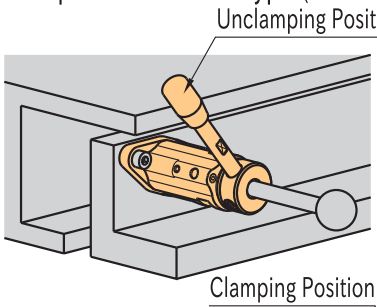
Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range
QLRCF-08R	CW	80	0.5	330	QLRCS-08100 0~22 QLRCS-08125 0~47 QLRCS-08150 0~72
QLRCF-08L	CCW				
QLRCF-12R	CW	150	1.4	950	QLRCS-12125 0~20 QLRCS-12150 0~45 QLRCS-12200 0~95
QLRCF-12L	CCW				

Feature

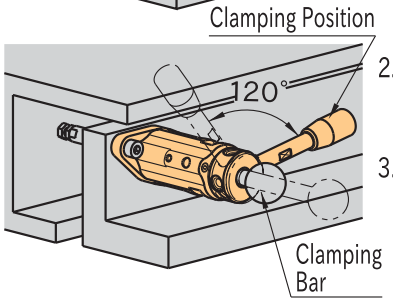
- Can be used in both vertical and horizontal clamping applications.
- The horizontal style is also available. (see page for QLRC)
- Spring-loaded clamp that provides constant clamping force.
- Long clamping-bar projection range allows clamping a recessed part. (When using your own clamping bar, ensure that the diameter is finished to a h9 or better tolerance)

How To Use

Operation of CW Type (Invert the operation for CCW type.)

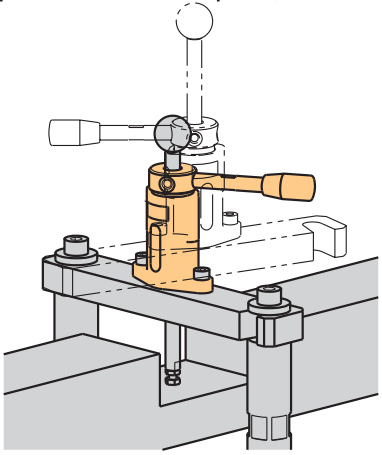


1. Unclamped
Load or unload a part.



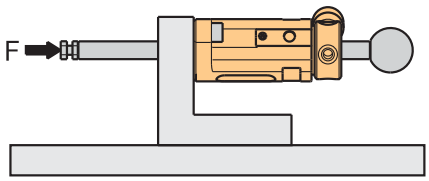
2. Clamping Setup
Project the clamping bar until it contacts the part.
3. Clamping
Turn the lever handle (120°) to the clamping position.

Application Example (Vertical Clamping)



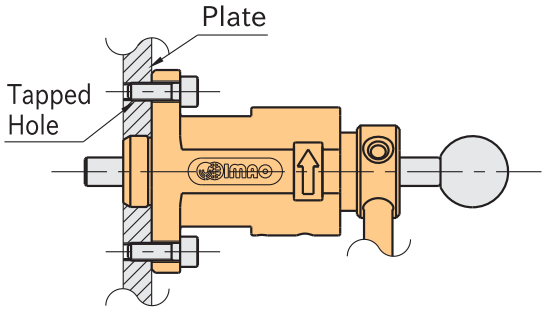
Note

When a reaction force (F) becomes greater than a clamping force, the clamping bar slides back to get a part unclamped.

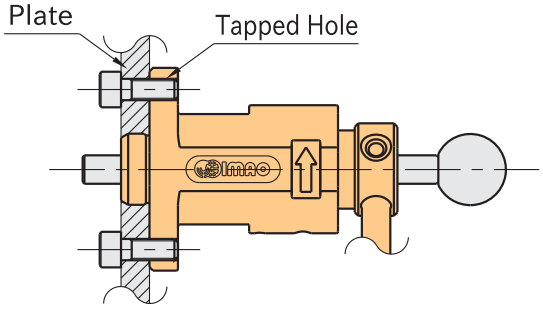


Type	Clamp Releasing Force
QLRCF-08-L	F>0.2kN
QLRCF-12-L	F>0.7kN
QLRCF-08	F>0.5kN
QLRCF-12	F>1.4kN

How to Mount



- Face Mounting
(Use cap screws with one-size smaller threads than mounting-hole threads.)



- Back Mounting
(Use cap screws with threads of the same size as mounting-hole threads.)

QLRC THRUST CLAMPS

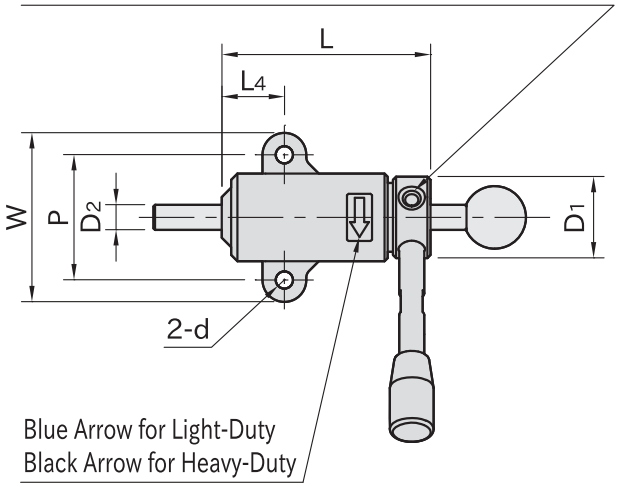
Light-Duty
(Marked with Blue Arrow)

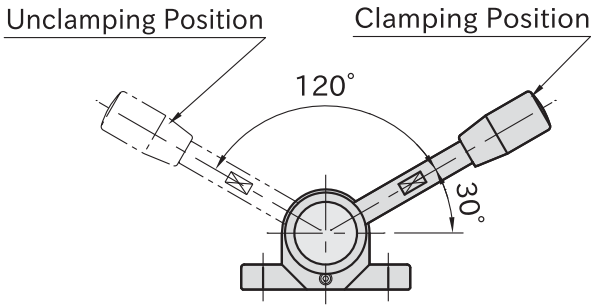
Heavy-Duty
(Marked with Black Arrow)

Note: Clamping bar is not included.

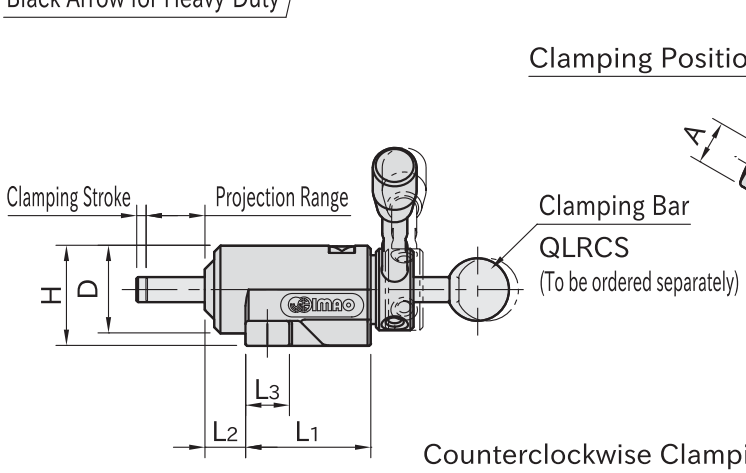
Body/Lever Arm	Cam	Handle
S45C steel Black oxide finish	SCM415 steel Carburized-hardened Black oxide finish	Phenolic plastic Black matte

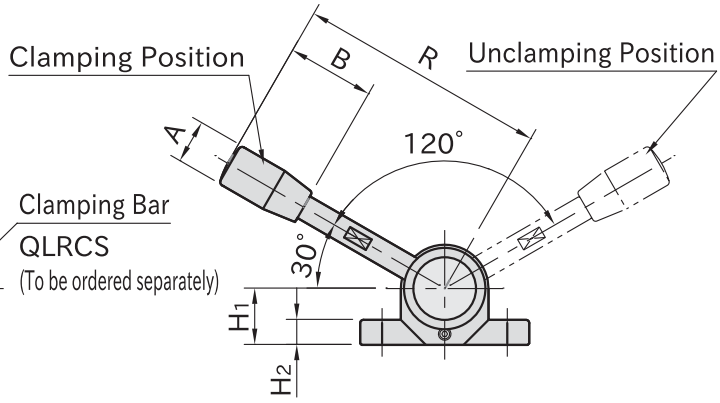
M-4 Handle-Mounting Holes(provided every 90° angle)
(4 options of mounting position)





Clockwise Clamping





Counterclockwise Clamping

Type	Clamping Stroke	D_2	H_1	L_4	W	L_3	H_2	d	P	H	D	D_1	L	L_1	L_2	R	B	A	M
QLRC-08	1.5	8	18	20	54	14	8	5.5	40	32	28	26	68.5	40	13	80	28	14	M5X0.8
QLRC-12	2.3	12	25	30	80	20	12	9	60	45	40	36	93.7	55	20	132	50	21	M6X1

QLRC-L (Light-Duty)

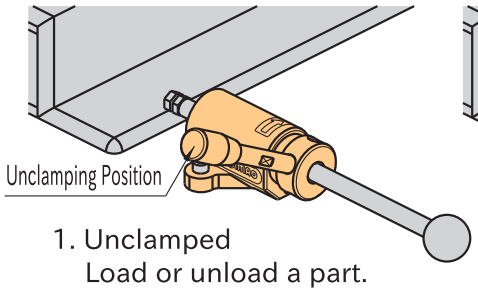
Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range
QLRC-08R-L	CW	40	0.2	330	QLRCS-08100 0～30 QLRCS-08125 0～55 QLRCS-08150 0～80
QLRC-08L-L	CCW				
QLRC-12R-L	CW	100	0.7	930	QLRCS-12125 0～29 QLRCS-12150 0～54 QLRCS-12200 0～104
QLRC-12L-L	CCW				

QLRC (Heavy-Duty)

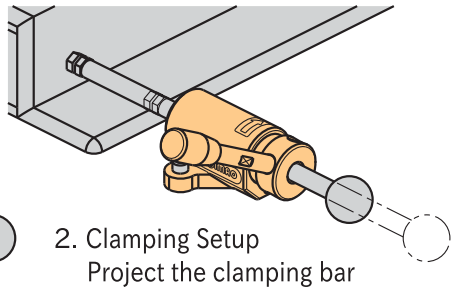
Part Number	Clamping Direction	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar Projection Range
QLRC-08R	CW	80	0.5	330	QLRCS-08100 0～30 QLRCS-08125 0～55 QLRCS-08150 0～80
QLRC-08L	CCW				
QLRC-12R	CW	150	1.4	910	QLRCS-12125 0～29 QLRCS-12150 0～54 QLRCS-12200 0～104
QLRC-12L	CCW				

How To Use

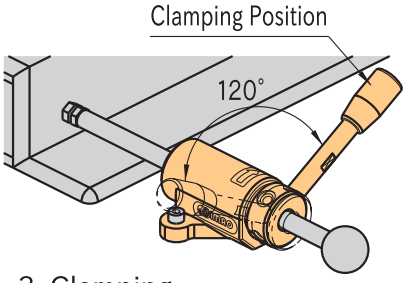
■Operation of CW Type (Invert the operation for CCW type.)



1. Unclamped
Load or unload a part.



2. Clamping Setup
Project the clamping bar until it contacts the part.



3. Clamping
Turn the lever handle (120°) to the clamping position.

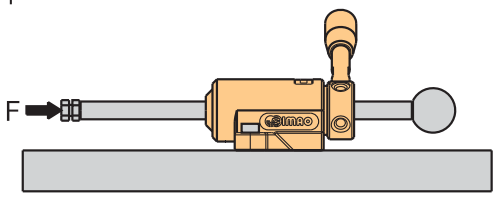
Feature

・Spring-loaded clamp that provides constant clamping force.
・Long clamping-bar projection range allows clamping a recessed part.
・Clamping Bars are not included (must be ordered separately).
(When using your own clamping bar, ensure that the diameter is finished to a h9 or better tolerance)

Note

When a reaction force (F) becomes greater than a clamping force, the clamping bar slides back to get a part unclamped.

Type	Clamp Releasing Force
QLRC-08-L	F>0.2kN
QLRC-12-L	F>0.7kN
QLRC-08	F>0.5kN
QLRC-12	F>1.4kN



QLRCW STABLELOCK THRUST CLAMPS

RoHS

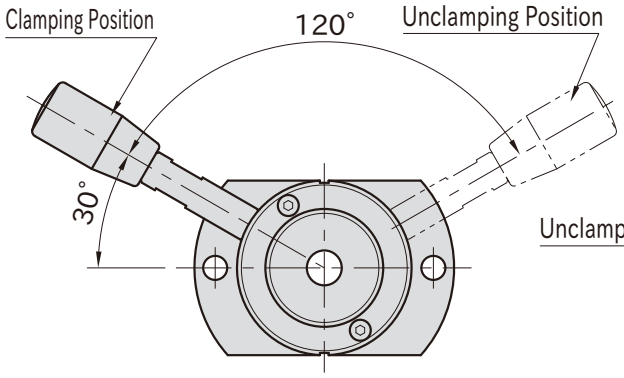
IMAO

Wedge

★Key Point

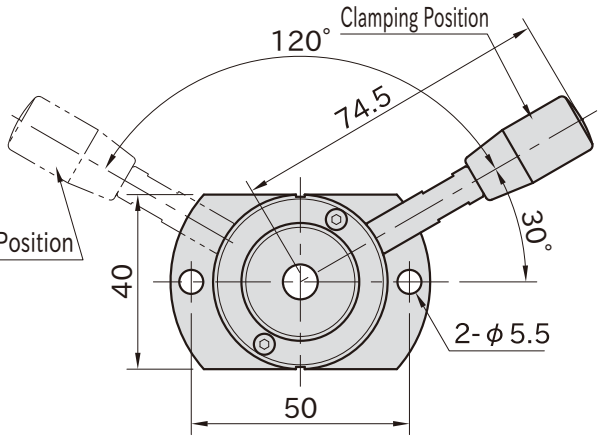
Works in 2 ways as a pull and thrust clamp

Body, Collet	Cover, Lever Arm	Handle
Pre-hardened steel Electroless nickel plated	S45C steel Electroless nickel plated	Phenolic plastic Black

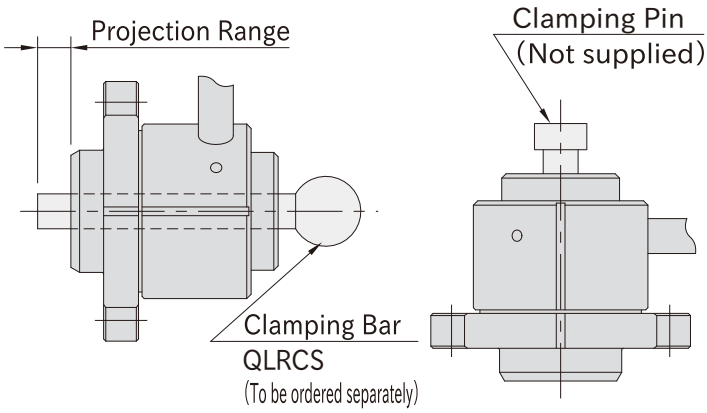


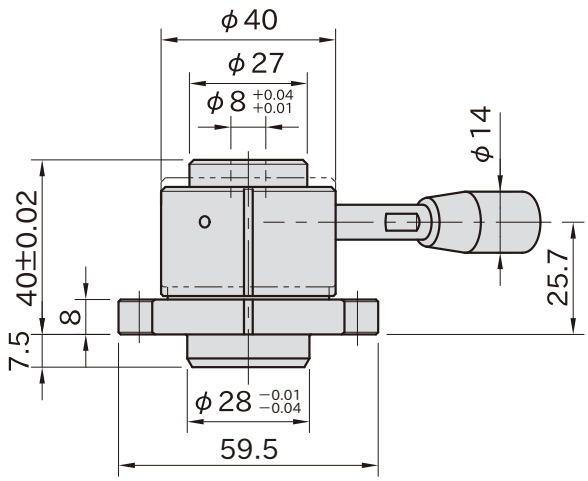
QLRCW40L-050

Counterclockwise Clamping



■For use as Thrust Clamp ■For use as Pull Clamp





QLRCW40R-050

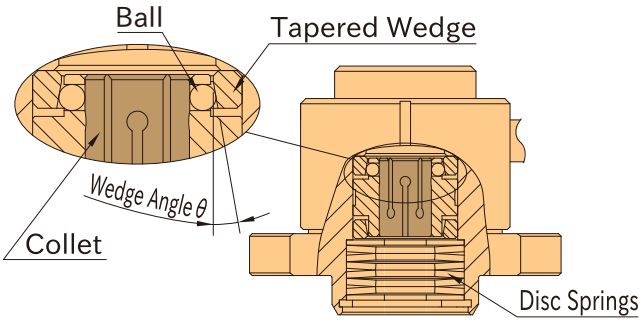
Clockwise Clamping

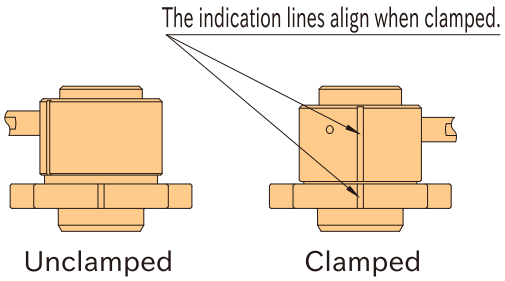
Part Number	Clamping Direction	Operating Load (N)	Clamping Force (kN)	Weight (g)	Clamping-Bar	Projection Range
QLRCW40R-050	CW	80	0.5	410	QLRCS-08100	0～ 51.5
QLRCW40L-050	CCW				QLRCS-08125	0～ 76.5
					QLRCS-08150	0～101.5

Note: Ensure that the clamping bar is in close contact with the workpiece when clamping.

Feature

- Available as both a pull clamp and a thrust clamp.
- By turning the handle, the balls are pushed out by the tapered surface to compress the collet and hold the shaft.
- Spring-loaded clamping ensures constant clamping force.
- The long clamping bar projection range is suitable for thrust clamping of recessed parts.
- Clamping bar should be ordered separately. When using your own clamping bar, ensure that the diameter is finished to h9 or better tolerance.



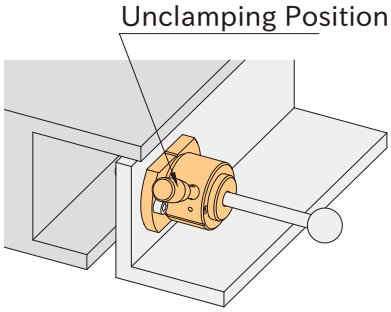


- The indication line clearly shows clamping/unclamping position.

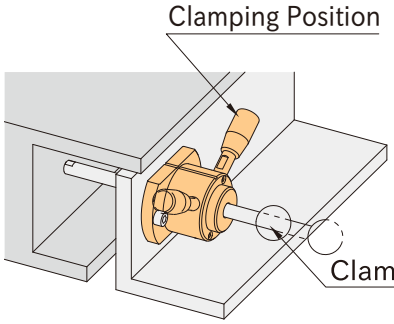
How To Use

■Clockwise Operation of Thrust Clamp

※Invert the operation for CCW type.



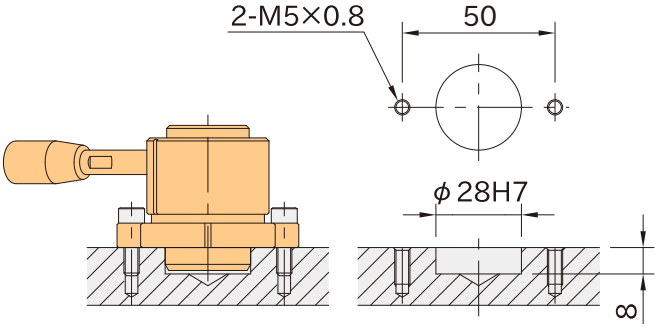
1.Unclamped
Load a workpiece.



2.Clamping Setup
Project the clamping bar until it contacts the workpiece.

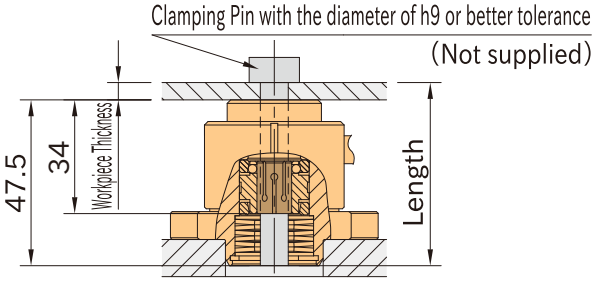
3.Clamping
Turn the handle by 120˚ to clamp.

■Mounting-Hole Dimension



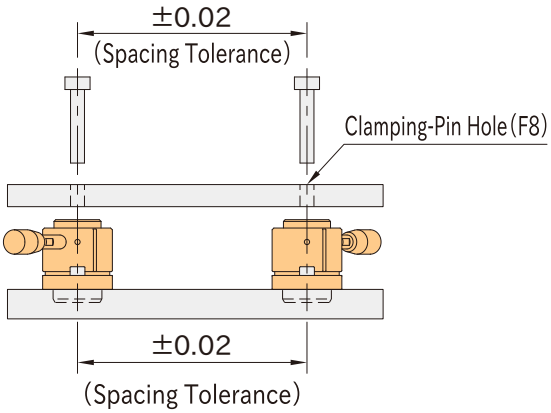
■Clamping Pin Length for Pull Clamp

Please refer to the following value for the clamping pin length.
Min. Length : 34 + Workpiece Thickness
Max. Length : 47.5 + Workpiece Thickness



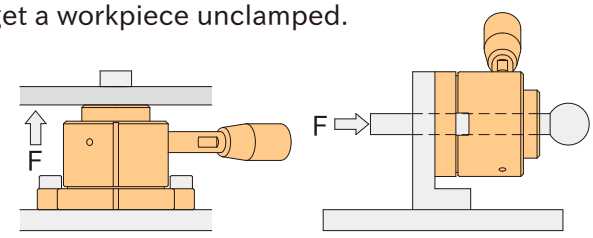
■How to Locate Workpiece for Pull Clamp

Locating Repeatability ±0.06



Note

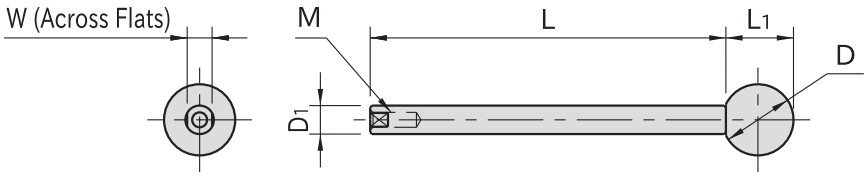
When a force from the back side (F) is greater than 0.5 kN, the clamping bar or pin will slide back to get a workpiece unclamped.



Reference

QLRCS CLAMPING BARS

QLRCS CLAMPING BARS

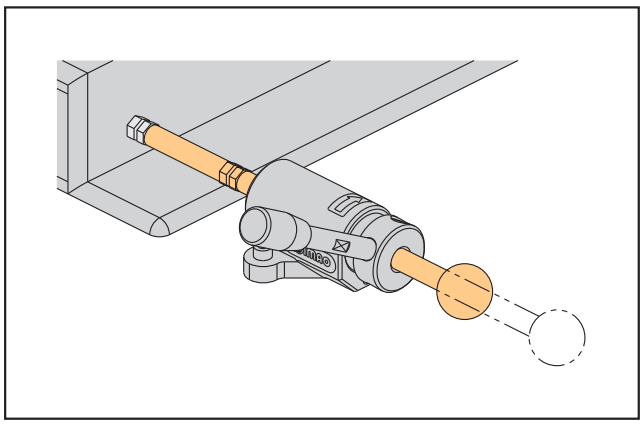


Part Number	D1 (f8)	L	L1	D	W	M	Weight (g)
QLRCS-08100	8	100	19	20	7	M4×0.7 Depth 8	50
QLRCS-08125		125					60
QLRCS-08150		150					70
QLRCS-12125	12	125	24	25	10	M6×1 Depth 12	130
QLRCS-12150		150					150
QLRCS-12200		200					190

Arm	Ball Knob
S45C steel Chrome plated	ABS resin Black

How To Use

- QLRC THRUST CLAMPS
- QLRCF THRUST CLAMPS (Vertical)
- Can be cut shorter to a desired length.



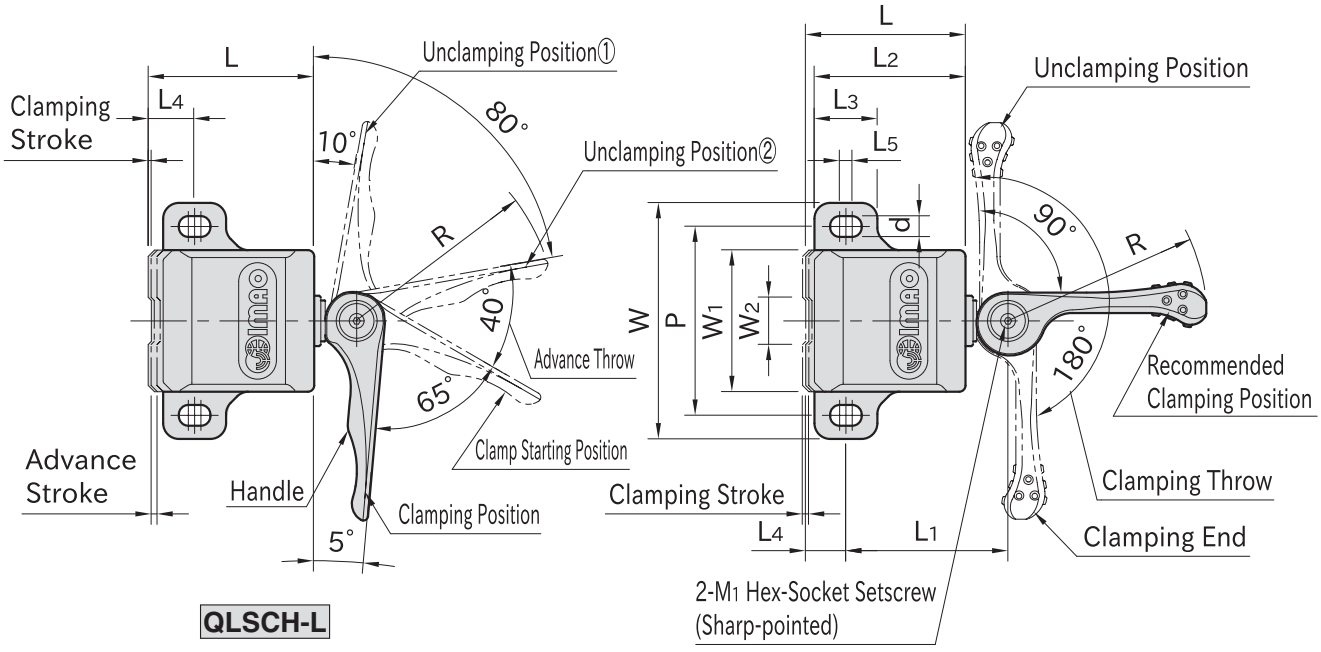
IMAO® fixtureworks®

QLSCH CAM EDGE CLAMPS

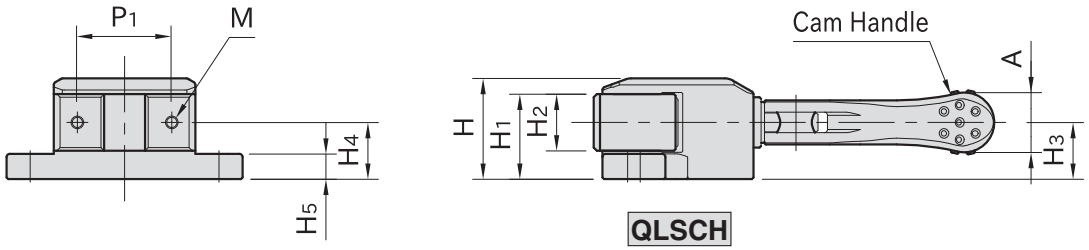
QLSCH-L
(Light-Duty)

QLSCH
(Standard)

Type	Body	Jaw/Handle Shaft	Handle
QLSCH-L	S45C steel Black oxide finished	S45C steel Quenched & tempered Black oxide finished Precision ground	SCM440 steel Quenched & tempered Electroless nickel plated
QLSCH			SCM440 steel Quenched & tempered Black oxide finished



QLSCH-L
(Light-Duty)



QLSCH
(Standard)

Size	W_1	W_2	H_1	H_2	M	P_1	H_4	L_4	W	L_3	H_5	d	L_5	P
QLSCH32	45	15	27	18	M4X0.7 Depth 6	30	18	13	75	20	8	6.6	3	60
QLSCH40	60	20	33	22	M5X0.8 Depth 8	40	22	17	100	26	10	8.6	4	80

Size	H	L	L_2	R	L_1	H_3	M_1
QLSCH32	32	51	48	63	51.5	18	M4X0.7-5L
QLSCH40	40	67	63	80	67	22	M5X0.8-6L

Related Product

Stronger type without handle is available.
QLSCH-H SIDE CLAMPS

■Light-Duty

Part Number	A	Clamping Stroke *)	Advance Stroke	Operating Load (N) **)	Clamping Force (kN)	Weight (g)
QLSCH32L	14	0.3	0.8	40	0.6	600
QLSCH40L	18	0.4		50	1.2	1320

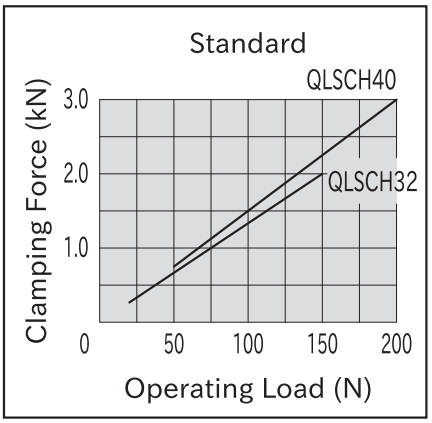
*) Dimensional variations between workpieces should be 0.1mm or less.
**) Load needed to turn the handle to clamping position

■Standard

Part Number	A	Clamping Stroke	Handle Number	Operating Load (N) ***)	Clamping Force (kN)	Weight (g)
QLSCH32	19	1.6	QLCA-06	150	2	620
QLSCH40	24	2.2	QLCA-08	200	3	1360

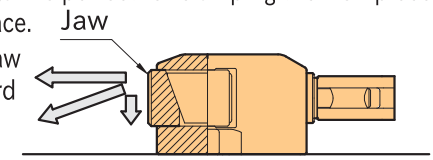
***) Allowable load to operate the handle

Performance Curve



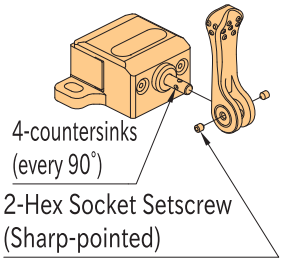
Feature

- The cam handle allows fast clamping in single operation.
- Spring-loaded light-duty style allows distributing constant clamping force.
- Standard style allows adjusting clamping force depending on operating loads.
- Precision-ground jaw is perfect for clamping the workpiece on its finished surface.
- In clamping, the jaw provides downward force to prevent part lift.

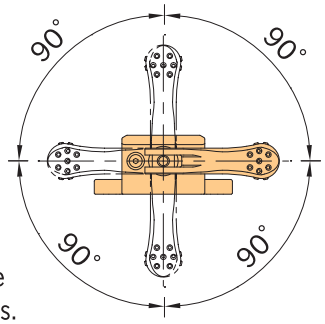


Changing Handle Position

The handle shaft has 4 countersinks which are provided every 90˚for 4 options of handle position.

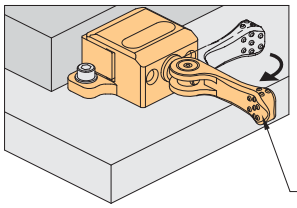


Note: The setscrews must be tightened into 2 countersinks.



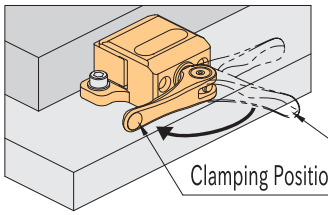
How To Use

■Standard



Turning the cam handle allows the jaw to advance to the workpiece for clamping. For clamping forces, see the performance curve.

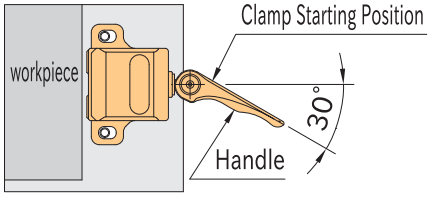
■Light-Duty



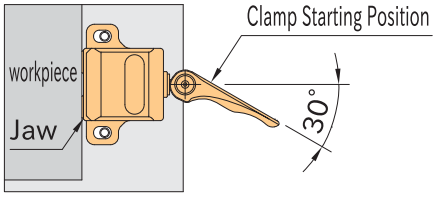
Turning the handle to the clamping position allows clamping the workpiece with constant clamping force.

Installation Instructions for Light-Duty Style

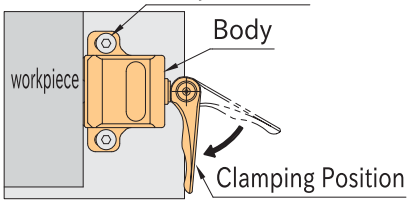
The steps below must be followed so that constant clamping force can be distributed within the clamping stroke.



Set the handle to the clamp starting position.



Contact the jaw to the workpiece.



Fasten the clamp with hex socket-head cap screws, and then turn the handle to the clamping position for clamping.

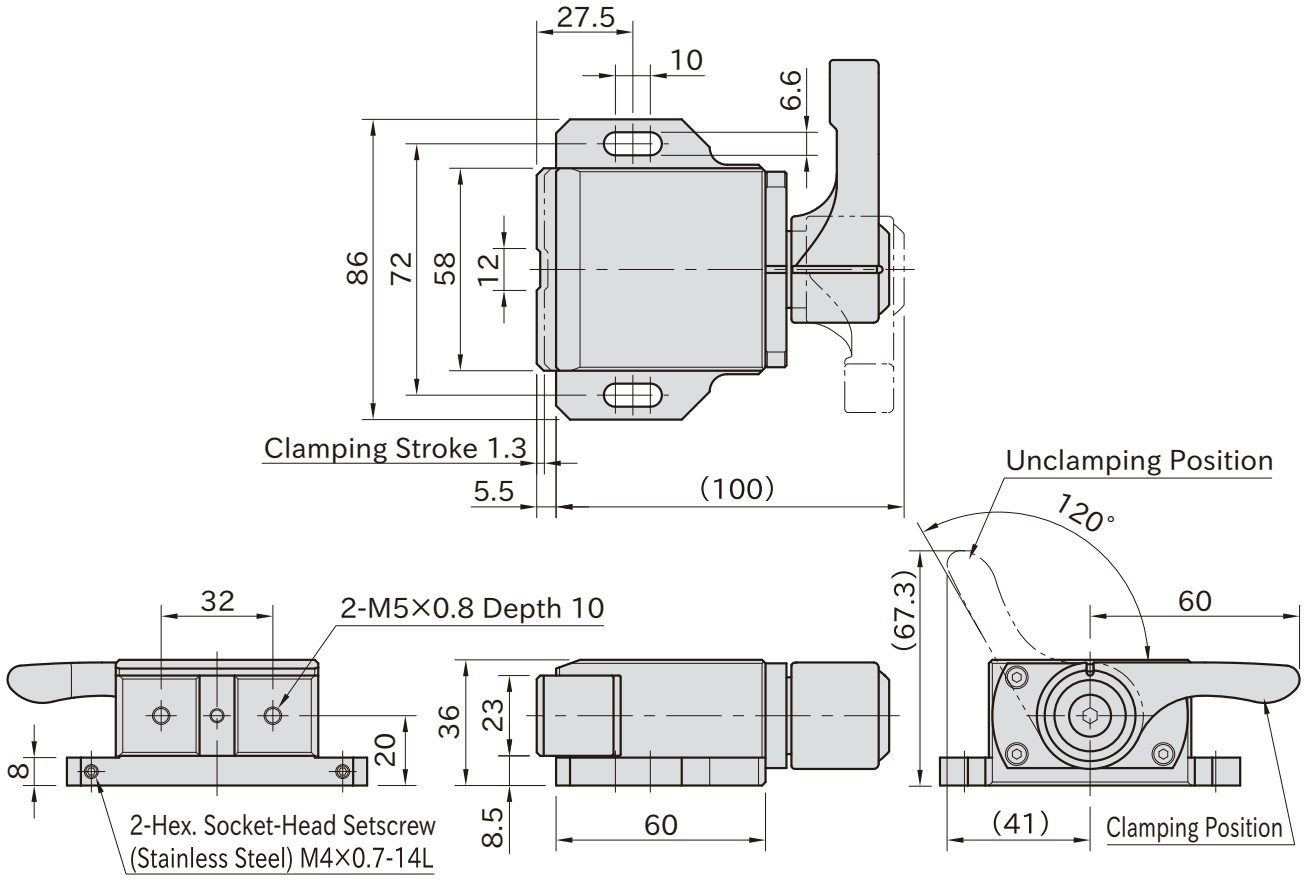
QLSCW STABLELOCK SIDE CLAMPS

RoHS

Wedge

★Key Point
Click to confirm consistent clamping

Body	Jaw	Cam Cylinder	Handle
S45C steel Electroless nickel plated	S45C steel Quenched & tempered Electroless nickel plated	SCM440 steel Electroless nickel plated	SCS13 stainless steel (Equivalent to SUS304)

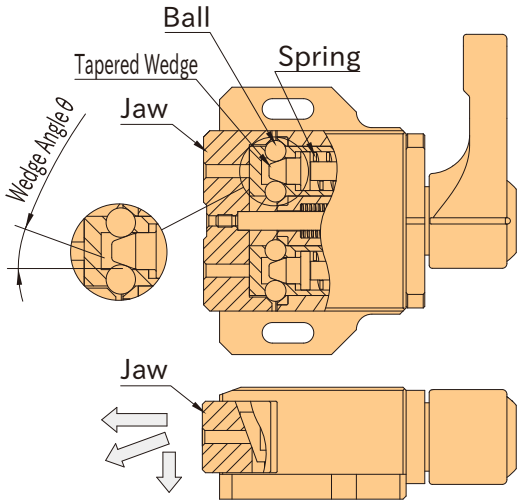


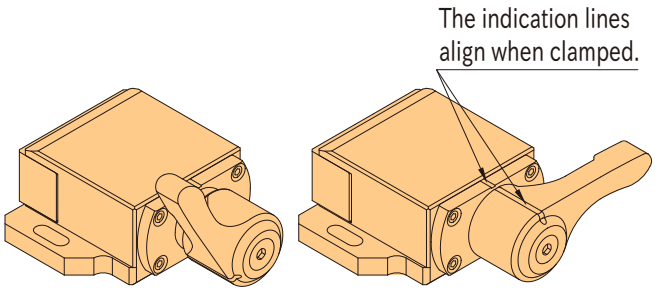
Part Number	Operating Load (N)	Clamping Force (kN)	Weight (kg)
QLSCW36-200	80	2 (1.3~2.7)	1.2

Note : The above operating load and clamping force are obtained when clamping the workpiece at the midpoint of the clamping stroke.
The clamping force varies within the above range depending on the amount of compression of the spring.

Feature

・By turning the handle, the balls are pushed out by the tapered surface, providing a rigid side push.
・Provides constant clamping force with mechanical positive locking and spring force.
・Precision-ground jaw is perfect for clamping the workpiece on its finished surface.
・The jaw provides downward force, preventing the workpiece from lifting.

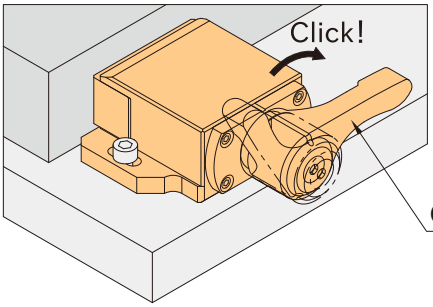




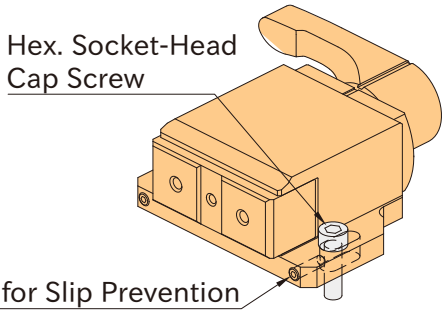
・The indication line clearly shows clamping/unclamping position.

How To Use

■Operation

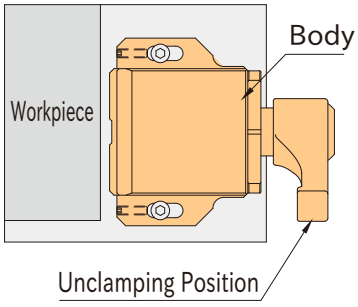


Turn the handle to the clamping position.
It offers constant clamping force with a click at the clamping end.

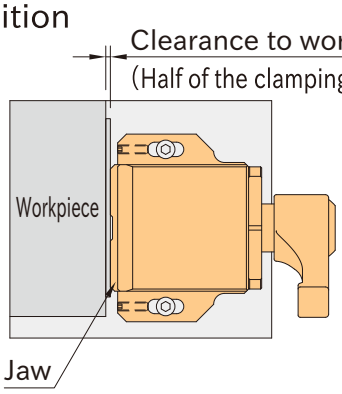


Tighten the setscrew until it contacts the hex. socket-head cap screw to prevent the body from sliding backward during clamping.

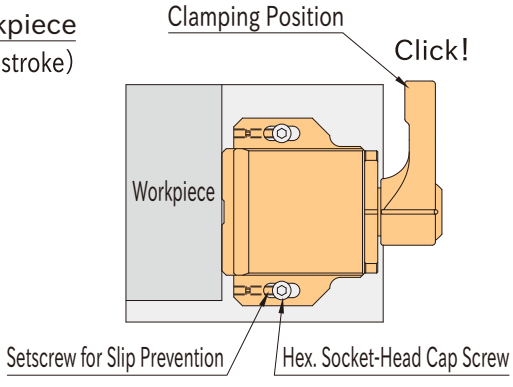
■How To Set Clamping Position



1.Place the clamp with the handle in the unclamped position.



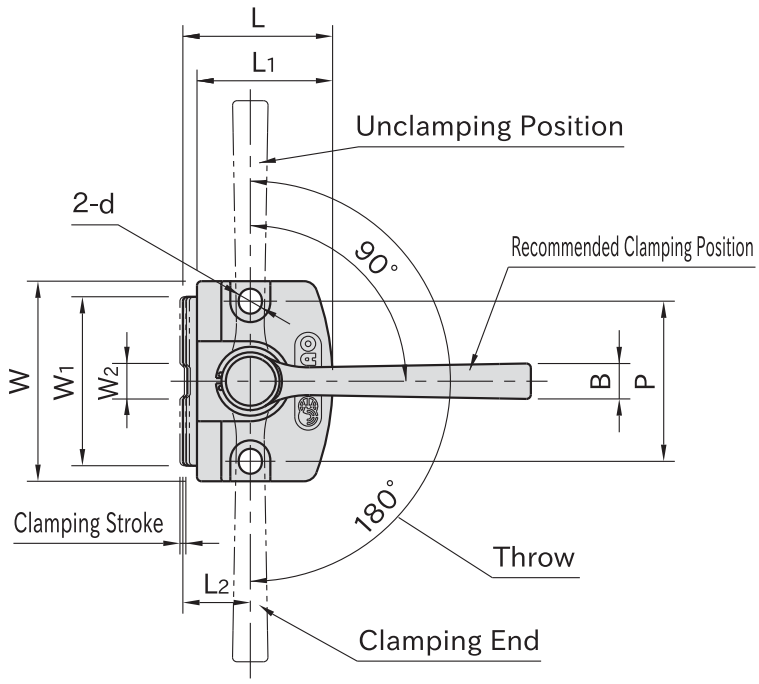
2.Leave a clearance of about half the clamping stroke between the workpiece and the jaw. Putting a thickness gauge facilitates this setting.

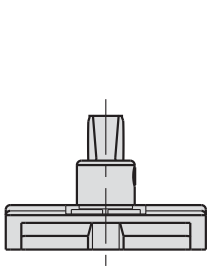


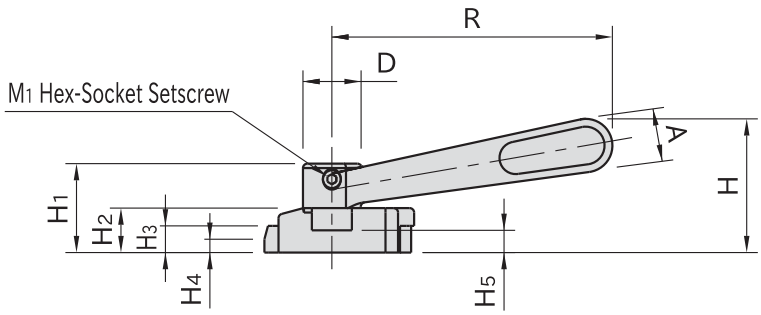
3.Temporarily fix the body with hex. socket-head cap screws by placing the thickness gauge between the jaw and the workpiece. Remove the thickness gauge and fully tighten the cap screws. Tightening the setscrews will prevent the body from slipping. Turn the handle to clamp.

QLSCL-R LOW-PROFILE CAM EDGE CLAMPS

Body	Jaw/Cam	Handle
S45C steel Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish







Part Number	Clamping Stroke	W_1	W_2	H_3	H_4	L_2	W	L	H_2	d	P	H_5	L_1	Clamping Mechanism
QLSCL10R	1	38	8	6	3	15	45	33.5	10	5.2	36	5	30.5	Spiral Cam
QLSCL15R	2	60	12	9	5	22	70	50	15	8.2	55	7	46	Cam Angle: 4°

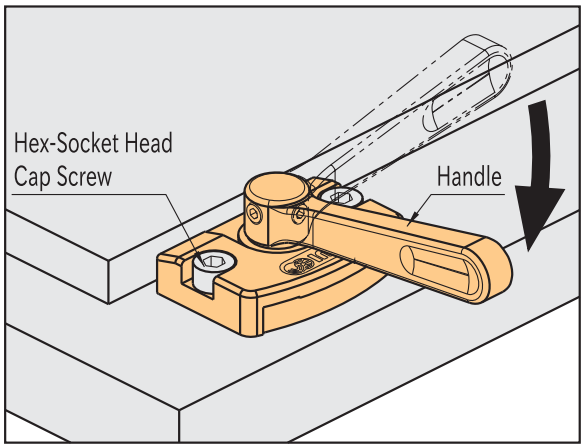
Part Number	H	D	H_1	R	A	B	M_1	Allowable Operating Load (N) *)	Clamping Force (kN)	Weight (g)
QLSCL10R	30	13	20	63	12	8	M4×0.7-4L	170	4	130
QLSCL15R	46	19	30	100	18	12	M5×0.8-5L	280	6	440

*) Allowable load to operate the handle

Feature

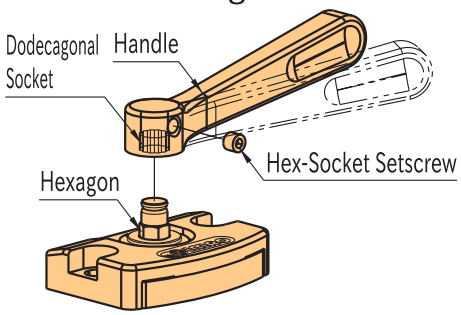
Designed to prevent part lift.

How To Use



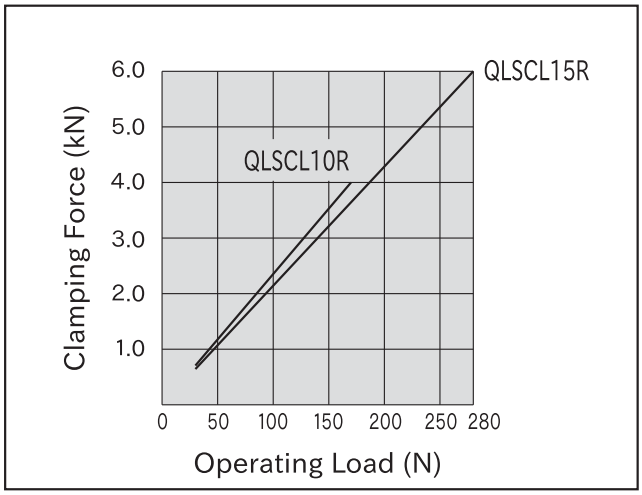
Turning the handle allows the cam to project the jaw for clamping. When the handle is turned back for unclamping, the loaded spring lets the jaw return to the original position.

■How to Change Handle Position



The handle has the dodecagonal socket to allow changing the handle position by 30˚

Performance Curve



Note

Ensure that mounting surfaces are finished to $\sqrt{}^{6.3}$ (6.3a) or better, without any scratches or dents.

QLSCL-NR	LOW-PROFILE CAM EDGE CLAMPS

Without handle type is available.

CP135-L SPIRAL CAM CLAMPS

RoHS

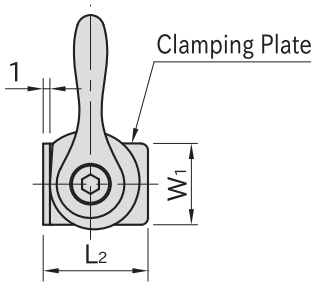
★Key Point

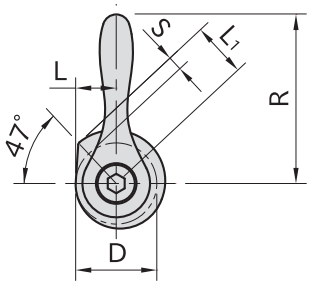
Space saving.
Long clamping stroke.

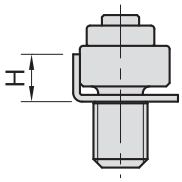
CP135-AL

CP135-L

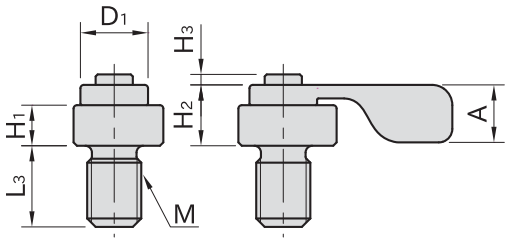
Spiral Cam Clamp	Handle	Clamping Plate
SCM440 steel Black oxide finished HRC33-39	SCM440 steel Black oxide finish HRC30-35	SUS304CSP stainless steel







CP135-AL
(With Clamping Plate)



CP135-L
(Without Clamping Plate)

Type	S	L	L_1	D	M	H_1	L_3	D_1	H_2	R	H_3	A	Allowable Operating Load (N)	Clamping Force (kN)
CP135-08001	2.2	6	8.2	12	M 8×1.25	6	12	10	9	25	1.5	8.5	50	0.3
CP135-10001	2.5	7	9.5	14	M10×1.5	7	15	12	11	30	1.8	10	70	0.5
CP135-12001	2.9	8	10.9	16	M12×1.75	8	18	14	13	40	2.2	12	100	0.7

CP135-AL (With Clamping Plate)

Part Number	H	W_1	L_2	Clamping Plates	Weight (g)
CP135-08001AL	7	12	15.5	CP135-08001P	19
CP135-10001AL	8	14	18	CP135-10001P	32
CP135-12001AL	9	16	20	CP135-12001P	54

CP135-L (Without Clamping Plate)

Part Number	Weight (g)
CP135-08001L	17
CP135-10001L	30
CP135-12001L	51

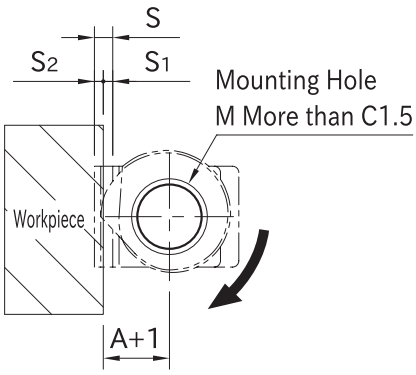
Feature

- The spiral cam provides quick and powerful clamping.
- The simple design keeps cost low and the small size allows more workpieces per load.
- Clamping Plate avoids marring workpiece surfaces.

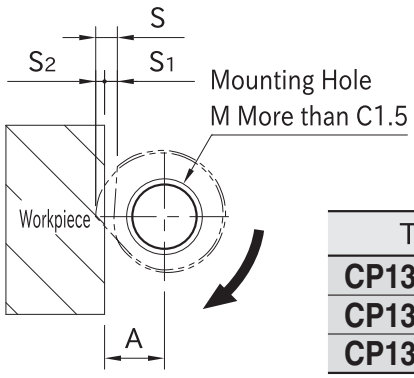
How To Use

■Mounting Hole Dimension

With Clamping Plate



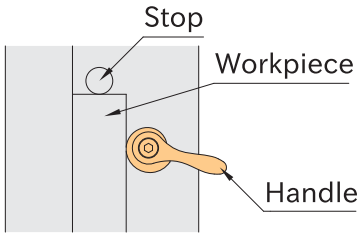
Without Clamping Plate

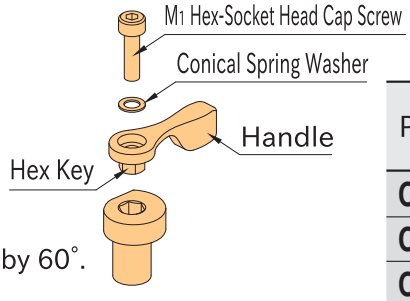


Type	A	S	S_1	S_2	M
CP135-08001	7.1	2.2	1.1	1.1	M 8X1.25
CP135-10001	8.3	2.5	1.3	1.2	M10X1.5
CP135-12001	9.5	2.9	1.5	1.4	M12X1.75

Note: Dimension A and A+1 are the recommended distances between the mounting hole and the end of the workpiece.

■How to Install Handle



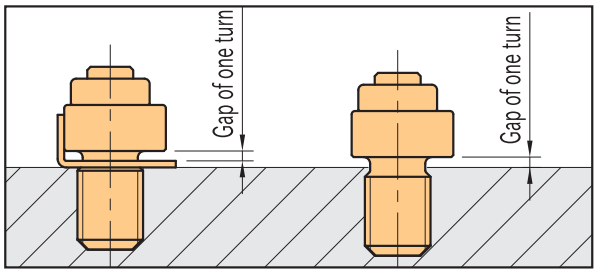


The handle position is adjustable by 60˚.

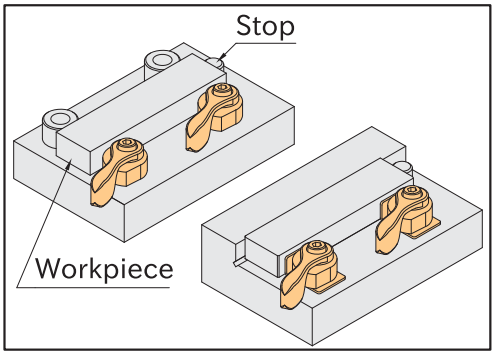
Part Number	M_1	Recommended Tightening Torque (N·m)
CP135-08001L	M3X0.5	1.2
CP135-10001L	M4X0.7	3
CP135-12001L	M5X0.8	6

Note

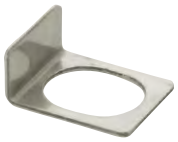
Tighten Spiral Cam Clamp fully and loosen it about one turn. Then mount a workpiece.



- Tighten clockwise to clamp the workpiece.
- Mount a stop on the right side of the workpiece.



CP135-P Clamping Plates

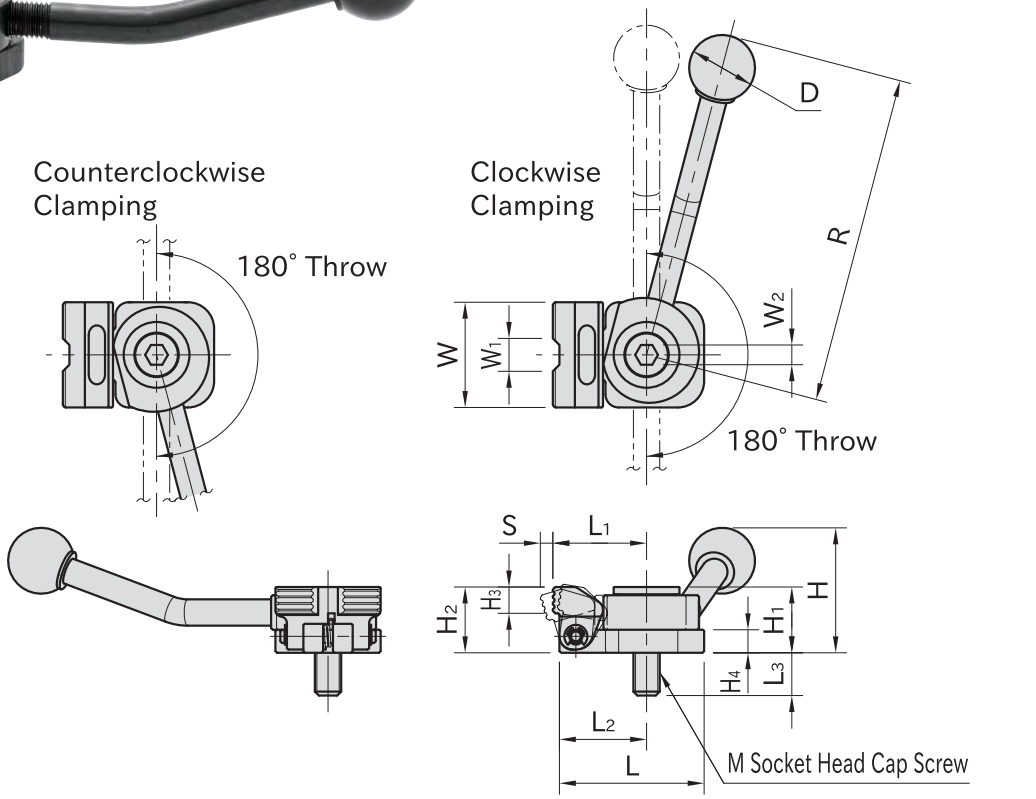


CP135 SPIRAL CAM CLAMPS

Without handle type is available.

QLSC CAM EDGE CLAMPS

Body/Jaw	Cam/Handle	Ball Knob
SCM440 steel Quenched and tempered Black oxide	SCM435 steel Quenched and tempered Black oxide	ABS resin Black



Part Number	Clamping Direction	H2	S	W	W1	H3	L1	L	L2	H4	M	L3	H1	H
QLSC-08R	CW	20	3.8	32	10	8	28.5	44	26.5	7	M 8×1.25	13	20	38
QLSC-08L	CCW													
QLSC-12R	CW	30	5.5	46	14	12	39.5	62	37.5	11	M12×1.75	17	30	55
QLSC-12L	CCW													

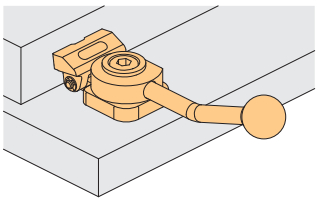
Part Number	R	D	W2	Allowable Operating Load (N)	Clamping Force (kN)	Weight (g)
QLSC-08R	100	20	6	250	2.5	195
QLSC-08L						
QLSC-12R	146	25	10	400	5	600
QLSC-12L						

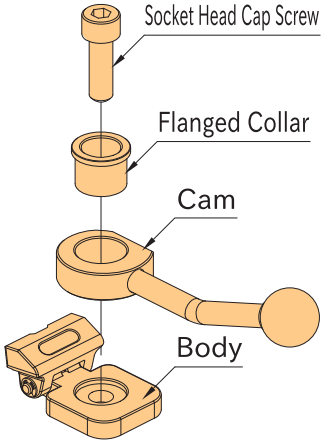
Feature

Enables one-touch clamping / unclamping of workpiece.

How To Use

Secure the body and the flanged collar with a socket head cap screw, and then turn the the handle to clamp a workpiece.





Related Product

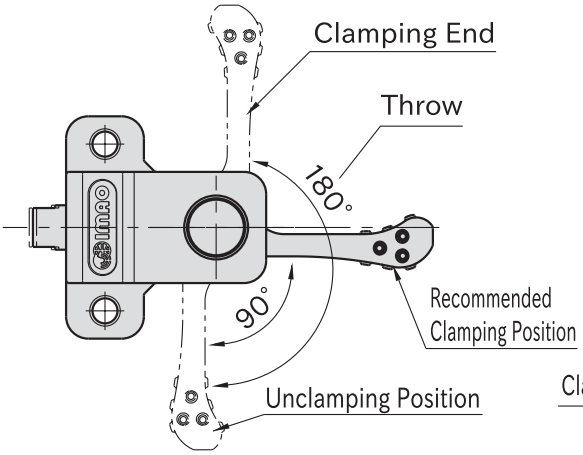
BJ162 CAM EDGE CLAMPS
Without handle type is available.

QLCP CAM PUSH CLAMPS

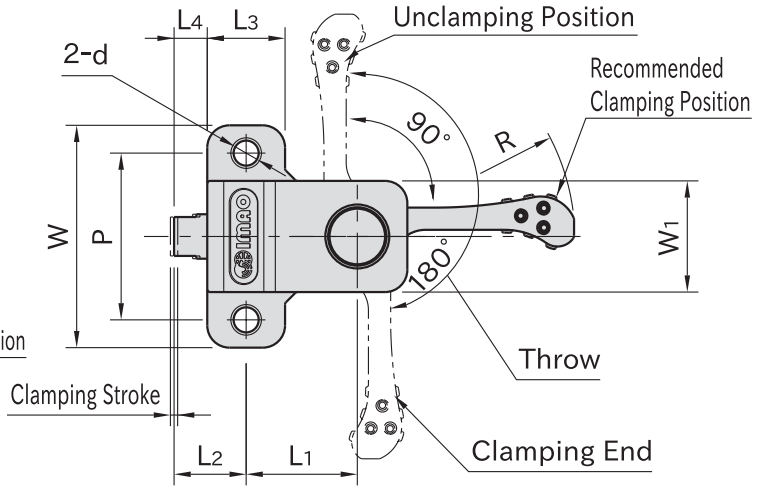
RoHS

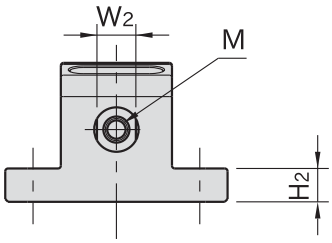
Body	Piston / Pin	Cam Handle
S45C steel Black oxide finish	S45C steel Quenched and tempered Black oxide finish	SCM440 steel Quenched and tempered Black oxide finish

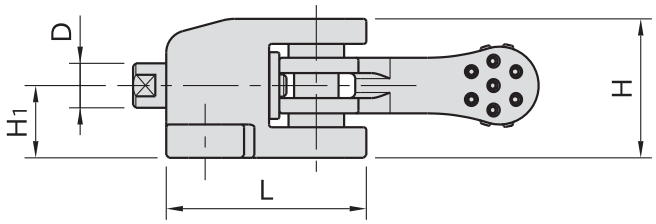
Counterclockwise Clamping



Clockwise Clamping





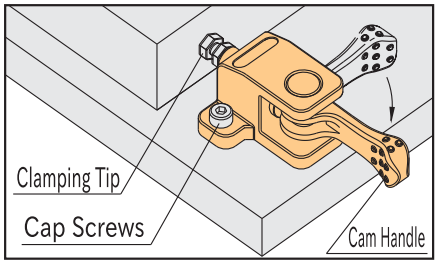


Part Number	Clamping Direction	Clamping Stroke	H1	D	W2	M	L2	L4	W	L3	H2	d	P	H	L	W1	R	L1	Cam Handle
QLCP080R	CW	1.2	13	8	7	M4×0.7 Depth 8	13	6	40	14	6	4.5	30	25	36	20	40	20	QLCA-04
QLCP080L	CCW																		
QLCP150R	CW	1.6	18	12	10	M6×1 Depth 12	19	9	55	20	10	6.6	40	33	50	26	63	28	QLCA-06
QLCP150L	CCW																		

Part Number	Allowable Operating Load (N) *)	Clamping Force (kN)	Clamping Mechanism	Weight (g)
QLCP080R	80	0.9	Spiral Cam Cam Angle:4°	130
QLCP080L				
QLCP150R	150	2.4		350
QLCP150L				

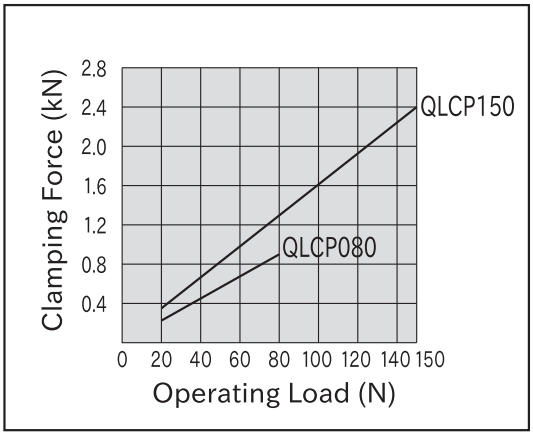
*) Allowable load to operate the cam handle

How To Use



Turning the handle in the clamping direction lets the cam work to project the piston for clamping.
Turning the handle back lets the spring work to retract the piston for unclamping.

Performance Curve



Feature

The tapped hole in the piston allows a tip to be fitted to the push clamp.

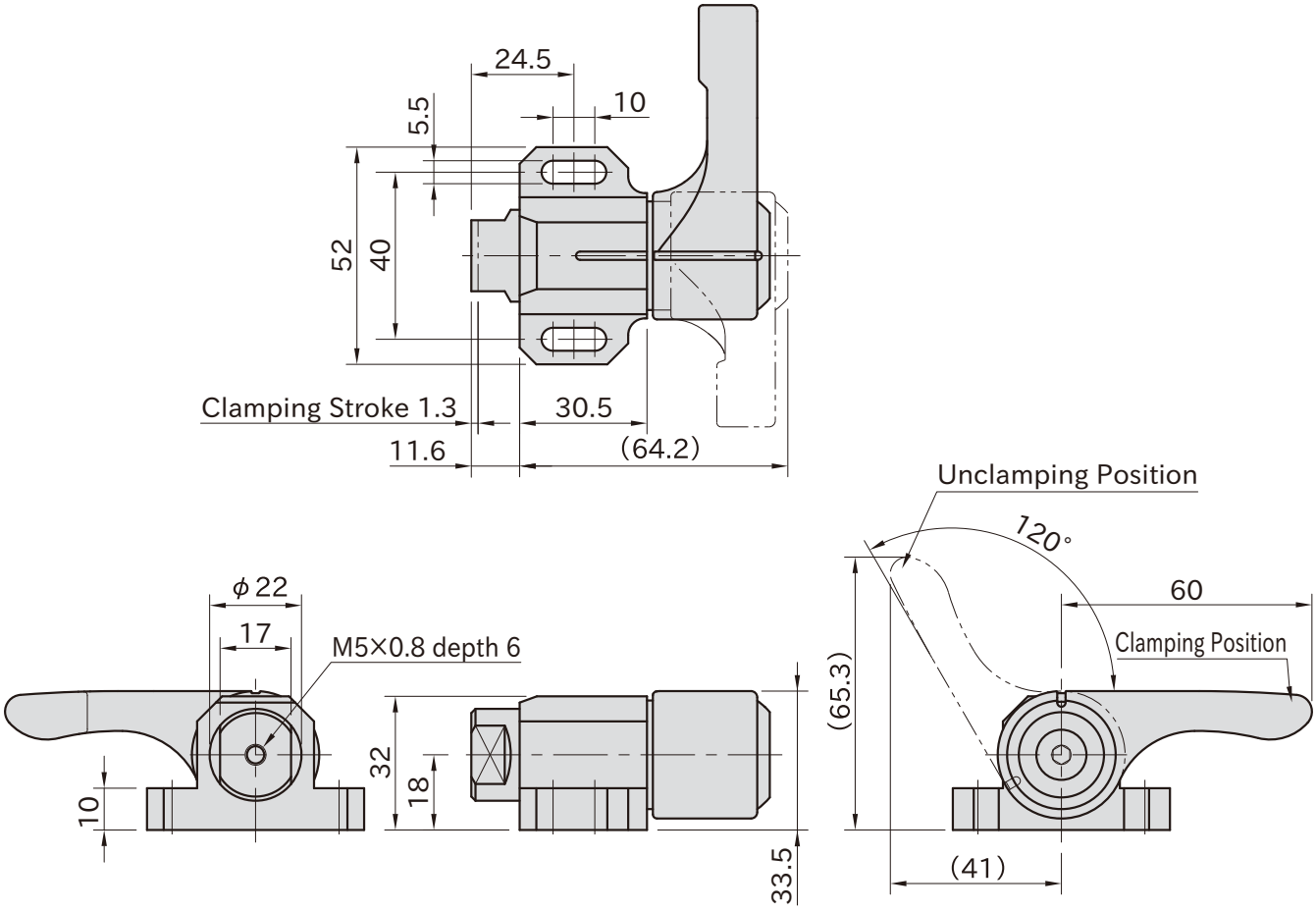
QLPUW STABLELOCK PUSH CLAMPS

RoHS

Wedge

★Key Point
Click to confirm consistent clamping

Body	Piston	Cam Cylinder	Handle
S45C steel Electroless nickel plated	S45C steel Quenched and tempered Electroless nickel plated	SCM435 steel Electroless nickel plated	SCS13 stainless steel (Equivalent to SUS304)

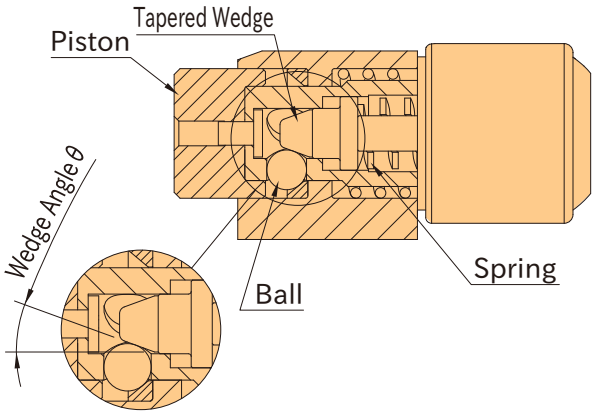


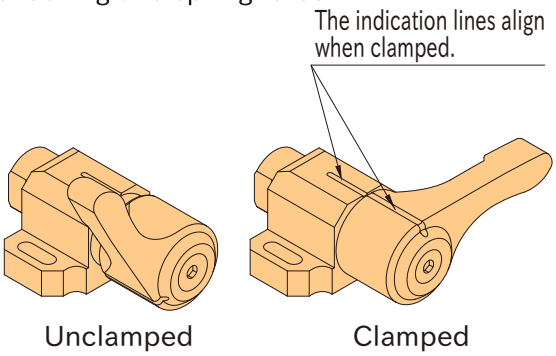
Part Number	Operating Load (N)	Clamping Force (kN)	Weight (g)
QLPUW32-080	40	0.8 (0.6~1)	430

Note : The above operating load and clamping force are obtained when clamping the workpiece at the midpoint of the clamping stroke.
The clamping force varies within the above range depending on the amount of compression of the spring.

Feature

・By turning the handle, the balls are pushed out by the tapered surface, providing a rigid side push.
・Provides constant clamping force with mechanical positive locking and spring force.

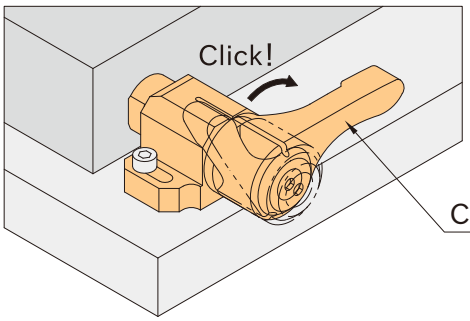




・The indication line clearly shows clamping/unclamping position.

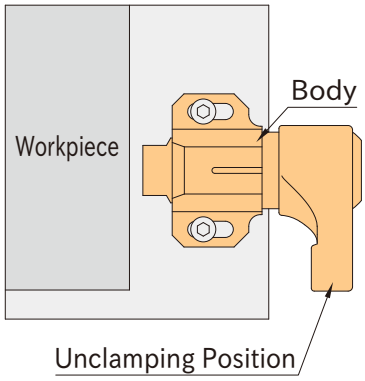
How To Use

■Operation

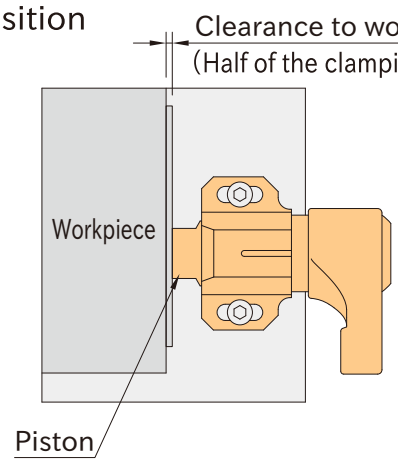


Turn the handle to the clamping position.
It offers constant clamping force with a click at the clamping end.

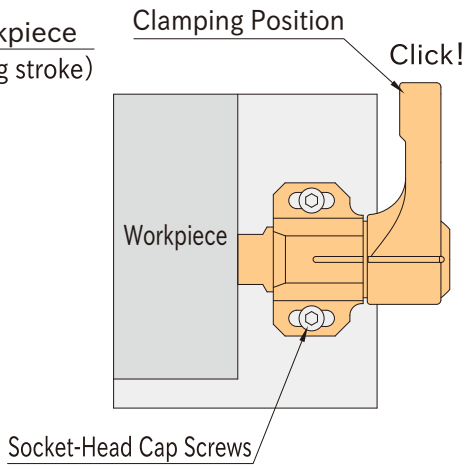
■How To Set Clamping Position



1.Place the clamp with the handle in the unclamped position.



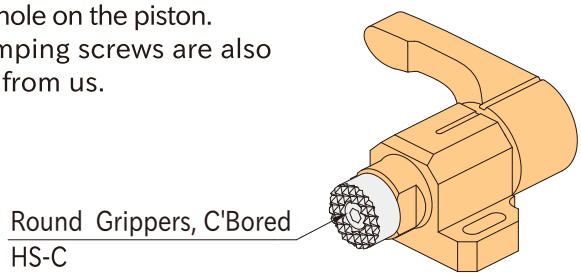
2.Leave a clearance of about half the clamping stroke between the workpiece and the piston. Putting a thickness gauge facilitates this setting.



3.Temporarily fix the body with hex. socket head cap screws by placing the thickness gauge between the piston and the workpiece. Remove the thickness gauge and fully tighten the cap screws. Turn the handle to clamp.

Related Products

A gripper or a screw can be attached to the M5 threaded hole on the piston.
Such clamping screws are also available from us.



QLPD PULL CLAMPS (Standard)

RoHS

(CCW Clamping With Handle)

(CW Clamping Without Handle)

(CW Clamping With Handle)

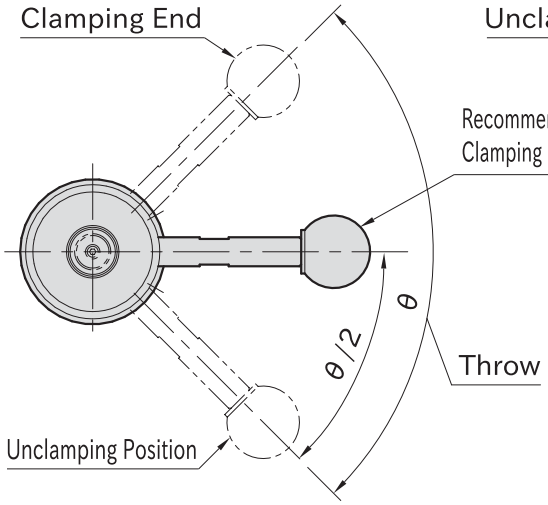
Note: Clamping Pins or Screws must be ordered separately.

Body	Handle Shank	Ball Knob
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Black oxide finish	ABS resin Black

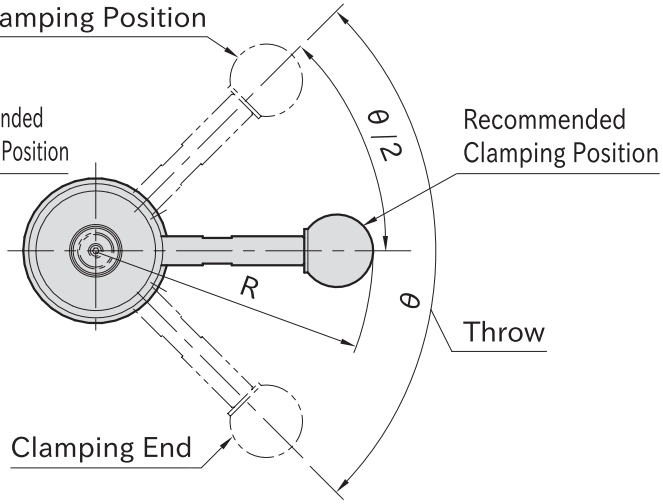
★Key Point

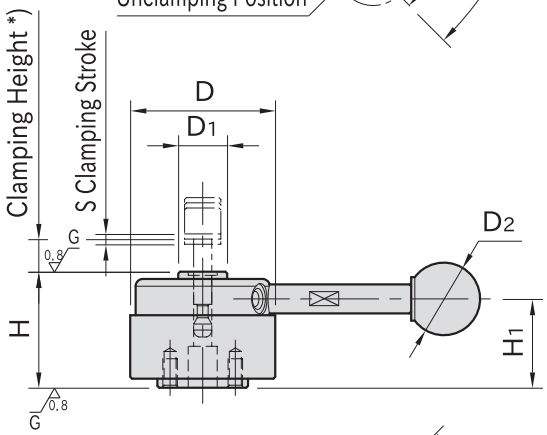
Easy clamping without screws.

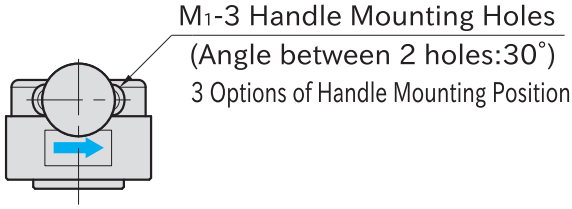
Counterclockwise Clamping

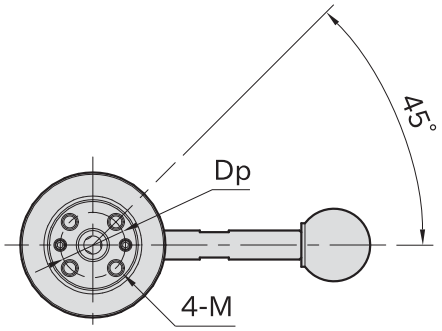


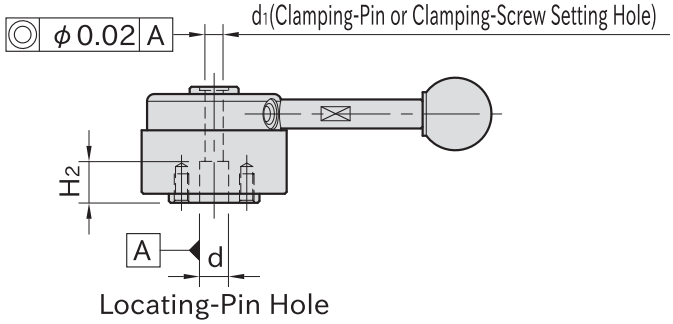
Clockwise Clamping











Type	S	d (G6)	d_1 (F7)	H_2	D_1	H (±0.01)	D	θ	Dp	M
QLPD150	1.5	8	5	10	13.5	32	40	90°	18	M4×0.7 Depth 8
QLPD200	2	12	8	13	18	40	50	110°	25	M6×1 Depth 9

Type	M_1	H_1	Clamping Force (kN)	Clamping Mechanism	Recommended Workpiece Thickness Tolerance **)
QLPD150	M5×0.8	24.5	0.9	Spiral Cam Cam Angle: 4°	±0.3
QLPD200	M6×1	30.7	2.5		±0.5

■With Handle

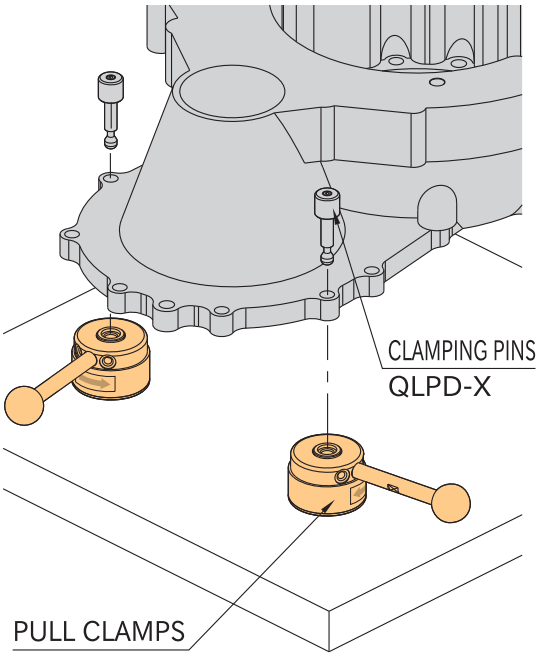
Part Number	Clamping Direction	R	D_2	Allowable Operating Load(N) ***)	Weight (g)
QLPD150R	CW	76.5	20	150	245
QLPD150L	CCW				
QLPD200R	CW	111.5	25	200	470
QLPD200L	CCW				

■Without Handle ****)

Part Number	Clamping Direction	Weight (g)
QLPD150NR	CW	220
QLPD150NL	CCW	
QLPD200NR	CW	420
QLPD200NL	CCW	

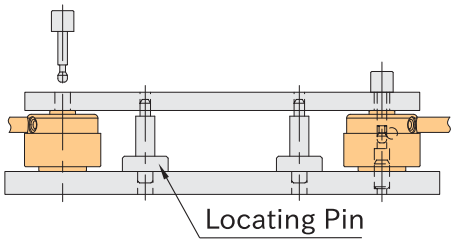
*) Grip length of QLPD-X Clamping Pin (workpiece thickness)
**) Maintaining these recommended tolerances allows minimizing the variation of handle position in the clamping mode in clamping with the use of the Clamping Pin.
***) Allowable load to operate the handle.
****) The handle must be ordered separately.
- QLSL STANDARD HANDLES
- QLTL ADJUSTABLE-TORQUE HANDLES

How To Use

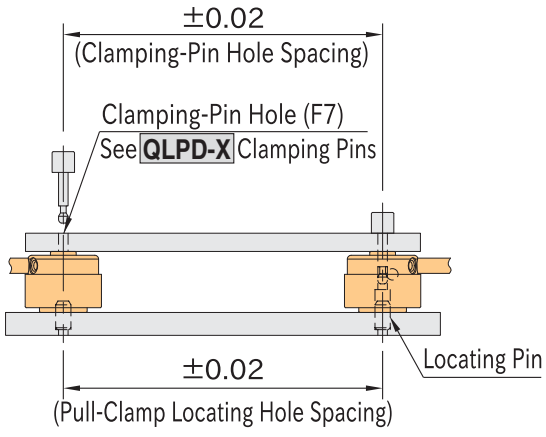


■How to Locate Workpiece

1. Basic Method



2. Method for clamping and locating a workpiece at a time
Give an accuracy shown below to the hole spacing to generate a locating accuracy of ±0.08.



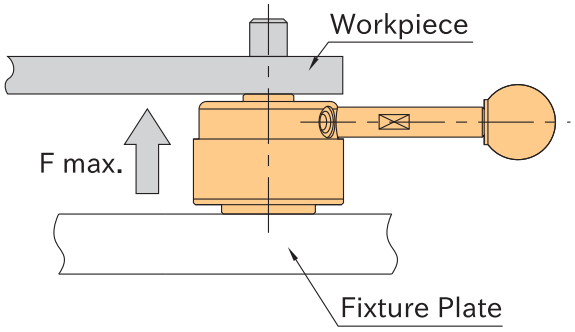
Continuing on Next Page

Technical Information

■Allowable Loads in Machining of Workpiece Bottom

Ensure that a force more than indicated below is not applied to the workpiece bottom.

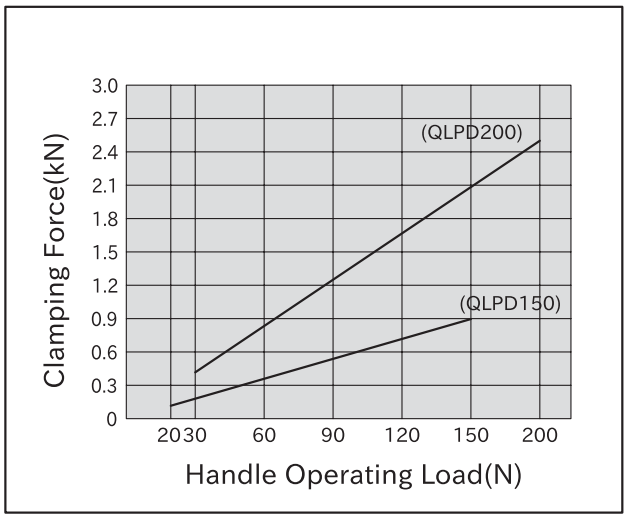
Type	Allowable Force To Workpiece Bottom (Per Clamp)
QLPD150	max.2 kN
QLPD200	max.5.5kN



Performance Curve

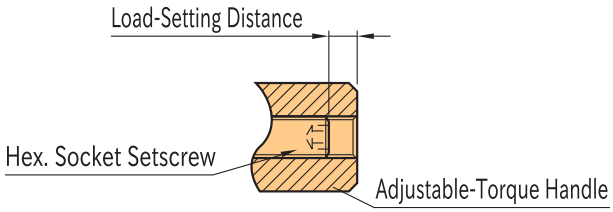
■QLSL STANDARD HANDLES

⚠ The performance curves shown below do not denote the guaranteed performance.

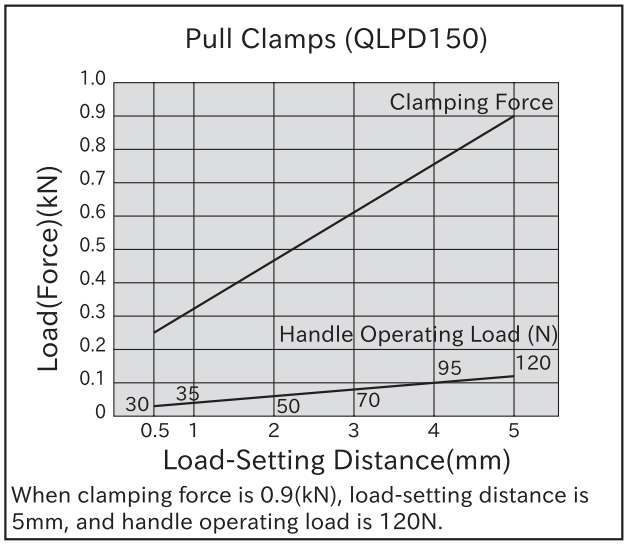


■QLTL ADJUSTABLE-TORQUE HANDLES

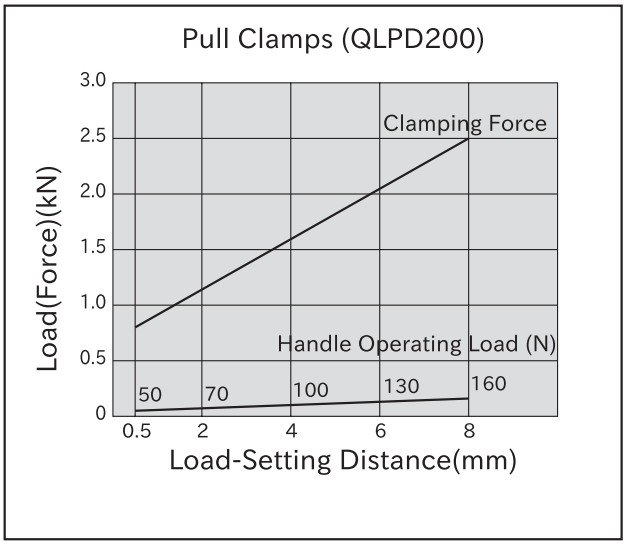
Use a force gauge when measuring handle-operating loads.



⚠ The performance curves shown below do not denote the guaranteed performance.

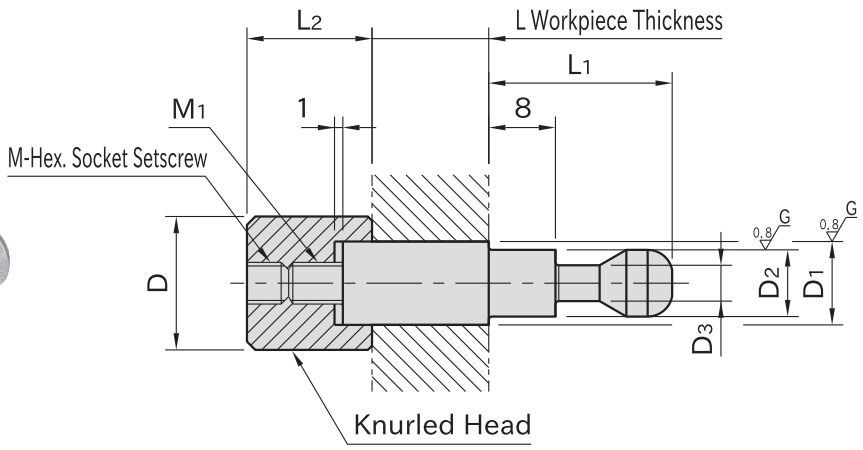


When clamping force is 0.9(kN), load-setting distance is 5mm, and handle operating load is 120N.



QLPD-X CLAMPING PINS (Standard)

On Request RoHS



L dimension is adjustable by ±1mm to fit actual workpiece thickness.

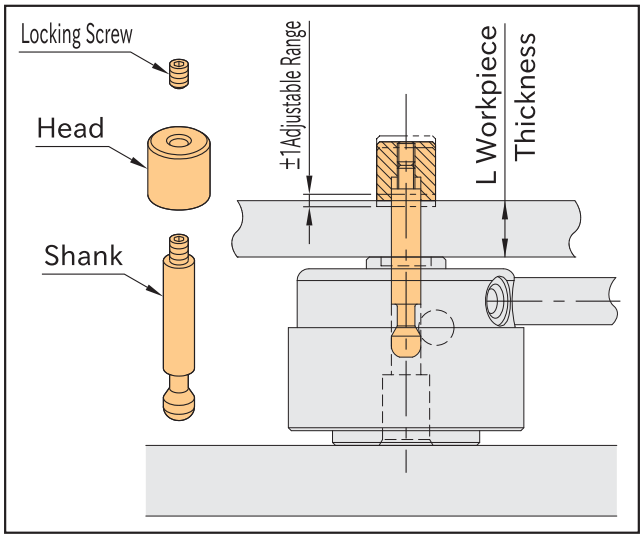
Shank	Head
SCM435 steel Induction hardened(taper seat) Precision ground	S45C steel Quenched and tempered Black oxide finish

Part Number	D_2 (f7)	D_1 (f7)	L*) (By 0.1mm)	D	L_2	L_1	D_3	M
QLPD150-5× 5- (L Dim. in mm)	5	5	3≦L≦50	10	10	17	3	M3×0.5-4L
QLPD150-5× 6- (L Dim. in mm)		6						
QLPD200-8× 8- (L Dim. in mm)	8	8	4≦L≦80	16	15	22	4.3	M5×0.8-5L
QLPD200-8×10- (L Dim. in mm)		10						

Part Number	M_1	Weight (g)	Pull Clamps
QLPD150-5× 5- (L Dim. in mm)	M3×0.5	min. 8~max.16	QLPD150Series
QLPD150-5× 6- (L Dim. in mm)		min. 8~max.19	
QLPD200-8× 8- (L Dim. in mm)	M5×0.8	min.30~max.60	QLPD200Series
QLPD200-8×10- (L Dim. in mm)		min.31~max.77	

*) For ordering, specify workpiece thickness.

How To Use



Note

The length of L dimension should be decided depending on the workpiece thickness.

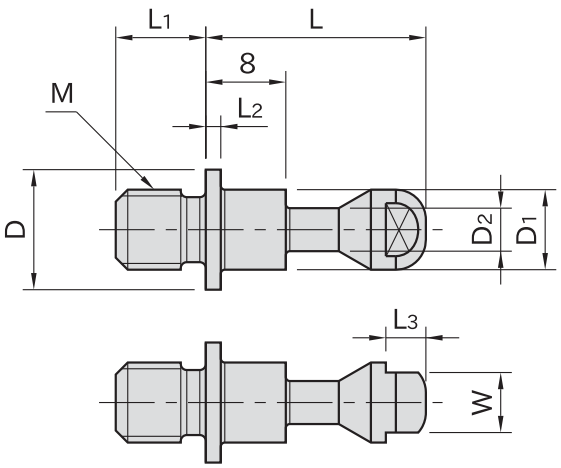
■ Ordering Example

QLPD150-5×5-10.5

Shank Size L Dim.

※ QLPD150-5×5 for 10.5mm thickness workpiece.

QLPD-M CLAMPING SCREWS (Standard)



Body
SCM435 steel Quenched and tempered Black oxide finish

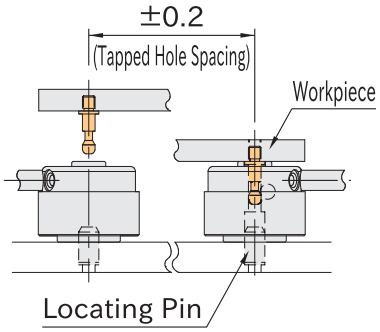
Part Number	D1	M	L1	L	D	L2	D2	W	L3	Weight (g)	Pull Clamps
QLPD150-M 5	5	M 5×0.8	6	17	8	1.2	3	4	2.5	3	QLPD150
QLPD150-M 6		M 6×1	7							4	
QLPD200-M 8	8	M 8×1.25	9	22	12	1.5	4.3	6	4	10	QLPD200
QLPD200-M10		M10×1.5	11							13	

Note

Custom Clamping Screws (different screw thread sizes) are available on request.

How To Use

■Recommended Spacing Tolerance in Use of Clamping Screws

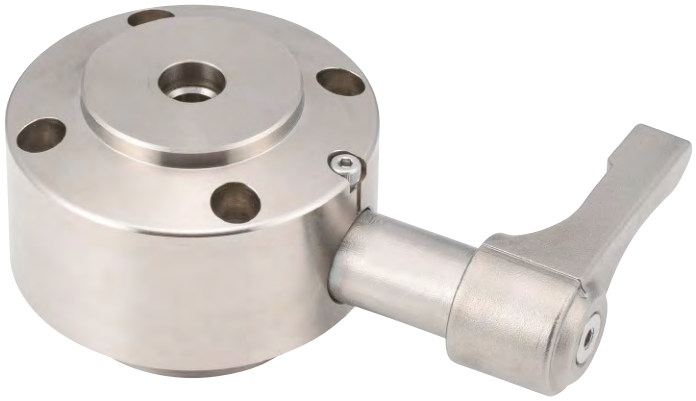


IMAO® fixtureworks®

QLPDW STABLELOCK PULL CLAMPS

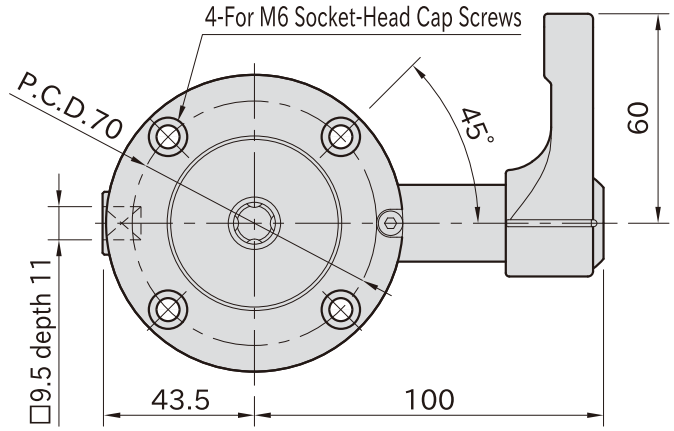
RoHS

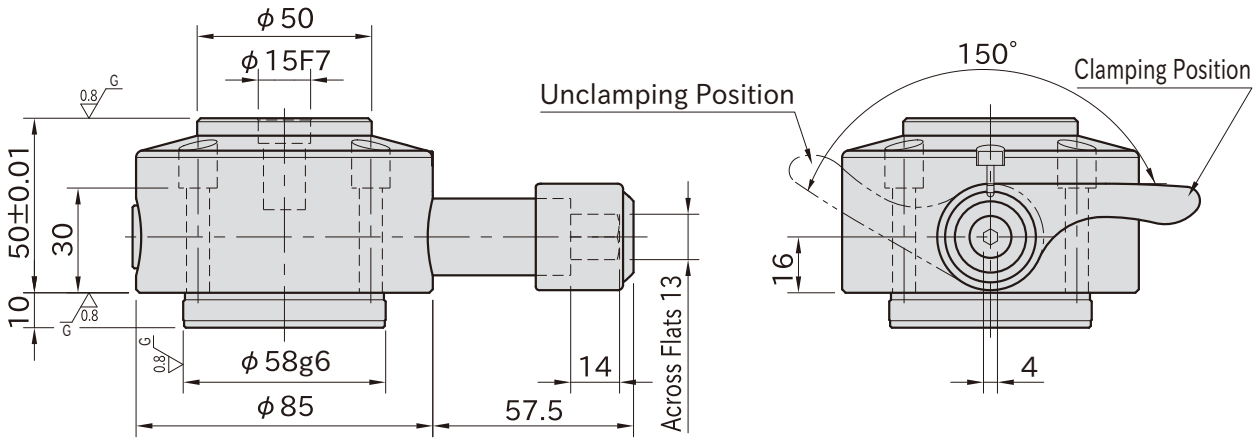
Wedge



★Key Point
Click to confirm consistent clamping

Body	Piston	Cam	Hexagonal Shaft, Handle
S45C steel Induction hardened Electroless nickel plated	SCM440 steel Nitrocarburized	SCM440 steel Quenched and tempered Electroless nickel plated	SCS13 stainless steel (Equivalent to SUS304)





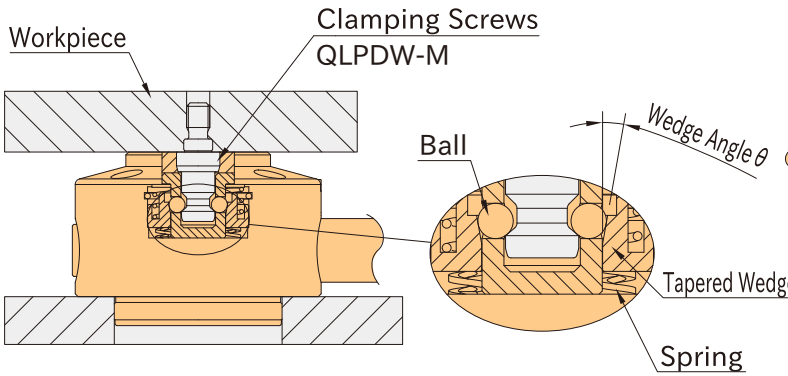
Part Number	Handle Operating Load (N)	Clamping Force (kN)	Weight (kg)
QLPDW85-300	80	3	2.1

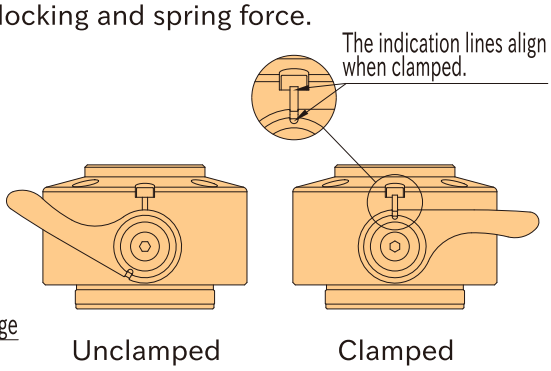
Reference

- QLPDW-M Clamping Screws
- QLPDW-RC Extension Units

Feature

・By turning the handle, the balls are pushed out by the tapered surface and pull down the clamping pin.
・Provides constant clamping force with mechanical positive locking and spring force.





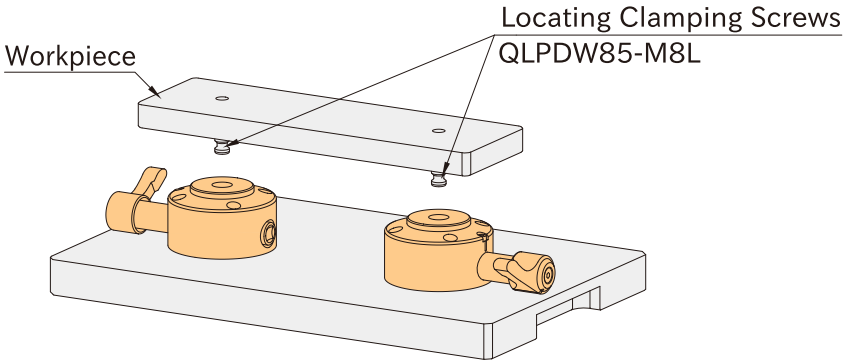
・The indication line clearly shows clamping/unclamping position.

How To Use

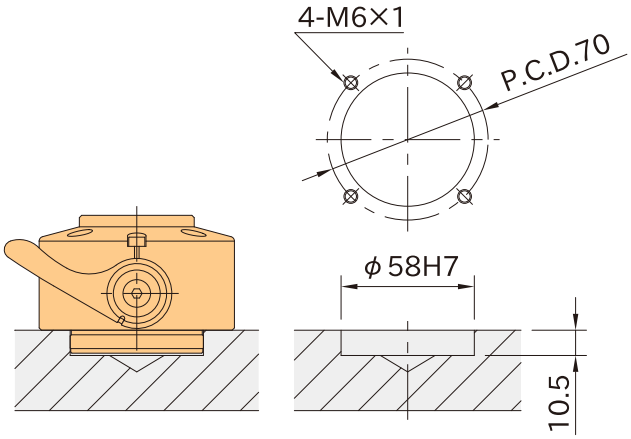
■Application Example

If positioning is required, use locating clamping screws.

*)When clamping at three or more points, use locating clamping screws at two points and standard clamping screws at all other points.

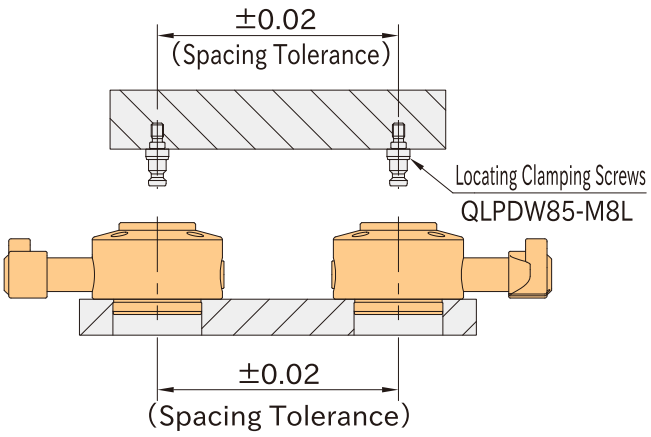


■Mounting Hole Dimension



■How to Locate Workpiece

Repeatability ±0.025



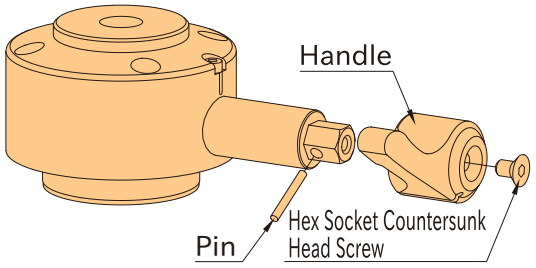
Continuing on Next Page

■How to Remove Handle

To use two units connected together or to use an extension unit, the handle needs to be removed. Follow the steps below.

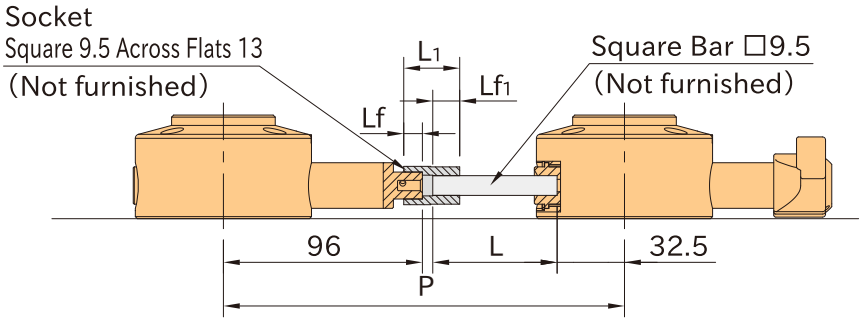
1.Remove the hex socket countersunk head screw, and then remove the handle.

2.Remove the pin.
For installation, follow back these steps.



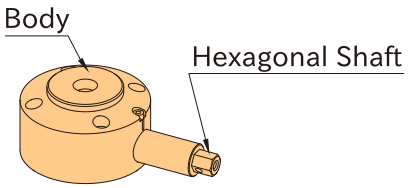
■Clamp Connection and Linkage

The Stablelock Pull Clamps must be connected in unclamping position.
The distance of the mounting holes "P" must be determined by the customer.
The length of the square bar "L" must be determined according to the socket used.

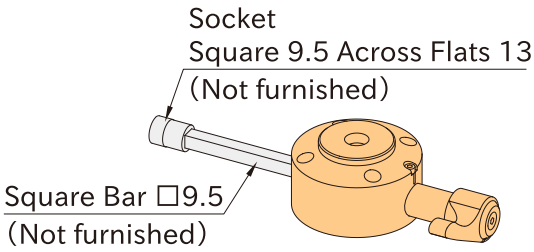


The length of Square Bar
The distance of mounting holes
$L=P-96-32.5-(L_1-Lf-Lf_1)-1$
Socket size
Clearance for Square Bar

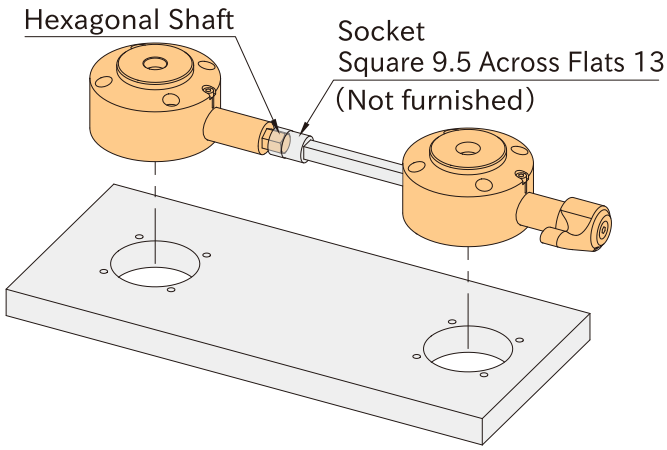
1. Remove the handle from one of the Stablelock Pull Clamps.



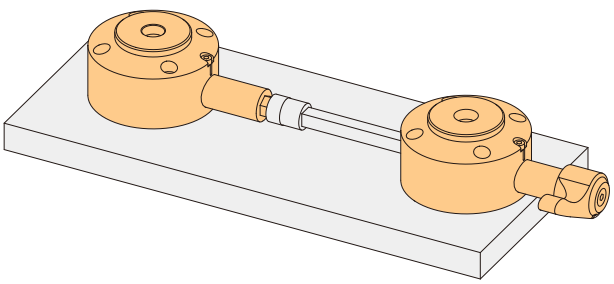
2. Attach the square bar and socket to another clamp.



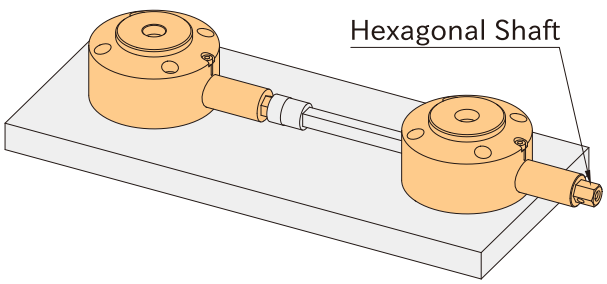
3.Insert the socket into the hexagonal shaft and mount both clamps into the mounting holes and secure.
The handle removed in step 1 is not used.



Coupling two clamps doubles the handle operating load.



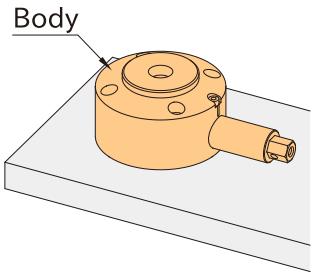
If the lever operation is too hard, the hexagonal shaft can be operated directly with a socket wrench.



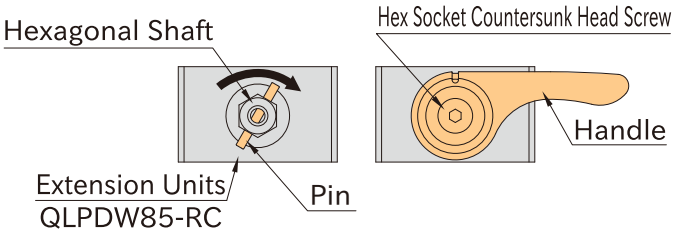
■Extension of Operating Part

The Stablelock Pull Clamps must be connected in unclamping position.

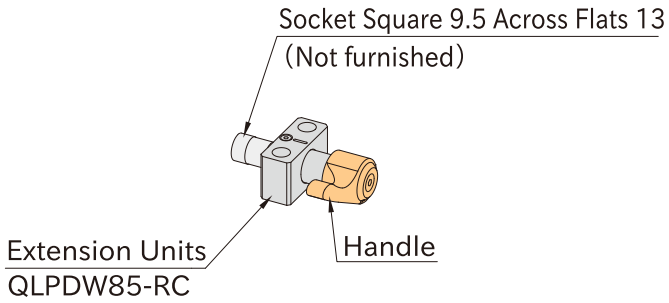
1. Fix the body with the handle removed.



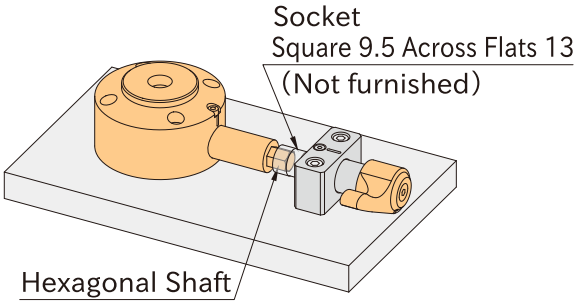
2.Turn the hexagonal shaft on the Extension Units to the right until it stops.
Mount the handle in the direction shown below, and fix it with a hex socket countersunk head screw.



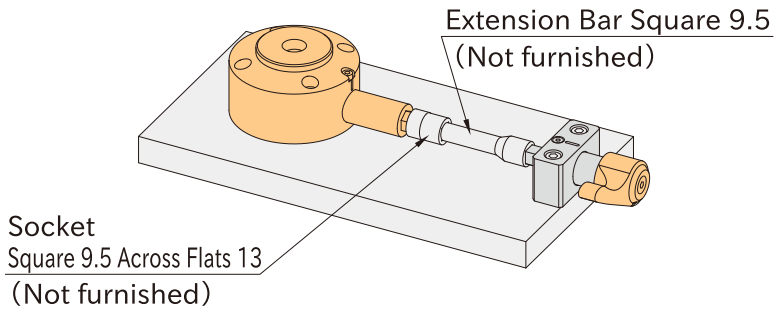
3.Turn the handle to unclamping position, and insert a socket into the Extension Units.



4.Insert the socket into the hexagonal shaft, and fix the Extension units.



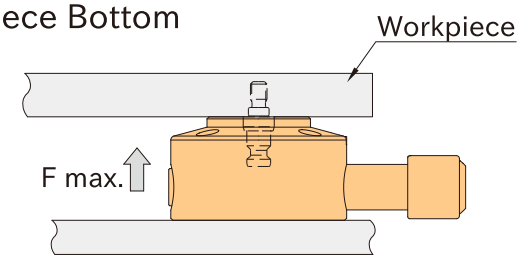
Add extension bars to extend further.



Technical Information

■Allowable Loads in Machining of Workpiece Bottom

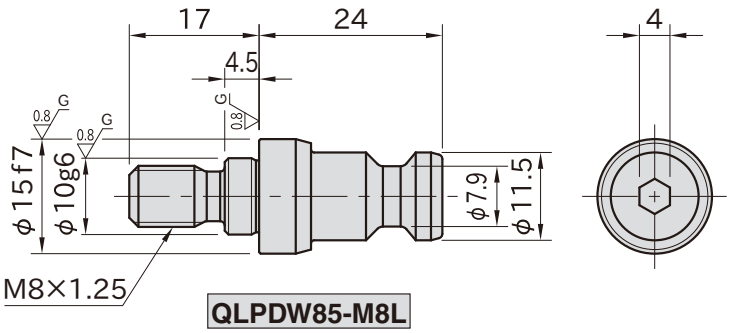
Ensure that any force more than max.5kN is not applied to the workpiece bottom.



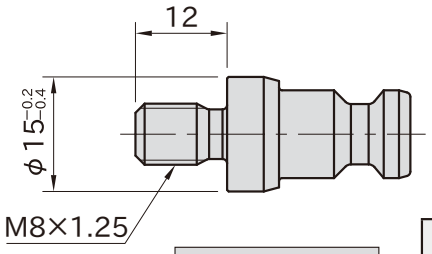
QLPDW-M CLAMPING SCREWS

QLPDW85-M8L
(For Locating)

QLPDW85-M8S
(Standard)



QLPDW85-M8L
(For Locating)



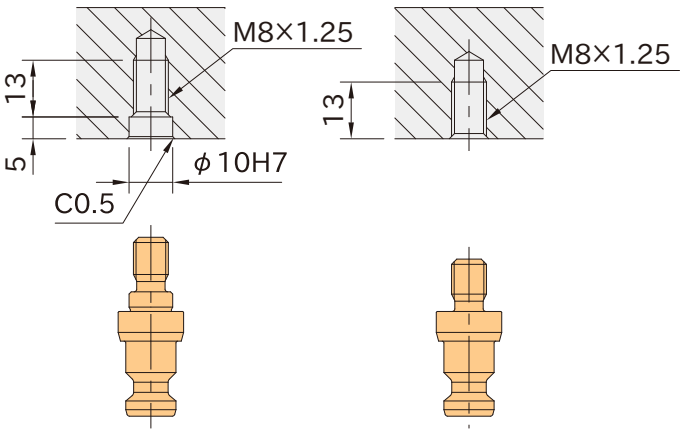
QLPDW85-M8S
(Standard)

Body
SCM435 steel Quenched and tempered Electroless nickel plated

For Locating		Standard		Stablelock Pull Clamps
Part Number	Weight (g)	Part Number	Weight (g)	
QLPDW85-M8L	28	**QLPDW85-M8S**	25	QLPDW85-300

How To Use

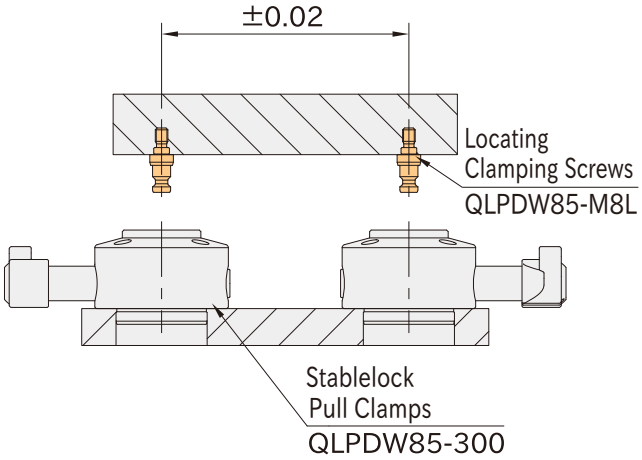
■Mounting Hole Dimension



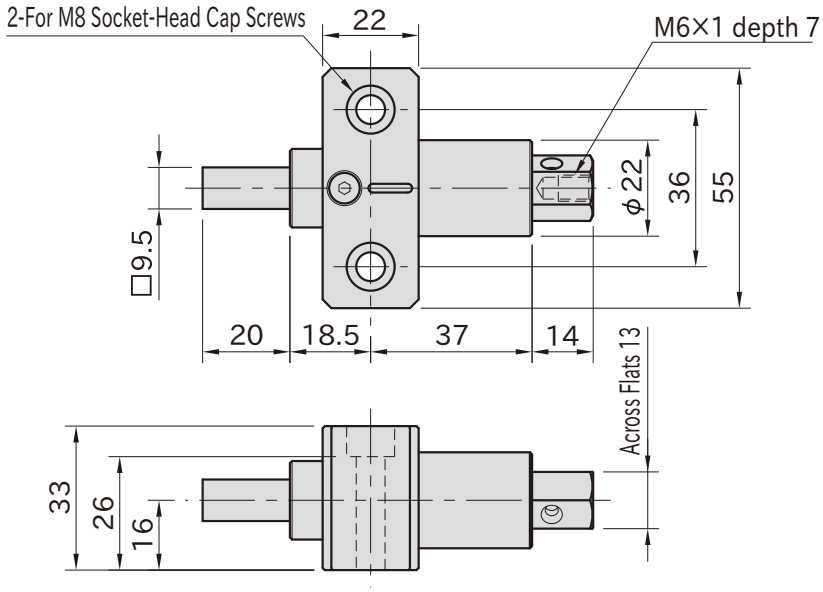
QLPDW85-M8L
(For Locating)

QLPDW85-M8S
(Standard)

■Spacing Tolerance



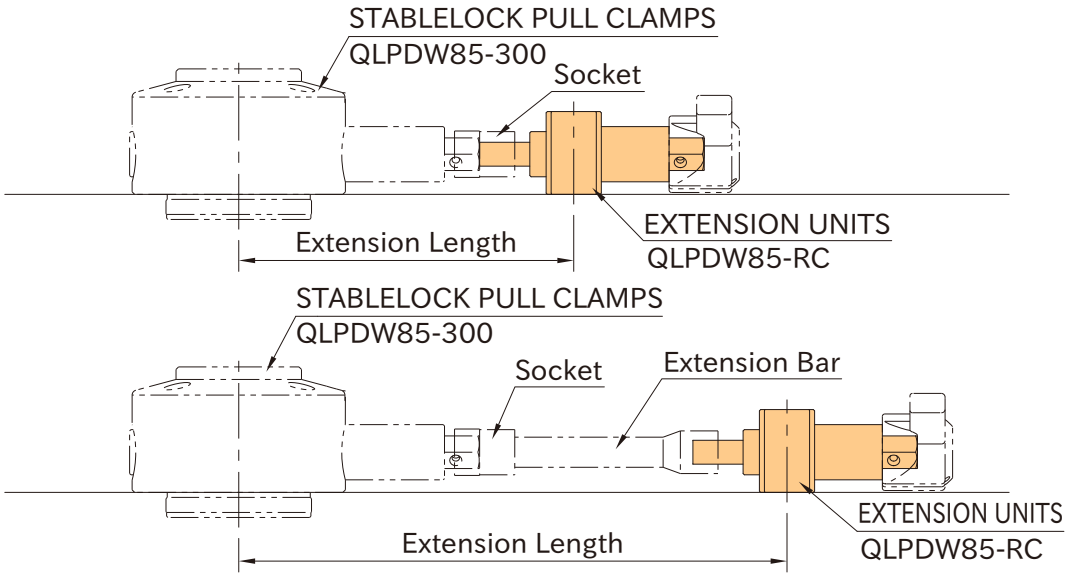
QLPDW-RC EXTENSION UNITS



Body	Hexagonal Shaft	Square Shaft
S45C steel Electroless nickel plated	SCS13 stainless steel (Equivalent to SUS304)	SS400 steel Electroless nickel plated

Part Number	Weight (g)	Stablelock Pull Clamps
QLPDW85-RC	520	QLPDW85-300

How To Use



The operating part can be extended to the customers' preferred length.

Use for extended operation of Stablelock Pull Clamps.

Note

- Socket and Extension Bar are not supplied.
- Applicable Size of Socket and Extension Bar
  Socket: Square 9.5mm, Across Flats 13mm
  Extension Bar: Square 9.5mm

QLPDH PULL CLAMPS (Heavy)

(Counterclockwise)

(Clockwise)

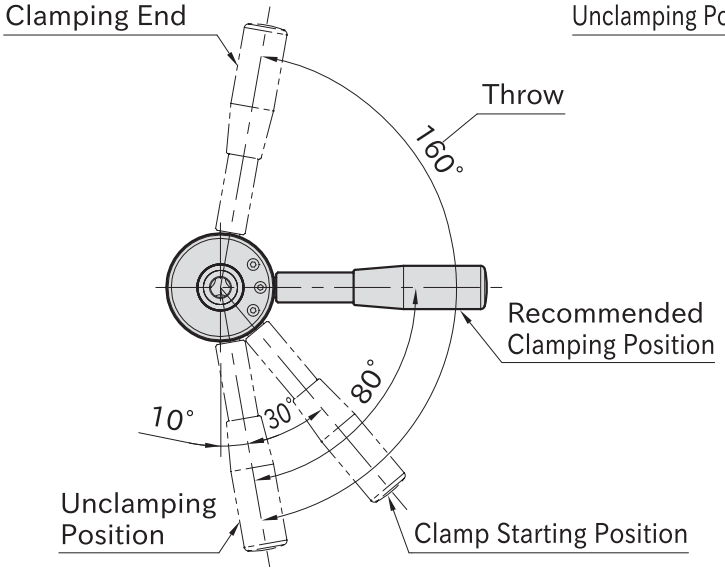
Body	Handle Shank	Handle
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish	Phenolic plastic Black

★Key Point

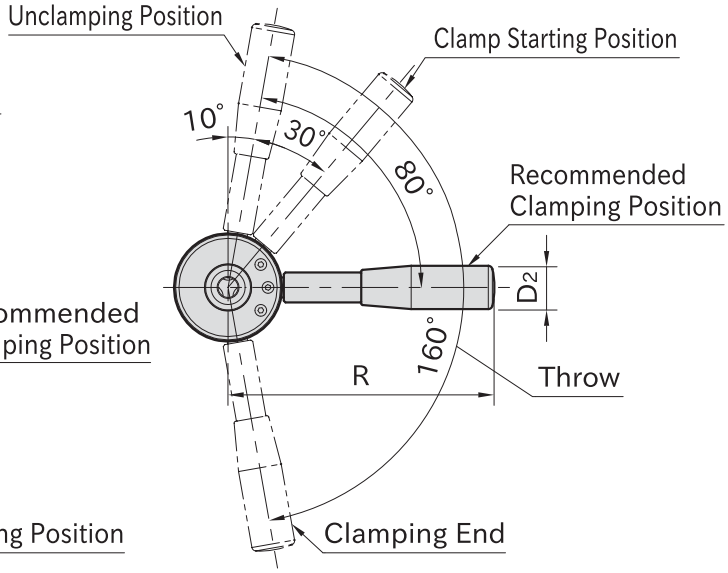
Easy clamping without screws.

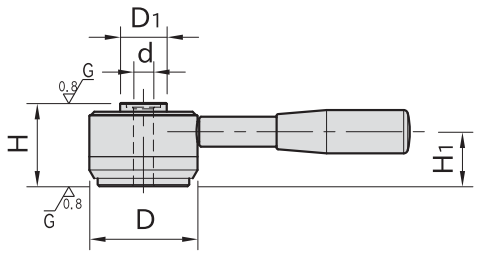
Note: Clamping Pins or Screws must be ordered separately.

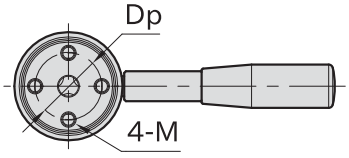
Counterclockwise Clamping

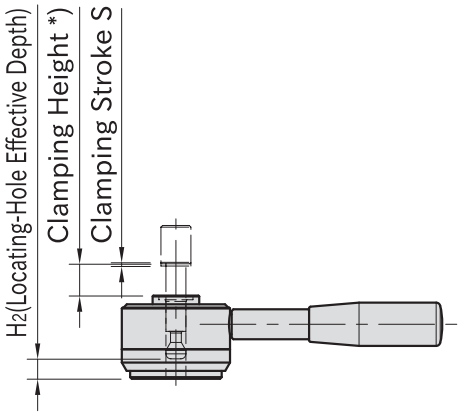


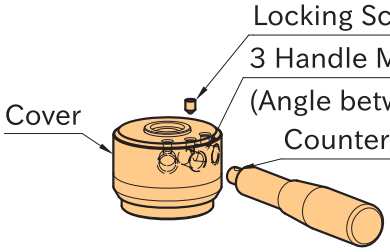
Clockwise Clamping











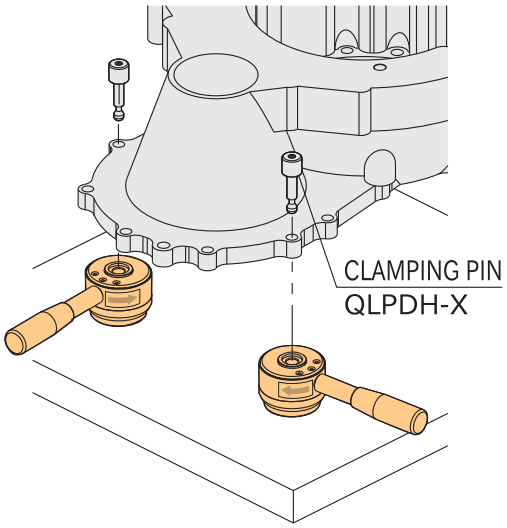
- The handle can be removed by loosening the locking screw.
- To keep the handle mounted permanently, make sure that the locking screw is fully tightened.
- 3 options of handle mounting position.

Part Number	Clamping Direction	S	d (F7)	H_2	D_1	H (±0.01)	D	M	Dp	R
QLPDH400R	CW	2	12	10	28	50	65	M 8X1.25 Depth 14	40	160
QLPDH400L	CCW									
QLPDH500R	CW	2.5	16	12	34	63	80	M10X1.5 Depth 18	50	180

Part Number	D_2	H_1	Allowable Operating Load (N) **)	Clamping Force (kN)	Clamping Mechanism	Recommended Workpiece Thickness Tolerance ***)	Weight (kg)
QLPDH400R	26	32.8	600	6	Spiral Cam Cam Angle: 4°	±0.5	1.2
QLPDH400L							
QLPDH500R	28	41.1		8		±0.8	2.2

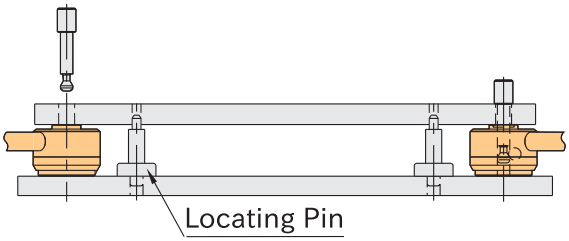
*) Grip length of QLPDH-X Clamping Pin (workpiece thickness)
**) Allowable load to operate the handle
***) Maintaining these recommended tolerances allows minimizing the variation of handle position in the clamping mode in clamping with the use of the Clamping P in.
****) QLPDH500 is available only with Clockwise Clamping.

How To Use



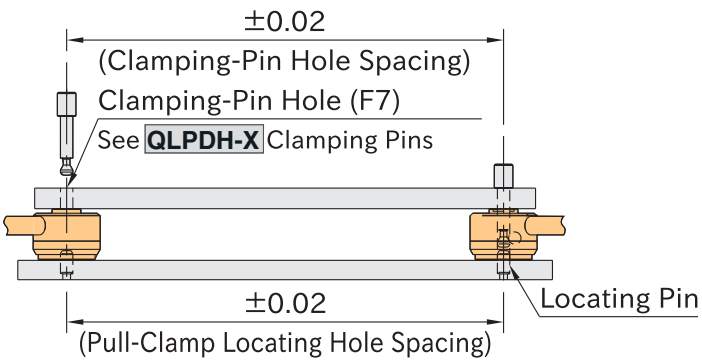
■How to Locate Workpiece

1. Basic Method



2. Method for clamping and locating a workpiece at a time

Give an accuracy shown below to the hole spacing to generate a locating accuracy of ±0.08.



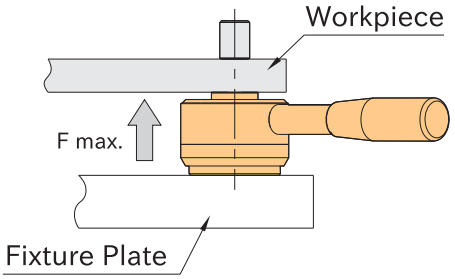
Related Product

- QLPDH-X CLAMPING PINS (Heavy)
- QLPDH-M CLAMPING SCREWS(Heavy)

Technical Information

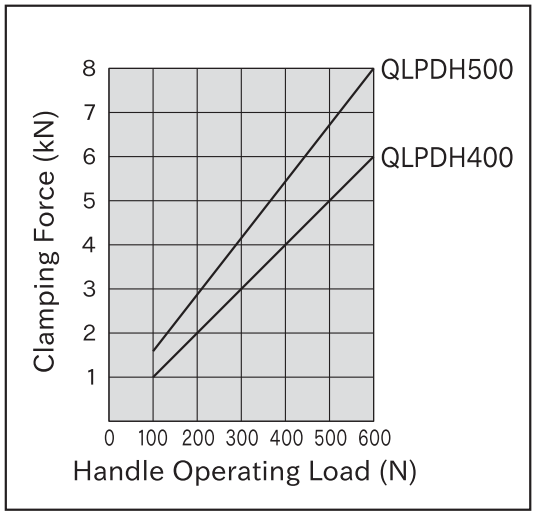
■Allowable Loads in Machining of Workpiece Bottom

Ensure that a force more than indicated below is not applied to the workpiece bottom.



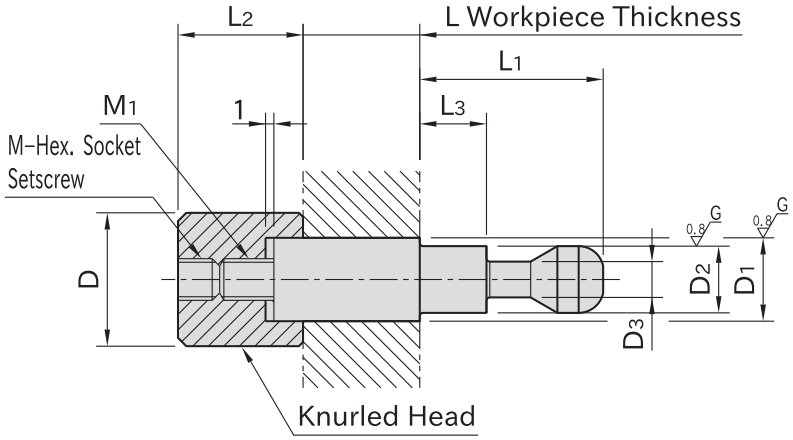
Type	Allowable Force To Workpiece Bottom (Per Clamp)
QLPDH400	max. 8kN
QLPDH500	max.14kN

Performance Curve



QLPDH-X CLAMPING PINS (Heavy)

On Request RoHS



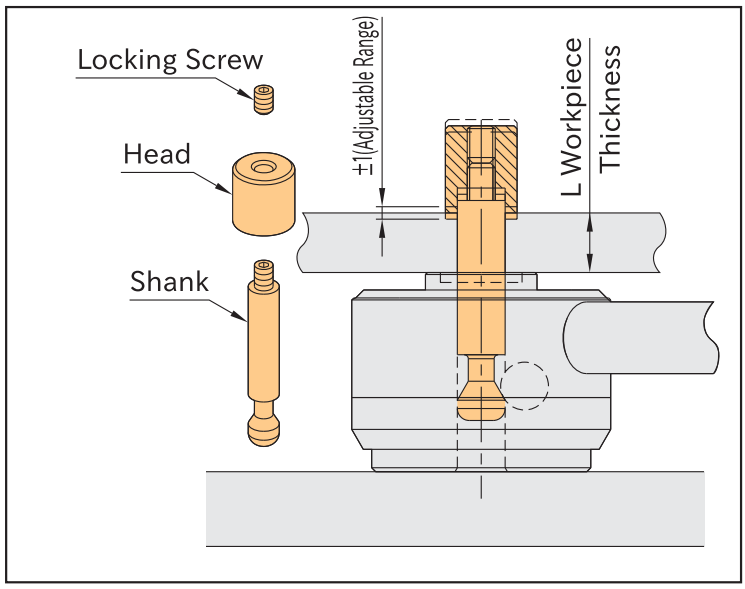
L dimension is adjustable by ± 1mm to fit actual workpiece thickness.

Shank	Head
SCM435 steel Induction hardened(taper seat) Precision ground	S45C steel Quenched and tempered Black oxide finish

Part Number	D_2 (f7)	D_1 (f7)	L*) (By 0.1mm)	D	L_2	L_1	L_3	D_3	M	M_1	Weight (g)	Pull Clamps
QLPDH400-12-(L Dim. In mm)	12	12	0<L≦100	18	23	38	21.5	6.5	M 8X1.25- 8L	M 8X1.25	min. 70~max.160	QLPDH400R
QLPDH400-16-(L Dim. In mm)		16		24							min.175~max.265	
QLPDH500-16-(L Dim. In mm)	16	16	0<L≦120	24	29	48	28	9.5	M10X1.5 -10L	M10X1.5	min.160~max.350	QLPDH500R
QLPDH500-20-(L Dim. In mm)		20		30							min.325~max.515	

*) For ordering, specify workpiece thickness.

How To Use



■ Ordering Example

QLPDH400-12-20.5

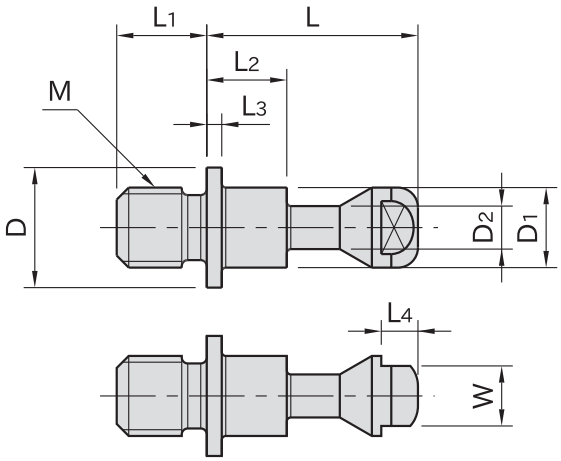
Shank Size — L Dim.

※ QLPD400-12 for 20.5mm thickness workpiece.

Note

The length of L dimension should be decided depending on the workpiece thickness.

QLPDH-M CLAMPING SCREWS(Heavy)



Body
SCM435 steel Quenched and tempered Black oxide finish

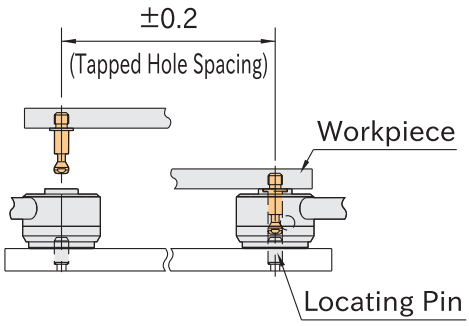
Part Number	D_1	M	L_1	L	D	L_2	L_3	D_2	W	L_4	Weight (g)	Pull Clamps
QLPDH400-M12	12	M12×1.75	13	38	20	21.5	2	6.5	10	4	40	QLPDH400R
QLPDH400-M16		M16×2	17								55	
QLPDH500-M16	16			48	25	28	2.5	9.5	13	5	90	QLPDH500R
QLPDH500-M20		M20×2.5	21								110	

Note

Custom Clamping Screws (different screw thread sizes) are available on request.

How To Use

■Recommended Spacing Tolerance in Use of Clamping Screws

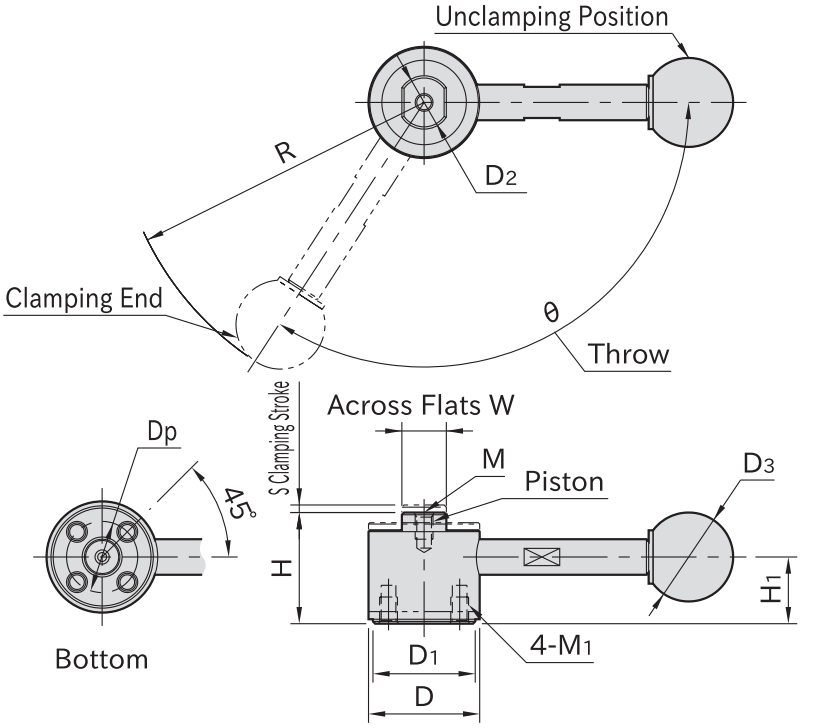


QLPU PUSH CLAMPS(Standard)

RoHS

With Handle

Without Handle



Cam	Piston	Handle	Ball Knob
SCM440 steel Quenched and tempered Black oxide finish	S45C steel Quenched and tempered Black oxide finish	S45C steel Black oxide finish	ABS resin Black

Type	H	S	D_2	M	W	θ	D	D_1	M_1	Dp	H_1
QLPU150	25 *)	1.7	12	M4X0.7 Depth 6	10	123°	25	23	M4X0.7 Depth 6	16	15
QLPU200	32 **)	2.5	15	M6X1 Depth 9	13	135°	32	30	M6X1 Depth 9	20	19.5

Type	Clamping Force (kN)	Clamping Mechanism
QLPU150	3	Spiral Cam Cam Angle:4°
QLPU200	4	

*) Actual clamping height : 25 to 26.7 (clamping stroke :1.7)
**) Actual clamping height : 32 to 34.5 (clamping stroke :2.5)

■With Handle

Part Number	R	D_3	Allowable Operating Load (N) ***)	Weight (g)
QLPU150R	69.5	20	150	100
QLPU200R	103	25	200	200

***) Allowable load to operate the handle.

■Without Handle

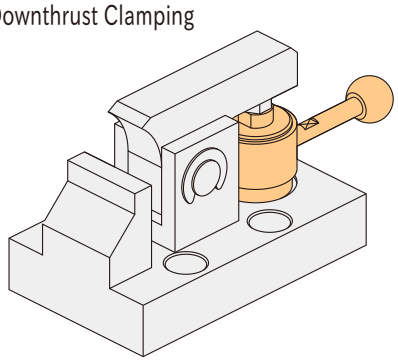
Part Number	Handle Mounting Hole	Weight (g)
QLPU150NR	M5X0.8	75
QLPU200NR	M6X1	150

The handle must be ordered separately.
・QLSL STANDARD HANDLES
・QLTL ADJUSTABLE-TORQUE HANDLES

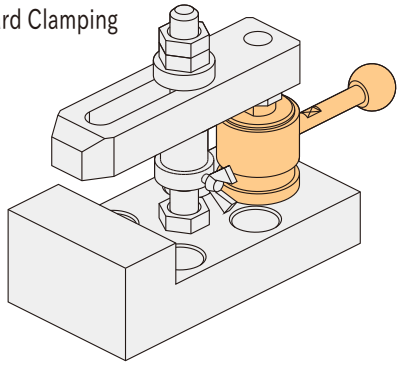
How To Use

■Application Examples

Downthrust Clamping

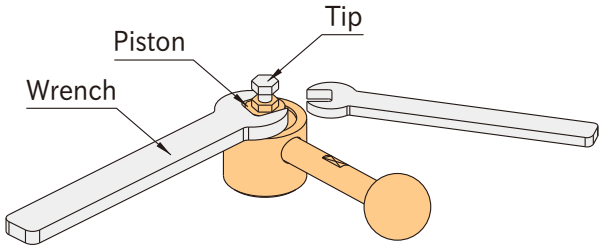


Downward Clamping



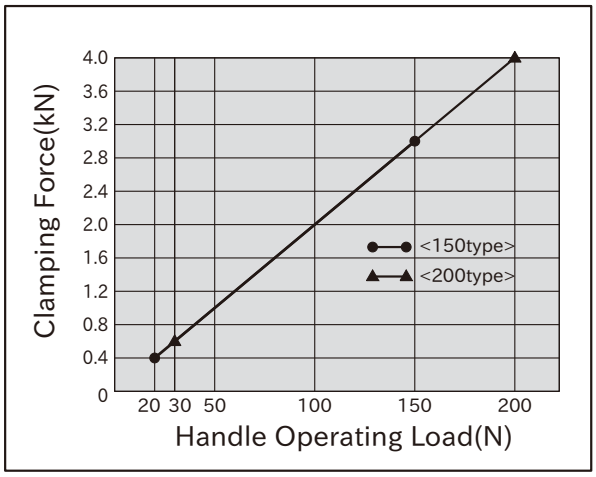
Note

・When installing a tip on the piston, lock the piston using a wrench to prevent the clamp from receiving any torque.
・The piston goes down when turning handle over clamping end.



Performance Curve

■QLSL STANDARD HANDLES

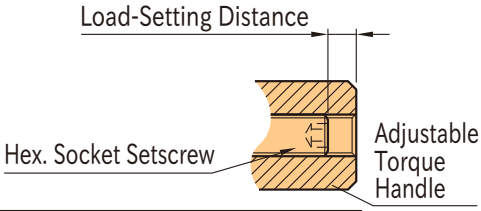


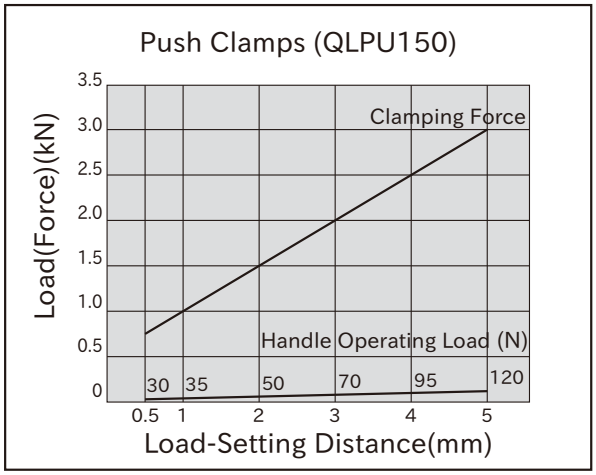
⚠ The performance curves shown below do not denote the guaranteed performance.

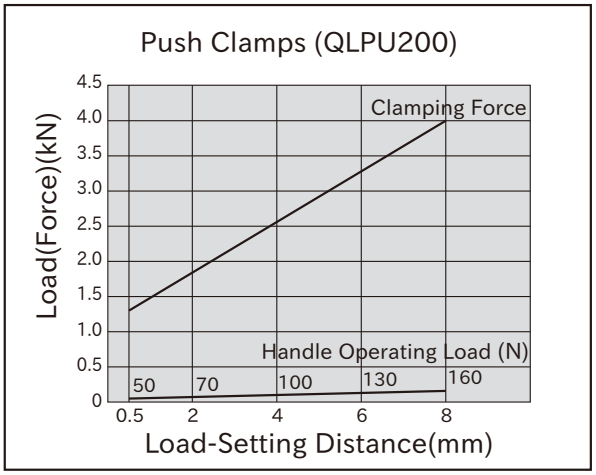
■QLTL ADJUSTABLE-TORQUE HANDLES

⚠ The performance curves shown below do not denote the guaranteed performance.

・Use a force gauge when measuring handle-operating loads.







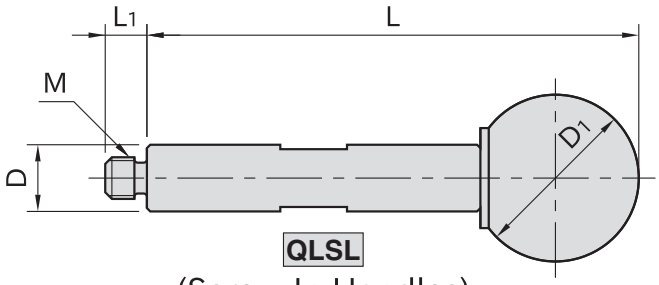
QLSL STANDARD HANDLES

RoHS

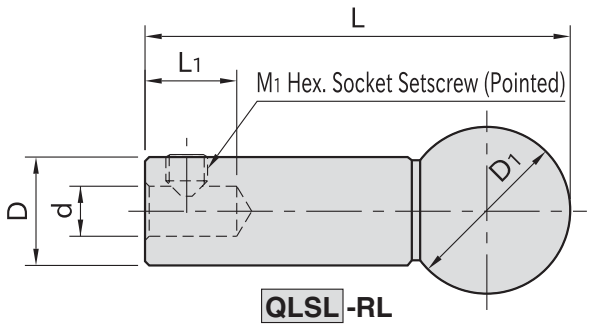
QLSL
(Screw-In Handles)

QLSL-RL
(Plug-In Handles)

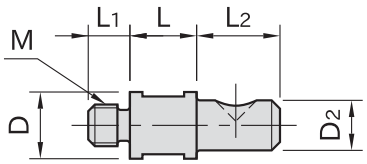
QLSL-RA
(Plug-In-Handle Adaptors)



QLSL
(Screw-In Handles)



QLSL-RL
(Plug-In Handles)



QLSL-RA
(Plug-In-Handle Adaptors)

Type	Handle	Ball Knob	Shaft
QLSL	SCM435 steel Tempered Black oxide finish	ABS resin Black	—
QLSL-RL	S45C steel Black oxide finish		—
QLSL-RA	—	—	SCM435 steel Quenched and tempered Black oxide finish

QLSL (Screw-In Handles)

Part Number	L	D_1	D	M	L_1	Weight (g)
QLSL150	59	20	8	M5×0.8	5	25
QLSL200	89	25	10	M6×1	6	50

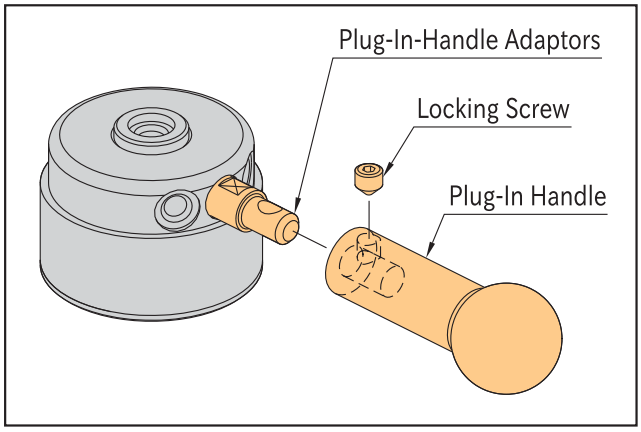
QLSL-RL (Plug-In Handles)

Part Number	L	D_1	D	d	L_1	M_1	Weight (g)
QLSL150-RL	51	20	13	6	11	M5×0.8-5L	45
QLSL200-RL	79	25	15	8	13	M6×1 -6L	90

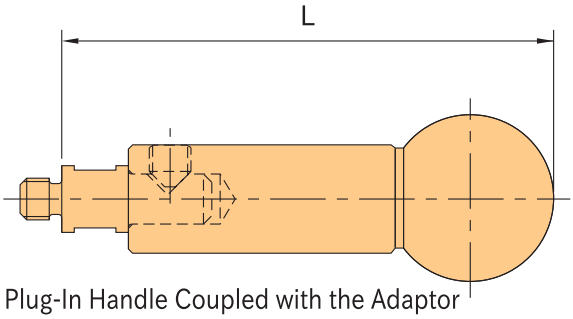
QLSL-RA (Plug-In-Handle Adaptors)

Part Number	L	D	L_2	D_2	M	L_1	Weight (g)
QLSL150-RA	8	8	10	6	M5×0.8	5	7
QLSL200-RA	10	10	12	8	M6×1	6	14

How To Use



Secure the Plug-In Handle to the Adaptor using the locking screw if necessary.



Plug-In Handle Coupled with the Adaptor

■Proper One-Touch Clamps
- SWING CLAMPS <QLSW>
- PULL CLAMPS <QLPD>
- PUSH CLAMPS <QLPU>

Type	L
QLSL150	59
QLSL200	89

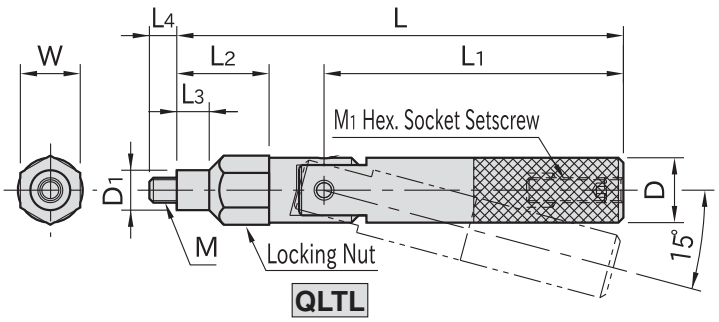
QLTL ADJUSTABLE-TORQUE HANDLES

RoHS

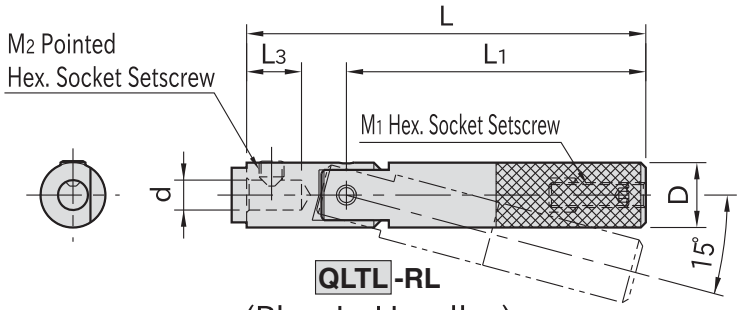
QLTL
(Screw-In Handles)

QLTL-RL
(Plug-In Handles)

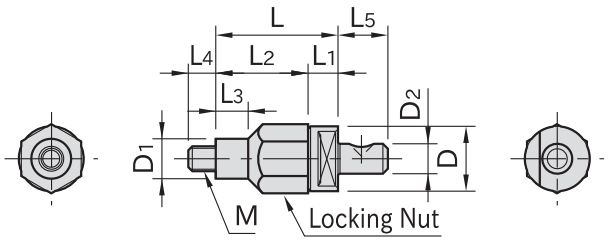
QLTL-RA
(Plug-In-Handle Adaptors)



QLTL
(Screw-In Handles)



QLTL-RL
(Plug-In Handles)



QLTL-RA
(Plug-In-Handle Adaptors)

Type	Stem	Locking Nut	Handle
QLTL	SCM435 steel Quenched & tempered Black oxide finished	S45C steel Black oxide finished	S45C steel Quenched & tempered Black oxide finished
QLTL-RL		—	
QLTL-RA		S45C steel Black oxide finished	—

QLTL (Screw-In Handles)

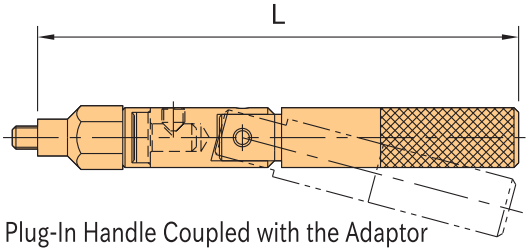
Part Number	L	L_1	D	L_2	L_3	D_1	W	M	L_4	M_1	Weight (g)
QLTL120	89.5	60	13	18.5	6.5	8	12	M5×0.8	5.5	M5×0.8-16L	90
QLTL160	119	84	15	23	8	10	14	M6×1	6.5	M6×1 -20L	140

QLTL-RL (Plug-In Handles)

Part Number	L	L_1	D	d	L_3	M_2	M_1	Weight (g)
QLTL120-RL	80	60	13	6	11	M5×0.8-5L	M5×0.8-16L	70
QLTL160-RL	107	84	15	8	13	M6×1 -6L	M6×1 -20L	130

QLTL-RA (Plug-In-Handle Adaptors)

Part Number	L	L_1	D	L_2	L_3	D_1	L_5	D_2	M	L_4	Weight (g)
QLTL120-RA	24.5	6	13	18.5	6.5	8	10	6	M5×0.8	5.5	20
QLTL160-RA	30	7	15	23	8	10	12	8	M6×1	6.5	40



Plug-In Handle Coupled with the Adaptor

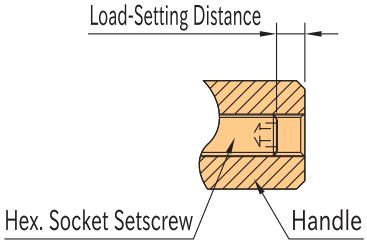
Type	L
QLTL120	104.5
QLTL160	137

■Proper One-Touch Clamps

- SWING CLAMPS <QLSW>
- PULL CLAMPS <QLPD>
- PUSH CLAMPS <QLPU>

How To Use

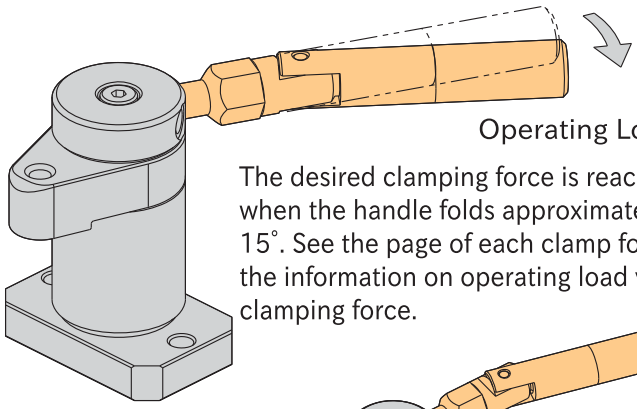
Turning the setscrew inside the handle allows adjusting the torque to set a desired clamping force.



[Operating-Load Setting Range]

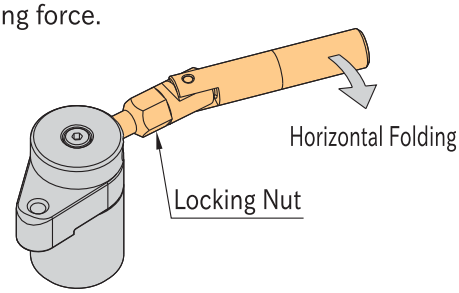
QLTL120/QLTL120-RL : 30N to 120N
QLTL160/QLTL160-RL : 50N to 160N

Note : Ensure that the operating load is not set below the lower limit to prevent the handle from returning to the unclamping position due to shock load generated during the transfer of machine pallets.



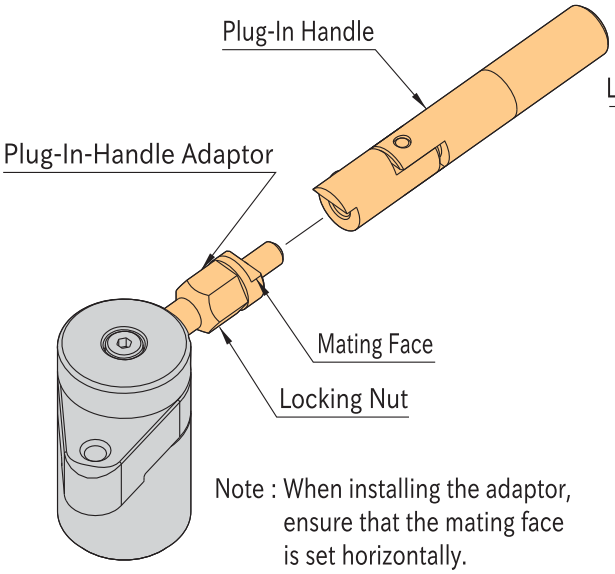
Operating Load

The desired clamping force is reached when the handle folds approximately 15˚. See the page of each clamp for the information on operating load vs. clamping force.

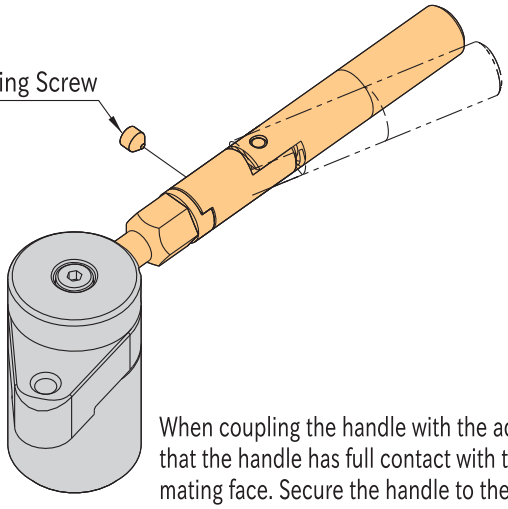


Note : Ensure that the handle is set to fold horizontally.

Plug-In Handle Installation



Note : When installing the adaptor, ensure that the mating face is set horizontally.



When coupling the handle with the adaptor,ensure that the handle has full contact with the adaptor's mating face. Secure the handle to the adaptor using the lockingscrew if necessary.

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