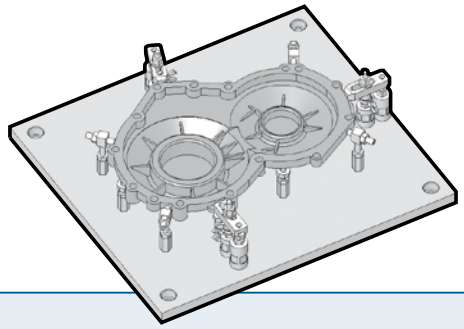
FAST-CLAMPS

On our website: www.omlspa.it
are available the drawings (format: dxf; dwg; igs; step; solid works)
of these products.

Fast Clamps

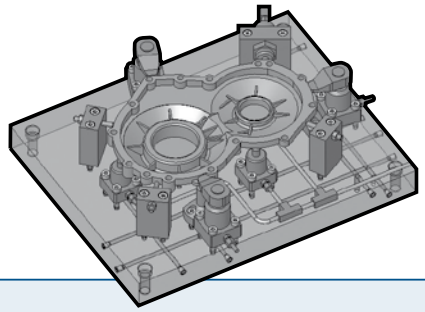
Speedier In Setup Than Conventional Manual Clamping

No tools needed



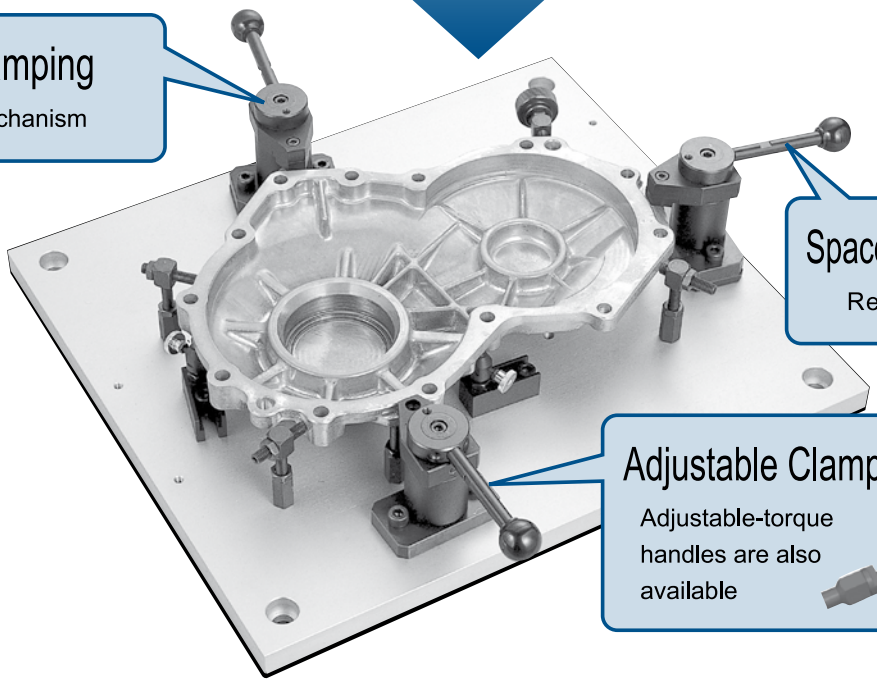
More Economical Than Hydraulic Clamping

Much lower fixture costs
Maintenance free



Positive Clamping

Spiral cam mechanism

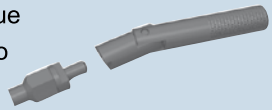


Space-Saving Design

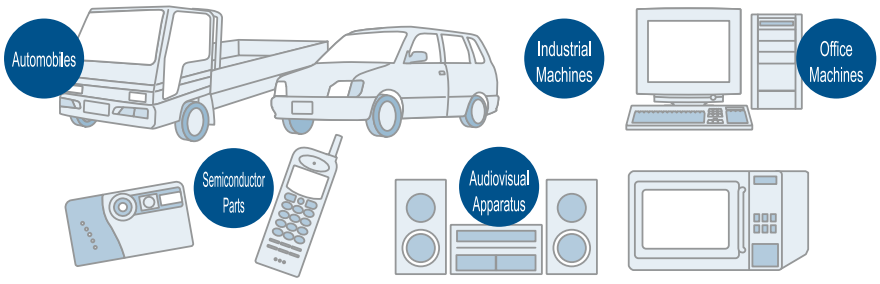
Removable handle

Adjustable Clamping Force

Adjustable-torque handles are also available



Fast Clamps serve for varied applications in machining and assembly jobs in different industries.



Added Product Items Offer A Wider Range Of Applications

Stronger Clamping Force
Clamping-Height Adjustment
Greater Performance

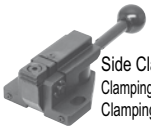
Clamping Force

NEW

Pull Clamps Heavy
Clamping Range:up to 2.5mm
Clamping Force:up to 8,000N

Swing Clamps Heavy
Clamping Range:up to 1.6mm
Clamping Force:up to 6,000N

NEW



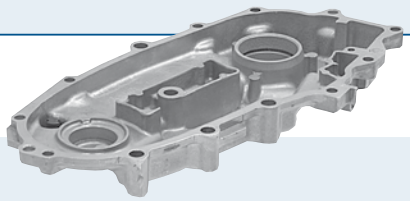
Side Clamps, Standard
Clamping Range:2mm
Clamping Force:up to 4,000N

Push Clamps, Standard
Clamping Range:up to 2.5mm
Clamping Force:up to 4,000N

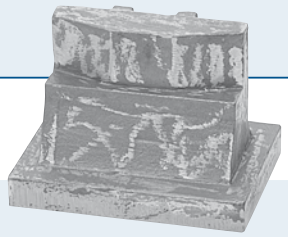
Pull Clamps, Standard
Clamping Range:up to 2mm
Clamping Force:up to 2,500N

Swing Clamps, Standard
Clamping Range:up to 1.8mm
Clamping Force:up to 1,200N

Clamping-Height Adjustment



Die-Cast Parts



Cast-Iron Parts

This extended line of Fast Clamps allows clamping parts made from materials ranging from non-ferrous metals like aluminum, zinc, etc. to cast iron and steel.

Setting a clamping force is important when clamping a part that can easily get strained.

To compensate for variations between castings, a long clamping height range is needed. Clamping force is also an important factor for castings that receive a comparatively heavy load when being machined.

QLPD PULL CLAMPS(Standard)

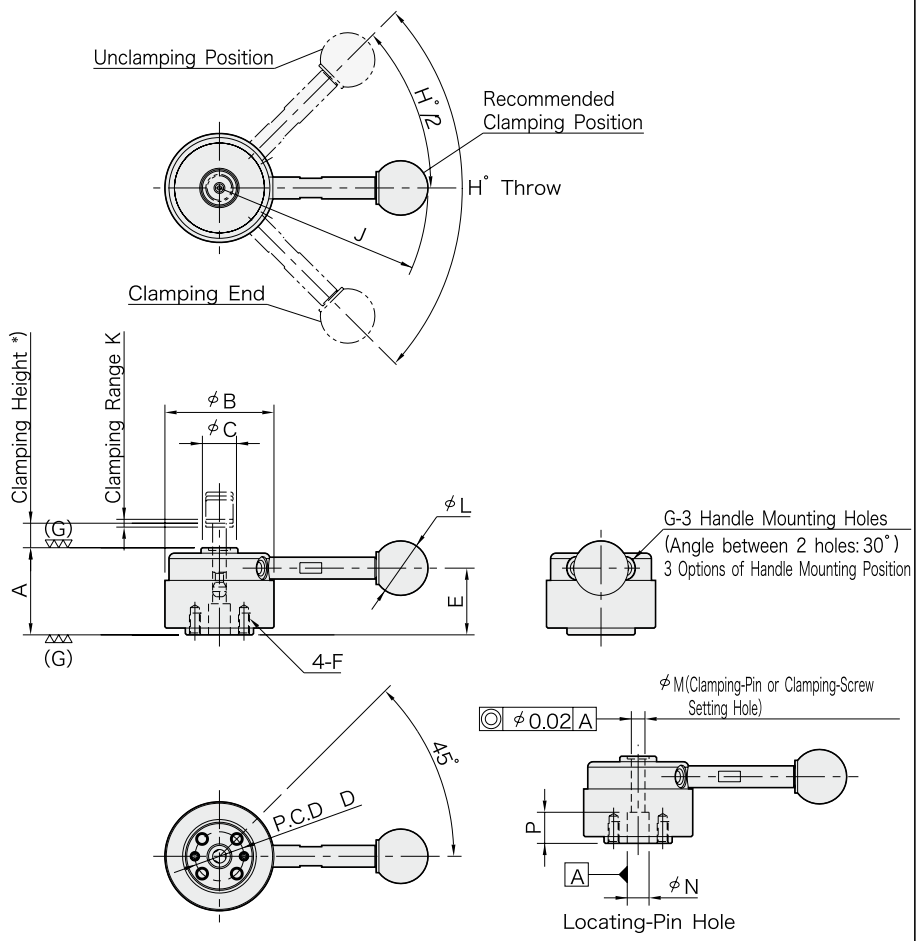
With Handle　　Without Handle

Note) Clamping Pins or Screws must be ordered separately.

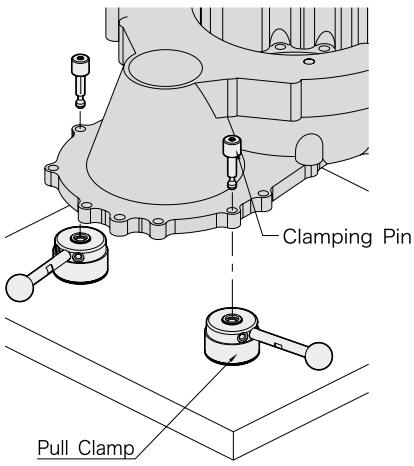
[Body & Cam]
Material: SCM440 steel
Finish : Black oxide
Heat Treat: Quenched and tempered

[Handle]
Material: S45C steel
Finish : Black oxide

[Ball Knob]
Material: ABS resin
Color : Black

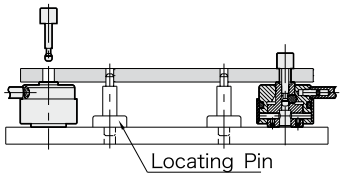


How To Use

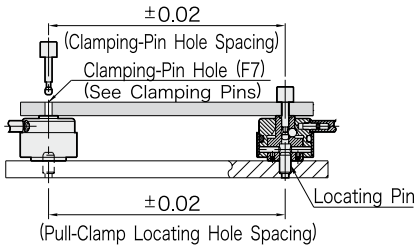


How To Locate Workpiece

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.



Series	A (±0.01)	B	C	D (P.C.D)	E	F	G	H	K	M (F7)
QLPD150	32	40	13.5	18	24.5	M4x0.7 8 deep	M5x0.8	90°	1.5	5
QLPD200	40	50	18	25	30.7	M6x1 9 deep	M6x1	110°	2	8

Technical Infomation

Allowable Loads in Machining of Workpiece Bottom

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

Series	Allowable Force To Workpiece Bottom (Per Clamp)
QLPD150	max.2000N
QLPD200	max.5500N

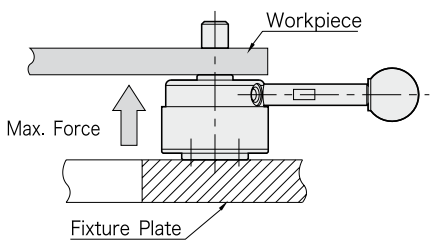
Series	N (G6)	P	Clamping Force (N)	Clamping Mechanism	Recommended Workpiece Thickness Tolerance **)
QLPD150	8	10	900	Spiral Cam Cam Angle:4°	±0.3
QLPD200	12	13	2500		±0.5

With Handle

Part Number	J	L	Allowable Operating Load (N) ***)	Weight (g)
51991101	76.5	20	150	245
51991102	111.5	25	200	470

Without Handle

Part Number	Weight (g)
51991103	220
51991104	420



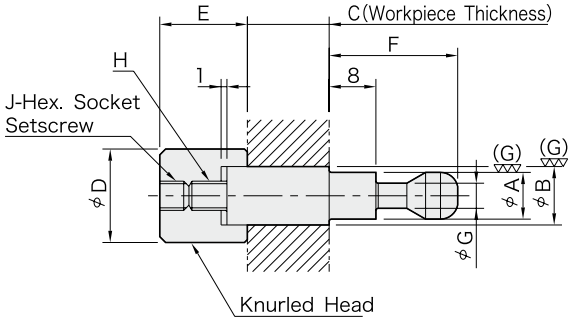
Note : See page 151 and 154 for performance curves.

*) Grip length of 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.

QLPD-X CLAMPING PINS(Standard)

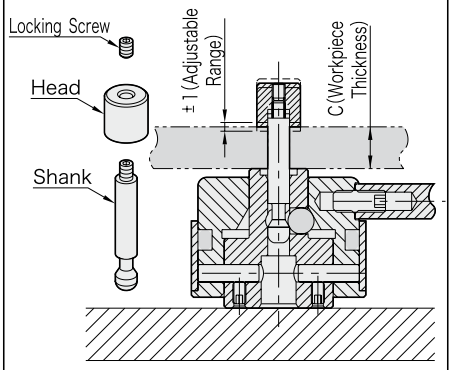
[Shank]
Material: SCM435 steel
Finish : Precision ground
Heat Treated(shank end)

[Head]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered



C dimension is adjustable by +/-1mm to fit actual workpiece thickness.

How To Use



Part Number	A (f7)	B (f7)	C *) (By 0.1mm)	D	E	F	G	H	J	Pull Clamps	Weight (g)
51991105 -(C Dim. in mm)	5	5	3≦C≦50	10	10	17	3	M3x0.5	M3x0.5-4L	QLPD150 Series	min. 8 to max.16
51991106 -(C Dim. in mm)		6									min. 8 to max.19
51991107 -(C Dim. in mm)	8	8	4≦C≦80	16	15	22	4.3	M5x0.8	M5x0.8-5L	QLPD200 Series	min.30 to max.60
51991108 -(C Dim. in mm)		10									min.31 to max.77

*) For ordering, specify workpiece thickness.

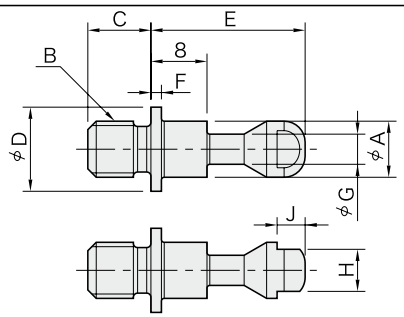
Ordering Example

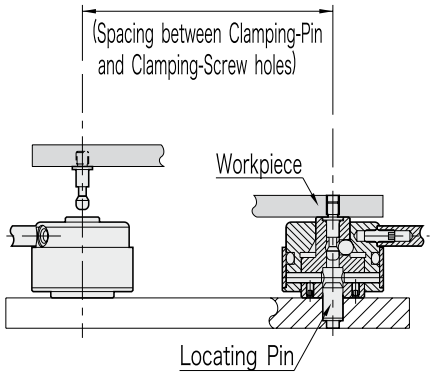
QLPD150-5x5-10.5
Shank Size C Dim.

· Custom Clamping Pins(different B dimensions) are available on request.

QLPD-M CLAMPING SCREWS(Standard)

Material: SCM435 steel
Finish : Black oxide
Heat Treat: Quenched and tempered





Part Number	A	B	C	D	E	F	G	H	J	Pull Clamps	Weight (g)
51991109	5	M 5x0.8	6	8	17	1.2	3	4	2.5	QLPD150 Series	3
51991110		M 6x1	7								4
51991111	8	M 8x1.25	9	12	22	1.5	4.3	6	4	QLPD200 Series	10
51991112		M10x1.5	11								13

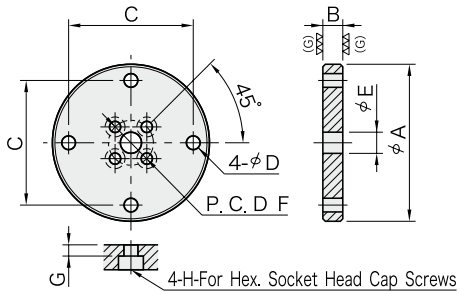
Recommended Spacing Tolerance in Use of Clamping Screws

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

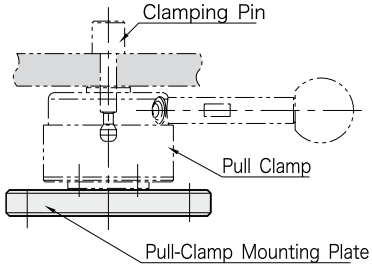
QLPD-P PULL-CLAMP(Std.) MOUNTING PLATES

Note) Pull Clamps or Clamping Pins must be ordered separately.

Material: S45C steel
Finish : Black oxide
Precision ground



How To Use



Part Number	A	B (±0.01)	C	D	E	F (P. C. D)	G	H	Pull Clamps	Weight (g)
51991113	63	8	50	5.5	8.5	18	3.5	M4	QLPD150 Series	180
51991114	80	10	65	9	12.5	25		M6	QLPD200 Series	350

QLPDH PULL CLAMPS(Heavy)

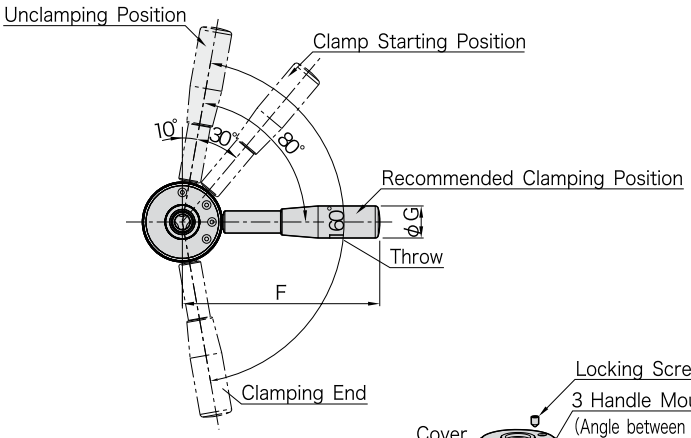
NEW

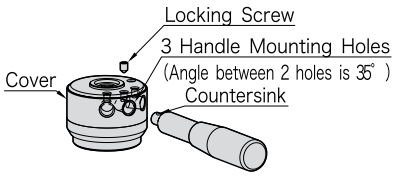
[Body & Clamp Ring]
Material:SCM440 steel
Finish :Black oxide
Heat Treat:Quenched and tempered

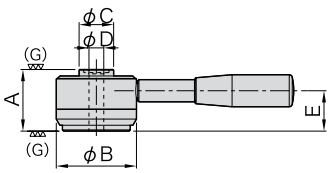
[Handle Shank]
Material:S45C steel
Finish :Black oxide
Heat Treat:Quenched and tempered

[Handle]
Material:Plastic
Color :Black

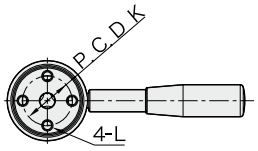
Note) Clamping Pins or Screws must be ordered separately.

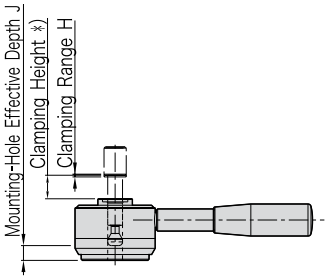






The handle can be removed by loosening the locking screw.
To keep the handle mounted permanently,make sure that the locking screw is fully tightened.
3 options of handle mounting position.



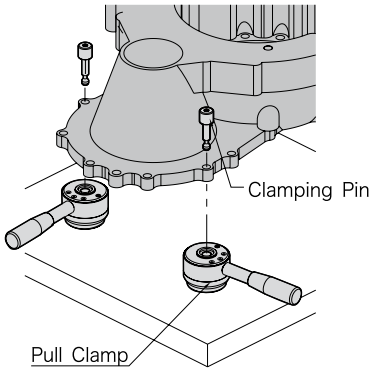


Part number	Series	A (±0.01)	B	C	D (F7)	E	F	G	H	J	K (P.C.D)
51991501	QLPDH 400 R	50	65	28	12	36	160	26	2	10	40
51991502	QLPDH 500 R	63	80	34	16	45	180	28	2.5	12	50

Part number	Series	L	Allowable Operating Load (N) **	Clamping Force (N)	Clamping Mechanism	Recommended Workpiece Thickness Tolerance ***	Weight (kg)
51991501	QLPDH 400 R	M 8x1.25 14 deep	600	6,000	Spiral Cam Cam Angle : 4°	±0.5	1.2
51991502	QLPDH 500 R	M10x1.5 18 deep		8,000		±0.8	2.2

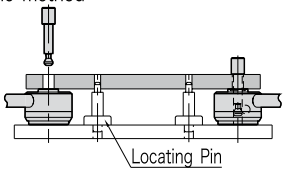
*) Grip length of Clamping Pin (workpiece thickness)
**) Allowable load to operate the handle
***) Maintaining these recommended tolerances allows minimizing the variation of handle position in the clamping mode in clamping with the use of the Clamping Pin.

How To Use

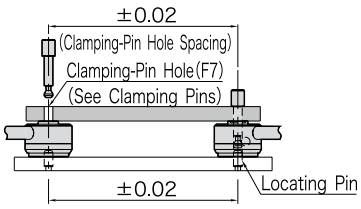


How To Locate Workpiece

1. Basic method



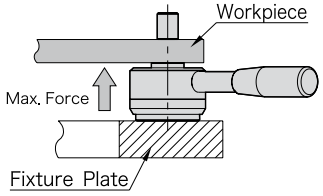
2. Method for clamping and locating a workpiece at a time. Give an accuracy shown below to the hole spacing to generate a locating accuracy of ±0.08.



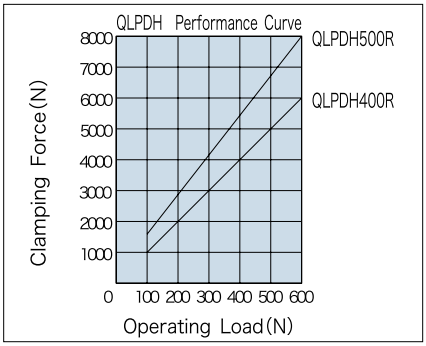
(Pull-Clamp Locating Hole Spacing)

Technical Information

Allowable Loads in Machining of Workpiece Bottom

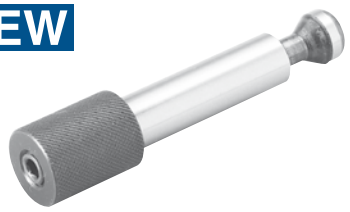


Part Number	Allowable Force To Workpiece Bottom (Per Clamp)
51991501	max. 8000N
51991502	max.14000N



QLPDH-X CLAMPING PINS (Heavy)

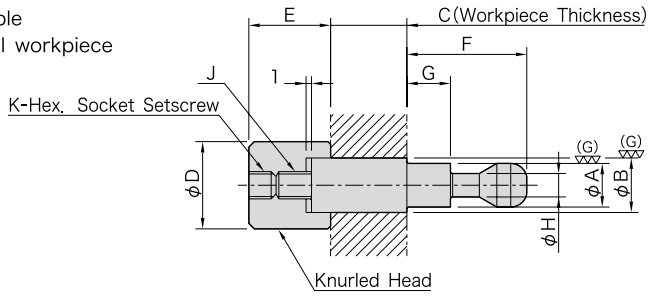
NEW



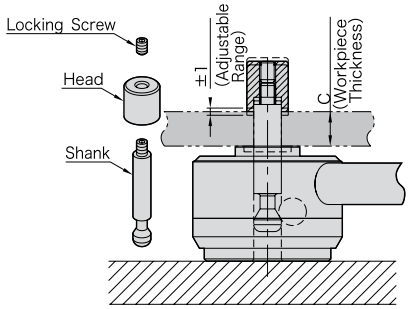
[Shank]
Material: SCM435 steel
Finish : Precision ground, heat treated (shank end)

[Head]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered

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



How To Use



Ordering Example

QLPDH400-12-20.5
Part Number C Dim.

·Custom Clamping Pins (different B dimensions) are available on request.

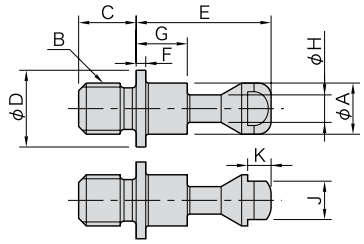
Part Number	A (f7)	B (f7)	C *) (By 0.1mm)	D	E	F	G	H	J	K	Pull Clamps	Weight (g)
51991503-(C Dim. In mm)	12	12	0<C≦100	18	23	38	21.5	6.5	M 8x1.25	M 8x1.25- 8L	QLPDH400R	70 to 160
51991504-(C Dim. In mm)		16		24								175 to 265
51991505-(C Dim. In mm)	16	16	0<C≦120	24	29	48	28	9.5	M10x1.5	M10x1.5 -10L	QLPDH500R	160 to 350
51991506-(C Dim. In mm)		20		30								325 to 515

*) For ordering, specify workpiece thickness.

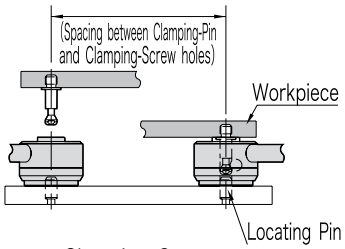
QLPDH-M CLAMPING SCREWS (Heavy)

NEW

Material: SCM435
Finish : Black oxide
Heat Treat: Quenched and tempered



Recommended Spacing Tolerance in Use of Clamping Screws



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

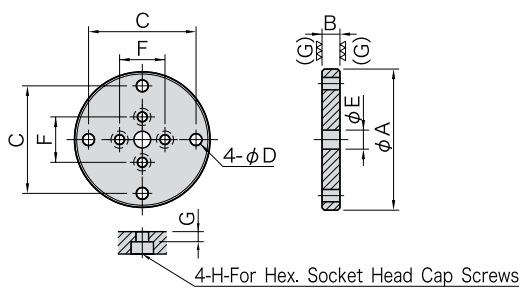
Part Number	A	B	C	D	E	F	G	H	J	K	Pull Clamps	Weight (g)
51991507	12	M12x1.75	13	20	38	2	21.5	6.5	10	4	QLPDH400R	40
51991508		M16x2	17									55
51991509	16	M16x2	17	25	48	2.5	28	9.5	13	5	QLPDH500R	90
51991510		M20x2.5	21									110

QLPDH-P PULL-CLAMP (Heavy) MOUNTING PLATES

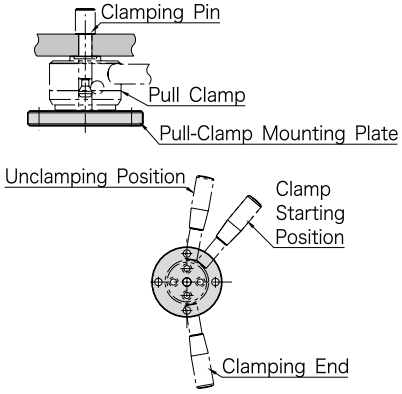
NEW

Note) Pull Clamps or Clamping Pins must be ordered separately.

Material: S45C steel
Finish : Black oxide, precision ground



How To Use



Part Number	A	B (±0.01)	C	D	E	F	G	H	Pull Clamps	Weight (kg)
51991511	105	13	85	11	13	40	4	M 8	QLPDH400R	0.77
51991512	130	17	105	13	17	50	6	M10	QLPDH500R	1.55

QLSW SWING CLAMPS(Standard)

With Handle　　Without Handle

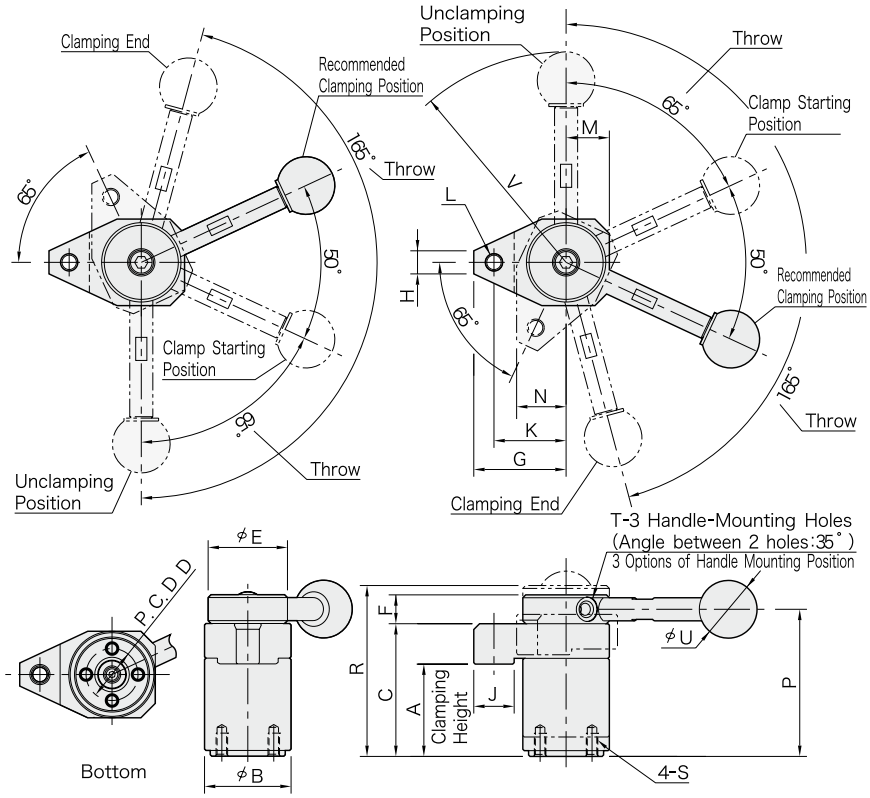
[Body & Shaft]
Material: SCM440 steel
Finish : Black oxide
Heat Treat: Quenched and tempered

[Clamp Arm & Adaptor Head]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered

[Handle]
Material: S45C steel
Finish : Black oxide

[Ball Knob]
Material: ABS resin
Color : Black

Counterclockwise Clamping　　Clockwise Clamping



Size/Type	Clamping Direction	A	B	C	D (P.C.D)	E	F	G	H	J	K	L
QLSW150R	Clockwise	32 *)	30	46	18	30	10	32	8	14	25	M6x1
QLSW150L	Counterclockwise											
QLSW200R	Clockwise	45 **)	40	63	25	38	13	40	12	16	32	M8x1.25
QLSW200L	Counterclockwise											

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

Size/Type	M	N	P	R	S	T	Clamping Force (N)	Clamping Mechanism
QLSW150R	15	17	51	57.5	M4x0.7 8 deep	M5x0.8	800	Spiral Cam Cam Angle:4°
QLSW150L								
QLSW200R	20	22.5	69.5	78.1	M6x1 12 deep	M6x1	1200	
QLSW200L								

With Handle

Part Number	U	V	Allowable Operating Load (N) ***)	Weight (g)
51991115	20	73	150	320
51991117				
51991116	25	107	200	710
51991118				

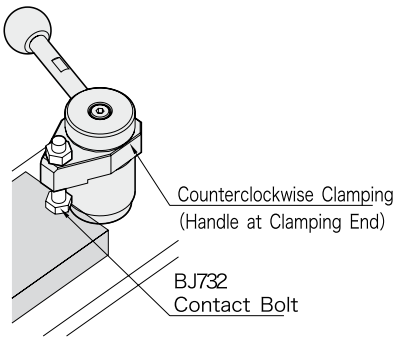
***) Allowable load to operate the handle

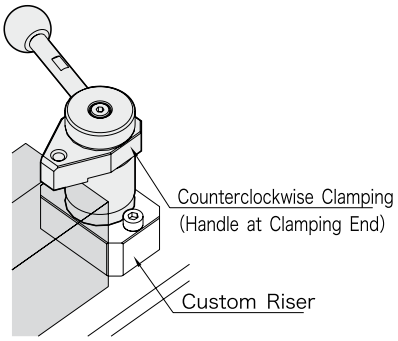
Without Handle

Part Number	Weight (g)
51991119	295
51991121	
51991120	660
51991122	

Note : The handle must be ordered separately.

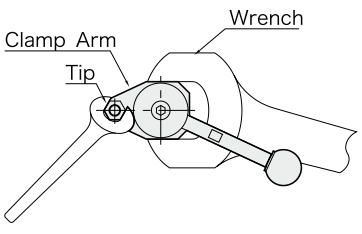
How To Use





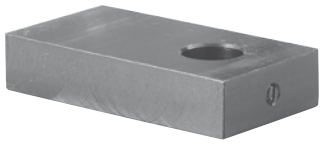
Tip Installation

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

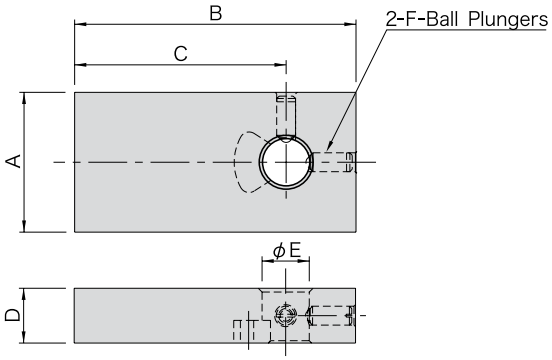


QLSW-SH MACHINABLE CLAMP ARMS FOR STANDARD SWING CLAMPS

NEW

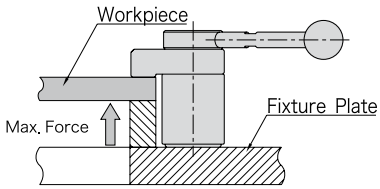


Material: S45C steel
Finish : Black oxide



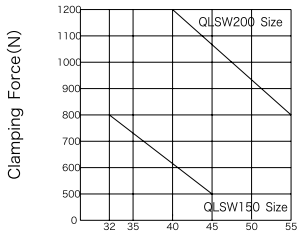
Technical Infomation

Allowable Loads in Machining of Workpiece Bottom

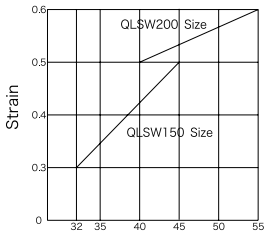


Series	Allowable Force To Workpiece Bottom(Per Clamp)
QLSW150	max.2100N
QLSW200	max.2700N

Clamp Arm Length Vs. Clamping Force



Clamp Arm Length Vs. Strain During Clamping

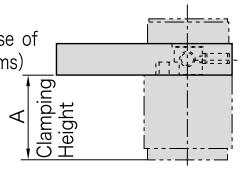


Notes :
- Clamp arm length denotes C dimensions below.
- Clamping force and strain during clamping denote values gained when the max. allowable load is applied to the handle.

How To Use

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

(Clamping Height in Use of Machinable Clamp Arms)



Part Number	A	B	C	D	E (F8)	F	Allowable Weight of Clamping Tip*) (g)	Swing Clamps	Weight (g)
51991513	30	60	45	12	10	M4	100	QLSW150Series	150
51991514	40	75	55	16	16	M5		QLSW200Series	330

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

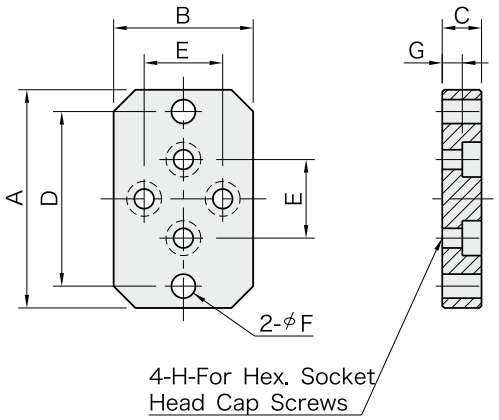
Part Number	A
51991113	34**)
51991114	47***)

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

QLSW-P SWING-CLAMP(Standard) MOUNTING PLATES

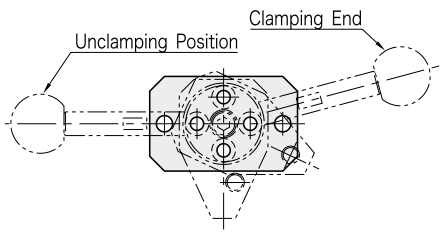
Note) Swing Clamps must be ordered separately.

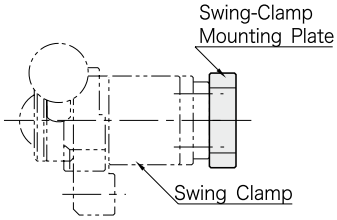
Material: S45C steel
Finish : Black oxide



How To Use

Example of mounting a Swing Clamp of clockwise clamping style





Part Number	A	B	C	D	E	F	G	H	Swing Clamps	Weight (g)
51991123	50	32	9	40	18	5.5	4.5	M4	QLSW150 Series	110
51991124	75	42	12	55	25	9	5.5	M6	QLSW200 Series	250

QLSWH SWING CLAMPS(Heavy)

NEW

[Body/Cam/Handle]
Material : SCM440 steel
Finish : Black oxide
Heat Treat : Quenched and tempered

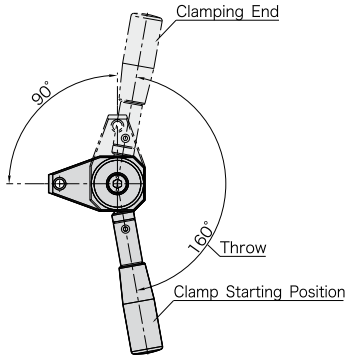
[Bolt]
Material : SCM435 steel
Finish : Black oxide
Heat Treat : Quenched and tempered

[Clamp Arm/Holder/Handle Shank]
Material : S45C steel
Finish : Black oxide
Heat Treat : Quenched and tempered

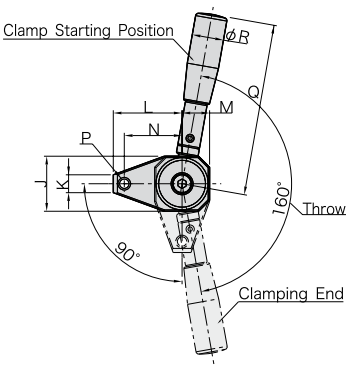
[Adjustment Knob]
Material : S45C steel
Finish : Black oxide

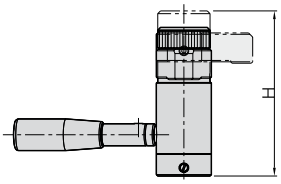
[Handle]
Material : Plastic
Color : Black

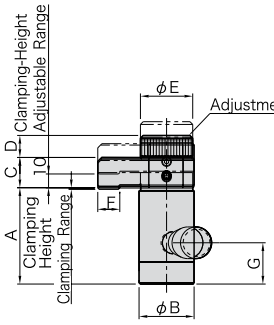
Counterclockwise Clamping

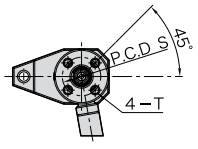


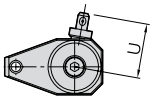
Clockwise Clamping



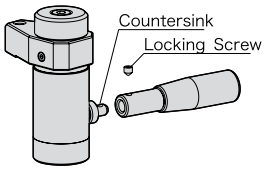






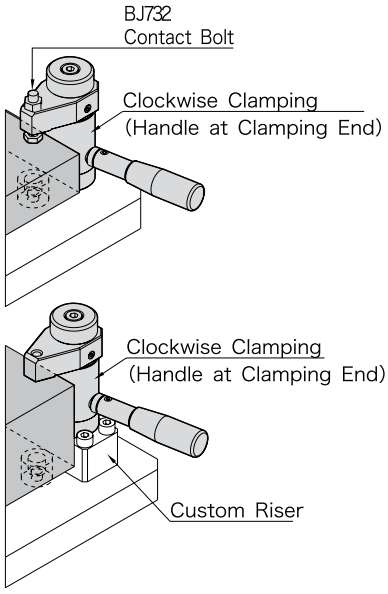


When Handle Is Removed



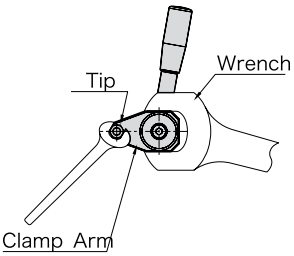
The handle can be removed by loosening the locking screw. To keep the handle mounted permanently, make sure that the locking screw is fully tightened.
3 options of handle mounting position.

How To Use



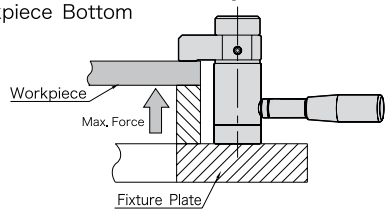
Tip Installation

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



Technical Information

Allowable Loads in Machining of Workpiece Bottom

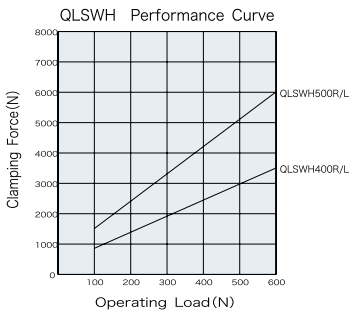


Series	Allowable Force To Workpiece Bottom(Per Clamp)
QLSWH400	max. 8000N
QLSWH500	max.14000N

Part Number	Clamping Direction	Clamping Range	Clamping Height	B	C	D	E	F	G	H	J	K	L	M
51991515	Clockwise	1.2	70 to 80	40	22	16	38	16	30	120	40	13	50	20
51991516	Counter-clockwise													
51991517	Clockwise	1.6	80 to 90	50	25	20	48	24	38	137	50	18	60	25
51991518	Counter-clockwise													

Part Number	N	P	Q	R	S (P.C.D)	T	U	Allowable Oerating Load(N)*)	Clamping Force (N)	Clamping Mechanism	Weight (kg)
51991515	42	M 8x1.25	125	23	28	M6x1 12 deep	39	600	3,500	Spiral Cam Cam Angle 2°	1.1
51991516											
51991517	48	M12x1.75	160	28	35	M8x1.25 16 deep	47	600	6,000		2
51991518											

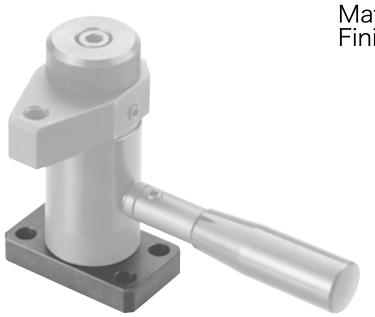
*) Allowable load to operate the handle

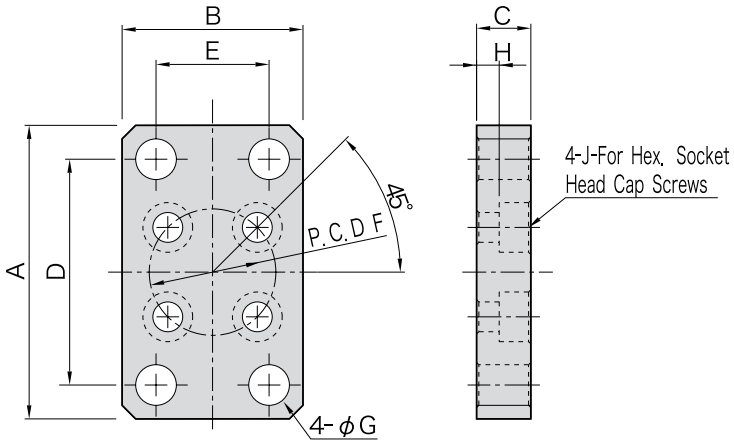


QLSWH-P SWING-CLAMP(Heavy)MOUNTING PLATES

NEW

Material: S45C steel
Finish : Black oxide

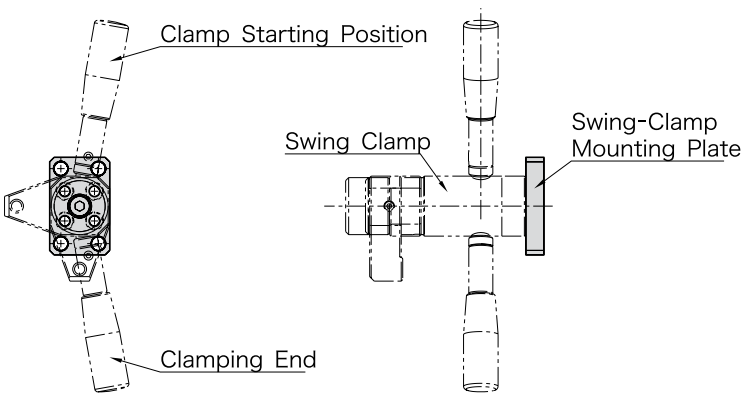




Part Number	A	B	C	D	E	F (P.C.D)	G	H	J	Swing Clamps	Weight (g)
51991519	65	40	12	50	25	28	9	5	M6	QLSWH400 Series	190
51991520	85	50	16	65	30	35	11	7	M8	QLSWH500 Series	425

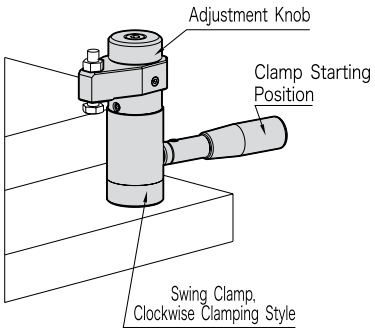
How To Use

Example of mounting a Swing Clamp for clockwise clamping

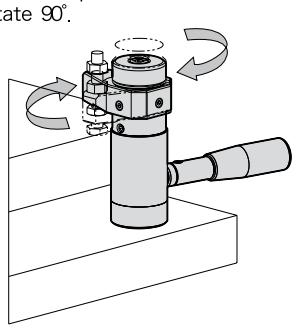


How To Operate

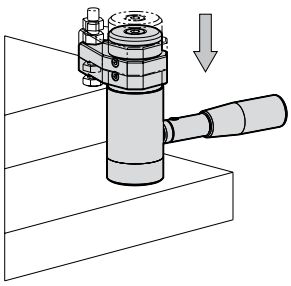
1. Load a workpiece.



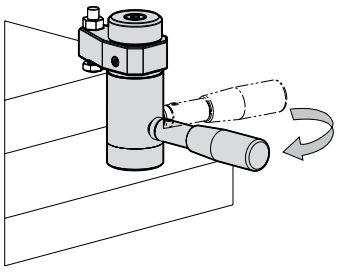
2. Turn the adjustment knob for the clamp arm to rotate 90°.



3. Continue turning the adjustment knob for the clamp arm to go down against the workpiece, for temporary clamping.



4. Turn the handle to do full clamping.



(For unclamping, follow the a bove steps back)

Information on Your Making Custom Clamp Arms for Standard Size of Swing Clamps

Recommeded Dimensions

Series	A (F8)	B	E	F	G	H	J	K	L(Max.) *)	M	N
QLSW150	10	12	5	32	M4x0.7	11	1.5	30	45	15	C5
QLSW200	16	16	6	42	M5x0.8	15	2	40	55	20	C8

*) See page 138 clamping force vs. clamp-arm length

Clamp Arm Installation/Removal Instructions

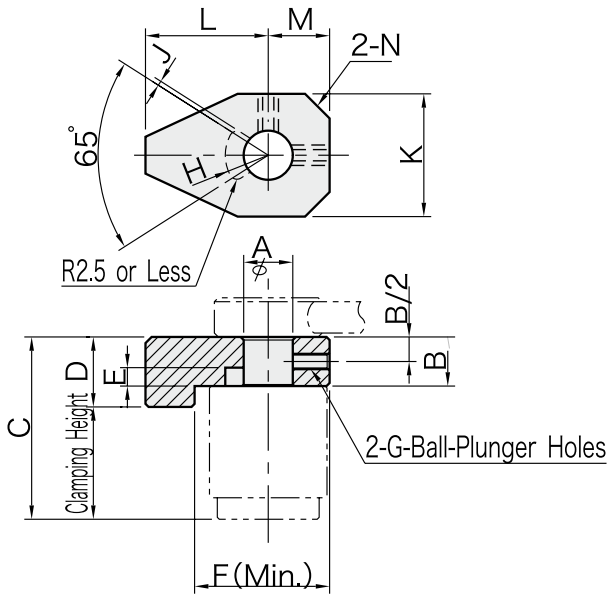
To install a clamp arm,

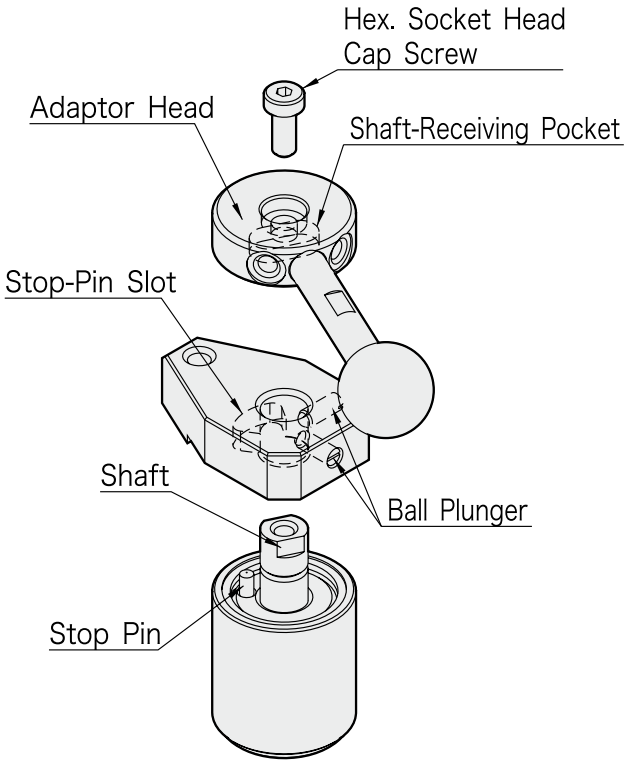
1. Fit it onto the shaft getting the stop pin received in the stop-pin slot provided on the clamp-arm bottom.
2. Place the adaptor head onto the shaft getting the shaft fitted into the shaft-receiving pocket in the adaptor head, and then lock the adaptor head using a hex. socket head cap screw.
3. Tighten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

To remove the clamp arm, follow the above steps back.

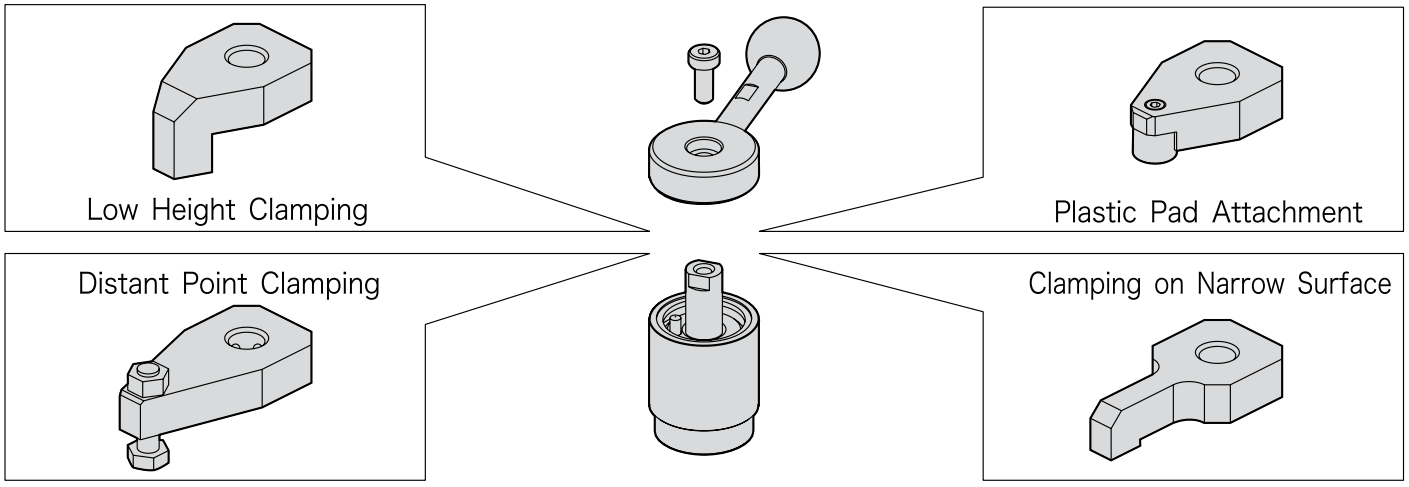
How To Determine D Dimensions

Series	C	D
QLSW150	46	46 - Clamping Height
QLSW200	63	63 - Clamping Height





Clamp Arm Customization Examples



Information on Your Making Custom Clamp Arms for Heavy Size of Swing Clamps

Recommended Dimensions

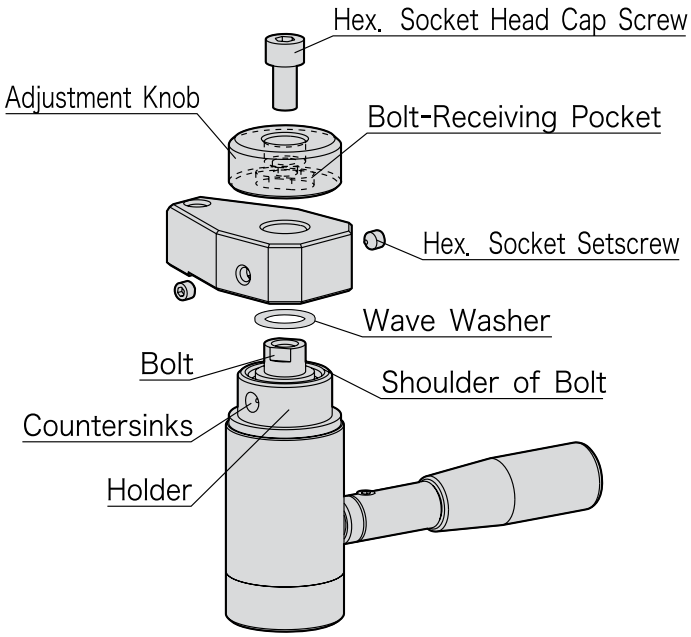
Series	A (F8)	B	C	D	E (±0.1)	F	G	H	L (Max.)
QLSWH400	32	15	21	13	5	M6x1	20	40	50
QLSWH500	41	19	24	15	6	M8x1.25	25	50	60

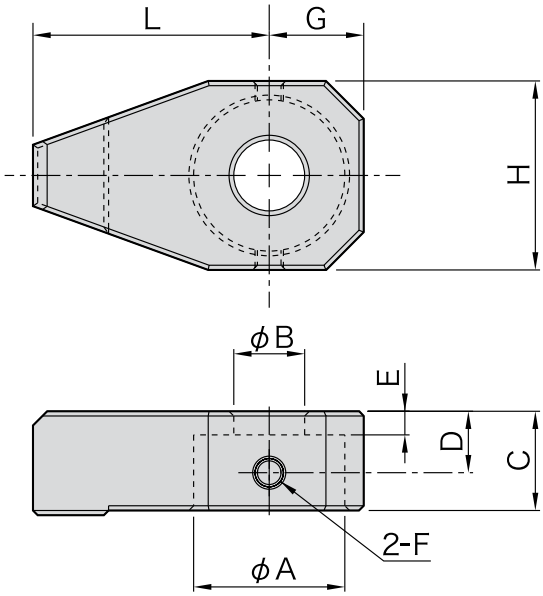
Clamp Arm Installation/Removal Instructions

To install a clamp arm,

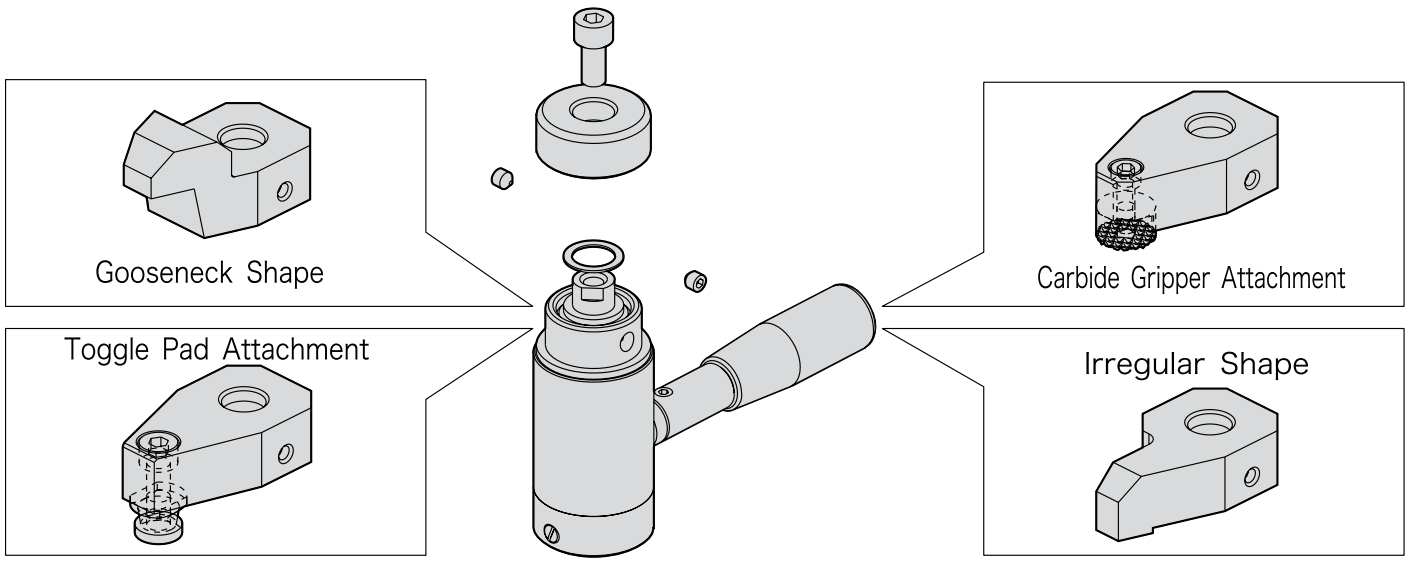
1. Place the wave washer on the shoulder of the bolt and then fit the clamp arm onto the bolt.
2. Place the adjustment knob onto the bolt getting the bolt fitted into the bolt-receiving pocket in the adjustment knob, and then lock the adjustment knob using a hex. socket head cap screw.
3. Align the countersinks on the side of the holder with the setscrew holes on the side of the clamp arm, and then lock them using the hex. socket setscrews.

To remove the clamp arm, follow the above steps back.





Clamp Arm Customization Examples



QLSWC SWING CLAMPS (Mini)

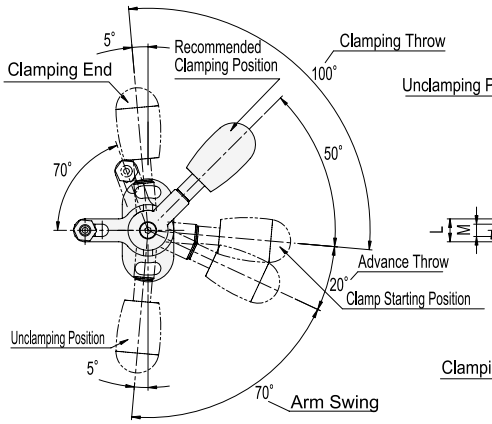
NEW

Body / Handle / Spindle	
Material	S45C steel
Finish	Black oxide
Heat treat	Quenched and tempered

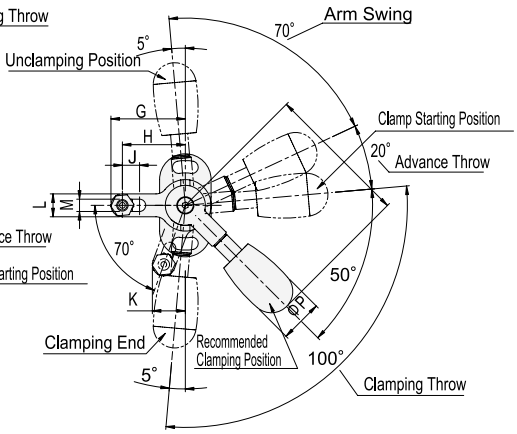
Arm / Cam Shaft	
Material	SCM440 steel
Finish	Black oxide
Heat treat	Quenched and tempered

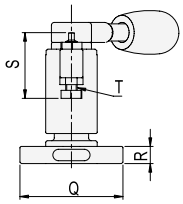
Knob	
Material	Phenolic plastic
Color	Black

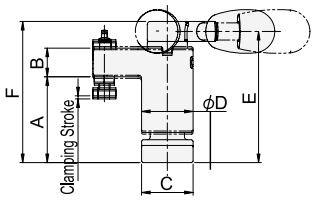
Counterclockwise Clamping

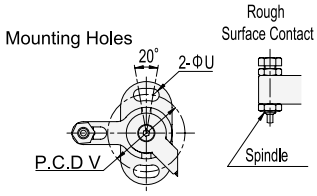


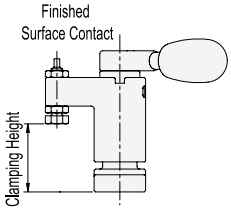
Clockwise Clamping

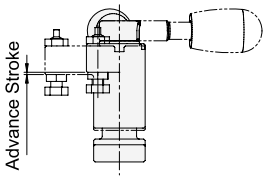












Part Number	Clamping Direction	Clamping Height *)				Clamping Stroke	Advance Stroke
		Finished Surface Contact		Rough Surface Contact			
		Min.	Max.	Min.	Max.		
51991822	Clockwise	22.8 (22.3-23.3)	24.8 (24.3-25.3)	22.4 (21.9-22.9)	24.4 (23.9-24.9)	1	0.8
51991823	Counterclockwise						
51991824	Clockwise	31.3 (30.6-32)	33.3 (32.6-34)	32.2 (31.5-32.9)	33.3 (33.5-34.9)	1.4	1.1
51991825	Counterclockwise						

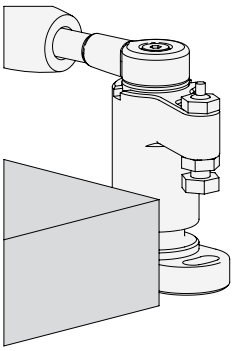
*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
51991822	30	10	18	18	45.8	49	26	22	6	11.5	8	4.3	50	15	36
51991823															
51991824	40	14	23	23	61.3	66	35	30	8	15.3	10	5.3	63	20	45
51991825															

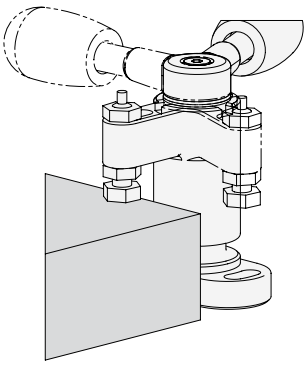
Part Number	R	S	T	U	V	W	Allowable Operating Load (N) **)	Clamping Force (N)	Clamping Mechanism	Weight (g)
51991822	6	22.8	M4×0.7	4.3	27	8	100	1,100	Spiral Cam Cam Angle:5°	112
51991823										
51991824	8	28.5	M5×0.8	5.3	34	10	150	1,800		250
51991825										

**) Allowable load to operate the handle

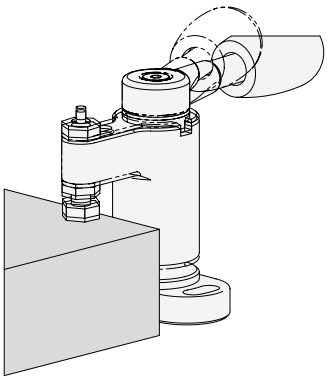
How To Operate



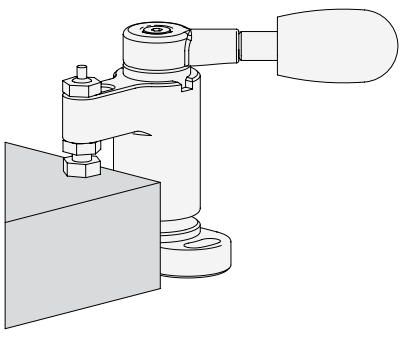
1. Unclamped
Load a workpiece.



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

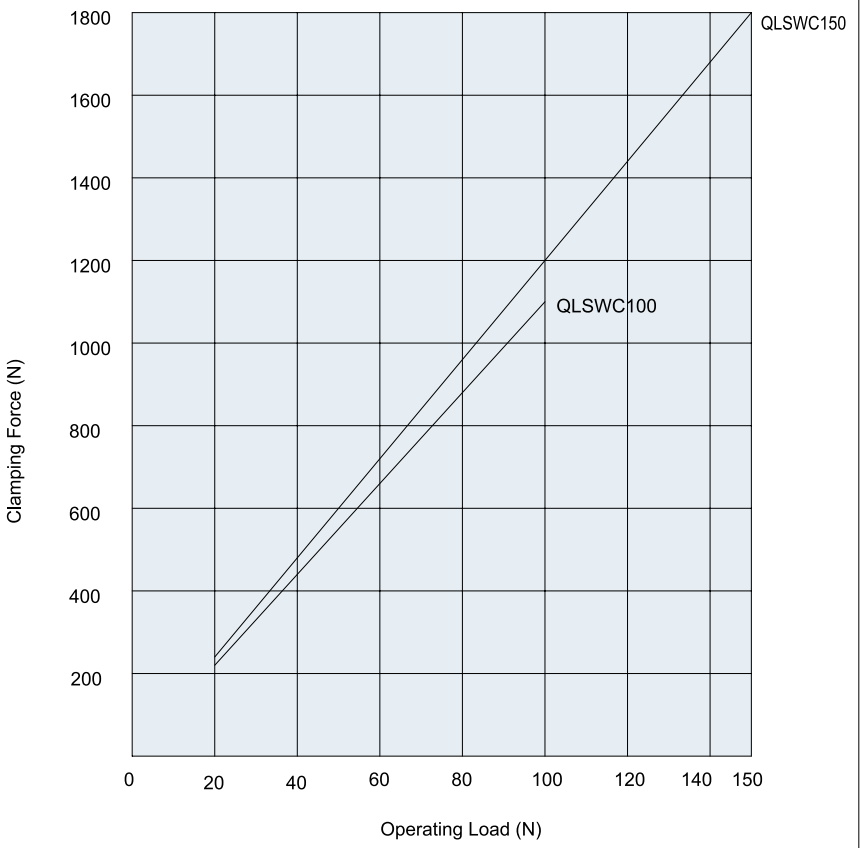


3. Clamping Setup
Continue turning the handle to set the spindle close to the workpiece.



4. Clamping
Turn the handle to the recommended clamping position.

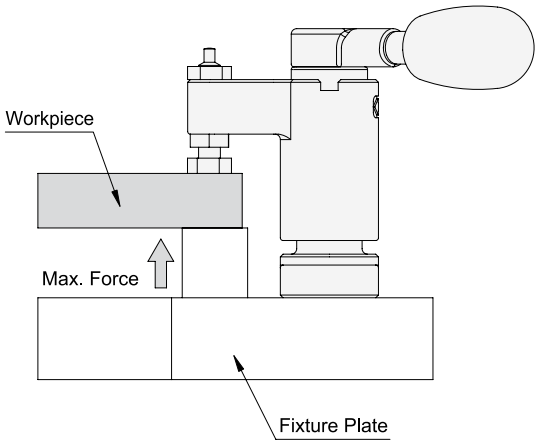
Performance Curve



Technical Information

Allowable Loads in Machining of Workpiece Bottom

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

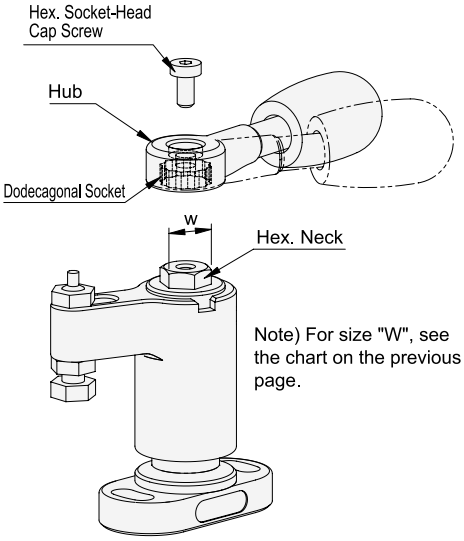


Series	Allowable Force to Workpiece Bottom (per Clamp)
QLSWC100	max.2,300N
QLSWC150	max.3,600N

How To Operate

How To Change Handle Position

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

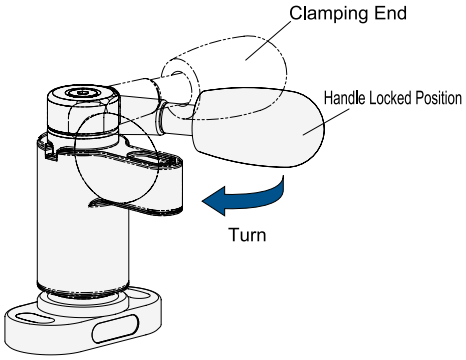


Note) For size "W", see the chart on the previous page.

How To Release Locked Handle

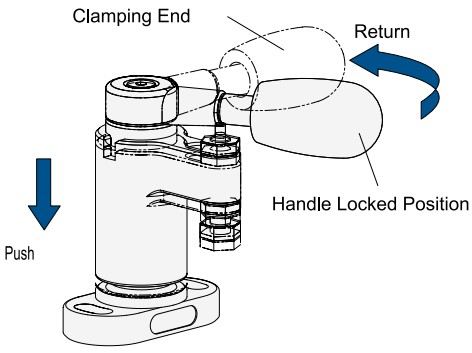
When turned beyond the clamping end, the handle will be locked with a click. The locked handle can be released by following the instructions below.

When the spindle is not installed,



Turn the handle beyond the locked position until another click is made.

When the spindle is installed,



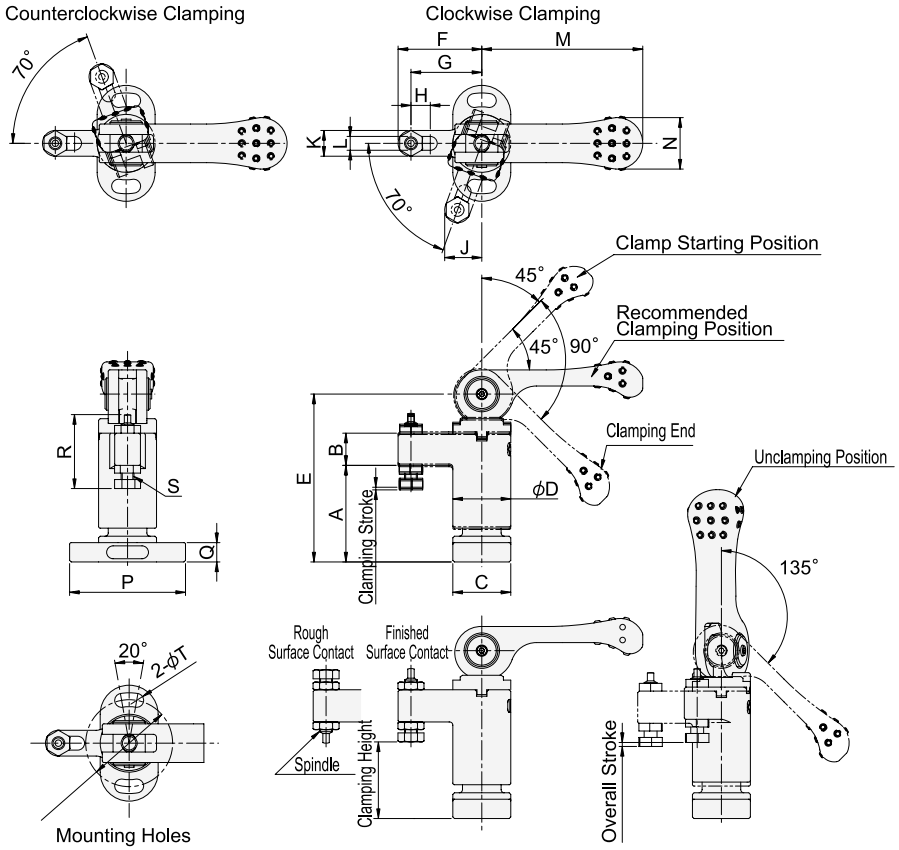
Lower the arm at the handle locked position and then return the handle keeping the arm lowered.

QLSWC SWING CLAMPS (Mini) WITH CAM HANDLE

NEW

Body / Washer / Spindle	
Material	S45C steel
Finish	Black oxide
Heat treat	Quenched and tempered

Arm / Cam Shaft / Handle	
Material	SCM440 steel
Finish	Black oxide
Heat treat	Quenched and tempered



Part Number	Clamping Direction	Clamping Height *)				Clamping Stroke	Overall Stroke
		Finished Surface Contact		Rough Surface Contact			
		Min.	Max.	Min.	Max.		
51991826	Clockwise	22.8	24.8	22.4	24.4	0.8	1.2
51991827	Counterclockwise	(22.4-23.2)	(24.4-25.2)	(22-22.8)	(24-24.8)		
51991828	Clockwise	31.3	33.3	32.2	34.2	1	1.5
51991829	Counterclockwise	(30.8-31.8)	(32.8-33.8)	(31.7-32.7)	(33.7-34.7)		

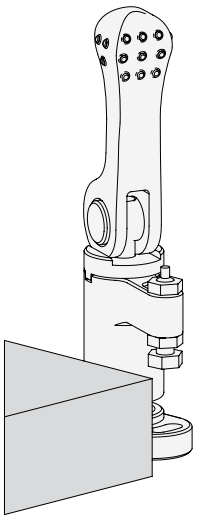
*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
51991826	30	10	18	18	52	26	22	6	11.5	8	4.3	50	15	36	6
51991827															
51991828	40	14	23	23	68	35	30	8	15.3	10	5.3	63	20	45	8
51991829															

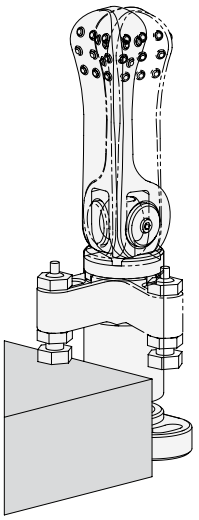
Part Number	R	S	T	U	Cam Handles Part Number	Allowable Operating Load (N) **)	Clamping Force (N)	Clamping Mechanism	Weight (g)
51991826	22.8	M4×0.7	4.3	27	QLCA-05	100	800	Spiral Cam Cam Angle:4°	134
51991827									
51991828	28.5	M5×0.8	5.3	34	QLCA-06	150	1,500		272
51991829									

**) Allowable load to operate the handle

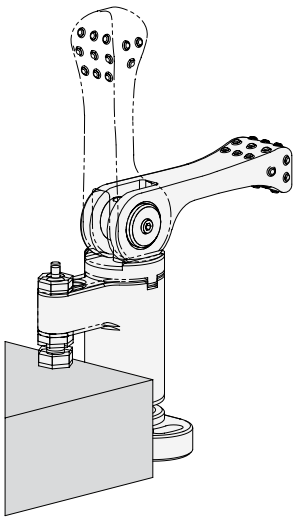
How To Operate



1. Unclamped
Load a workpiece.

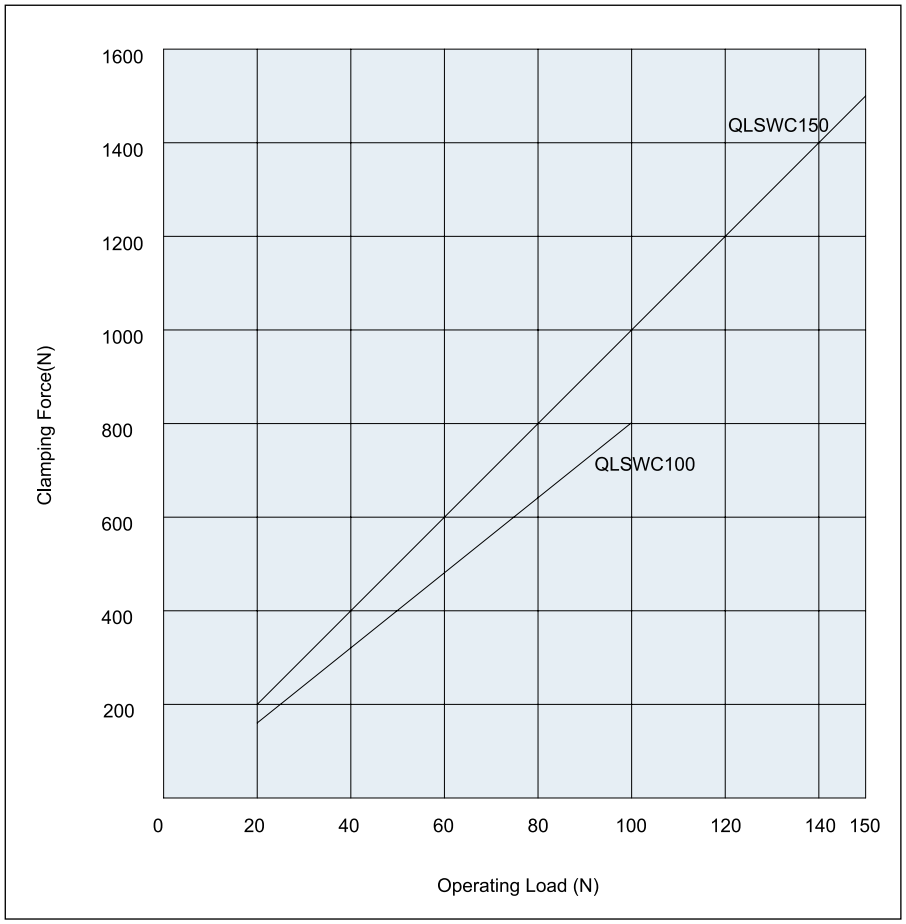


2. Arm Swing
Turn the handle to set the arm in position.



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

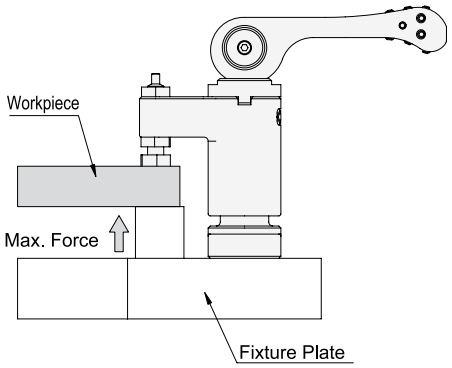
Performance Curve



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.2,300N
QLSWC150	max.3,600N

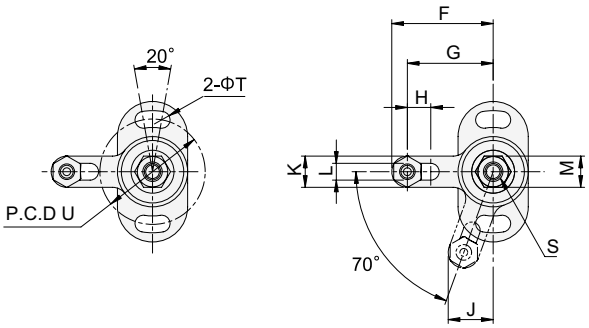
QLSWC SWING CLAMPS (Mini) FOR TORQUE CONTROL

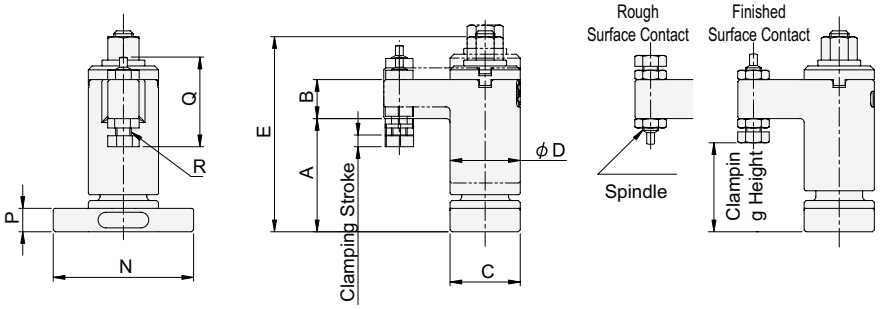
NEW

Body / Washer / Flange Nut / Spindle	
Material	S45C steel
Finish	Black oxide
Heat treat	Quenched and tempered

Arm	
Material	SCM440 steel
Finish	Black oxide
Heat treat	Quenched and tempered

- Designed for clamping-force control with a torque wrench
- Screw clamping mechanism allows for longer clamping stroke and greater clamping force.





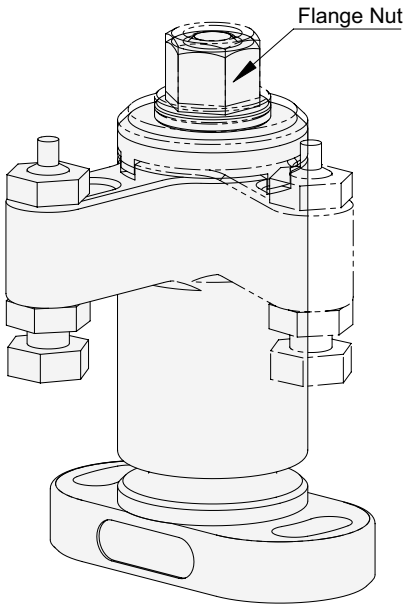
Part Number	Clamping Height *)				Clamping Stroke	A	B	C	D	E
	Finished Surface Contact		Rough Surface Contact							
	Min.	Max.	Min.	Max.						
51991830	22.8 (22.8-25.8)	24.8 (24.8-27.8)	22.4 (22.4-25.4)	24.4 (24.4-27.4)	3	29	10	18	18	52.5
51991831	31.3 (31.3-35.3)	33.3 (33.3-37.3)	32.2 (32.2-36.2)	34.2 (34.2-38.2)	4	39	14	23	23	69.5

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

Part Number	F	G	H	J	K	L	M	N	P	Q
51991830	26	22	6	11.5	8	4.3	8	36	6	22.8
51991831	35	30	8	15.3	10	5.3	10	45	8	28.5

Part Number	R	S	T	U	Clamping Force(N)	Allowable Screw Torque (N.m)	Weight (g)
51991830	M4×0.7	M5×0.8	4.3	27	2,300	6	94
51991831	M5×0.8	M6×1	5.3	34	3,600	10	210

How To Operate

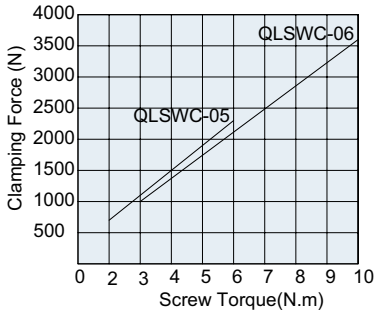


Turning the flange nut allows the arm to swing into position for clamping.

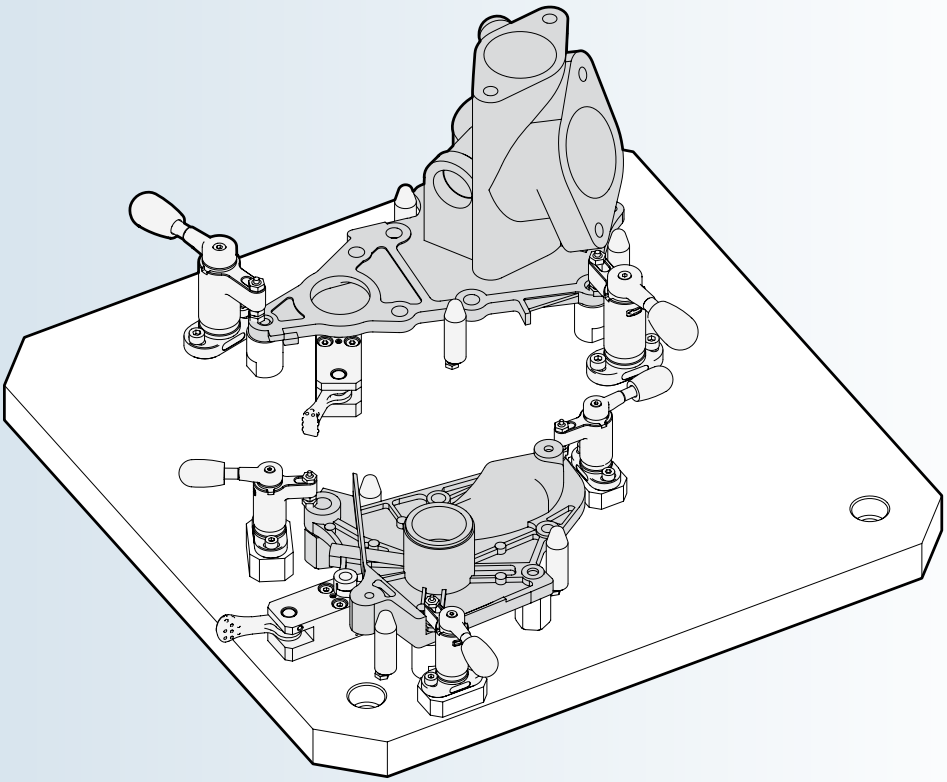
Warning

Do not use a power tool(impact wrench etc.) to turn the flange nut, for damage prevention.

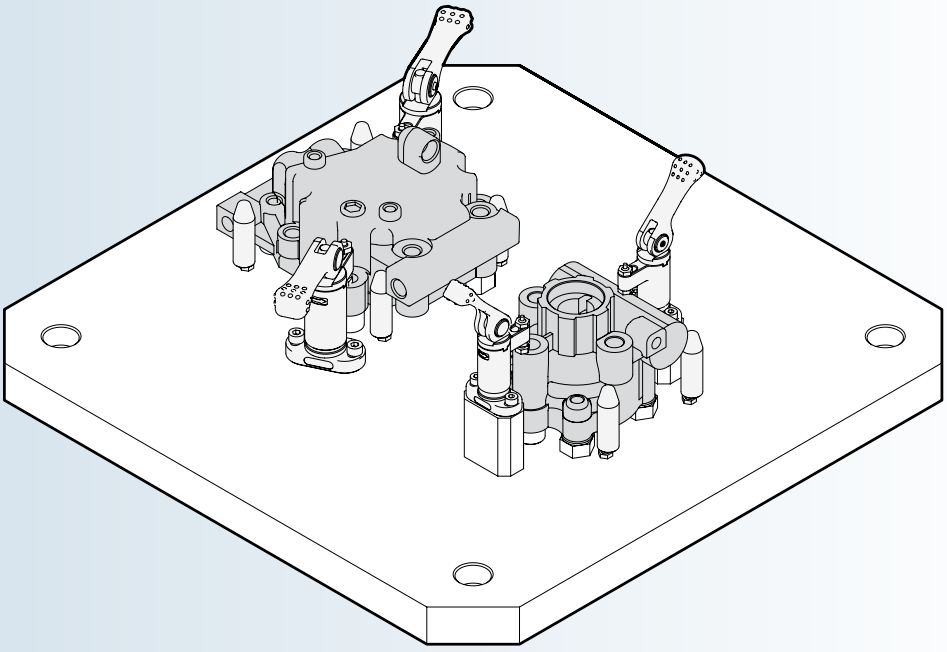
Performance Curve



Fixturing with Swing Clamps(Mini)



Fixturing with Swing Clamps(Mini) with Cam Handle



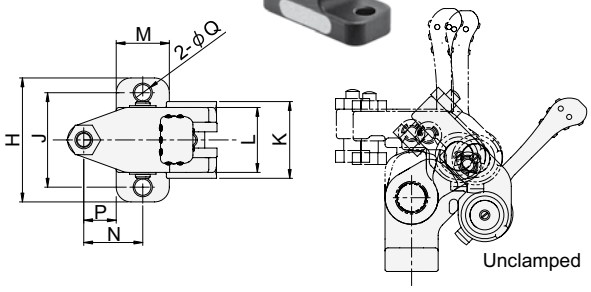
QLRE RETRACTABLE CLAMPS (Mini) WITH CAM HANDLE

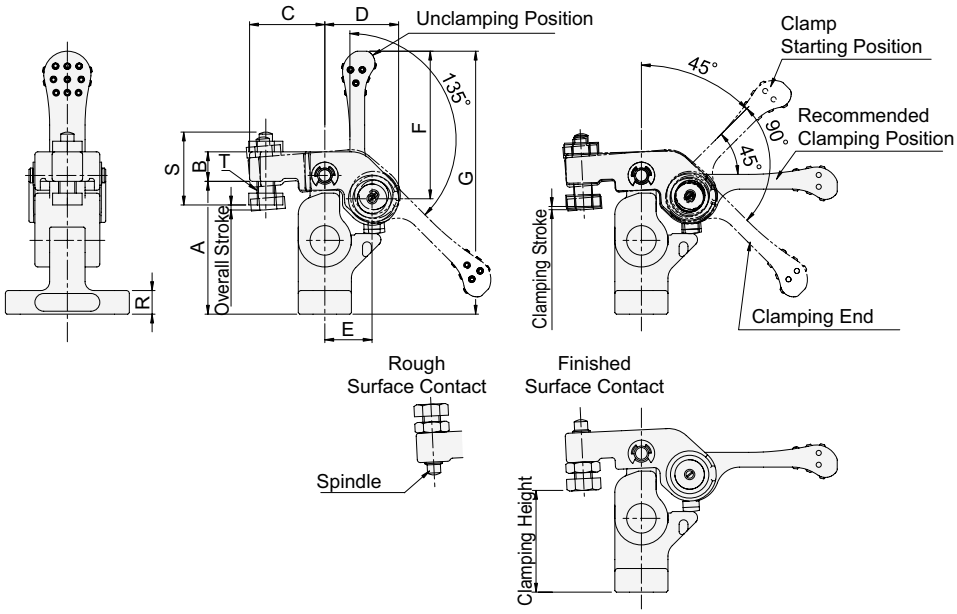
NEW

Body / Spindle	
Material	S45C steel
Finish	Black oxide
Heat treat	Quenched and tempered

Arm / Joint	
Material	SCM435 steel
Finish	Black oxide
Heat treat	Quenched and tempered

Cam Handle	
Material	SCM440 steel
Finish	Black oxide
Heat treat	Quenched and tempered





Part Number	Clamping Height *)				Clamping Stroke	Overall Stroke
	Finished Surface Contact		Rough Surface Contact			
	Min.	Max.	Min.	Max.		
51991832	32 (31.5-32.5)	40 (39.5-40.5)	35 (34.5-35.5)	43 (42.5-43.5)	1	1.5
51991833	37 (36.4-37.6)	48 (47.4-48.6)	42 (41.4-42.6)	53 (52.4-53.6)	1.2	1.8

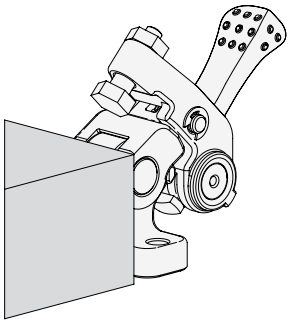
*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
51991832	45	10	25.5	25	16	50	89	42	32	26	22	18	20	11	5.5
51991833	55	12	32	31	20	63	109	52	40	32	28	22	25	14	6.6

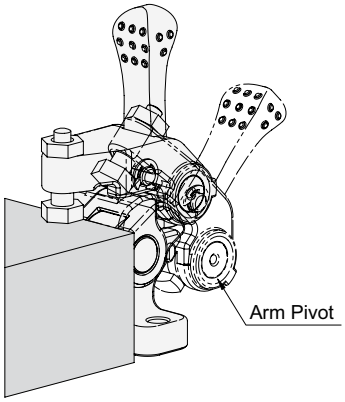
Part Number	R	S	T	Cam Handles Part Number	Allowable Operating Load (N) **)	Clamping Force(N)	Clamping Mechanism	Weight (g)
51991832	8	24	M6×1	QLCA-05	100	700	Spiral Cam Cam Angle:4°	244
51991833	10	30.5	M8×1.25	QLCA-06	150	1,100		468

**) Allowable load to operate the handle

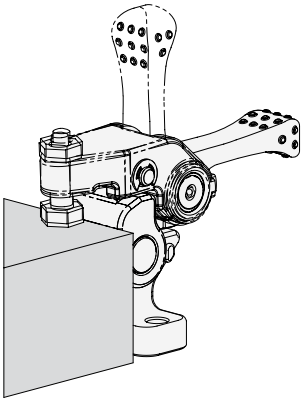
How To Operate



1. Unclamped
Load a workpiece.



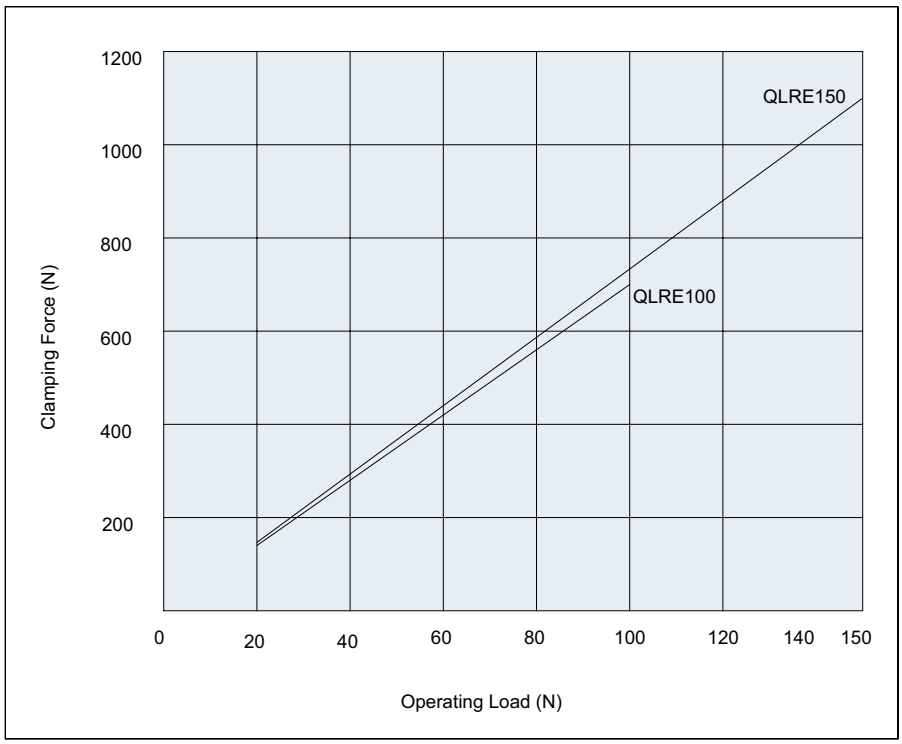
2. Clamping Setup
Set the arm in clamping position holding it at the arm pivot.



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

For unclamping, follow the above steps back.

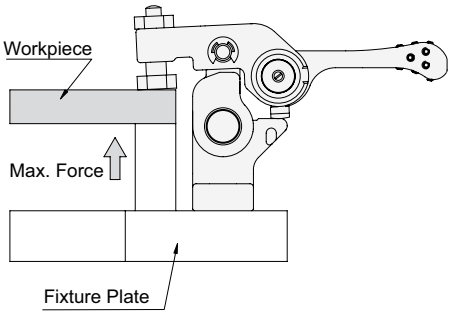
Performance Curve



Technical Information

Allowable Loads in Machining of Workpiece Bottom

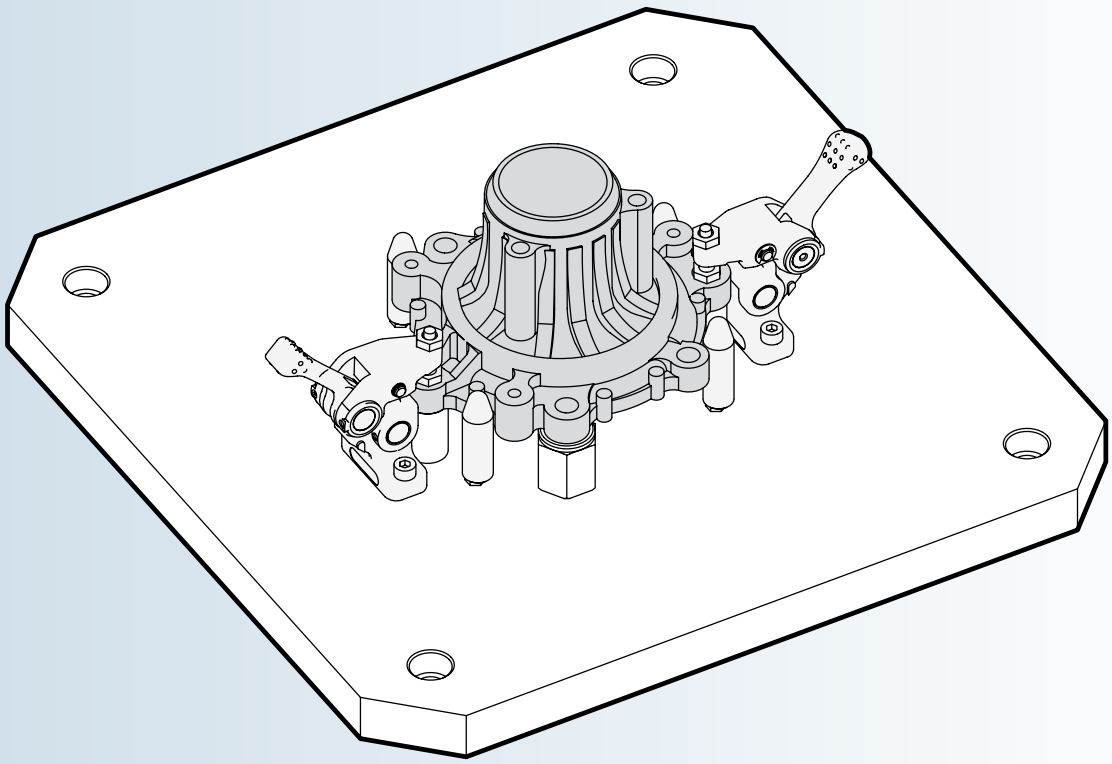
Ensure that any force more than stated below is not applied.



Part Number	Allowable Force to Workpiece Bottom (per Clamp)
51991832	max.5,000N
51991833	max.6,000N

APPLICATION EXAMPLES

Fixturing with Retractable Clamps (Mini) with Cam Handle



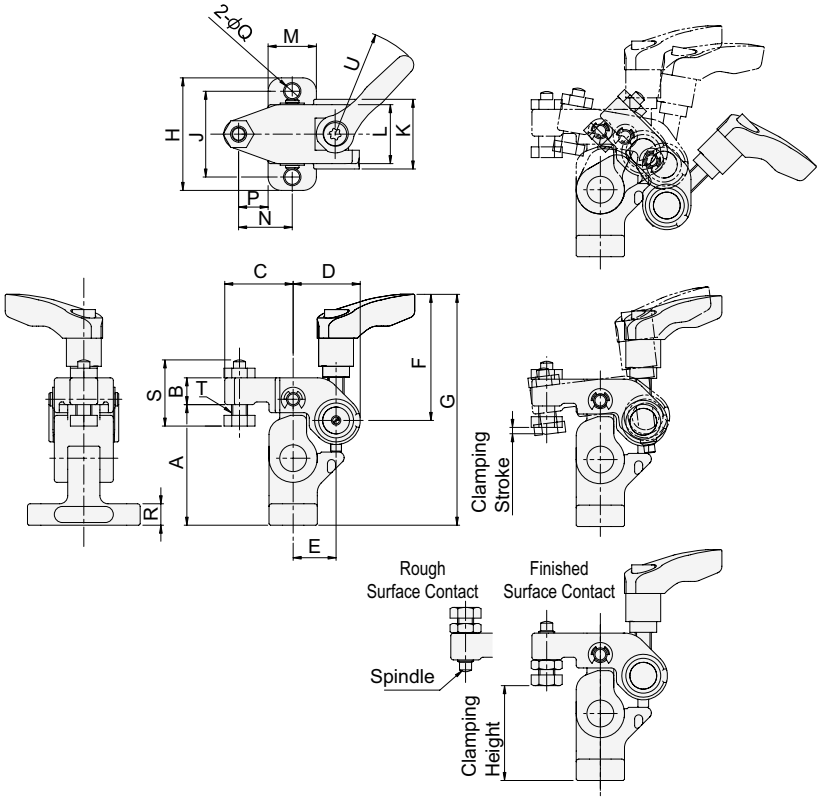
QLRE RETRACTABLE CLAMPS (Mini) WITH ADJUSTABLE HANDLE

NEW

Body / Spindle	
Material	S45C steel
Finish	Black oxide
Heat treat	Quenched and tempered

Arm / Joint	
Material	SCM435 steel
Finish	Black oxide
Heat treat	Quenched and tempered

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



Part Number	Clamping Height *)				Clamping Stroke	A	B	C	D	E
	Finished Surface Contact		Rough Surface Contact							
	Min.	Max.	Min.	Max.						
51991834	32 (32-29.5)	40 (40-37.5)	35 (35-32.5)	43 (43-40.5)	2.5	45	10	25.5	25	16
51991835	37 (37-33.5)	48 (48-44.5)	42 (42-38.5)	53 (53-49.5)	3.5	55	12	32	31	20

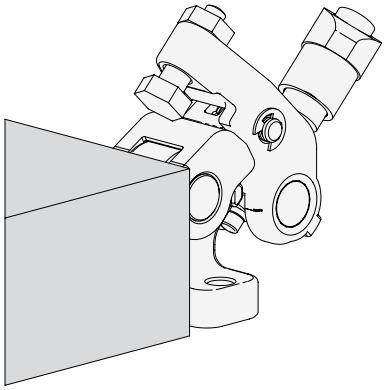
*) Clamping height can be adjusted. The parenthesised values denote actual clamping height.

Part Number	F	G	H	J	K	L	M	N	P	Q
51991834	47	86	42	32	26	22	18	20	11	5.5
51991835	63	109	52	40	32	28	22	25	14	6.6

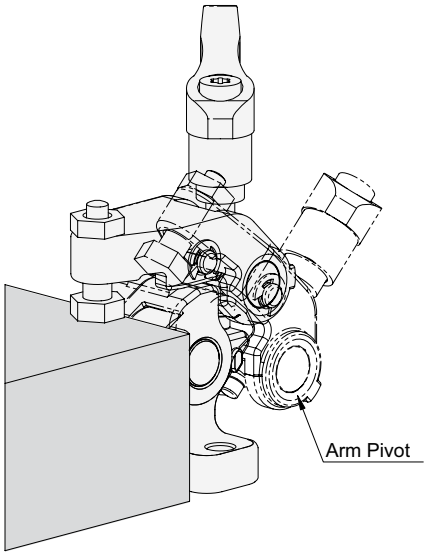
Part Number	R	S	T	U	Adjustable Handles	Allowable Operating Load (N) **)	Clamping Force(N)	Clamping Mechanism	Weight (g)
51991834	8	24	M6×1	40	FKF6-BR	170	2,400	Screw	242
51991835	10	30.5	M8×1.25	65	FKF8-BR	210	4,200		490

**) Allowable load to operate the handle

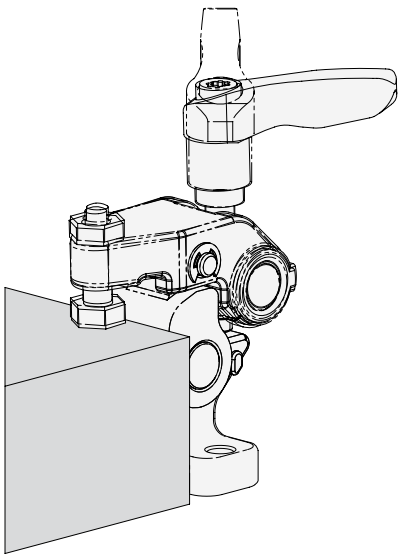
How To Operate



1. Unclamped
Load a workpiece.



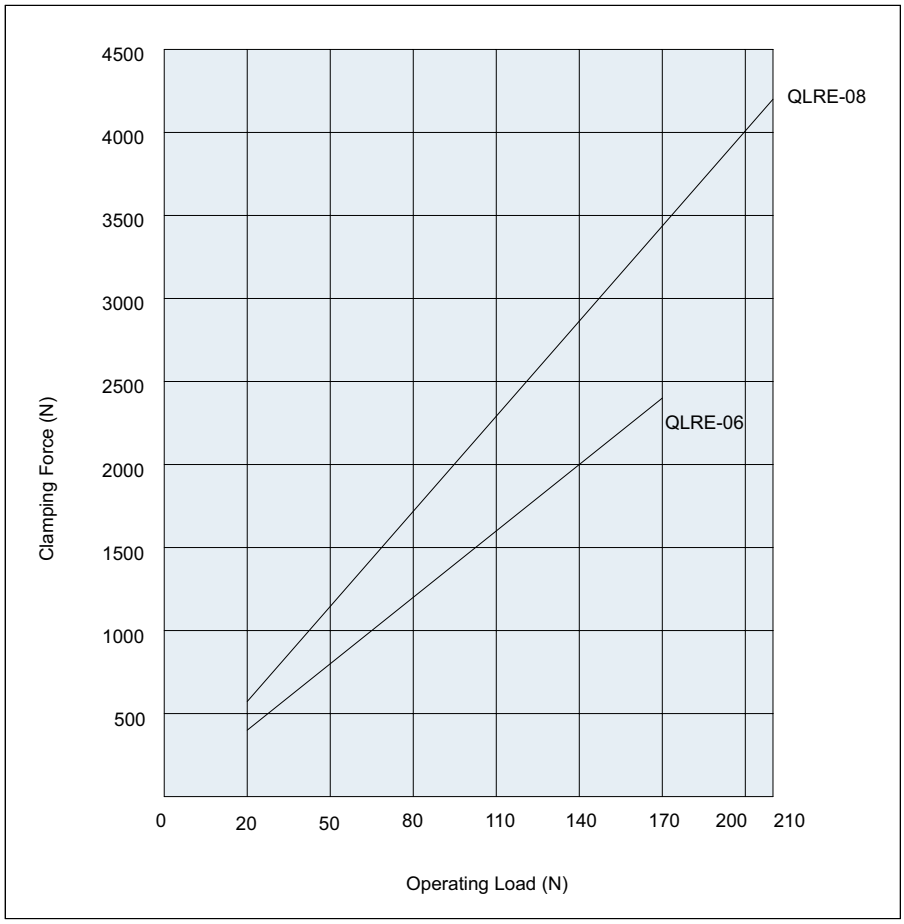
2. Clamping Setup
Set the arm in clamping position holding it at the arm pivot.



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

For unclamping, follow the above steps back.

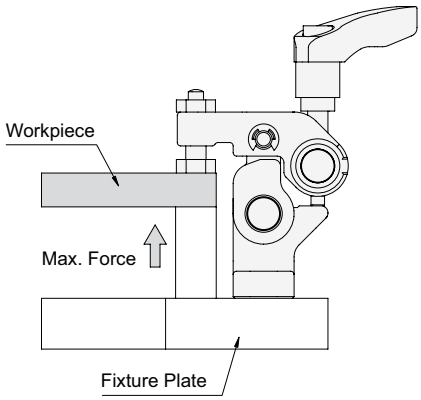
Performance Curve



Technical Information

Allowable Loads in Machining of Workpiece Bottom

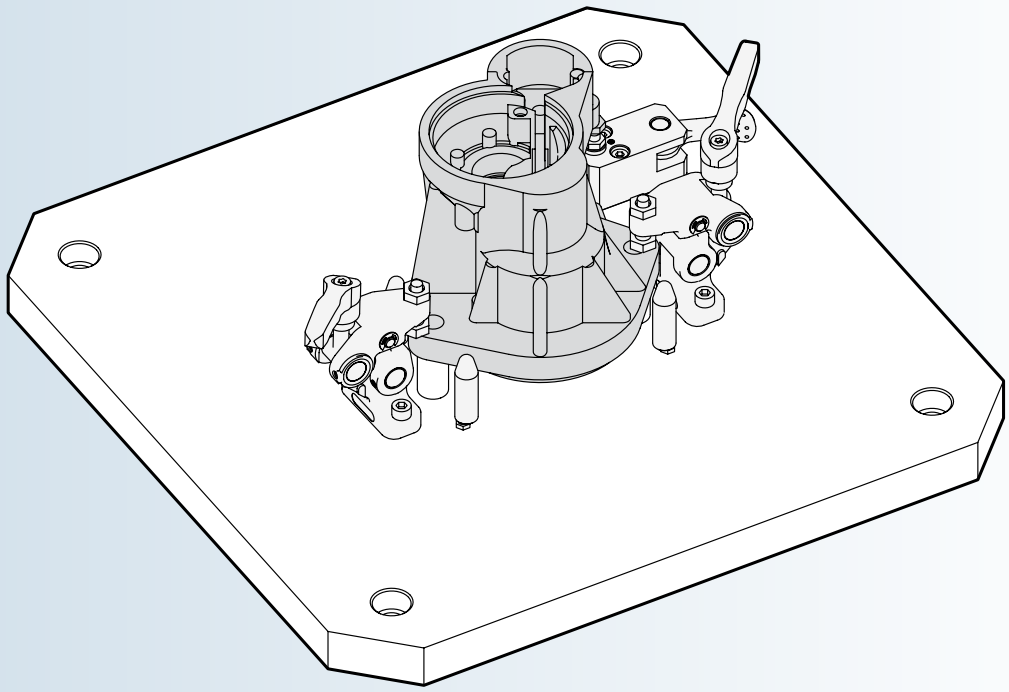
Ensure that any force more than stated below is not applied.



Part Number	Allowable Force to Workpiece Bottom (per Clamp)
QLRE-06	max.5,000N
QLRE-08	max.6,000N

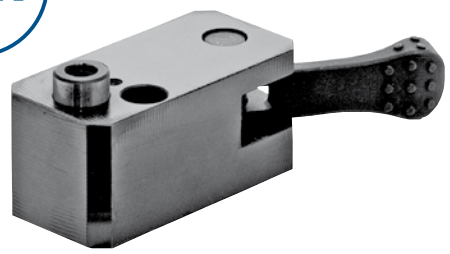
APPLICATION EXAMPLES

Fixturing with Retractable Clamps (Mini) with Adjustable Handle



BJ352 WORK SUPPORT WITH CAM HANDLE

NEW



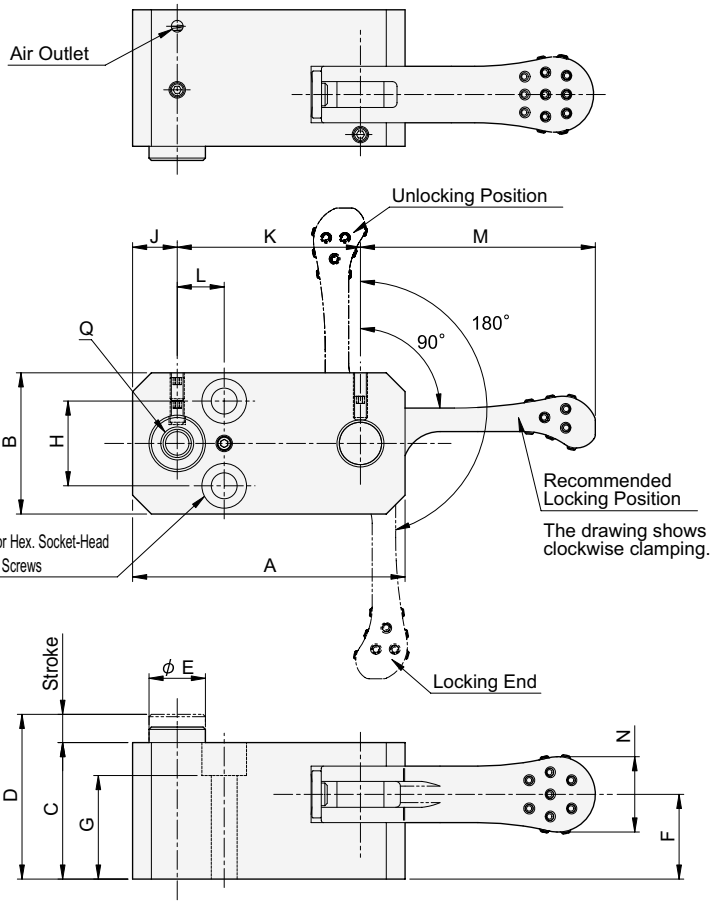
Body	
Material	S45C steel
Finish	Black oxide

Piston	
Material	SK4 steel
Finish	Black oxide
Heat treat	Quenched and tempered

Locking Pin	
Material	S45C steel
Finish	Black oxide
Heat treat	Quenched and tempered

Handle	
Material	SCM440 steel
Finish	Black oxide
Heat treat	Quenched and tempered

- The clamping direction can easily be changed.

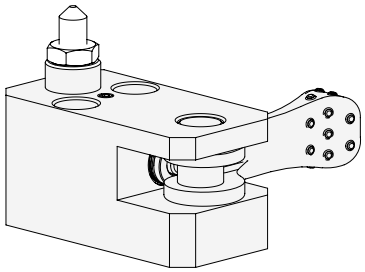


Part Number	A	B	C	D	E	F	G	H	J	K	L	M	N
51991836	52	25	24	29	10	14	19	15	8	36	8	40	14
51991837	58	30	29	35	12	18	22	18	9.5	39	10	50	16
51991838	75	38	37	45	16	23	25	24	12	51	12	63	19
51991839	85	45	42	52	19	26	30	28	14.5	56	15	80	24

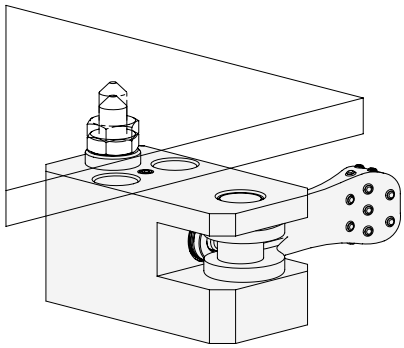
Part Number	P	Q	Cam Handles Part Number	Allowable Operating Load (N) *)	Support Capacity (N)	Piston Spring Force (N)	Locking Mechanism	Weight (g)
51991836	M4	M5×0.8 8 deep	QLCA-04	80	500	0-6	Spiral Cam Cam Angle:4°	213
51991837	M5	M6×1 10 deep	QLCA-05	100	700	0-6		335
51991838	M6	M8×1.25 15 deep	QLCA-06	150	900	0-7		738
51991839	M8	M10×1.5 15deep	QLCA-08	200	1,200	1-11		1,110

*) Allowable load to operate the handle

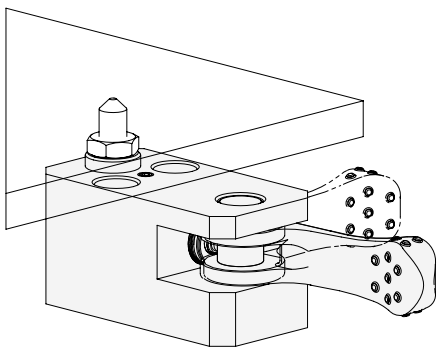
How To Operate



1. Unlocked
No workpiece loaded



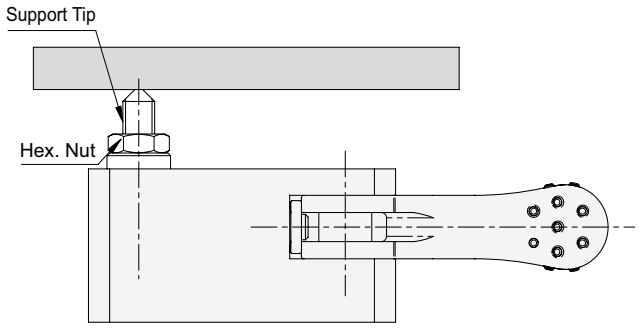
2. Workpiece Loading
Load a workpiece, and the piston lowers.



3. Clamping
Turn the handle to lock the piston.

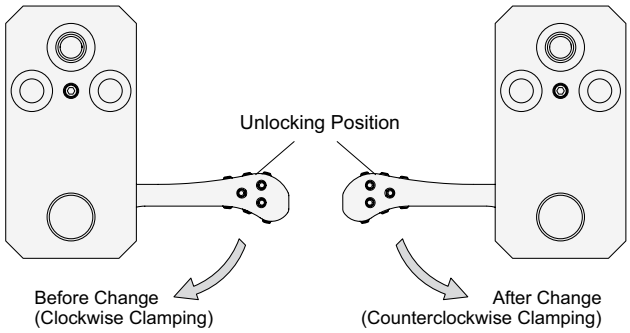
Adjusting Handle Locking Position

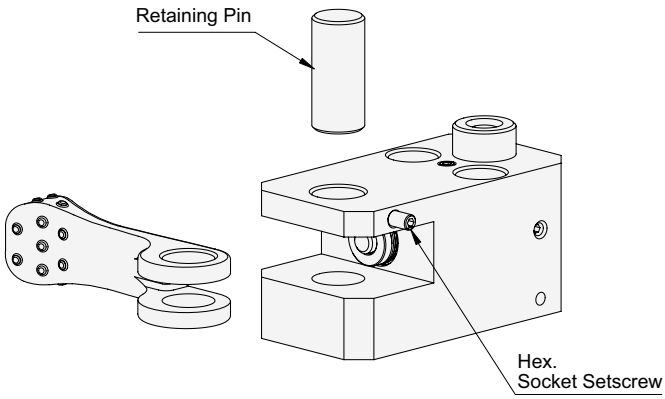
Ensure before use that the handle comes to the recommended position when the piston is locked, by adjusting the height of a support tip.



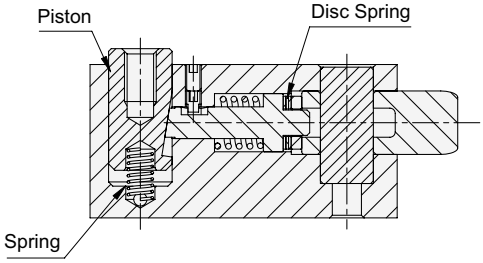
Changing Clamping Direction

Loosen the hex. socket setscrew to remove the retaining pin. Turn the handle upside down and put it in position again.



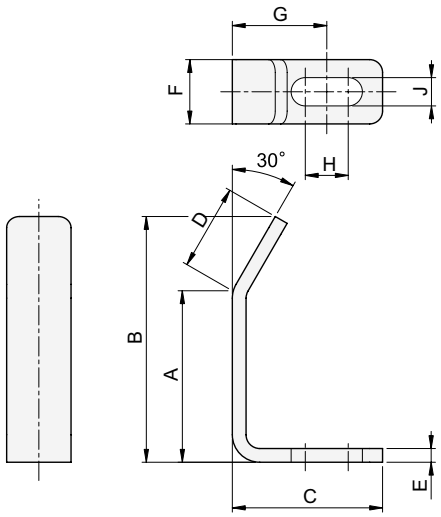


The built-in disc spring prevents loosened locking.



BJ840 WORK GUIDE ANGLES

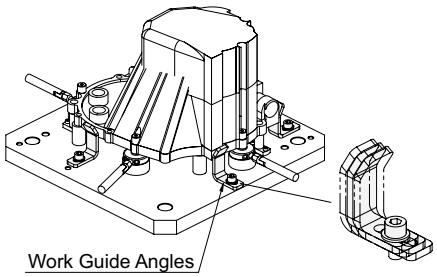
NEW



Material	Steel(SPHC)
Finish	Black oxide

Part Number	A	B	C	D	E	F	G	H	J	Weight (g)
51991840	15	23.7	23	10	1.6	10	15.5	5	4.5	5
51991841	30	38.7			2.3					10
51991842	50	58.7			3.2					18
51991843	25	42.3	35	20	3.2	15	22	10	6.6	25
51991844	40	57.3			3.2					31
51991845	60	77.3			4.5					52
51991846	50	71.7	60	25	6	25	38.5	15	11	131
51991847	80	101.7			6					166
51991848	120	141.7			9					310

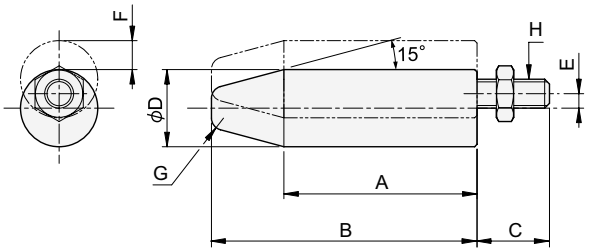
How To Use



The long mounting hole allows for position adjustment.

BJ841 WORK GUIDE PINS

NEW

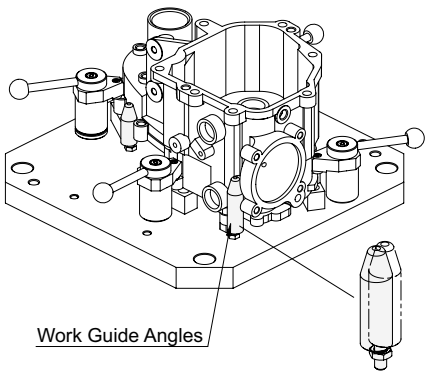


Body	
Material	MC nylon

Screw / Nut	
Material	Steel

Part Number	A	B	C	D	E	F	G	H	Weight (g)
51991849	15	25	10	12	2	4	R2	M4×0.7	6
51991850	30	40							8
51991851	50	60							12
51991852	25	40	15	16	3	6	R2.5	M6×1	16
51991853	40	55							20
51991854	60	75							24
51991855	50	75	25	25	4	8	R4	M10×1.5	62
51991856	80	105							76
51991857	120	145							98

How To Use



The eccentric design allows for position adjustment.

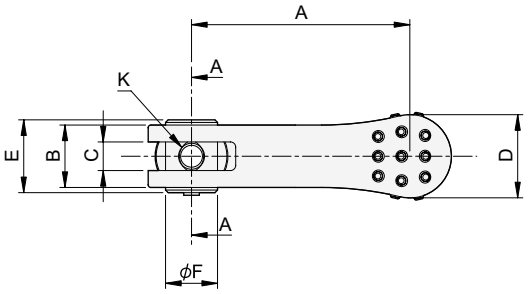
The plastic body prevents workpiece marring.

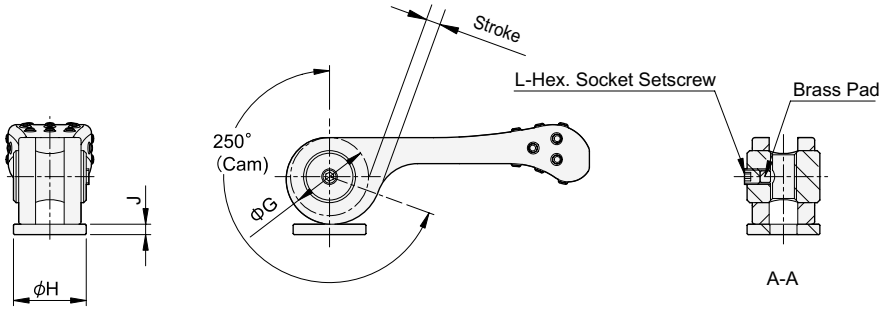
QLCA CAM HANDLES

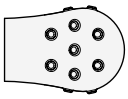
NEW

Lever	
Material	SCM440 steel
Finish	Black oxide
Heat treat	Quenched and tempered

Ring Nut / Washer	
Material	S45C steel
Finish	Black oxide
Heat treat	Quenched and tempered

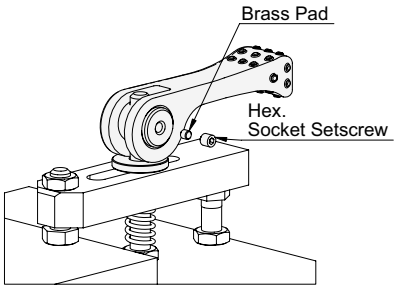






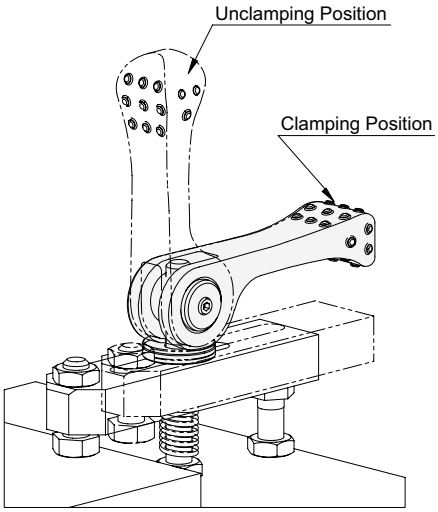
Bottom

Installing the cam handle



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

Application Example

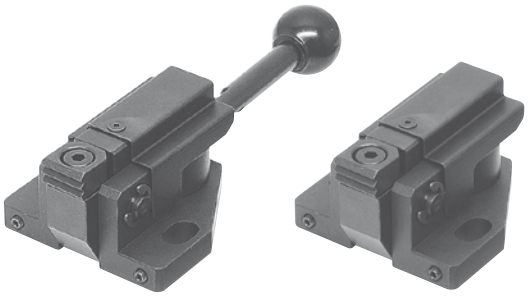


Part Number	A	B	C	D	E	F	G	H	J
51991858	40	10	4.5	14	12	8	12	12	2
51991859	50	12	5.5	16	14	10	15	14	2
51991860	63	14	6.5	19	16	12	18	16	3
51991861	80	18	9	24	20	15	22	20	3

Part Number	K	L	Stroke	Allowable Operating Load (N) *)	Clamping Force(N)	Clamping Mechanism	Weight (g)
51991858	M4×0.7	M3×0.5−3L	1.8	80	900	Spiral Cam Cam Angle:4°	26
51991859	M5×0.8	M3×0.5−3L	2.3	100	1,300		46
51991860	M6×1	M4×0.7−4L	2.7	150	2,600		80
51991861	M8×1.25	M4×0.7−4L	3.3	200	4,000		154

*) Allowable load to operate the handle

QLSC SIDE CLAMPS(Standard)



With Handle　　Without Handle

[Base]
Material: S45C steel
Finish :Black oxide
Heat Treat: Quenched and tempered

[Jaw]
Material: SKH51 steel
Finish :Black oxide
Heat Treat: Quenched and tempered

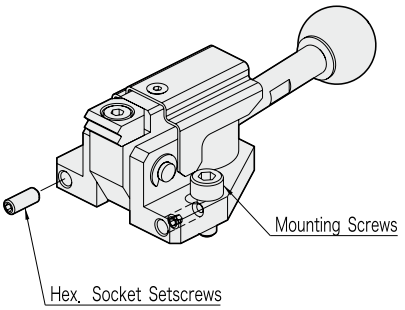
[Cam]
Material: SCM440 steel
Finish :Black oxide
Heat Treat: Quenched and tempered

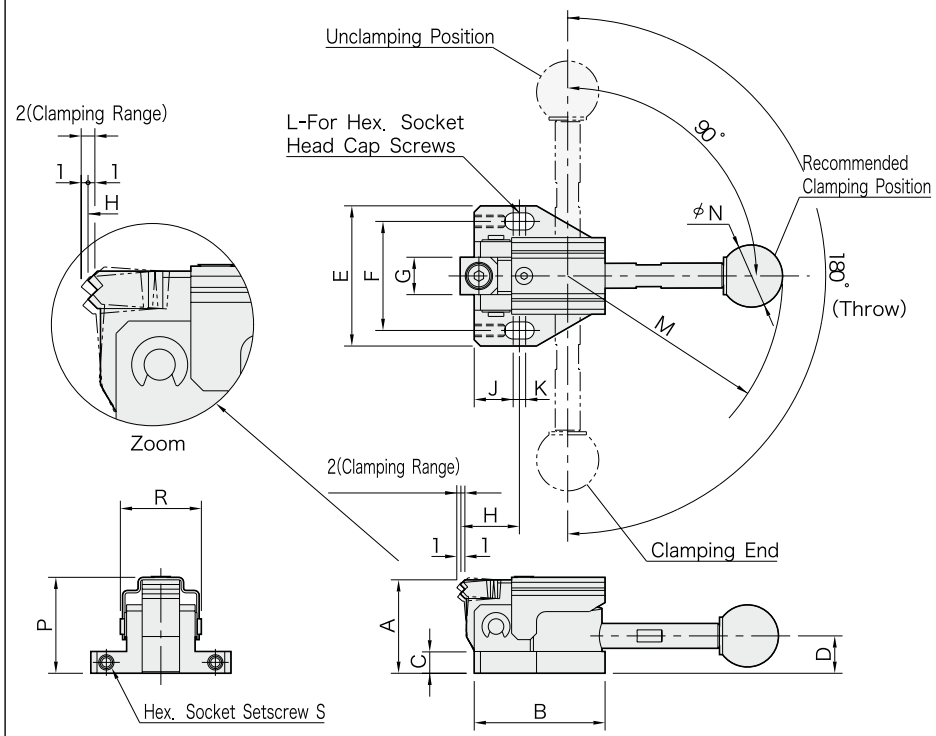
[Handle]
Material: S45C steel
Finish :Black oxide

[Ball Knob]
Material: ABS resin
Color :Black

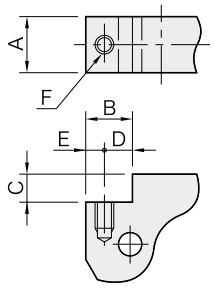
How To Use

The long mounting holes allow adjusting the clamping range. Tightening the hex. socket setscrews in the base front allows preventing the clamp from sliding back in the clamping mode.



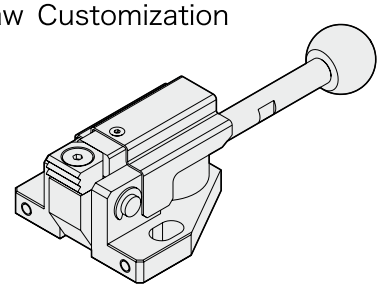


Dimensions of Jaw Base



Size	A	B	C	D	E	F
QLSC150	12	10	6	6	4	M4x0.7 7 deep
QLSC200	16	14.5	10	8	6.5	M6x1 9 deep

Jaw Customization



Size	A	B	C	D	E	F	G	H	J	K	L	P
QLSC150	30	42	7	12	45	35	12	19	12.5	4	M5	31
QLSC200	40	62	10	16	65	50	16	28	18.5	5	M8	41

Size	R	S	Clamping Force(N)	Clamping Mechanism
QLSC150	26	M4x0.7-10L	3000	Spiral Cam Cam Angle:4°
QLSC200	38	M4x0.7-15L	4000	

With Handle

Part Number	M	N	Allowable Operating Load (N) ⁎)	Weight (g)
51991125	69	20	150	210
51991126	104	25	200	580

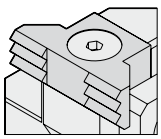
⁎) Allowable load to operate the handle

Without Handle

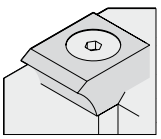
Part Number	Weight (g)
51991127	185
51991128	530

Note: The handle must be ordered separately.

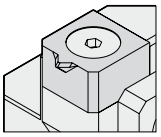
Wide Serrated Jaw



Edged Jaw



Pointed Jaw



Note

See page 151 and 154 for performance curves.

QLPU PUSH CLAMPS(Standard)

With Handle

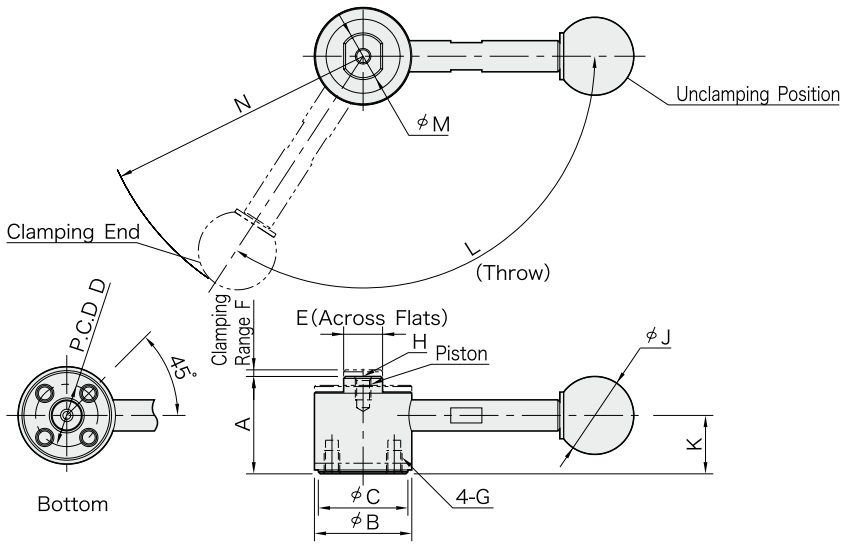
Without Handle

[Cam]
Material: SCM440 steel
Finish : Black oxide
Heat Treat: Quenched and tempered

[Piston]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered

[Handle]
Material: S45C steel
Finish : Black oxide

[Ball Knob]
Material: ABS resin
Color : Black



Series	A	B	C	D (P.C.D)	E	F	G	H	K	L	M	Clamping Force(N)	Clamping Mechanism
QLPU150	25	25	23	16	10	1.7	M4x0.7 6 deep	M4x0.7 6 deep	15	123°	12	3000	Spiral Cam
QLPU200	32	32	30	20	13	2.5	M6x1 9 deep	M6x1 9 deep	19.5	135°	15	4000	Cam Angle:4°

With Handle

Part Number	J	N	Allowable Operating Load (N) *)	Weight (g)
51991129	20	69.5	150	180
51991130	25	103	200	370

*) Allowable load to operate the handle

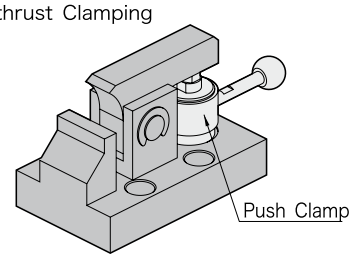
Without Handle

Part Number	Weight (g)
51991131	150
51991132	310

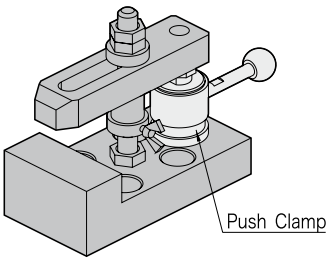
Note: The handle must be ordered separately.

Application Examples

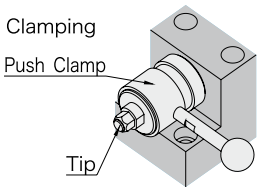
Downthrust Clamping



Downward Clamping



Sideways Clamping

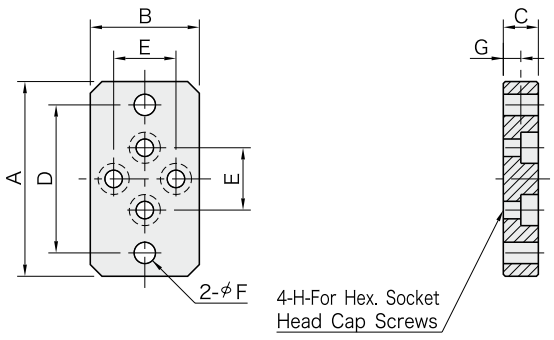


When installing a tip on the piston, lock the piston using a wrench to prevent the clamp from receiving any torque.

Note : See page 151 and 154 for performance curves.

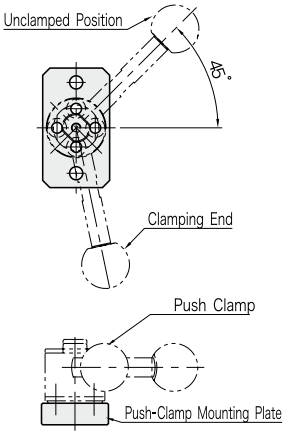
QLPU-P PUSH-CLAMP(Std.) MOUNTING PLATES

Material: S45C steel
Finish : Black oxide



Part Number	A	B	C	D	E	F	G	H	Push Clamps	Weight (g)
51991133	50	28	9	38	16	5.5	4.5	M4	QLPU150 Size	85
51991134	65	35	12	48	20	9	5.5	M6	QLPU200 Size	180

How To Use

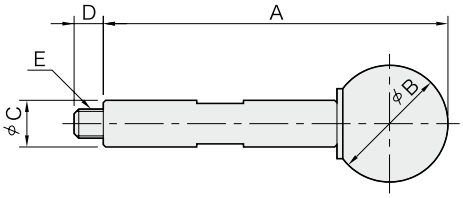


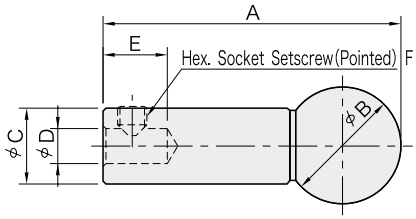
QLSL STANDARD HANDLES

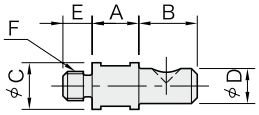
QLSL(Screw-In Handles)
[Handle]
Material: S45C steel
Finish : Black oxide
[Ball Knob]
Material: ABS resin
Color : Black

QLSL-RL(Plug-In Handles)
[Handle]
Material: S45C steel
Finish : Black oxide
[Ball Knob]
Material: ABS resin
Color : Black

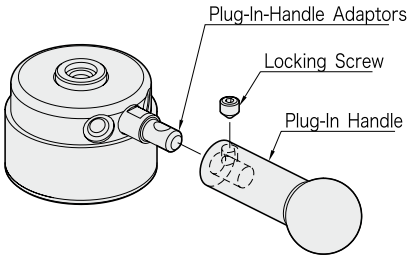
QLSL-RA(Plug-In-Handle Adaptors)
Material: SCM435 steel
Finish: Black oxide
Heat Treat: Quenched and tempered



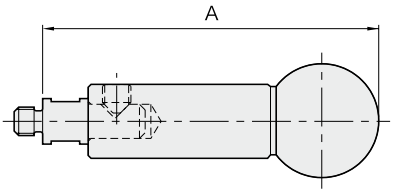




How To Use



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



Plug-In Handle Coupled with the Adaptor

Size	A
QLSL150	59
QLSL200	89

QLSL (Screw-in Handles)

Part Number	A	B	C	D	E	Weight (g)
51991135	59	20	8	5	M5x0.8	30
51991136	89	25	10	6	M6x1	60

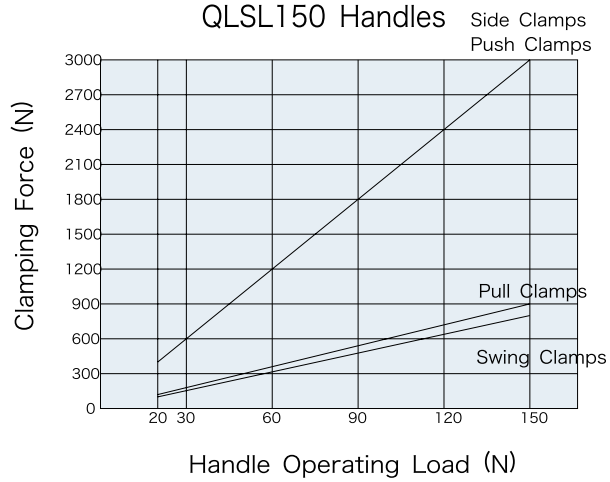
QLSL-RL(Plug-In Handles)

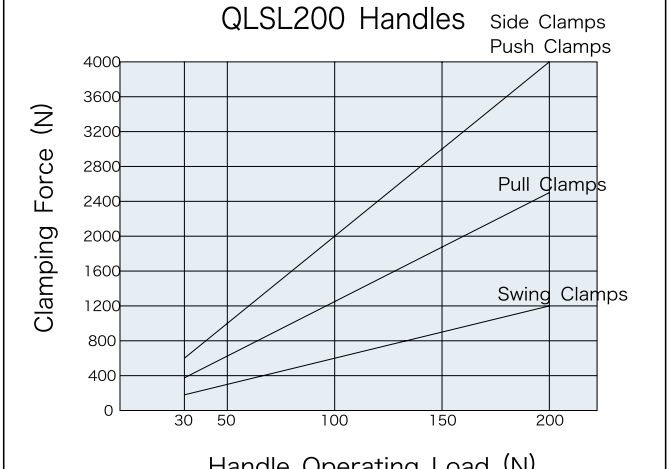
Part Number	A	B	C	D	E	F	Weight (g)
51991137	51	20	13	6	11	M5x0.8-5L	45
51991138	79	25	15	8	13	M6x1 -6L	90

QLSL-RA(Plug-In-Handle Adaptors)

Part Number	A	B	C	D	E	F	Weight (g)
51991139	8	10	8	6	5	M5x0.8	7
51991140	10	12	10	8	6	M6x1	14

Performance Curves

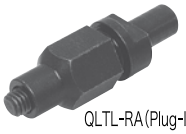




QLTL ADJUSTABLE-TORQUE HANDLES

QLTL(Screw-In Handles)

QLTL-RL(Plug-In Handles)



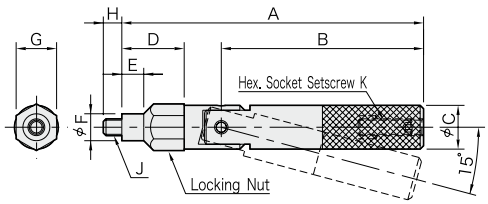
QLTL-RA(Plug-In-Handle Adaptors)

[Stem]
Material: SCM435 steel
Finish : Black oxide
Heat Treat: Quenched and tempered

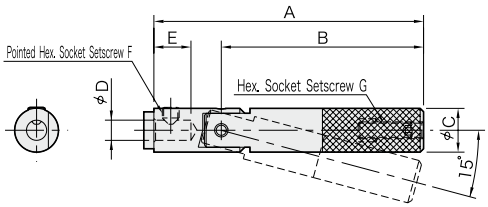
[Locking Nut]
Material: S45C steel
Finish : Black oxide

[Handle]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered

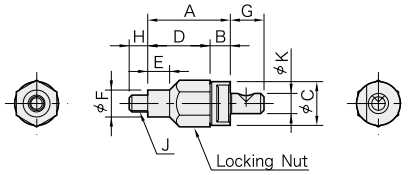
QLTL(Screw-In Handles)



QLTL-RL(Plug-In Handles)

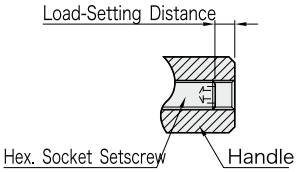


QLTL-RA(Plug-In-Handle Adaptors)



How To Use

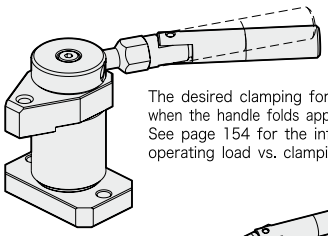
Turning the setscrew inside the handle allows adjusting the torque to set a desired clamping force.



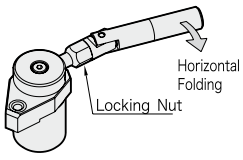
[Operating-Load Setting Range]

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.



The desired clamping force is reached when the handle folds approximately 15°
See page 154 for the information on operating load vs. clamping force.



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

QLTL(Screw-In Handles)

Part Number	A	B	C	D	E	F	G	H	J	K	Weight (g)
51991141	89.5	60	13	18.5	6.5	8	12	5.5	M5x0.8	M5x0.8-16L	90
51991142	119	84	15	23	8	10	14	6.5	M6x1	M6x1 -20L	140

QLTL−RL(Plug-In Handles)

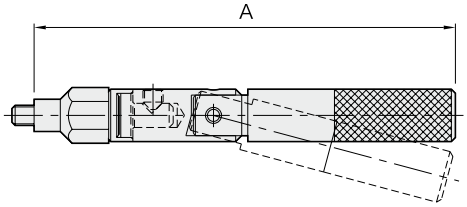
Part Number	A	B	C	D	E	F	G	Weight (g)
51991143	80	60	13	6	11	M5x0.8-5L	M5x0.8-16L	70
51991144	107	84	15	8	13	M6x1 -6L	M6x1 -20L	130

QLTL−RA(Plug-In-Handle Adaptors)

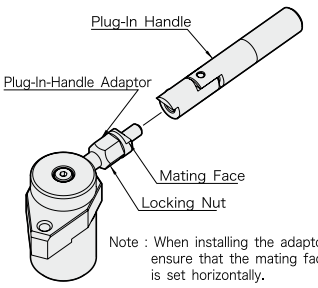
Part Number	A	B	C	D	E	F	G	H	J	K	Weight (g)
51991145	24.5	6	13	18.5	6.5	8	10	5.5	M5x0.8	6	20
51991146	30	7	15	23	8	10	12	6.5	M6x1	8	40

Plug-In Handle Coupled with the Adaptor

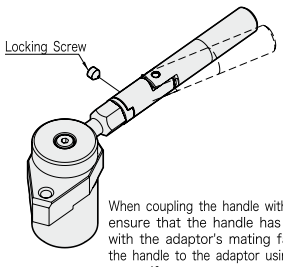
Part Number	A
51991143 **51991145**	104.5
51991144 **51991146**	137



Plug-In Handle Installation

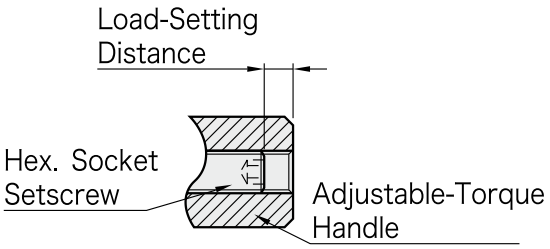


Note : When installing the adaptor, ensure that the mating face is set horizontally.

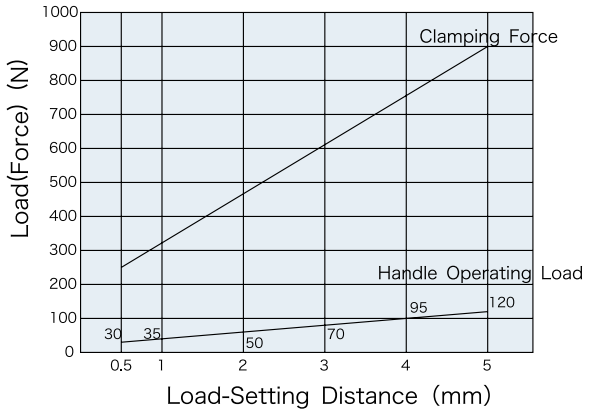


When coupling the handle with the adaptor, ensure that the handle has full contact with the adaptor's mating face. Secure the handle to the adaptor using the locking screw if necessary.

Performance Curves

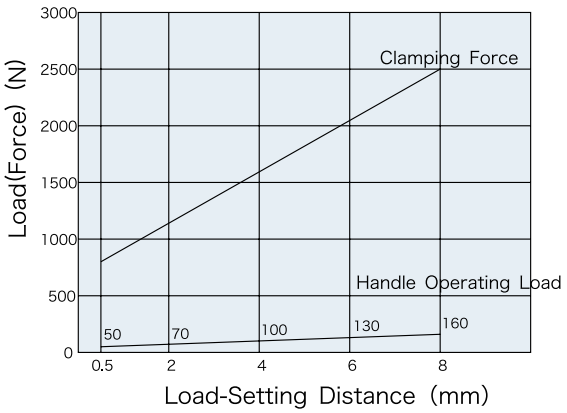


Pull Clamps (QLPD150)

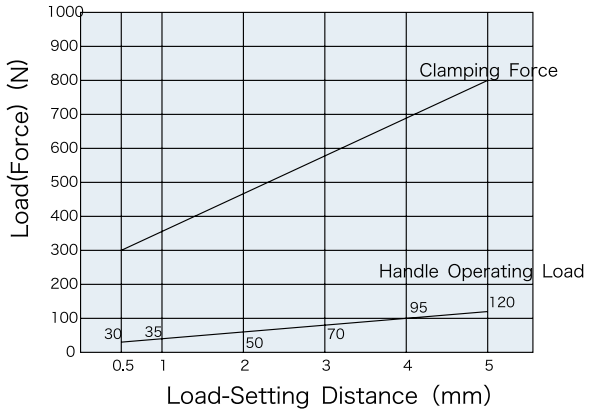


When clamping force is 900(N), load-setting distance is 5mm, and handle operating load is 120N.

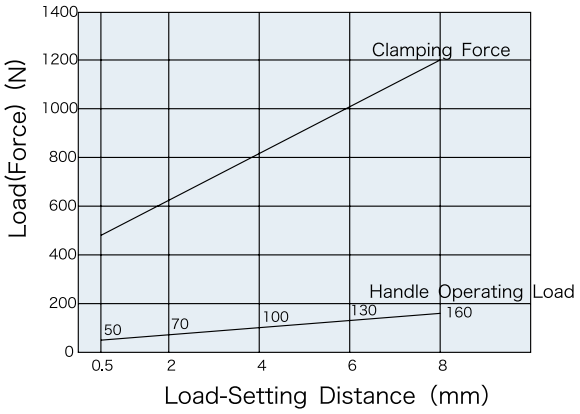
Pull Clamps (QLPD200)



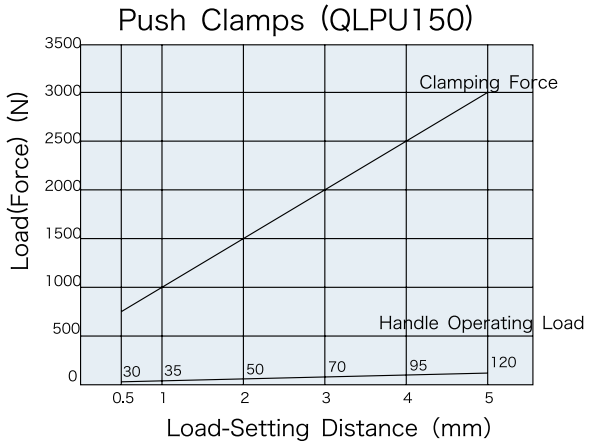
Swing Clamps (QLSW150)



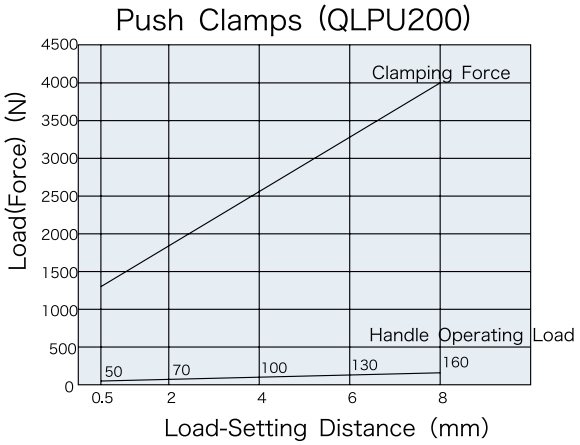
Swing Clamps (QLSW200)



Side Clamps (QLSC150)
Push Clamps (QLPU150)



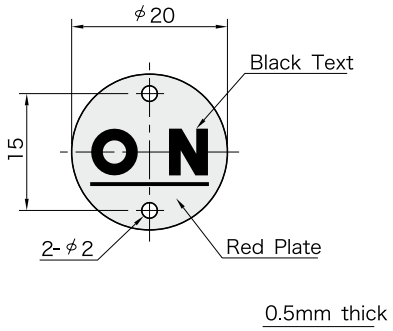
Side Clamps (QLSC200)
Push Clamps (QLPU200)



Note : The above performance curves apply when clamps are degreased.

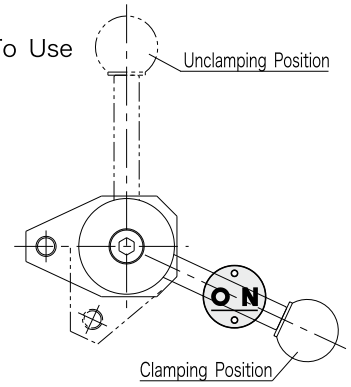
QLST MARKER PLATES

Material: Aluminum



Pressure sensitive adhesive on the backside.
Two 2mm-dia. holes allow for riveting.

How To Use

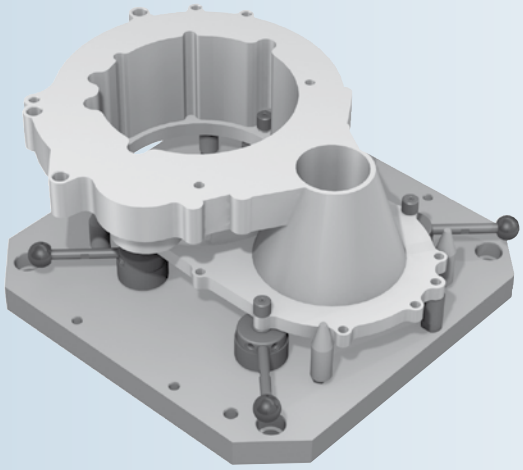


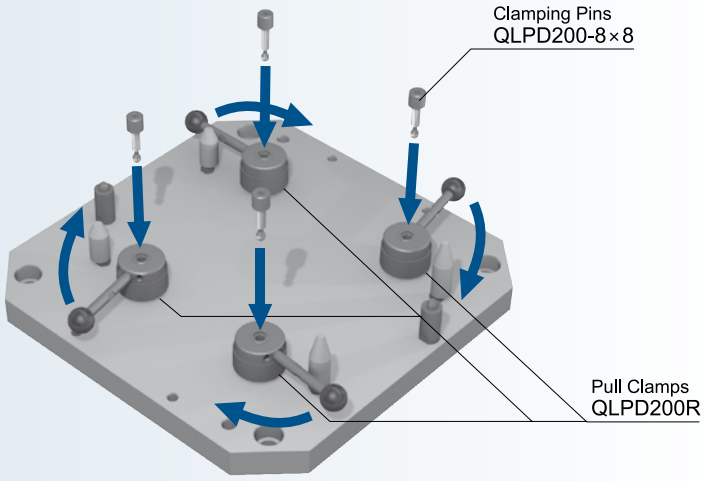
Use to mark the handle position in the clamping mode.

Part Number
51991147

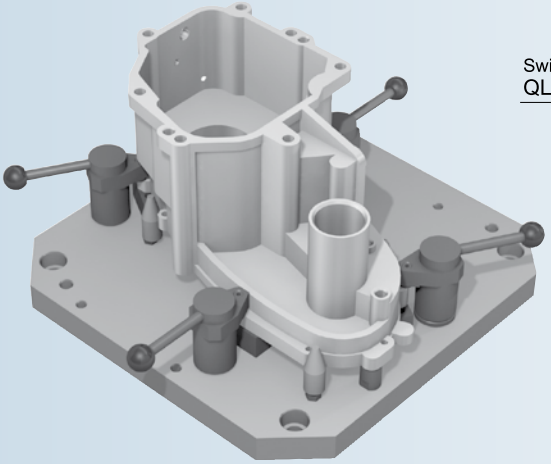
APPLICATION EXAMPLES

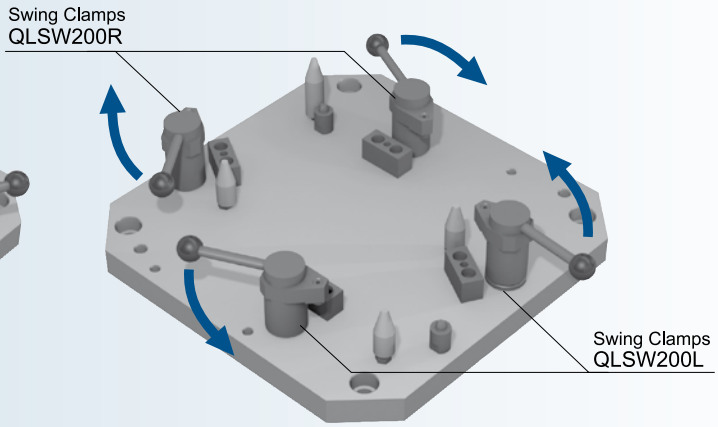
Pull Clamps



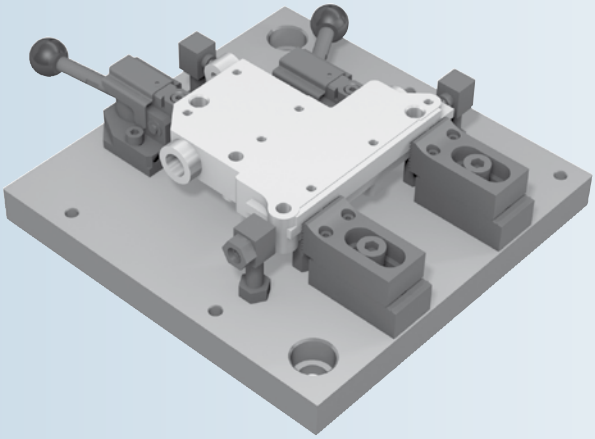


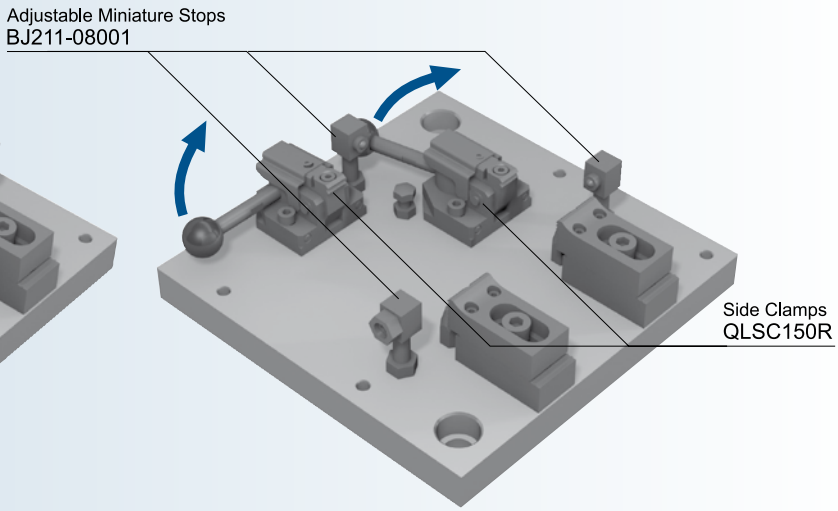
Swing Clamps



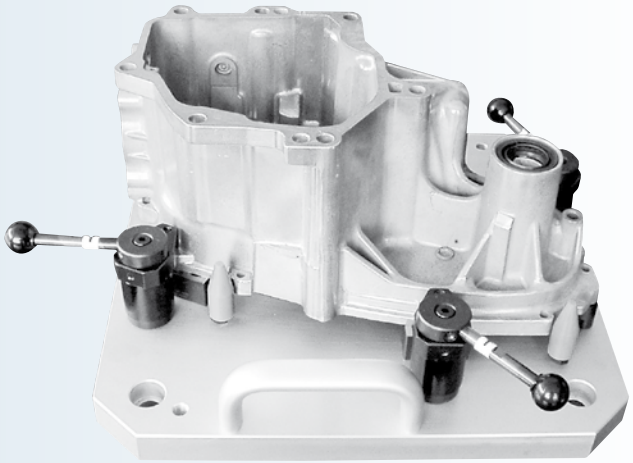


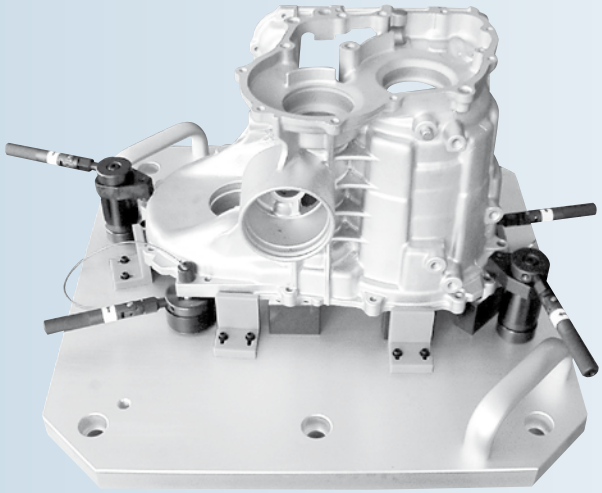
Side Clamps



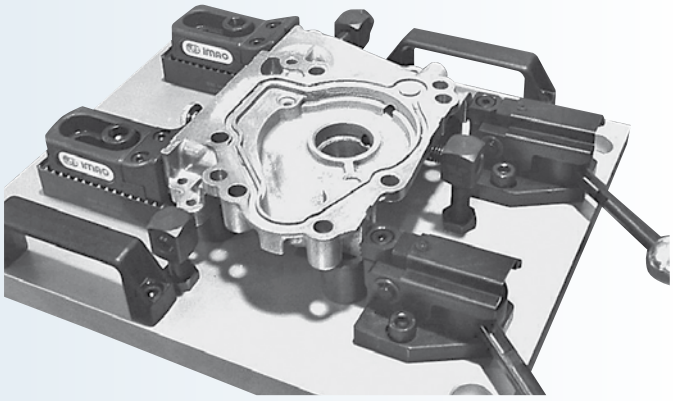


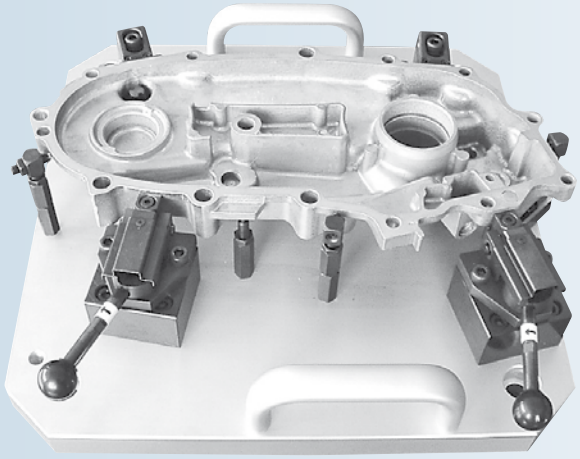
Actual Applications of Swing Clamps





Actual Applications of Side Clamps





CP710 SPRING-LOADED WORK LOCATORS

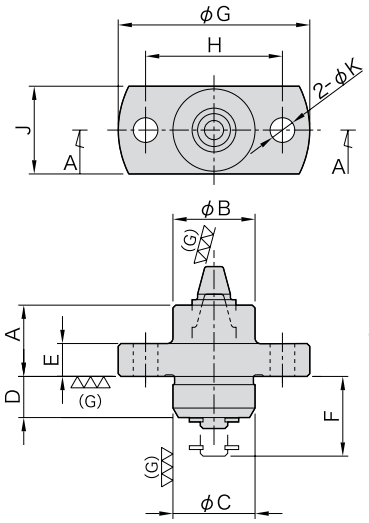
NEW

Standard

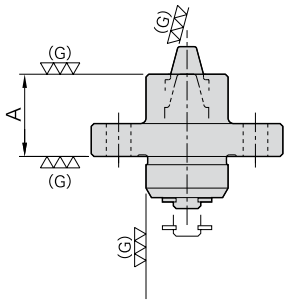
Accurate

[Body]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered

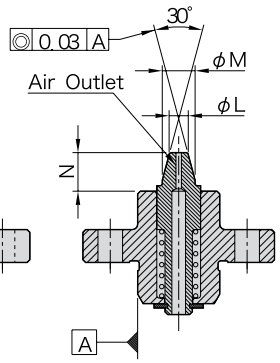
[Locating Pin]
Material: SK4 steel
Heat Treat: Quenched and tempered



Standard

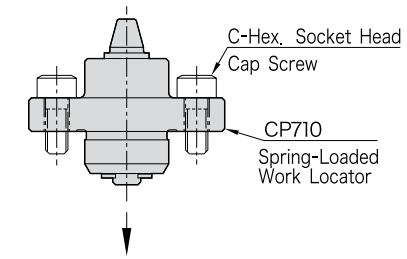


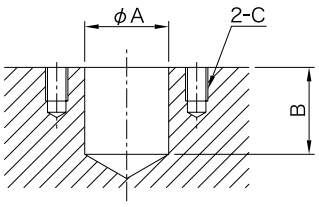
Accurate



Section A-A

Mounting Hole Dimensions





Series	A (H7)	B	C
51991521 **51991522**	15 (H7-effective depth: 8)	16	M4x0.7
51991525 **51991526**			
51991523 **51991524**	20 (H7-effective depth: 10)	21	M4x0.7
51991527 **51991528**			

Standard

Part Number	A	B	C (g6)	D	E	F	G	H	J	K	L	M
51991521	13	15	15	7.5	6	15	35	25	16	4.5	3.5	6
51991522											4.5	7
51991523	18	20	20	10	8	20	40	30	22	4.5	5.5	9
51991524											7.5	11

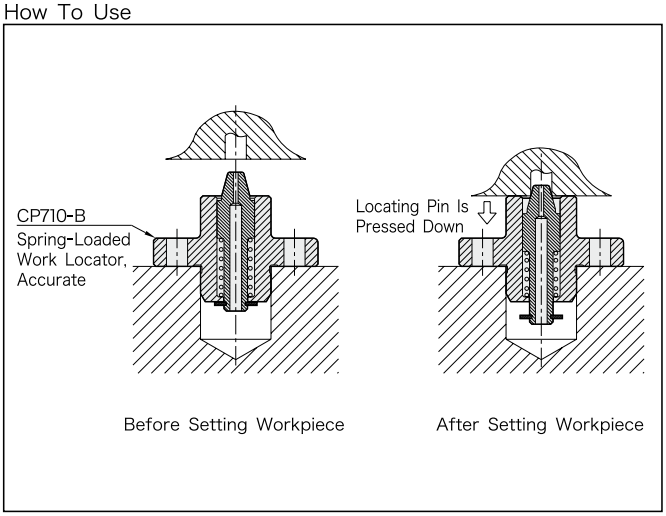
Part Number	N	Locating Hole Dia. *)	Support Capacity (N)	Weight (g)
51991521	7.4	φ3.8 to φ 5.2	6.4 to 19.3	45
51991522		φ4.8 to φ 6.2		45
51991523	9.3	φ5.8 to φ 8.2	5.5 to 20.5	95
51991524		φ7.8 to φ10.2		95

Accurate

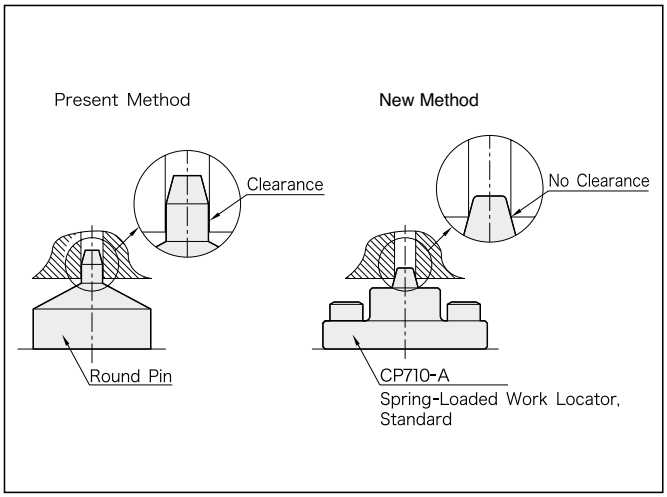
Part Number	A (±0.01)	B	C (g6)	D	E	F	G	H	J	K	L	M
51991525	15	15	15	7.5	6	15	35	25	16	4.5	3.5	6
51991526											4.5	7
51991527	20	20	20	10	8	20	40	30	22	4.5	5.5	9
51991528											7.5	11

Part Number	N	Locating Hole Dia. *)	Support Capacity (N)	Weight (g)
51991525	5.4	φ3.8 to φ 5.2	6.4 to 19.3	50
51991526		φ4.8 to φ 6.2		50
51991527	7.3	φ5.8 to φ 8.2	5.5 to 20.5	100
51991528		φ7.8 to φ10.2		100

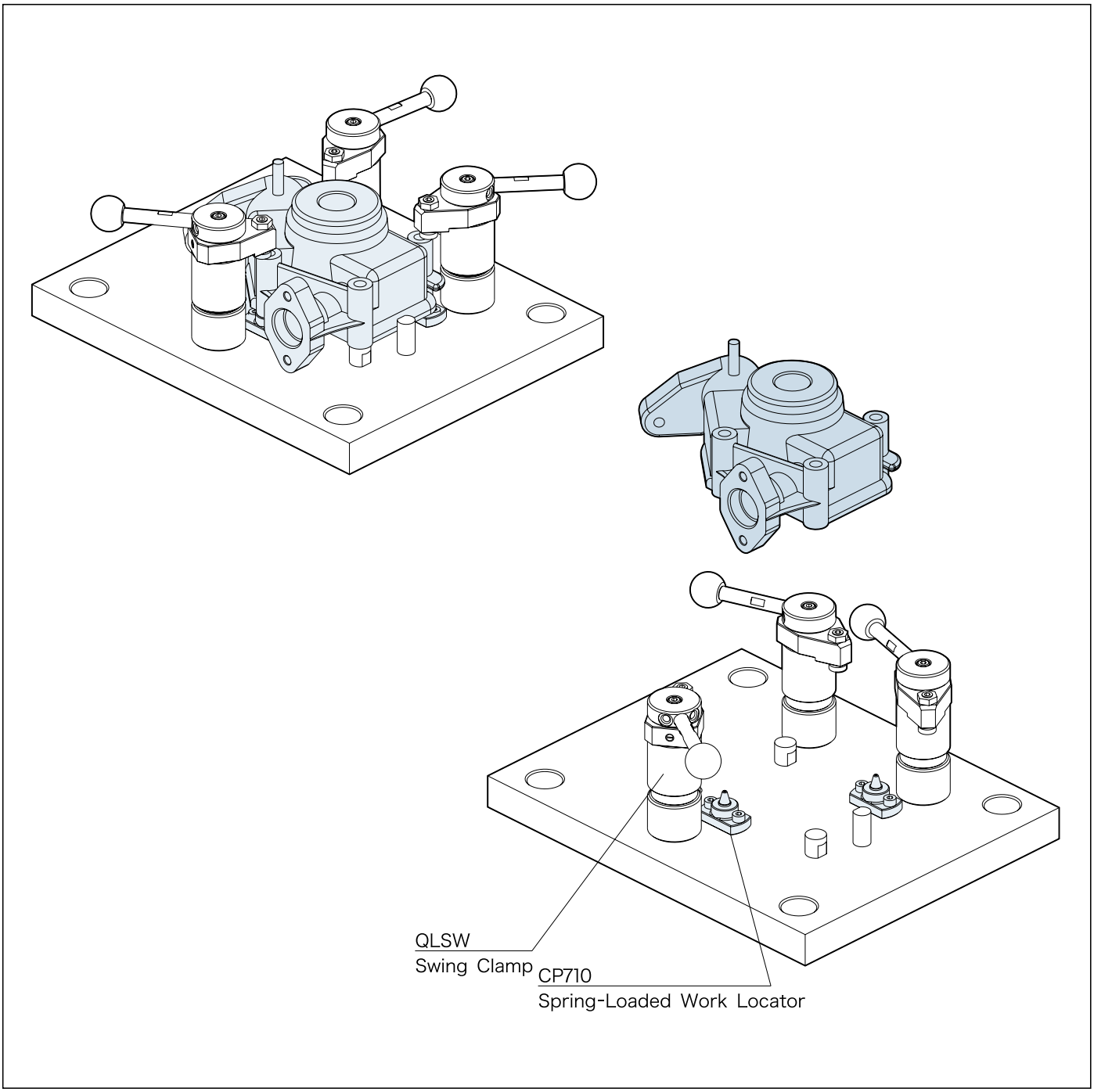
*)Within these diameter limits, locating holes can be chamfered up to 1mm x 1mm.



When the workpiece is set, the tapered pin is pressed down to locate it. The accurate style allows vertically as well as horizontally positioning the workpiece with accuracy.



Use of tapered pin allows secure locating with no clearance between the locating hole and the tapered pin.



Note: In clamping, hold down the workpiece by hand to avoid lift that can be generated by spring force.

CP700 WORK LOCATORS

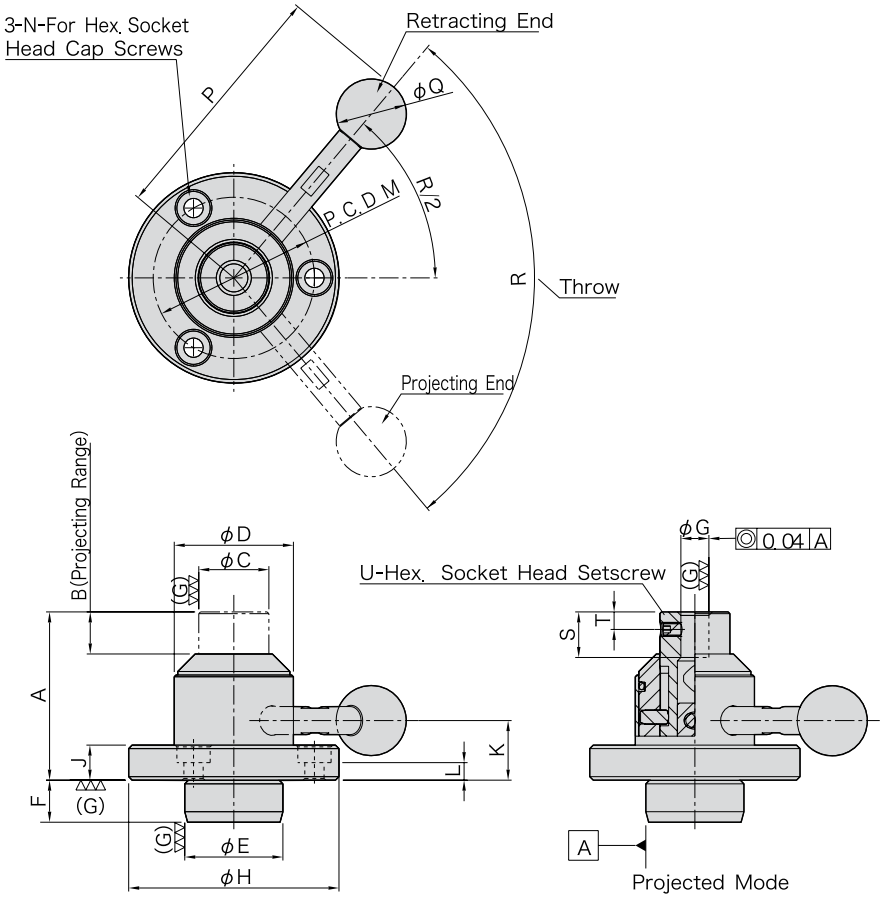
NEW

[Body]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered

[Piston]
Material: SCM440 steel
Finish : Black oxide
Heat Treat: Quenched and tempered

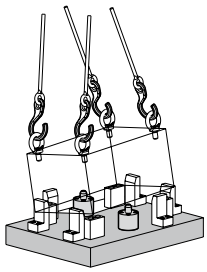
[Handle]
Material: S45C steel
Finish : Black oxide

[Ball Knob]
Material: ABS resin
Color : Black



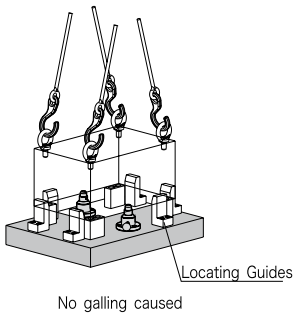
How To Use

Present Method



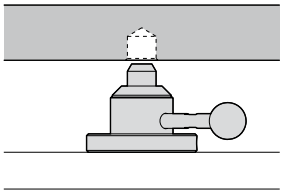
Galling and damage caused

Our Method

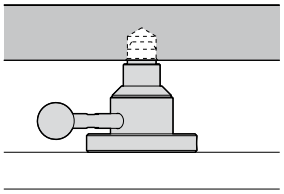


No galling caused

The locating pin gets projected only after the workpiece is set on supports. This allows loading and unloading the workpiece smoothly, with no galling. Get the locating pin projected to locate the workpiece after it is roughly positioned with the help of locating guides.



Retracted Mode

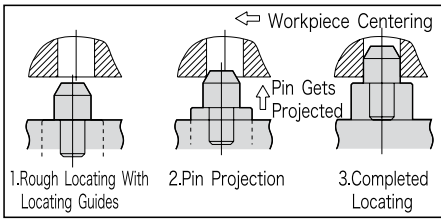


Projected Mode

Part Number	A	B	C	D	E (g6)	F	G (G7)	H	J	K	L	M (P.C.D)	N	P
51991529	48	12	20	34	28	12	8	60	10	17	5	46	M5	71
51991530	61	15	30	48	42	14	12	80	13	23	7	63	M6	94

Part Number	Q	R	S	T	U	Allowable Operating Load (N)*	Max. Workpiece Weight (kg)**	Weight (kg)
51991529	20	100	13	5	M4x0.7-5L	150	250	0.42
51991530	25	90	15	8	M6x1 -8L	200	300	1.04

*) Allowable load to operate the handle
**)Max. weight that allows the locating pin to project and provide workpiece centering

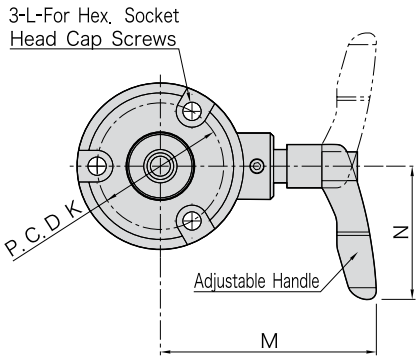


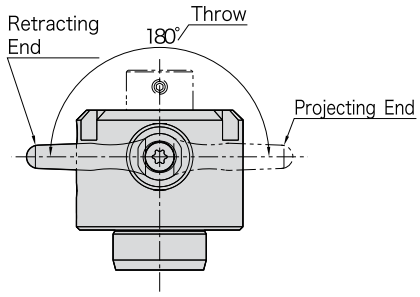
CP701 EXTENDABLE WORK LOCATORS

NEW

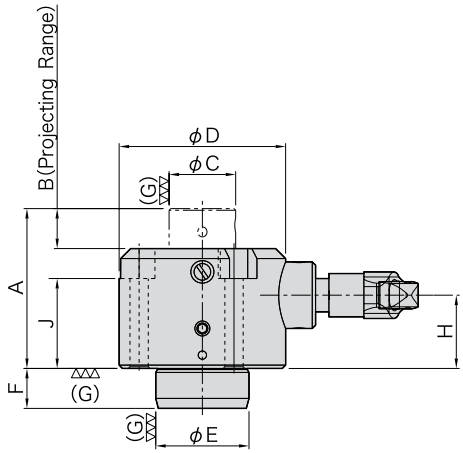
[Body & Piston]
Material: S45C steel
Finish : Black oxide
Heat Treat: Quenched and tempered

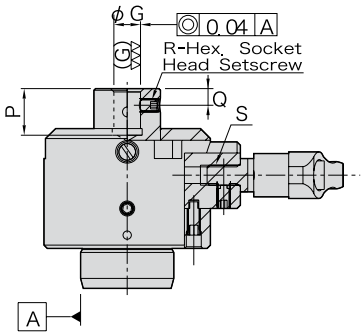
[Crank shaft]
Material: S45C steel
Color : Black





The handle position can be changed freely, clockwise or counterclockwise.

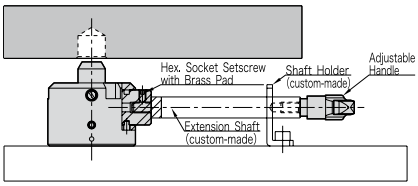




Projected Mode

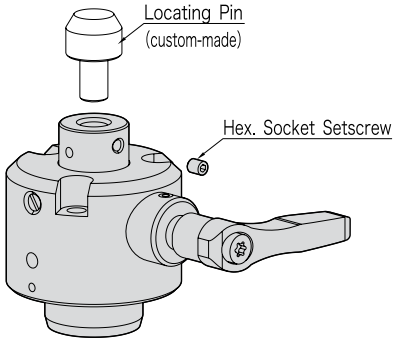
How To Use

Extended Application



With an extension shaft and a shaft holder prepared separately, the handle control can be easily done even when small space is available under the workpiece.

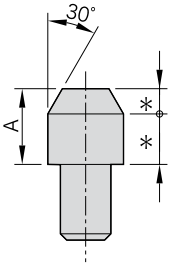
Locating-Pin Mounting



Projected Mode

A locating pin can easily be mounted by using a hex. socket setscrew when the piston is fully projected (locating pins must be prepared separately).

Locating-Pin Head Dimensions



A
12 or less
15 or less

Determine the dimensions marked with an asterisk considering a clearance set between the workpiece and the locating guides. When the taper angle is determined to be smaller than 30° (recommended), set the clearance smaller.

Part Number	A	B	C	D	E (g6)	F	G (G7)	H	J	K (P.C.D)	L	M	N	P
51991533	48	12	20	50	28	12	8	22	27	38	M5	65	40	14
51991534	61	15	30	65	42	14	12	26	31	52	M6	87.5	65	16

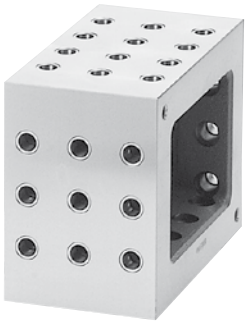
Part Number	Q	R	S	Adjustable Handles	Allowable Operating Load(N)*	Max. Workpiece Weight(kg)**	Weight (kg)
51991533	5	M4x0.7-5L	M6x1 12 deep	FKR6X10-BR	170	250	0.59
51991534	6	M5x0.8-8L	M8x1.25 17 deep	FKR8X15-BR	210	300	1.31

*) Allowable load to operate the handle
**) Max. weight that allows the locating pin to project and provide workpiece centering

Features

- Can support heavy workpieces made from steel or cast iron
- No tools needed
- Different locating pins can be mounted depending on workpiece's locating holes.
- The piston stays locked when it is fully projected or retracted until the handle is operated again.

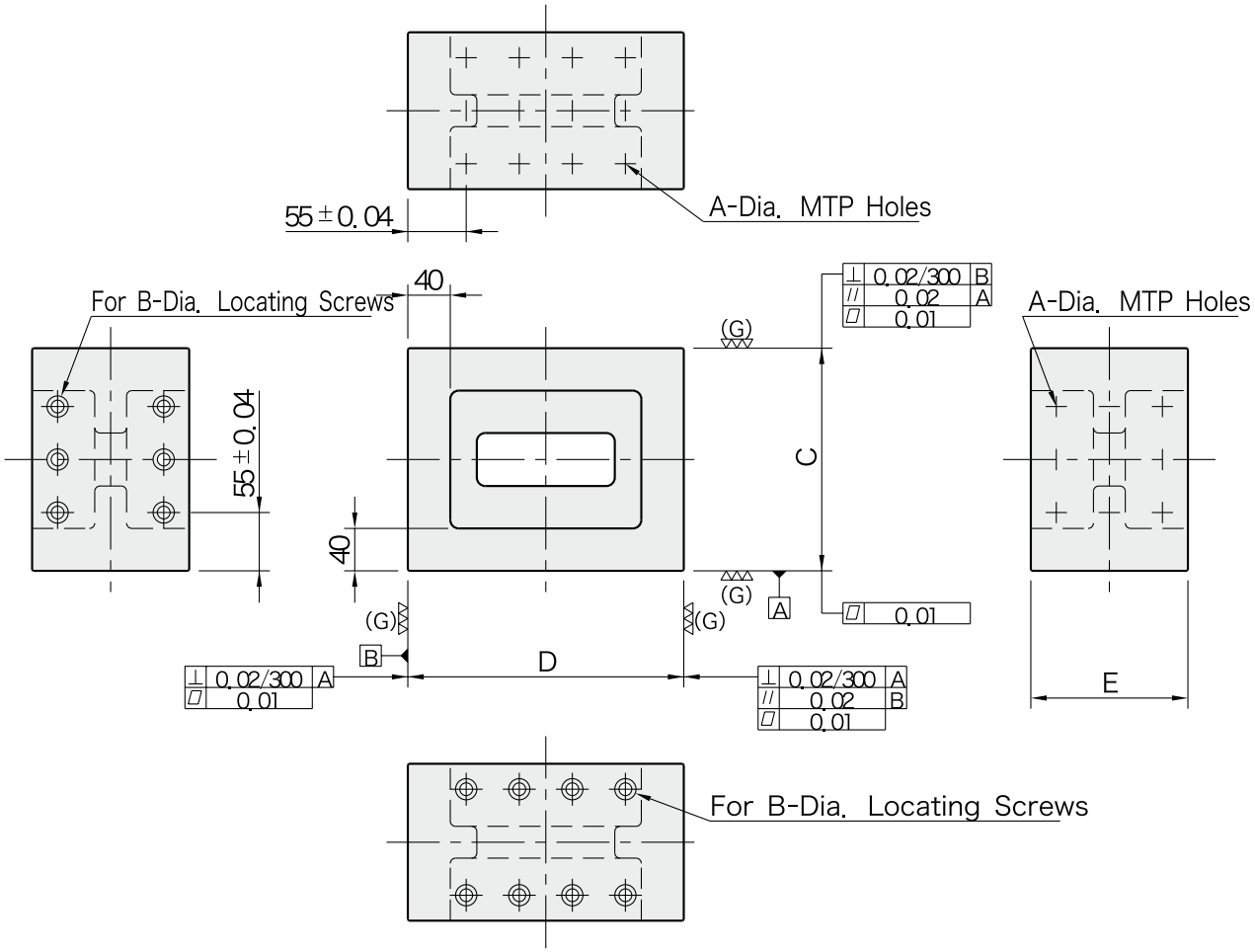
BJ090 RISER BLOCKS



[Body]
Material:FC300 cast iron
Annealed
Precision ground

[Alignment Bushing]
Material:SUJ2 steel
Heat treated

[Threaded Insert]
Material:S45C steel
Heat treated



Part Number	A (F7)	A (Thread)	B (F7)	C (±0.02)	D (±0.02)	E	No. of MTP Holes	No. of Mounting Holes	Proper Locating Screws Cod.	Weight (kg)
51991535	12	M12x1.75	12	160	210	148	15	10	**51991863**	26
51991536				210	260		21	14		37
51991537	16	M16x2	16	160	210	148	15	10	**51991865**	25
51991538				210	260		21	14		36

·MTP-hole protection plugs and eye bolts are included.
·Locate on a tooling plate or block using Locating Screws.
·MTP holes spacing : 50 ± 0.02mm