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SWING & HOOK



TOGGLE & RETRACTABLE



SNAP



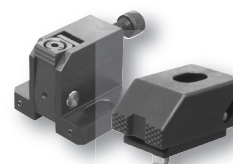
THRUST



PUSH & PULL



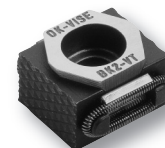
SIDE & TOE



CAM



OK-VISE WEDGE



ID / OD



SWING CLAMPS - SWC SERIES - W/ HANDLE

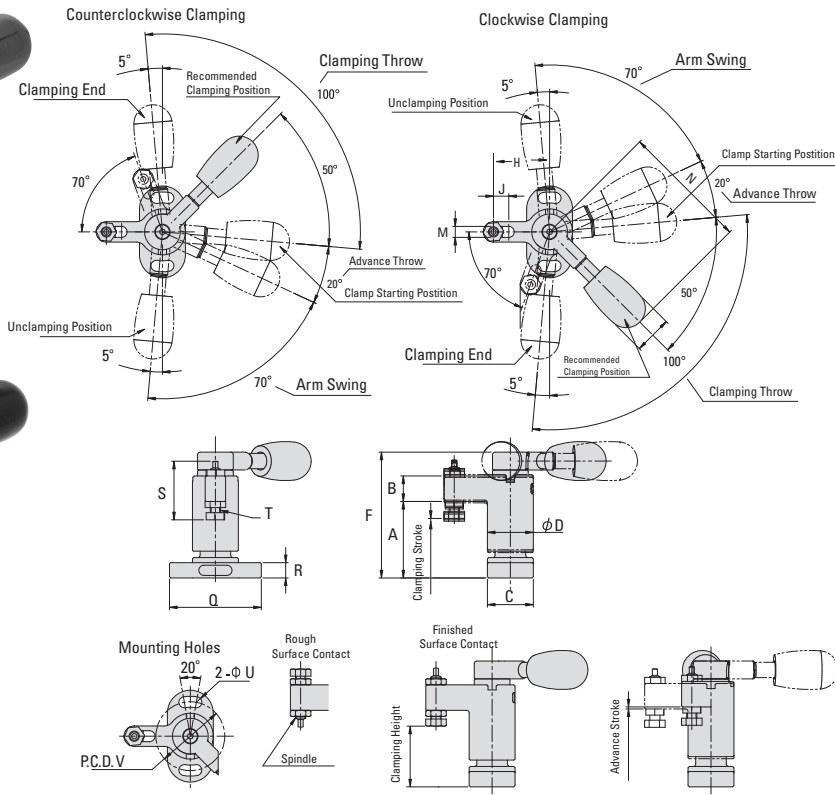
ONE-TOUCH
Clamps



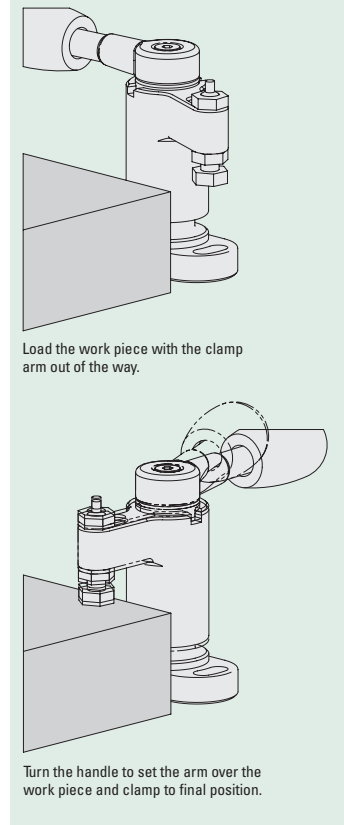
Black Oxide Finish



Electroless Nickel Plated



How To Use



These miniature swing clamps swing into position and clamp straight down onto the work piece for direct downward pressure. The arm swings completely out of the way to allow for easy loading and unloading of the work piece. Ideal for repetitive clamping operations. Contact bolt can be reversed for finished or rough surfaces. Mounts from the top with two mounting holes. Part numbers ending with R have a clockwise clamping direction, part numbers ending in L have a counter clockwise clamping direction. The body, handle and spindle are made from SAE-1045 alloy steel. The clamp arm and cam shaft are made from SAE-4140 alloy steel. Parts are heat treated. Available with black oxide finish or with electroless nickel plating. The electroless nickel plating provides improved corrosion and wear resistance to increase the life of the clamp in harsh environments. Handle is black plastic. See pages 122-125 for pneumatic style.

Part #	CLAMPING HEIGHT		Clamping Stroke mm	Advance Stroke mm	Clamping Force Lbs.	Handle Load Lbs.*
	Finished Surface mm	Rough Surface mm				
QLSWC100	22.3 - 25.3	21.9-24.9	1.0	0.8	247	22
QLSWC150	30.6 - 34.0	31.5-34.9	1.4	1.1	405	34
QLSWC200	31.7 - 39.7	32.7-40.7	1.5	1.4	495	45
QLSWC300	35.5 - 46.9	38.0-49.4	1.9	1.7	787	67

*Allowable load to operate handle.

Black Oxide Part #	Nickel Plated Part #	A mm	B mm	C mm	D mm	F mm	H mm	J mm	M mm	N mm	Q mm	R mm	S mm	T mm	U mm	P.C.D.* V mm
QLSWC100R	QLSWC100R-NP	30	10	18	18	49	22	6	4.3	50	36	6	22.8	M4X0.7	4.3	27
QLSWC100L	QLSWC100L-NP	30	10	18	18	49	22	6	4.3	50	36	6	22.8	M4X0.7	4.3	27
QLSWC150R	QLSWC150R-NP	40	14	23	23	66	30	8	5.3	63	45	8	28.5	M5X0.8	5.3	34
QLSWC150L	QLSWC150L-NP	40	14	23	23	66	30	8	5.3	63	45	8	28.5	M5X0.8	5.3	34
QLSWC200R	QLSWC200R-NP	50	18	30	30	82	37	8	8.4	80	65	12	45.5	M8X1.25	8.4	48
QLSWC200L	QLSWC200L-NP	50	18	30	30	82	37	8	8.4	80	65	12	45.5	M8X1.25	8.4	48
QLSWC300R	QLSWC300R-NP	60	22	40	40	100	45	8	10.4	100	85	15	57	M10X1.5	10.5	64
QLSWC300L	QLSWC300L-NP	60	22	40	40	100	45	8	10.4	100	85	15	57	M10X1.5	10.5	64

*Pitch Circle Diameter

SWING CLAMPS - SW SERIES - W/ OR W/O HANDLE

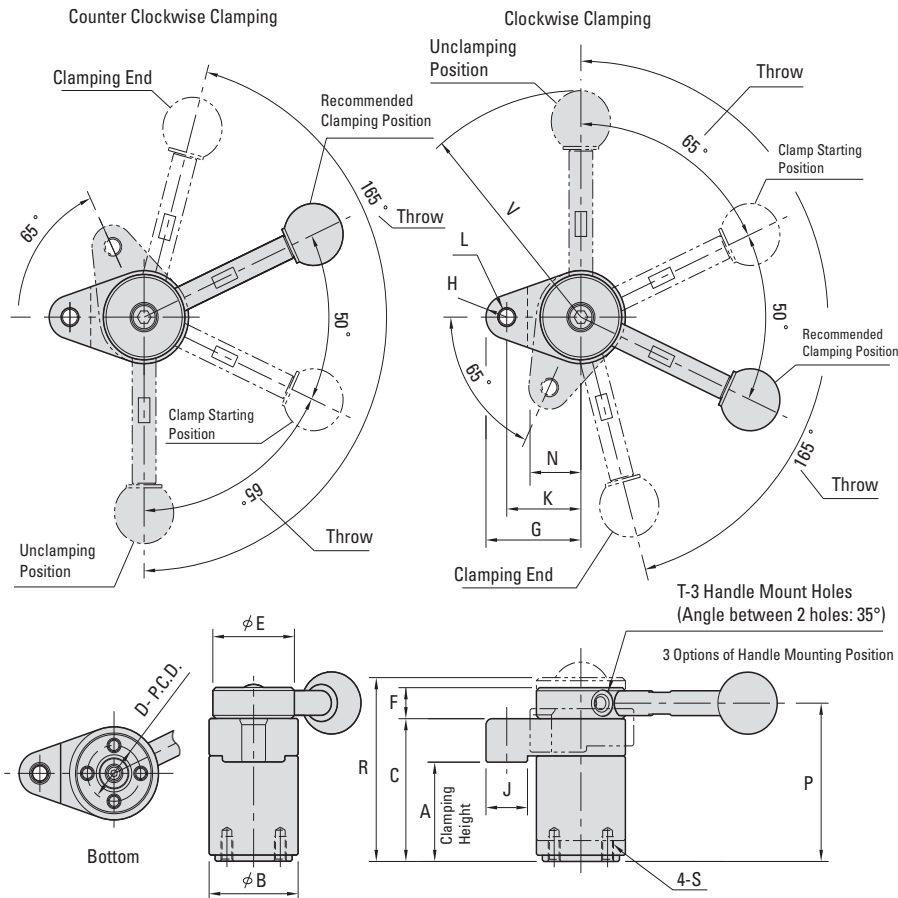
ONE-TOUCH
Clamps



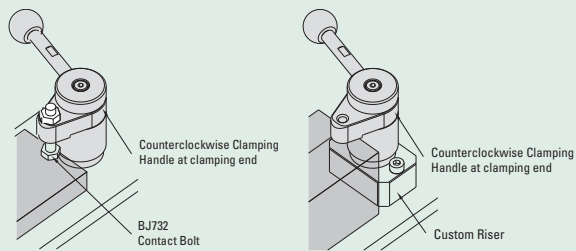
with handle



without handle

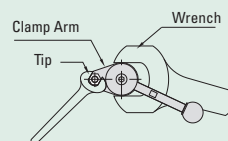


How To Use



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.



Part #	Clamping Range mm	Clamping Force Lbs.	Handle Load Lbs.*
QLSW150	1.2	170	33
QLSW200	1.8	260	45

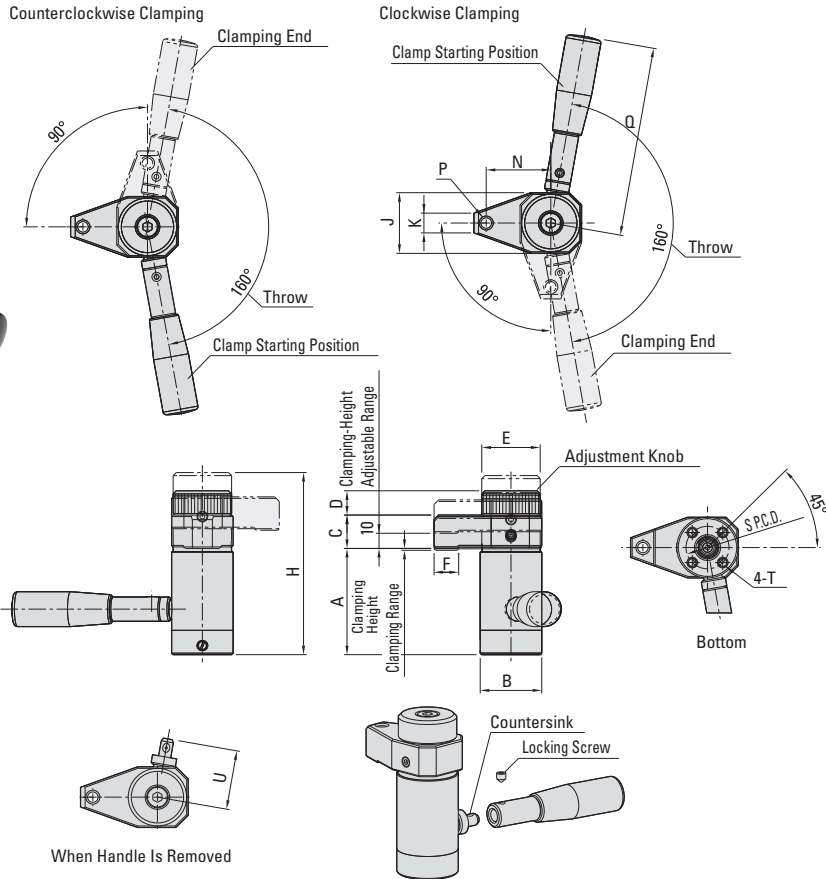
*Allowable load to operate handle

These swing clamps swing into position, then clamp straight down onto the work piece for direct downward pressure. When releasing the clamp, the clamp swings out 65 degrees for easy removal and placement of the work piece. Excellent for repetitive clamping operations. The tapped end of the clamp arm allows for custom clamping tip and greater clamping range. Can be ordered in either clockwise or counter clockwise clamping movement. Four screws and two locating holes allow for secure fastening and precision locating. Mounting bases are also available to provide top side mounting and height adjustment. Part numbers with R have clockwise clamping direction, part numbers with L have counter clockwise clamping direction. The body and shaft are made from SAE-4140 alloy steel. The clamp arm and adapter head are made from SAE-1045 alloy steel. Parts are heat treated with black oxide finish. Handle is black plastic. See pages 48 and 49 for machinable clamp arm and other handle options.

With Handle Part #	w/o Handle Part #	A mm	B mm	C mm	P.C.D.* D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	N mm	P mm	R mm	S mm	T mm	V mm
QLSW150R	QLSW150NR	31.4-32.6	30	46	18	30	10	32	7	14	25	M6X1	17.5	51.0	57.5	M4X0.7	M5X0.8	73
QLSW150L	QLSW150NL	31.4-32.6	30	46	18	30	10	32	7	14	25	M6X1	17.5	51.0	57.5	M4X0.7	M5X0.8	73
QLSW200R	QLSW200NR	44.1-45.9	40	63	25	38	13	40	8	16	32	M8X1.25	21.5	69.5	78.1	M6X1	M6X1	107
QLSW200L	QLSW200NL	44.1-45.9	40	63	25	38	13	40	8	16	32	M8X1.25	21.5	69.5	78.1	M6X1	M6X1	107

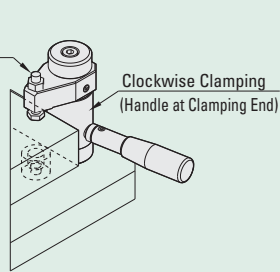
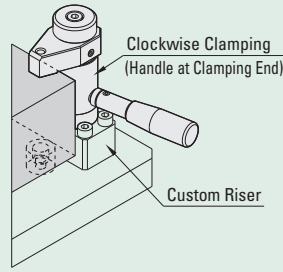
*Pitch Circle Diameter

SWING CLAMPS - SWH SERIES - HEAVY DUTY

ONE-TOUGH
Clamps


When Handle Is Removed

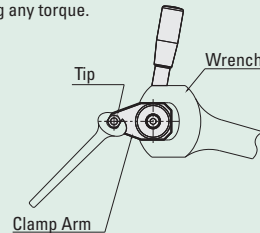
How To Use

 BJ732
Contact Bolt

 Clockwise Clamping
(Handle at Clamping End)

 Clockwise Clamping
(Handle at Clamping End)

Custom Riser

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.



These Heavy Duty Swing Clamps swing into position then clamp straight down onto the work piece for direct downward pressure. The arm swings completely out of the way to allow for easy loading and unloading of the work piece. Ideal for repetitive clamping operations. The tapped end of the clamp arm allows for a clamping tip to be added. Mounts from the bottom with four mounting holes. Mounting bases are available that allow top side mounting. To operate: load the work piece, turn the adjustment knob to rotate and lower the clamp arm over the work piece. Rotate the handle to apply full clamping force to the work piece. The 400 series provide 786 lbs of clamping force, the 500 series provides 1,348 lbs of clamping force. Part numbers ending with R have a clockwise clamping direction, part numbers ending in L have a counter clockwise clamping direction. The body, cam and handle are made from SAE-4140 alloy steel. The clamp arm is made from SAE-1045 alloy steel. Parts are heat treated with black oxide finish. The handle is made from black plastic.

Part#	Clamping Range mm	Clamping Height mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	K mm	N mm	P mm	Q mm	U mm	P.C.D.*	
															S mm	T mm
QLSWH400R	1.2	70-80	40	22	16	38	16	120	40	13	42	M8X1.25	125	39	28	M6X1X12D
QLSWH400L	1.2	70-80	40	22	16	38	16	120	40	13	42	M8X1.25	125	39	28	M6X1X12D
QLSWH500R	1.6	80-90	50	25	20	48	24	137	50	18	48	M12X1.75	160	47	35	M8X1.25X16D
QLSWH500L	1.6	80-90	50	25	20	48	24	137	50	18	48	M12X1.75	160	47	35	M8X1.25X16D

Note: Maximum load on the handle cannot exceed 134 lbs. *Pitch Circle Diameter

SWING CLAMPS - SWCV SERIES - W/ CAM HANDLE

ONE-TOUCH
Clamps

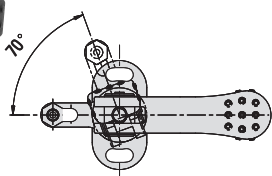


Black Oxide Finish

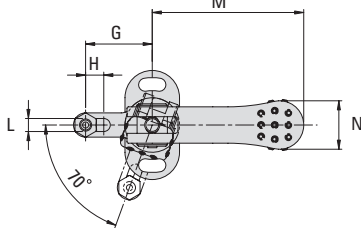


Electroless Nickel Plated

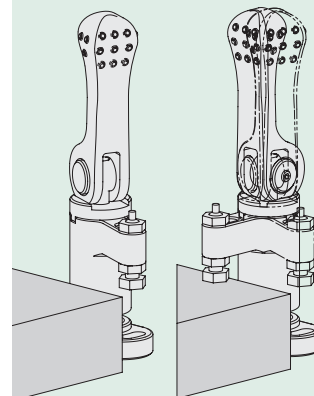
Counterclockwise Clamping



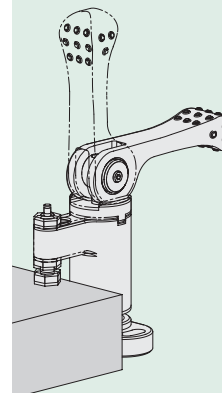
Clockwise Clamping



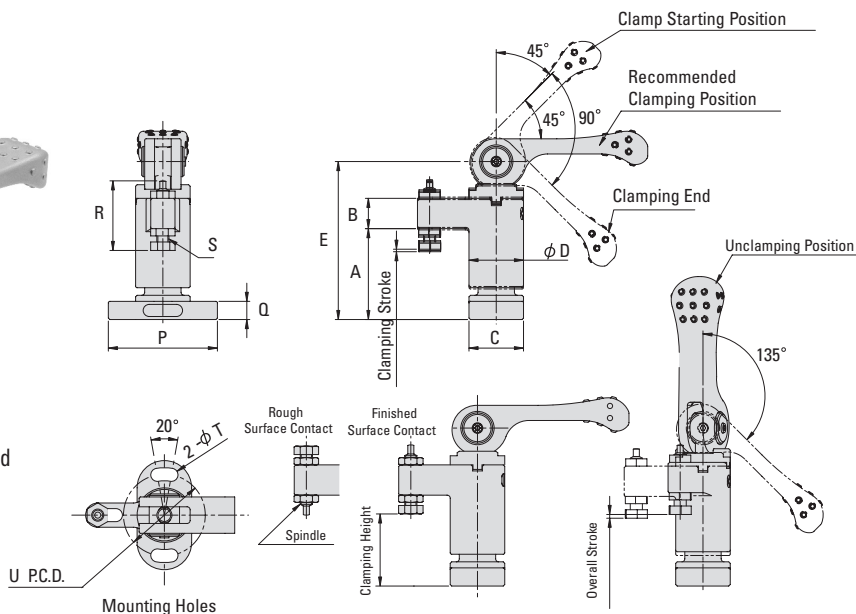
How To Use



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.



These miniature cam action clamps swing into position and clamp straight down onto the work piece for direct downward pressure. The arm swings completely out of the way to allow for easy loading and unloading of the work piece. Ideal for repetitive clamping operations. Contact bolt can be reversed for finished or rough surfaces. Mounts from the top with two mounting holes. Part numbers ending with R have a clockwise clamping direction, part numbers ending in L have a counter clockwise clamping direction. The body, handle and spindle are made from SAE-1045 alloy steel. The clamp arm and cam shaft are made from SAE-4140 alloy steel. Parts are heat treated. Available with black oxide finish or with electroless nickel plating. The electroless nickel plating provides improved corrosion and wear resistance to increase the life of the clamp in harsh environments.

Part #	CLAMPING HEIGHT		Clamping Stroke mm	Overall Stroke mm	Clamping Force Lbs.	Handle Load Lbs.*
	Finished Surface mm	Rough Surface mm				
QLSWC100V	22.4 - 25.2	22.0 - 24.8	0.8	1.2	180	22
QLSWC150V	30.8 - 33.8	31.7 - 34.7	1.0	1.5	337	34
QLSWC200V	31.9 - 39.6	32.9 - 40.6	1.2	1.8	472	45
QLSWC300V	35.7 - 46.7	38.2 - 49.2	1.5	2.3	629	67

*Allowable load to operate handle.

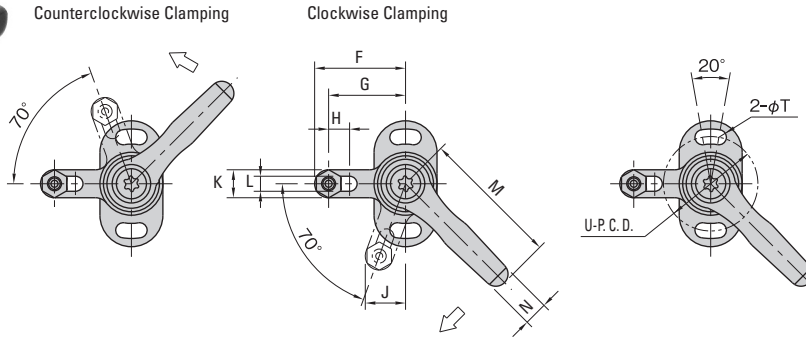
Black Oxide Part #	Nickel Plated Part #	A mm	B mm	C mm	D mm	E mm	G mm	H mm	L mm	M mm	N mm	P mm	Q mm	R mm	S mm	T mm	P.C.D.* U mm
QLSWC100VR	QLSWC100VR-NP	30	10	18	18	52	22	6	4.3	50	16	36	6	22.8	M4X0.7	4.3	27
QLSWC100VL	QLSWC100VL-NP	30	10	18	18	52	22	6	4.3	50	16	36	6	22.8	M4X0.7	4.3	27
QLSWC150VR	QLSWC150VR-NP	40	14	23	23	68	30	8	5.3	63	19	45	8	28.5	M5X0.8	5.3	34
QLSWC150VL	QLSWC150VL-NP	40	14	23	23	68	30	8	5.3	63	19	45	8	28.5	M5X0.8	5.3	34
QLSWC200VR	QLSWC200VR-NP	50	18	30	30	87	37	8	8.4	80	24	65	12	45.5	M8X1.25	8.4	48
QLSWC200VL	QLSWC200VL-NP	50	18	30	30	87	37	8	8.4	80	24	65	12	45.5	M8X1.25	8.4	48
QLSWC300VR	QLSWC300VR-NP	60	22	40	40	107	45	8	10.4	100	30	85	15	57	M10X1.5	10.5	64
QLSWC300VL	QLSWC300VL-NP	60	22	40	40	107	45	8	10.4	100	30	85	15	57	M10X1.5	10.5	64

*Pitch Circle Diameter

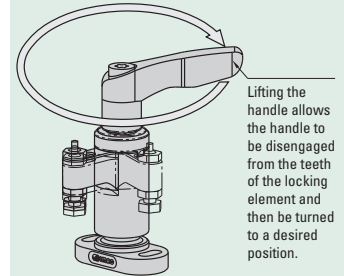


SWING CLAMPS - SWCK SERIES - W/ ADJUSTABLE HANDLE

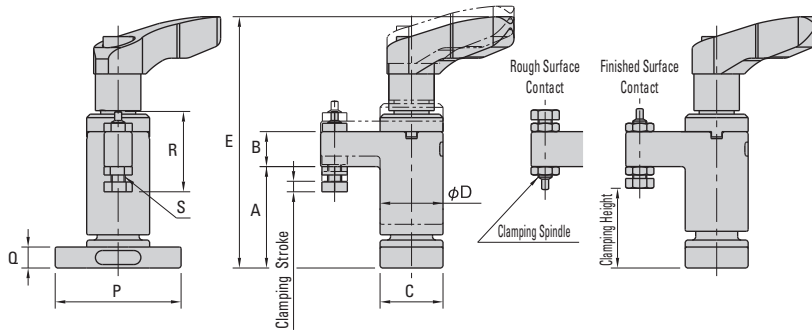
ONE-TOUCH
Clamps



How To Use



Turning the handle allows the clamp arm to swing for clamping.



These miniature swing clamps swing into position and clamp straight down onto the work piece for direct downward pressure. The arm swings completely out of the way to allow for easy loading and unloading of the work piece. The adjustable handle allows for greater clamping stroke and clamping forces. The adjustable handle allows for tightening in limited space and can be moved out of the way to avoid interference. Contact bolt can be reversed for finished or rough surfaces. Mounts from the top with two mounting holes. Part numbers ending with R have a clockwise clamping direction and part numbers ending in L have a counter clockwise clamping direction. The body is made from SAE-4140 alloy steel. The base and clamping spindle is made from SAE-1045 alloy steel. Parts are heat treated with black oxide finish. The adjustable handle is made from zinc die cast.

Part #	CLAMPING HEIGHT		Clamping Stroke mm	Operating Load Lbs.*	Clamping Force Lbs.
	Finished Surface mm	Rough Surface mm			
QLSWC-0618KR	21.8-26.8	21.4-26.4	3	38	449
QLSWC-0618KL	21.8-26.8	21.4-26.4	3	38	449
QLSWC-0823KR	30.3-36.3	31.2-37.2	4	38	719
QLSWC-0823KL	30.3-36.3	31.2-37.2	4	38	719
QLSWC-1030KR	30.5-41.0	31.5-42.0	4	78	1,011
QLSWC-1030KL	30.5-41.0	31.5-42.0	4	78	1,011
QLSWC-1240KR	34.5-49.0	37.0-51.5	5	92	1,348
QLSWC-1240KL	34.5-49.0	37.0-51.5	5	92	1,348

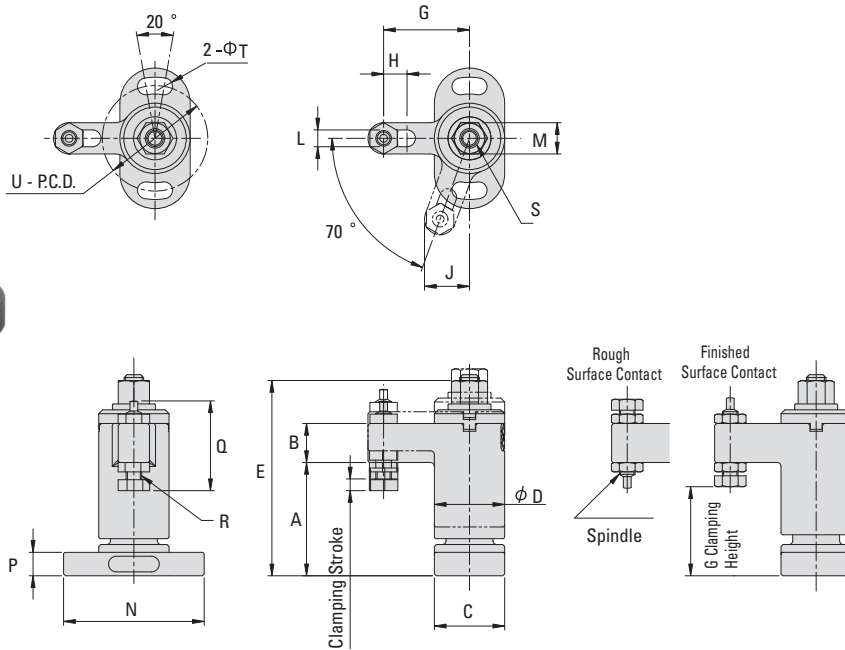
*Allowable load to operate handle

Part #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	P.C.D.*	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	U
QLSWC-0618KR	29	10	18	18	71.9	26	22	6	11.5	8	4.3	40	7	36	6	22.8	M4X0.7	4.3	27	
QLSWC-0618KL	29	10	18	18	71.9	26	22	6	11.5	8	4.3	40	7	36	6	22.8	M4X0.7	4.3	27	
QLSWC-0823KR	39	14	23	23	97.3	35	30	8	15.3	10	5.3	65	9.5	45	8	28.5	M5X0.8	5.3	34	
QLSWC-0823KL	39	14	23	23	97.3	35	30	8	15.3	10	5.3	65	9.5	45	8	28.5	M5X0.8	5.3	34	
QLSWC-1030KR	48	18	30	30	122.3	45	37	8	20.7	16	8.4	80	11	65	12	45.5	M8X1.25	8.4	48	
QLSWC-1030KL	48	18	30	30	122.3	45	37	8	20.7	16	8.4	80	11	65	12	45.5	M8X1.25	8.4	48	
QLSWC-1240KR	58	22	40	40	145.7	55	45	8	25.4	20	10.4	95	13	85	15	57	M10X1.5	10.5	64	
QLSWC-1240KL	58	22	40	40	145.7	55	45	8	25.4	20	10.4	95	13	85	15	57	M10X1.5	10.5	64	

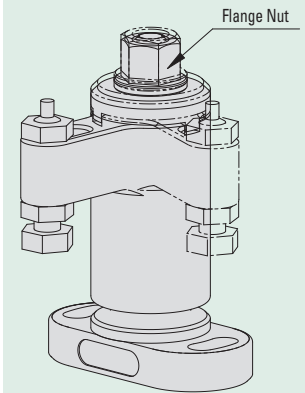
*Pitch Circle Diameter

SWING CLAMPS - SWC SERIES - W/ NUT DRIVER

ONE-TOUCH
Clamps



How To Use



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

Warning

To prevent damage, do not use power tools (impact wrench) to turn the flange nut.

These miniature clamps swing into position and clamp straight down onto the work piece for direct downward pressure. The arm swings completely out of the way to allow for easy loading and unloading of the work piece. The flange nut is used to activate the swing arm and allows the user to apply precise pressure by using a torque wrench or a removable handle to avoid interference. Ideal for applications where precise clamping force is required to avoid part distortion. Comes with a contact bolt that can be reversed for finished or rough surfaces. Mounts from the top with two mounting holes. The clamp arm swings out of the way in a counter clockwise direction. The body, washer, flange nut and spindle are made from SAE-1045 alloy steel. The clamping arm is made from SAE-4140 alloy steel. Parts are heat treated with black oxide finish.

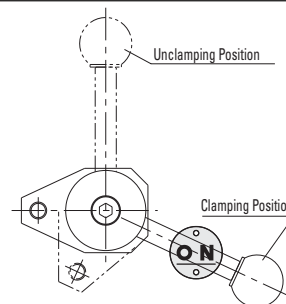
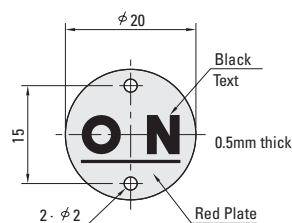
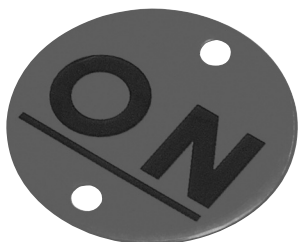
Part #	CLAMPING HEIGHT		Clamping Stroke mm	Allowable Screw Torque (in/lbs.)	Clamping Force Lbs.
	Finished Surface mm	Rough Surface mm			
QLSWC-0618	21.8 - 26.8	21.4 - 26.4	3	53	517
QLSWC-0823	30.3 - 36.3	31.2 - 37.2	4	92	809
QLSWC-1030	30.5 - 41.0	31.5 - 42.0	4	265	1,348
QLSWC-1240	34.5 - 49.0	37.0 - 51.5	5	398	1,686

*Allowable load to operate handle

Part #	A mm	B mm	C mm	D mm	E mm	G mm	H mm	J mm	L mm	M mm	N mm	P mm	Q mm	R mm	S mm	T mm	P.C.D.* U mm
QLSWC-0618	29	10	18	18	56.5	22	6	11.5	4.3	10	36	6	22.8	M4X0.7	M6X1	4.3	27
QLSWC-0823	39	14	23	23	73.5	30	8	15.3	5.3	13	45	8	28.5	M5X0.8	M8X1.25	5.3	34
QLSWC-1030	48	18	30	30	91	37	8	20.7	8.4	17	65	12	45.5	M8X1.25	M10X1.5	8.4	48
QLSWC-1240	58	22	40	40	114	45	8	25.4	10.4	19	85	15	57	M10X1.5	M12X1.75	10.5	64

*Pitch Circle Diameter

MARKER PLATES

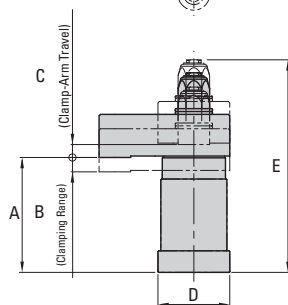
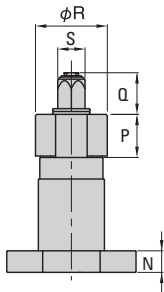
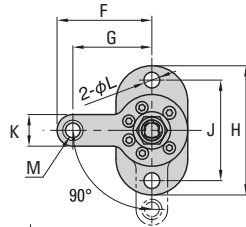


These aluminum marker plates are used to mark the handle position in the clamping mode. Pressure sensitive adhesive on the backside. 2mm holes allow for riveting. Color is red.

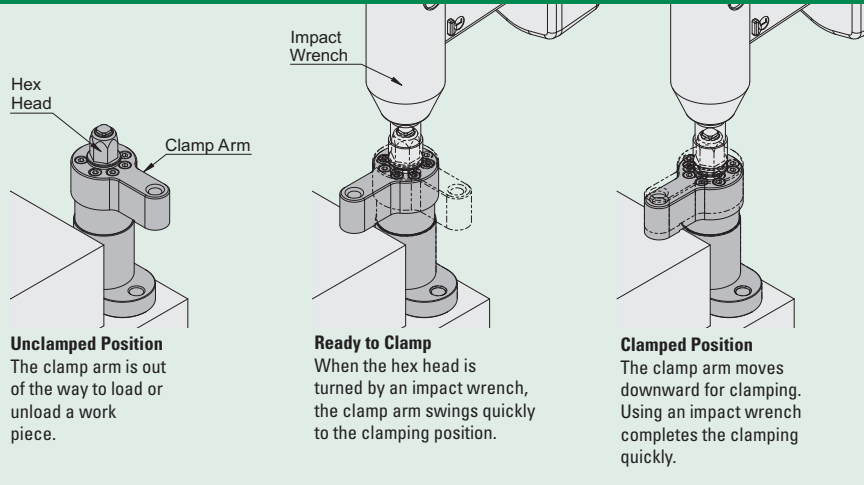
Part #
QLST-ON

SWING CLAMPS - SW1 SERIES - QUICK ACTING

ONE-TOUCH
Clamps



How To Use



Unclamped Position
The clamp arm is out of the way to load or unload a work piece.

Ready to Clamp
When the hex head is turned by an impact wrench, the clamp arm swings quickly to the clamping position.

Clamped Position
The clamp arm moves downward for clamping. Using an impact wrench completes the clamping quickly.

Part #	Clamping Force lbs.	Max Torque Ft/lbs.
PTSW1-12	1,350	20
PTSW1-16	2,250	40

These swing clamps swing into position, then clamp straight down onto the work piece for direct downward pressure. When releasing the clamp, the arm swings out 90 degrees for easy removal and placement of the work piece. These clamps are designed to be used with an adjustable torque impact wrench for quick clamping and accurate clamping pressure. They are ideal for repetitive production clamping operations. The tapped end of the clamp arm allows for installing a clamping tip. The body and shaft are made from SAE-4140 alloy steel. The clamp arm is made from SAE-1045 alloy steel. Parts are heat treated with black oxide finish. These clamps have a clockwise clamping direction.

Swing Clamp with Arm

Part #	Clamping Range		Clamp Arm Travel	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
	A mm	B mm	C mm														
PTSW1-12R	80	10	11	50	150	66	55	90	70	22	11	M12X1.75	15	30	29	50	19
PTSW1-16R	95	10	14	60	179	79	65	100	80	28	13	M16X2	20	35	35	60	24

Swing Clamp without Arm

Part #	Clamping Range		Clamp Arm Travel	D	E	H	J	L	N	P	Q	R	S
	A mm	B mm	C mm										
PTSW1-12NR	80	10	11	50	150	90	70	11	15	30	29	50	19
PTSW1-16NR	95	10	14	60	179	100	80	13	20	35	35	60	24

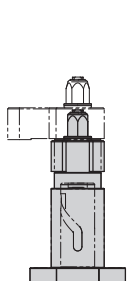
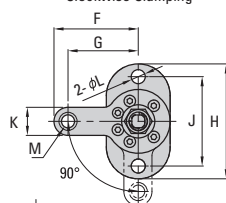
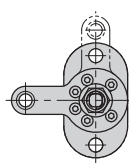
SWING CLAMPS - SW2 SERIES - SPIRAL ACTING

ONE-TOUCH
Clamps

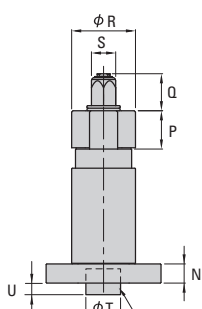


Counterclockwise Clamping

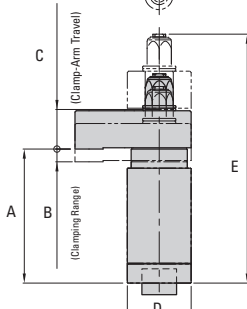
Clockwise Clamping



The internal spiral groove allows the clamp arm to swing positively.



Locating Boss (Included)
Use when locating clamps are required in an automated production line.



How To Use

Unclamped Position
The clamp arm is out of the way to load or unload a work piece.

Ready to Clamp
When the hex head is turned by a nut runner, the clamp arm swings quickly to the clamping position.

Clamped Position
The clamp arm moves downward for clamping. Using a nut runner completes the clamping quickly.

Part #	Clamping Force lbs.	Max Torque Ft/lbs.
PTSW2-12	1,350	20
PTSW2-16	2,250	40

These swing clamps swing into position, then clamp straight down onto the work piece for direct downward pressure. When releasing the clamp, the arm swings out 90 degrees for easy removal and placement of the work piece. The internal spiral groove forces positive clamp arm rotation both in the clamping and unclamping motions. These clamps are designed to be used in robotized production lines where robots use nut runners. The tapped end of the clamp arm allows for installing a clamping tip. The body and shaft are made from SAE-4140 alloy steel. The clamp arm is made from SAE-1045 alloy steel. Parts are heat treated with black oxide finish. Parts ending in R have a clockwise clamping direction, part numbers ending in L have a counter-clockwise clamping direction.

Swing Clamp with Arm

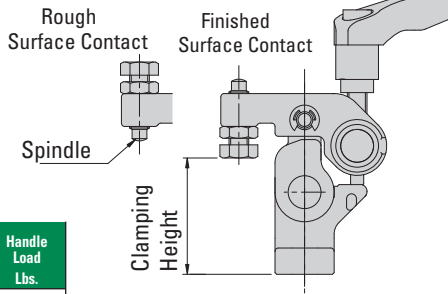
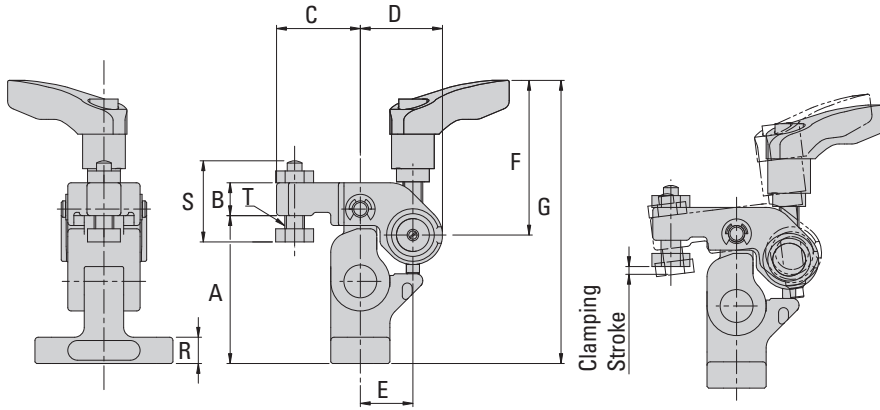
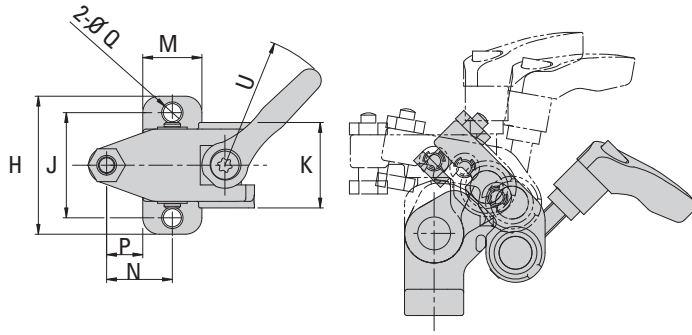
Part #	Clamping Range		Clamp Arm Travel C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	+0/-0.2	
	A	B																T	U
PTSW2-12R	105	10	31	50	195	66	55	90	70	22	11	M12X1.75	15	30	29	50	19	26	10
PTSW2-12L	105	10	31	50	195	66	55	90	70	22	11	M12X1.75	15	30	29	50	19	26	10
PTSW2-16R	120	10	36	60	226	79	65	100	80	28	13	M16X2	20	35	35	60	24	30	12
PTSW2-16L	120	10	36	60	226	79	65	100	80	28	13	M16X2	20	35	35	60	24	30	12

Swing Clamp without Arm

Part #	Clamping Range		Clamp Arm Travel C	D	E	H	J	L	N	P	Q	R	S	+0/-0.2	
	A	B												T	U
PTSW2-12NR	105	10	31	50	195	90	70	11	15	30	29	50	19	26	10
PTSW2-12NL	105	10	31	50	195	90	70	11	15	30	29	50	19	26	10
PTSW2-16NR	120	10	36	60	226	100	80	13	20	35	35	60	24	30	12
PTSW2-16NL	120	10	36	60	226	100	80	13	20	35	35	60	24	30	12

RETRACTABLE CLAMPS - RE SERIES - W/ ADJUSTABLE HANDLE

ONE-TOUGH
Clamps

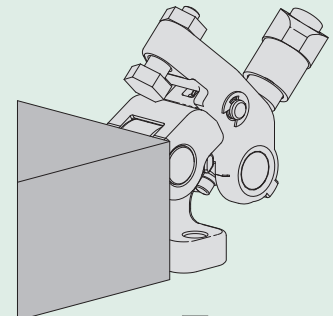


Part #	CLAMPING HEIGHT		Stroke mm	Clamping Force Lbs.	Handle Load Lbs.
	Finished Surface mm	Rough Surface mm			
QLRE-06	29.5 - 40.0	32.5 - 43.0	2.5	539	38
QLRE-08	33.5 - 48.0	38.5 - 53.0	3.5	944	47

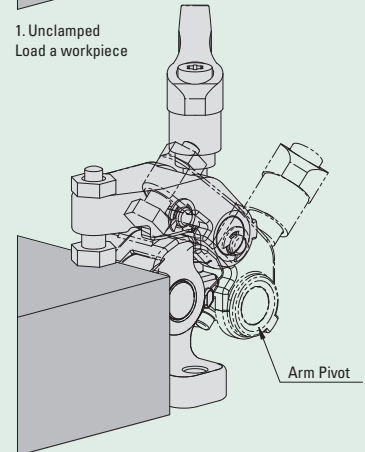
These miniature retractable clamps pivot completely away from the work piece for easy loading and unloading. The clamp moves forward and downward into position and clamps straight down onto the work piece for direct downward pressure. The adjustable handle is then tightened to apply clamping pressure and allows for longer clamping stroke and greater clamping force. These clamps are ideal for repetitive accurate clamping operations. They come with a contact bolt that can be reversed for finished or rough work piece surfaces. Mounts from the top with two mounting holes. The body and spindle are made from SAE-1045 alloy steel. The arm and joint are made from SAE-4135 alloy steel. Parts are heat treated with black oxide finish. The adjustable handle is made from cast zinc.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	M mm	N mm	P mm	Q mm	R mm	S mm	T mm	U mm
QLRE-06	45	10	25.5	25	16	47	86	42	32	26	18	20	11	5.5	8	24.0	M6X1	40
QLRE-08	55	12	32.0	31	20	63	109	52	40	32	22	25	14	6.6	10	30.5	M8X1.25	65

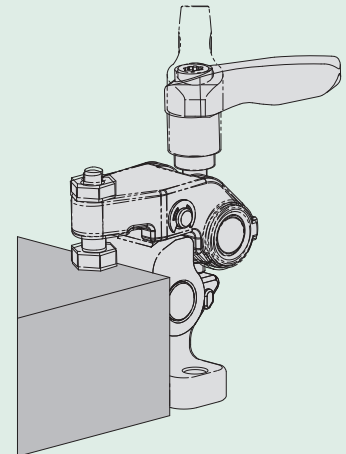
How To Use



1. Unclamped
Load a workpiece



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

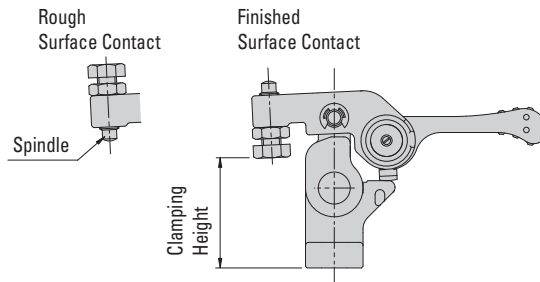
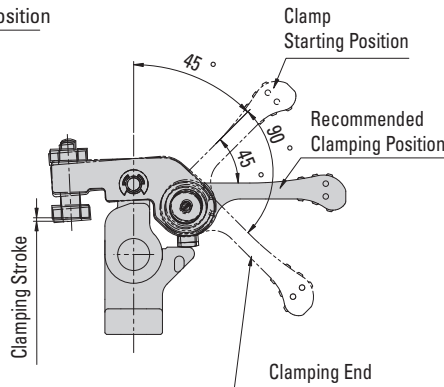
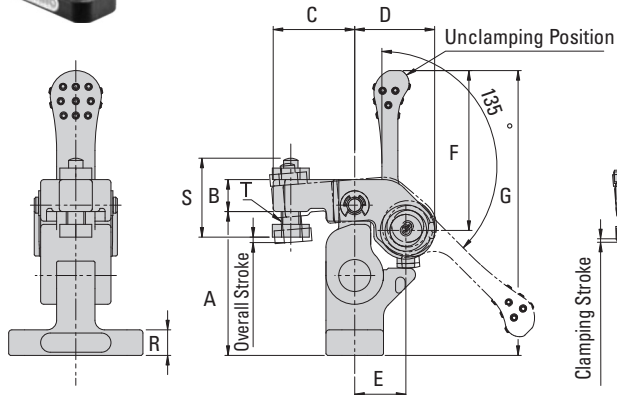
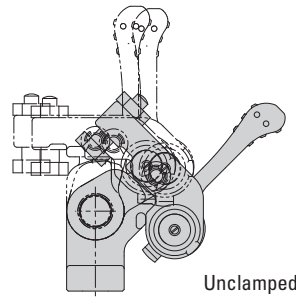
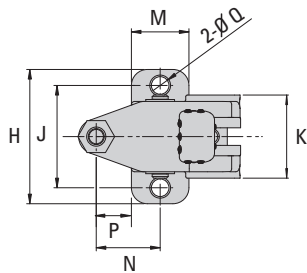


3. Clamping
Set the handle down to clamp the workpiece.

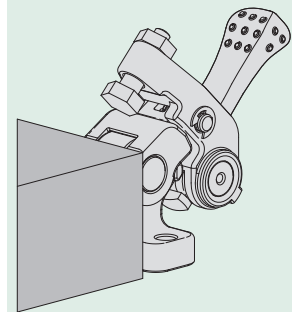
For unclamping, reverse the above steps.

RETRACTABLE CLAMPS - RE SERIES - W/ CAM HANDLE

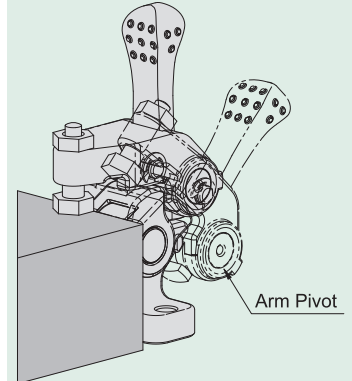
ONE-TOUCH
Clamps



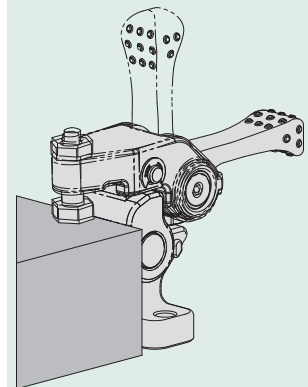
How To Use



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, reverse the above steps.

Part#	CLAMPING HEIGHT		Clamping Stroke mm	Overall Stroke mm	Clamping Force Lbs.	Handle Load Lbs.
	Finished Surface mm	Rough Surface mm				
QLRE100	31.5 - 40.5	34.5 - 43.5	1.0	1.5	150	22
QLRE150	36.4 - 48.6	41.4 - 53.6	1.2	1.8	247	33

These miniature retractable clamps pivot completely away from the work piece for easy loading and unloading. The clamp moves forward and downward into position and clamps straight down onto the work piece for direct downward pressure. The cam handle is then pushed down for final workholding pressure. These clamps are ideal for repetitive accurate clamping operations. They come with a contact bolt that can be reversed for finished or rough work piece surfaces. Mounts from the top with two mounting holes. The body and spindle are made from SAE-1045 alloy steel. The arm and joint are made from SAE-4135 alloy steel. The handle is made from SAE-4140 alloy steel. Parts are heat treated with black oxide finish.

Part#	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	M mm	N mm	P mm	Q mm	R mm	S mm	T mm
QLRE100	45	10	25.5	25	16	50	89	42	32	26	18	20	11	5.5	8	24.0	M6X1
QLRE150	55	12	32.0	31	20	63	109	52	40	32	22	25	14	6.6	10	30.5	M8X1.25

SNAP CLAMPS - SNDM SERIES - MINI HOLD DOWN

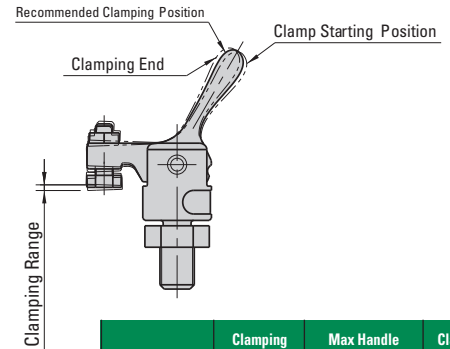
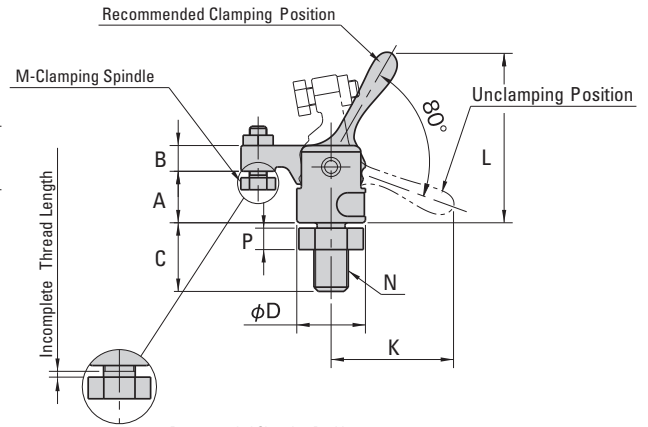
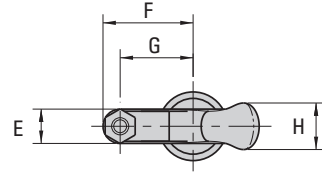
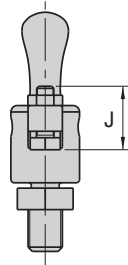
ONE-TOUCH
Clamps



Clamped Position

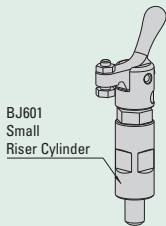


Unclamped Position



Part #	Clamping Range mm	Max Handle Operating Load Lbs.	Clamping Force Lbs.
QLSNDM08-01	1	1.1	2
QLSNDM12-01	1.5	1.1	2
QLSNDM12-03	1.5	2.9	6

How To Use



Use a BJ601 Small Riser Cylinder (page 164) to raise these clamps.

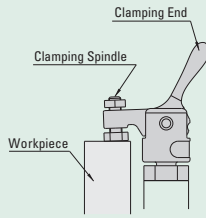


Fig. 1

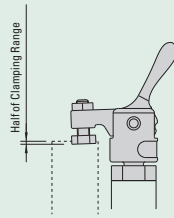
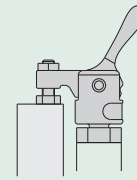


Fig. 2



Setting Completed

To set the handle for recommended clamping position, move the handle to the clamping position and then set the spindle to contact the work piece. (Fig. 1) Adjust the spindle by about half of the clamping range and then tighten the nuts on the spindle for locking. (Fig. 2)

These snap clamps use a unique snap-on system to provide uniform and positive clamping in one smooth operation. As the handle is moved upward, the internal mechanism works to build tension. At a specified point, the tension is released and transformed into clamping force. This allows uniform clamping force with every cycle. The one piece body offers excellent durability and will not become weak or unstable after repeated use like traditional toggle clamps. They are ideal for small part clamping and where space is limited. They are designed for fingertip handle operation. Urethane tip style spindles are available. The steel style body is made from SAE-1045 alloy steel with the clamping arm and handle made from SAE-4140 alloy steel with a black oxide finish. The nickel plated style is made from the same material as the steel style but features an electroless nickel plating finish. The electroless nickel plating provides improved corrosion and wear resistance to increase the life of the clamp in harsh environments. The stainless style has the body and clamping arm made from SCS13. The stainless provides corrosion resistance in hostile environments. The stated clamping forces and handle operating loads can vary by +/-20%. When the reaction force exceeds the stated clamping force, the clamp will release.

Steel Part #	Nickel Plated Part #	Stainless Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm
QLSNDM08-01	QLSNDM08-01-NP	QLSNDM08-01-SUS	12	6	16	16	8	21	17	11	15	28.5	39.5	M4X35L	M8X1.25	5
QLSNDM12-01	QLSNDM12-01-NP	QLSNDM12-01-SUS	17	8	24	22	10	27	22	13	18.5	38	53.5	M5X15L	M12X1.75	7
QLSNDM12-03	QLSNDM12-03-NP	QLSNDM12-03-SUS	17	8	24	22	10	27	22	13	18.5	38	53.5	M5X15L	M12X1.75	7

SNAP CLAMPS - SND SERIES - HOLD DOWN

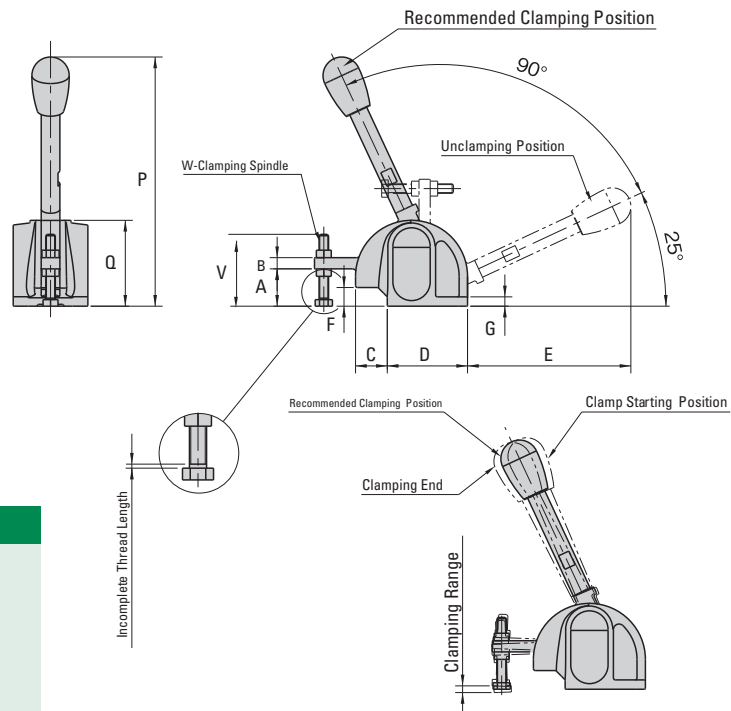
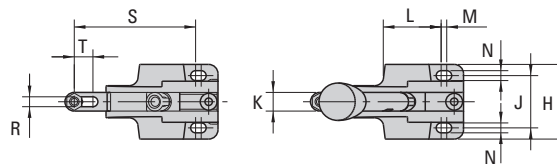
ONE-TOUCH
Clamps



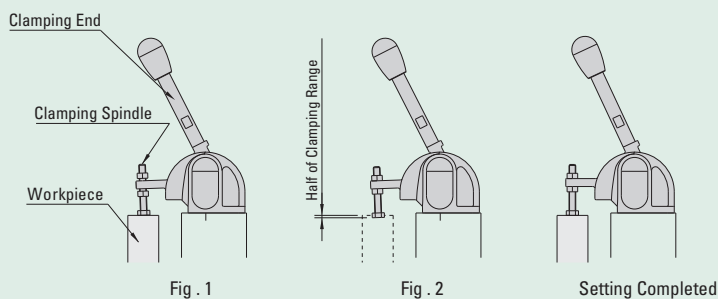
Clamped Position



Unclamped Position



How To Use



To set the handle for recommended clamping position, move the handle to the clamping position and then set the spindle to contact the work piece. (Fig. 1) Adjust the spindle by about half of the clamping range and then tighten the nuts on the spindle for locking. (Fig. 2)

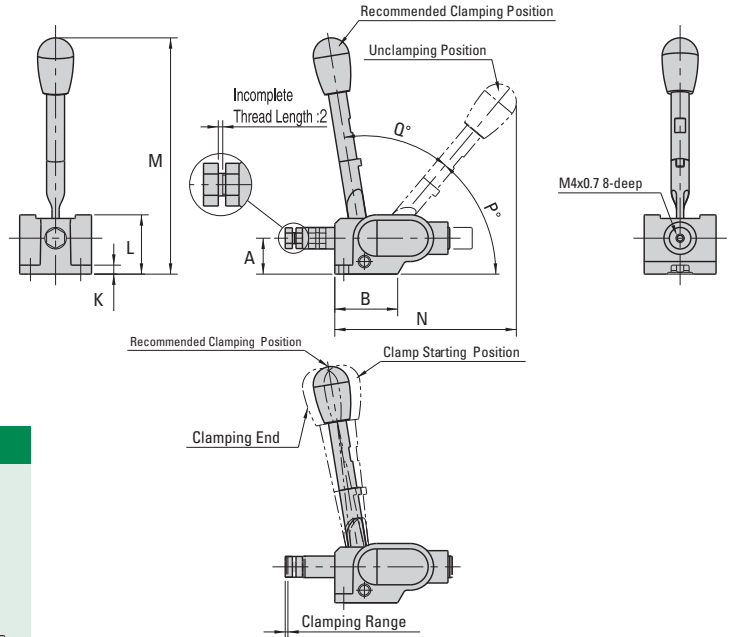
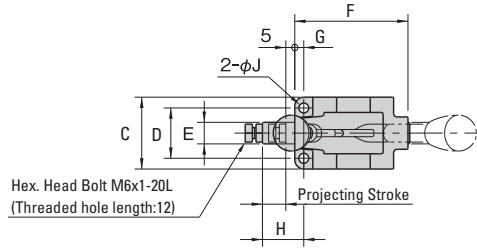
Part #	Clamping Range mm	Spindle W mm	Handle Operating Load Lbs.	Clamping Force Lbs.
QLSND28-02	3	M5 - 35L	1.35	4
QLSND28-05	3	M5 - 35L	2.70	11
QLSND30-03	3	M5 - 35L	1.35	6
QLSND30-06	3	M5 - 35L	2.70	13

These snap clamps use a unique snap-on system to provide uniform and positive clamping in one smooth operation. As the handle is moved forward, the internal mechanism works to build tension. At a specified point, the tension is released and transformed into clamping force. This allows uniform clamping force with every cycle. The one piece body offers excellent durability and will not become weak or unstable after repeated use like traditional toggle clamps. Supplied with steel spindle. Urethane tip styles are available. The body and clamping arm are made from alloy steel with black finish. The handle is chrome plated steel with plastic knob. Extension arms, mounting brackets and angle handle adapters are available on the following pages. The stated clamping forces and handle operating loads can vary by +/-20%. When the reaction force exceeds the stated clamping force, the clamp will release.

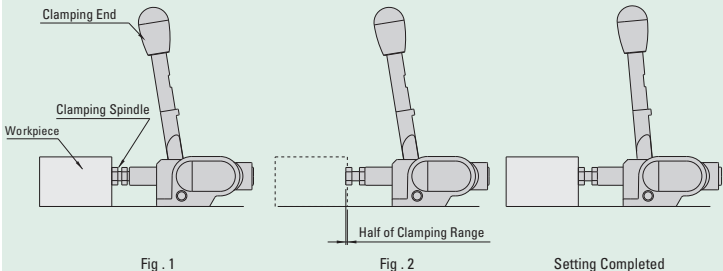
Part #	A	B	C	D	E	F	G	H	J	K	L	M	N	Max P	Q	R	S	T	V
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
QLSND28-02	20	6	17	43	88	10	5	40	28	10	31	3	5.3	140	46	5.3	65	10	38.5
QLSND28-05	20	6	17	43	88	10	5	40	28	10	31	3	5.3	140	46	5.3	65	10	38.5
QLSND30-03	20	8	22.5	48.5	98	12	6	42	30	10	32.5	6	6.4	158	53	5.3	75	12	38.5
QLSND30-06	20	8	22.5	48.5	98	12	6	42	30	10	32.5	6	6.4	158	53	5.3	75	12	38.5

SNAP CLAMPS - SNS SERIES - PUSH

ONE-TOUCH
Clamps



How To Use



To set the handle for recommended clamping position, move the handle to the clamping position and then set the spindle to contact the work piece. (Fig. 1) Adjust the spindle by about half of the clamping range and then tighten the nuts on the spindle for locking. (Fig. 2)

Part #	Projecting Stroke mm	Clamping Range mm	Handle Operating Load Lbs.	Clamping Force Lbs.
QLSNS28-05	12	1.5	2.00	11
QLSNS28-12	12	1.5	4.50	27
QLSNS30-07	22	1.5	1.35	15
QLSNS30-14	22	1.5	4.00	31

These snap clamps use a unique snap-on system to provide uniform and positive clamping in one smooth operation. As the handle is moved forward, the internal mechanism works to build tension. At a specified point, the tension is released and transformed into clamping force. This allows uniform clamping force with every cycle. They offer excellent durability and will not become weak or unstable after repeated use like traditional toggle clamps. Supplied with steel spindle. Urethane tip styles are available. The body and clamping arm are made from alloy steel with black finish. The handle is chrome plated steel with plastic knob. Cover plates to keep debris out of the clamps are available. The stated clamping forces and handle operating loads can vary by +/-20%. When the reaction force exceeds the stated clamping force, the clamp will release.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	Max M mm	N mm	P Degree	Q Degree
QLSNS28-05	20	35	40	28	12	63	5	22	5.5	5	33	133	101	50	50
QLSNS28-12	20	35	40	28	12	63	5	22	5.5	5	33	133	101	50	50
QLSNS30-07	25	42	42	30	12	80	6	33	6.5	6	38	157	131	45	60
QLSNS30-14	25	42	42	30	12	80	6	33	6.5	6	38	157	131	45	60

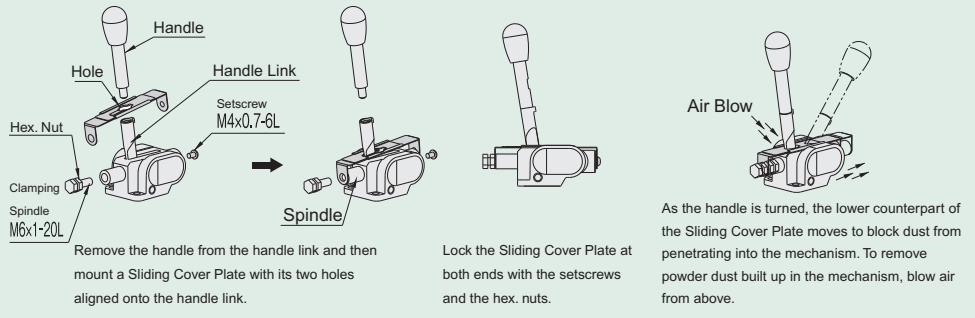


SNAP CLAMP SLIDING COVER PLATES

ONE-TOUCH
Clamps



How To Use

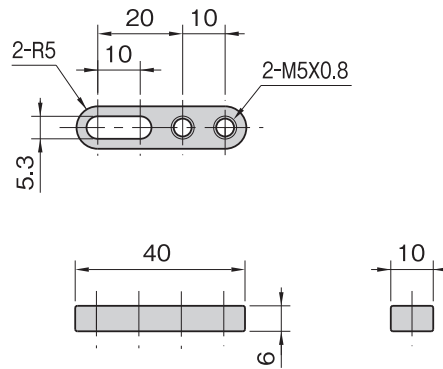


These sliding plate covers work with the push snap clamps shown on page 22. They are designed to keep chips and debris from the clamp mechanism. Made from steel with black oxide finish. Comes with a head socket set screw.

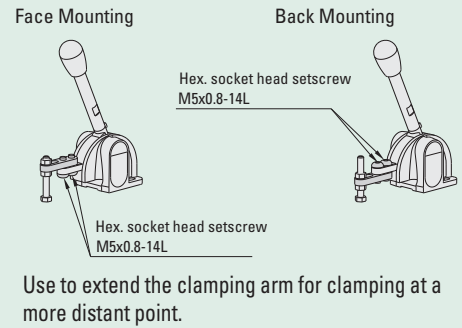
Part #	Use With Clamps
QLSNS28-SL	QLSNS28-05 & QLSNS28-12
QLSNS30-SL	QLSNS30-07 & QLSNS30-14

SNAP CLAMP EXTENSION ARM

ONE-TOUCH
Clamps



How To Use

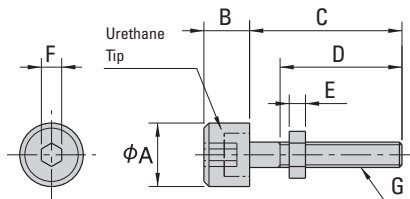


This clamping extension arm is used with the standard hold down snap clamps shown on page 21. The arm extends the clamping point further from the clamp. The extension arm includes two set screws to attach the arm to the clamp. The arm can be mounted to the top or bottom of the Snap Clamp depending on the application. Made from SAE-1045 alloy steel with black oxide finish. Note: Using these clamp extension arms will reduce holding force by 25% - 30% of the stated clamping force.

Part #	Description
QLSND-EX20	Extension Arm For SND Series Snap Clamps

CLAMPING SPINDLES

ONE-TOUCH
Clamps

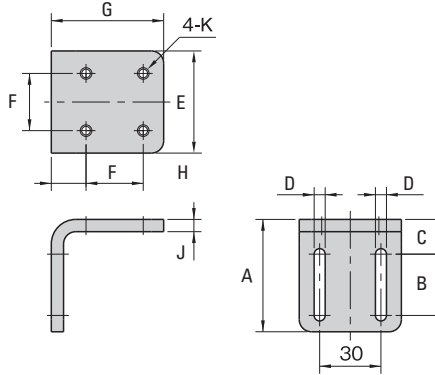


These clamping spindles are designed to be used with the snap clamps shown on pages 20-22. The tip is made from black urethane - 90 durometer. The bolt and hex nut are made from steel.

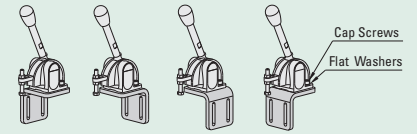
Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Use With Snap Clamp Style
UB4X15	10	7	15	14	2.4	3	M4X0.7	SNDM Series
UB5X15	12.5	9	15	13.5	3.2	4	M5X0.8	SNDM Series
UB5X30	12.5	9	30	24	3.2	4	M5X0.8	SND Series
UB6X20	15	10	20	18	3.6	5	M6X1	SNS Series

SNAP CLAMP MOUNTING BRACKETS

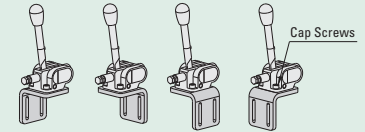
ONE-TOUCH
Clamps



How To Use



Examples of Mounting Standard Hold-Down Snap Clamps



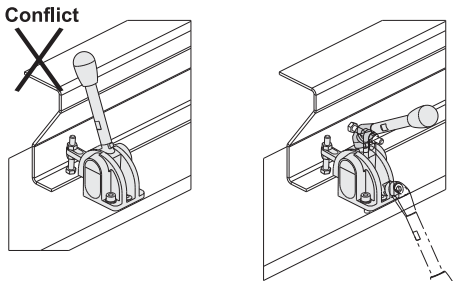
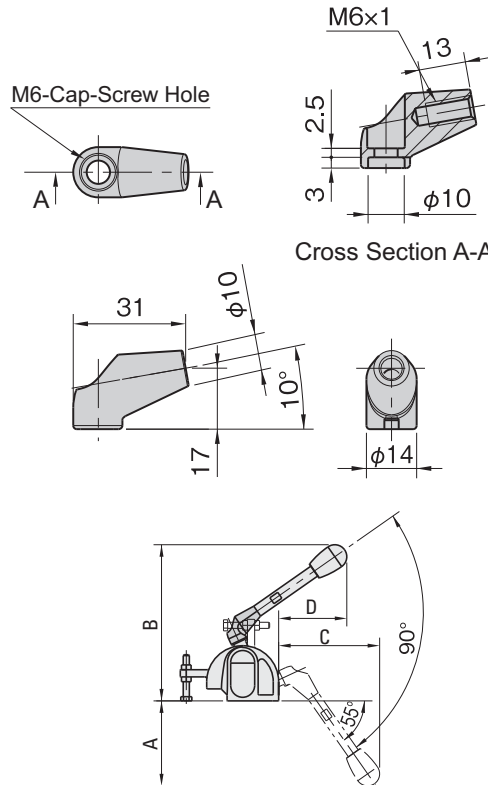
Examples of Mounting Push-Pull Snap Clamps

These mounting brackets are designed to be used with either the standard hold down style or push style snap clamps shown on pages 21 and 22. They allow greater mounting flexibility in a wide range of applications. These brackets also work well when mounting the clamps to aluminum profiles. Made from alloy steel with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	Use With Clamps
QLSN28-B	55	30	17	5.4	50	28	55	17	6	M5X0.8	QLSND28 & QLSNS28
QLSN30-B	70	35	25	6.4	55	30	70	27.5	6	M6X1	QLSND30 & QLSNS30

SNAP CLAMP HANDLE ADAPTER

ONE-TOUCH
Clamps

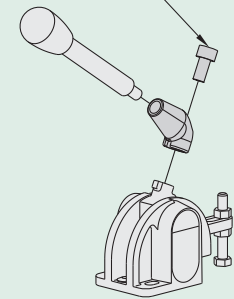


Perfect in applications where the handle can not be turned to the clamping position.

These angular adapters are designed for use with the standard hold down snap clamps shown on page 21. The adapters allow the user to change the angle of the handle in situations where the standard handle mounting cannot be used because of interference from the work piece or other obstacles. Easily installs by removing the standard handle, installing the adapter and then installing the handle into the adapter. Hex socket cap screw is included. The adapter is made from SAE-1045 alloy steel with black oxide finish.

How To Use

Hex. Socket Head Cap Screw
M6x1-12L



Remove the handle and then install the adapter between the body and the handle.

Dimensions of Snap Clamps with Adapter Mounted

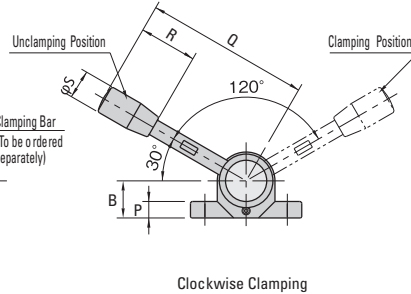
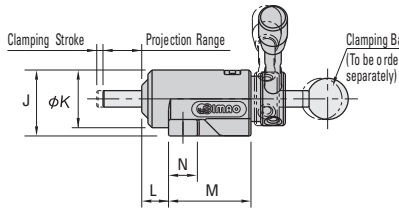
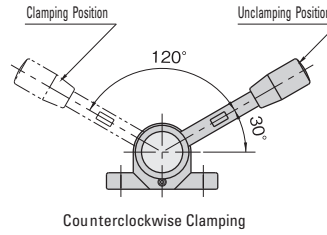
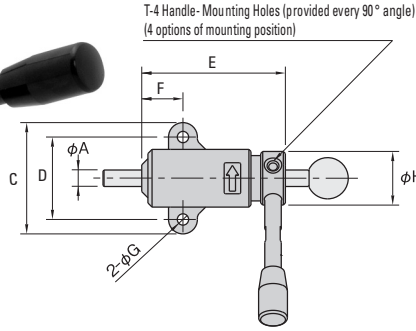
Series	A	B	C	D
QLSND28	71	130	84	57
QLSND30	79	145	92	61

Part #	Description
QLSND-AN10	Angular Adapter For SND Series Snap Clamps



THRUST CLAMPS - RC SERIES - SIDE MOUNT

ONE-TOUCH
Clamps



How To Use

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.

These thrust clamps feature a clamping body and a clamping bar used together for a wide range of workholding solutions. To clamp, simply push the bar through the center of the clamping body until contact is made with the work piece. Final clamping is achieved by turning the handle which extends and clamps the bar for secure workholding. Releasing the handle allows the clamping bar to be retracted for work piece removal. The long clamping bar projection range allows for clamping recessed or hard to access parts. The clamping bar has a tapered end so it can fit with a custom tip. The clamping bar can be cut shorter to the desired lengths. (If the user is making a custom clamping bar, it is recommended the outside diameter is finished to an h9 or better tolerance to insure proper fit.) Mounts from the top with two mounting holes. Part numbers ending with R have a clockwise clamping direction and part numbers ending in L have a counter clockwise clamping direction. The clamping body and lever arm are made from SAE-1045 alloy steel. The internal cam is made from hardened SCM415 alloy steel. Black oxide finish. The handle is black plastic. When the reaction force exceeds the stated clamping force, the clamp will release. The clamp body and clamp bar are sold separately. For the QLRC-08 clamps, use the 8mm clamping bar, for the QLRC-12 clamps, use the 12mm clamping bar.

Part #	Clamping Stroke mm	Operating Load Lbs.*	Clamping Force Lbs.**	CLAMPING BAR PROJECTION RANGE			
				100mm Bar mm	125mm Bar mm	150mm Bar mm	200mm Bar mm
QLRC-08R	1.5	18	112	0-30	0-55	0-80	-
QLRC-08L	1.5	18	112	0-30	0-55	0-80	-
QLRC-12R	2.3	33	314	-	0-29	0-54	0-104
QLRC-12L	2.3	33	314	-	0-29	0-54	0-104

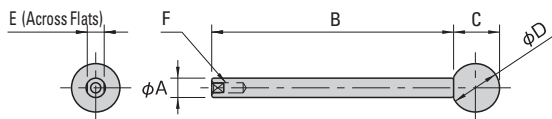
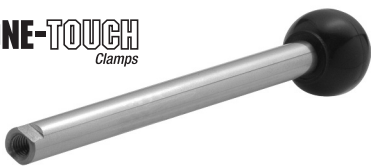
*Allowable load to operate handle

** When the reaction force exceeds the stated clamping force, the clamp will release

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	Q mm	R mm	S mm	T mm
QLRC-08R	8	18	54	40	70	20	5.5	26	32	28	13	40	14	8	80	28	14	M5X0.8
QLRC-08L	8	18	54	40	70	20	5.5	26	32	28	13	40	14	8	80	28	14	M5X0.8
QLRC-12R	12	25	80	60	96	30	9	36	45	40	20	55	20	12	132	40	21	M6X1
QLRC-12L	12	25	80	60	96	30	9	36	45	40	20	55	20	12	132	40	21	M6X1

THRUST CLAMP CLAMPING BAR

ONE-TOUCH
Clamps



These clamping bars are used with the thrust clamps shown above and on page 26. The clamping bar has a tapered end so it can be fit with a custom tip. The clamping bar can be cut shorter to meet the users need. If the user is making a custom clamping bar, it is recommended the outside diameter is finished to an h9 or better tolerance to insure proper fit. The bar is made from SAE-1045 alloy steel with chrome plating. The handle is black plastic.

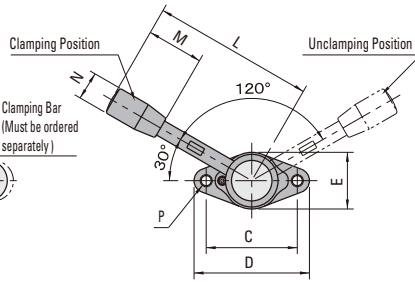
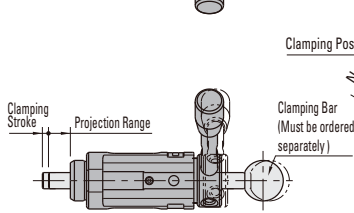
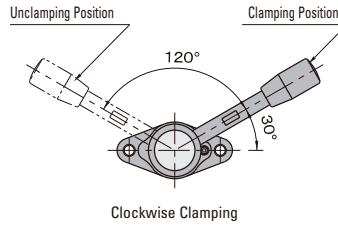
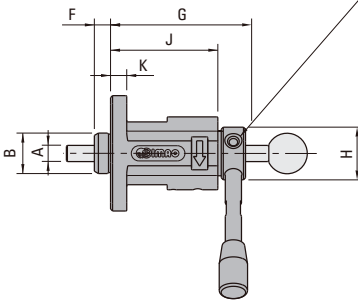
Part #	A mm	B mm	C mm	D mm	E mm	F mm
QLRCS-08100	8	100	19	20	7	M4X0.7 - 8 Deep
QLRCS-08125	8	125	19	20	7	M4X0.7 - 8 Deep
QLRCS-08150	8	150	19	20	7	M4X0.7 - 8 Deep
QLRCS-12125	12	125	24	25	10	M6X1 - 12 Deep
QLRCS-12150	12	150	24	25	10	M6X1 - 12 Deep
QLRCS-12200	12	200	24	25	10	M6X1 - 12 Deep

THRUST CLAMPS - RCF SERIES - TOP MOUNT

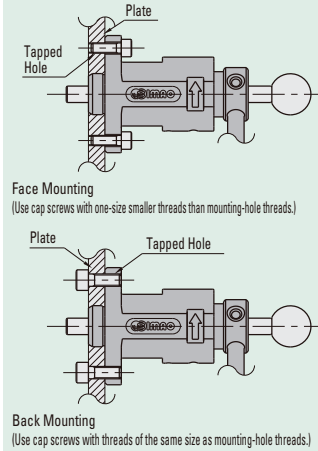
ONE-TOUCH
Clamps



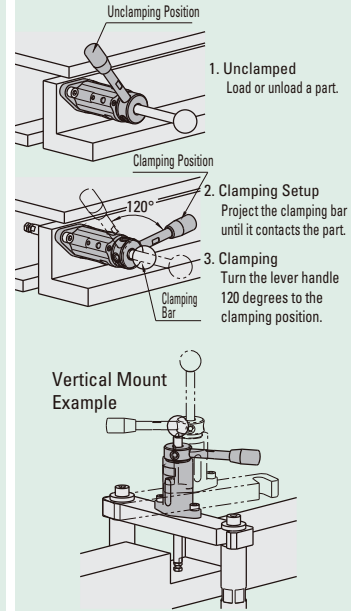
Ø.4 Lever-Arm Mounting Holes - Angle between 2 holes: 90°
(4 options of mounting position)



How To Mount



How To Use



Part #	Clamping Stroke mm	Operating Load Lbs.*	Clamping Force Lbs.**	CLAMPING BAR PROJECTION RANGE			
				100mm Bar mm	125mm Bar mm	150mm Bar mm	200mm Bar mm
QLRCF-08x-L	1.5	9	45	0-22	0-47	0-72	-
QLRCF-12x-L	2.3	22	157	-	0-20	0-45	0-95
QLRCF-08x	1.5	18	112	0-22	0-47	0-72	-
QLRCF-12x	2.3	34	315	-	0-20	0-45	0-95

*Allowable load to operate handle

** When the reaction force exceeds the stated clamping force, the clamp will release.

These thrust clamps feature a clamping body and a clamping bar used together for a wide range of workholding solutions. To clamp, simply push the bar through the center of the clamping body until contact is made with the work piece. Final clamping is achieved by turning the handle which extends and clamps the bar for secure workholding. Releasing the handle allows the clamping bar to be retracted for work piece removal. The long clamping bar projection range allows for clamping recessed or hard to access parts. The clamping bar has a tapped end so a custom tip can be used. The clamping bar can be cut shorter to the desired lengths. (If the user is making a custom clamping bar, it is recommended the outside diameter is finished to an h9 or better tolerance to insure proper fit.) The clamping body and lever arm are made from SAE-1045 alloy steel. The internal cam is made from hardened SCM415 alloy steel. Black oxide finish. The handle is black plastic. When the reaction force exceeds the stated clamping force, the clamp will release. The clamp body and clamp bar are sold separately. For the QLRCF-08 clamps, use the 8mm clamping bar, for the QLRCF-12 clamps, use the 12mm clamping bar. See page 25 for clamping bars.

Light Duty

Part #	-0.04/ -0.08		C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	Q mm	Clamping Direction
	A mm	B mm														
QLRCF-08R-L	8	20	45	57	28	8	68.5	26	53	8	80	28	14	M6X1	M5X0.8	Right
QLRCF-08L-L	8	20	45	57	28	8	68.5	26	53	8	80	28	14	M6X1	M5X0.8	Left
QLRCF-12R-L	12	30	65	85	40	12	90.7	36	72	12	132	50	21	M10X1.5	M6X1	Right
QLRCF-12L-L	12	30	65	85	40	12	90.7	36	72	12	132	50	21	M10X1.5	M6X1	Left

Heavy Duty

Part #	-0.04/ -0.08		C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	Q mm	Clamping Direction
	A mm	B mm														
QLRCF-08R	8	20	45	57	28	8	68.5	26	53	8	80	28	14	M6X1	M5X0.8	Right
QLRCF-08L	8	20	45	57	28	8	68.5	26	53	8	80	28	14	M6X1	M5X0.8	Left
QLRCF-12R	12	30	65	85	40	12	90.7	36	72	12	132	50	21	M10X1.5	M6X1	Right
QLRCF-12L	12	30	65	85	40	12	90.7	36	72	12	132	50	21	M10X1.5	M6X1	Left

PULL CLAMPS - PD SERIES

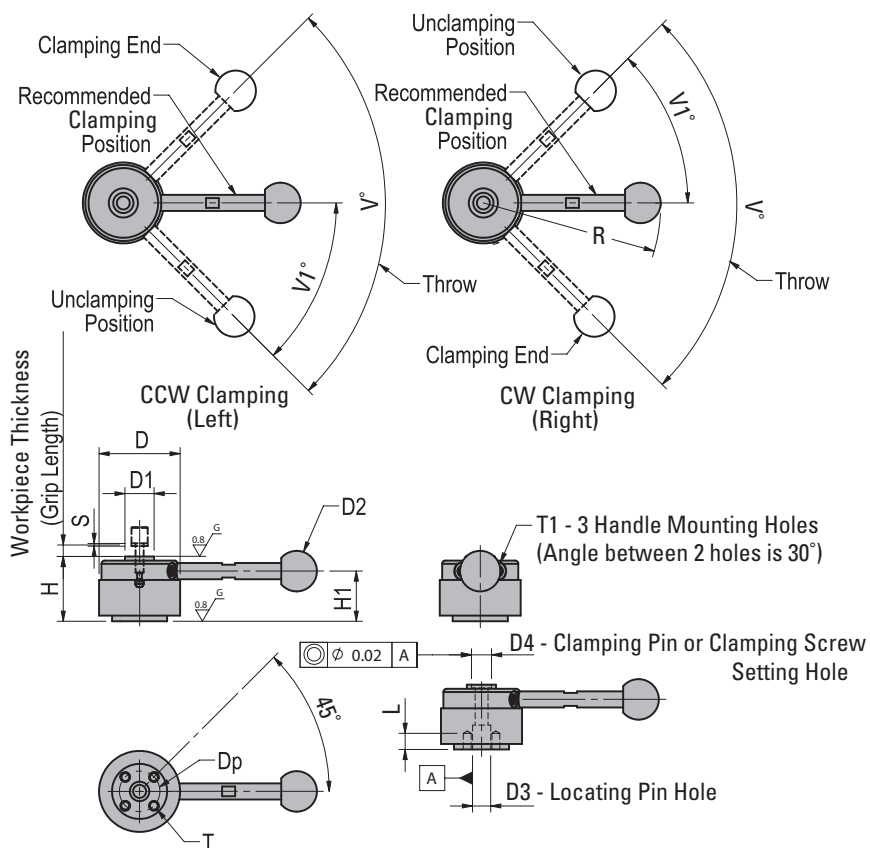
ONE-TOUCH
Clamps



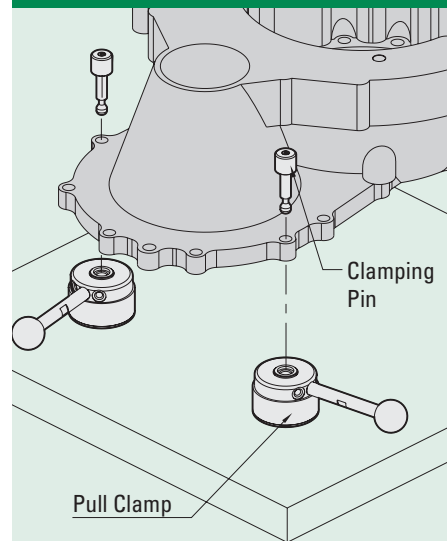
with handle



without handle

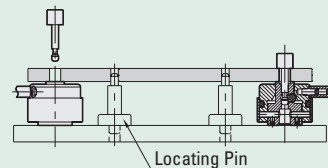


How To Use

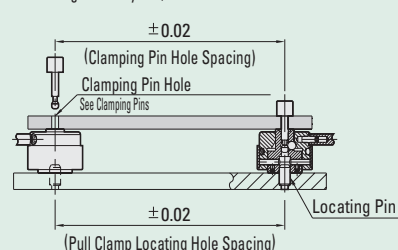


How To Locate Workpiece

1. Basic Method



2. Method for clamping and locating a workpiece. Hole spacing accuracy shown below generates a locating accuracy of +/- 0.08



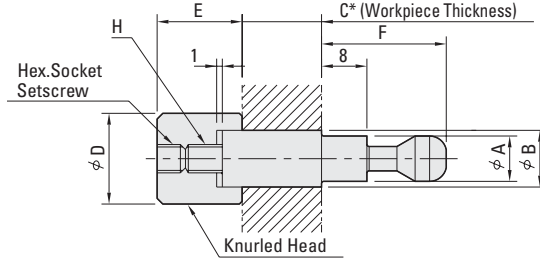
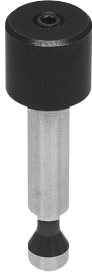
These unique clamps provide very quick and secure fastening for repetitive machining operations. They consist of a clamp base along with a customized pin based on the thickness of the part you are clamping. By turning the handle 1/4 turn, the base clamp pulls the pin downward and secures it in position. Four screws and two locating holes allow for secure fastening and precision locating. See information on next page to order clamping pins or clamping screws. Mounting bases are also available to provide top side mounting and height adjustment. Recommended work piece tolerance is +/- .3mm for the 150 and +/- .5mm for the 200. Maximum allowable load that can be applied to the underside of the workpiece is 449 pounds for the 150 series and 1,236 pounds for the 200 series. The body and cam are made from SAE-4140 alloy steel, heat treated with black oxide finish. The handle shaft is made from SAE-1045 alloy steel with black oxide finish. The ball knob is plastic. See pages 48 and 49 for other handle options.

With Handle Part #	w/o Handle Part #	Clamping Direction	T mm	T1 mm	D mm	D1 mm	D2 mm	(G6) D3 mm	(F7) D4 mm	Dp mm	L mm	H mm	H1 mm	R mm	V°	V1°	Stroke S mm	Clamping Force Lbs.
QLPD150R	QLPD150NR	CW	M4X0.7 (8MM Depth)	M5X0.8	40	13.5	20	8	5	18	10	32	24.5	76.5	90°	45°	1.5	200
QLPD200R	QLPD200NR	CW	M6X1.0 (9MM Depth)	M6X1.0	50	18	25	12	8	25	13	40	30.7	111.5	110°	55°	2	550
QLPD150L	QLPD150NL	CCW	M4X0.7 (8MM Depth)	M5X0.8	40	13.5	20	8	5	18	10	32	24.5	76.5	90°	45°	1.5	200
QLPD200L	QLPD200NL	CCW	M6X1.0 (9MM Depth)	M6X1.0	50	18	25	12	8	25	13	40	30.7	111.5	110°	55°	2	550

See page 561 for F7 and G6 tolerance specifications.

PULL CLAMP PINS FOR PD SERIES

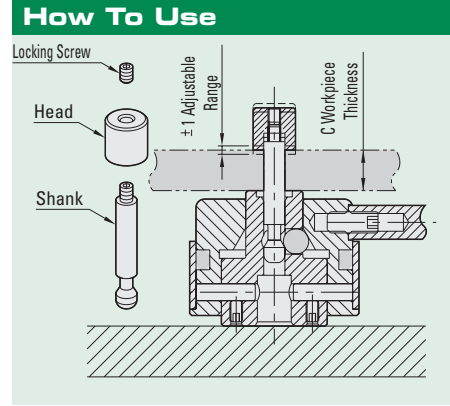
ONE-TOUCH
Clamps



For use with the standard pull clamps shown on the previous page. The pins are designed to be modified by the user to fit the actual work piece thickness. The shank is made from SAE-4135 alloy steel, precision ground and the shank end is heat treated. The head is made from SAE-1045 alloy steel, heat treated with black oxide finish.

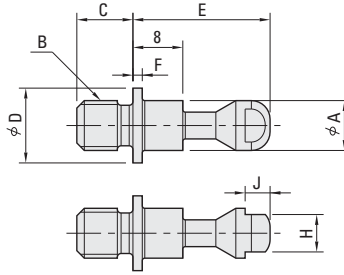
Part #	f7 A mm	f7 B mm	C mm	D mm	E mm	F mm	H mm	Use With Clamp Series
QLPD150-5X5	5	5	50	10	10	17	M3X0.5	QLPD150
QLPD150-5X6	5	6	50	10	10	17	M3X0.5	QLPD150
QLPD200-8X8	8	8	80	16	15	22	M5X0.8	QLPD200
QLPD200-8X10	8	10	80	16	15	22	M5X0.8	QLPD200

* Minimum 3mm for the 150, 4mm for the 200. See page 561 for f7 tolerance specifications.

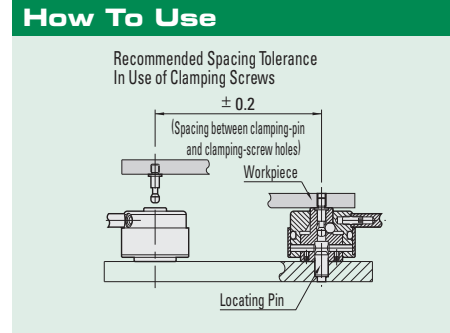


PULL CLAMP SCREWS FOR PD SERIES

ONE-TOUCH
Clamps



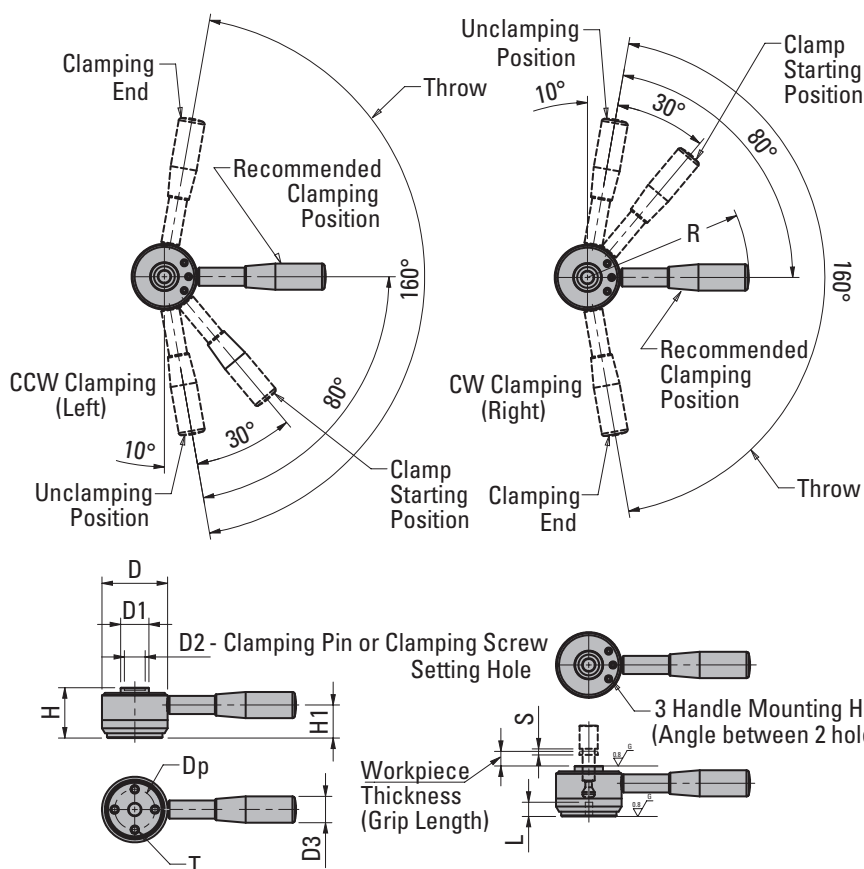
For use with the standard pull clamps shown on the previous page. These clamping screws attached directly to the bottom of the work piece or fixture completely eliminating any protrusion on the surface. Precision ground. Made from SAE-4135 alloy steel, heat treated with black oxide finish.



Part #	A mm	B mm	C mm	D mm	E mm	F mm	H mm	J mm	Use With Clamp Series
QLPD150-M5	5	M5X0.8	6	8	17	1.2	4	2.5	QLPD150
QLPD150-M6	5	M6X1	7	8	17	1.2	4	2.5	QLPD150
QLPD200-M8	8	M8X1.25	9	12	22	1.5	6	4.0	QLPD200
QLPD200-M10	8	M10X1.5	11	12	22	1.5	6	4.0	QLPD200

PULL CLAMPS - PDH SERIES - HEAVY DUTY

ONE-TOUCH
Clamps



How To Use

How To Locate Workpiece

1. Basic Method
2. Method for clamping and locating a workpiece. Hole spacing accuracy shown below generates a locating accuracy of +/- 0.08

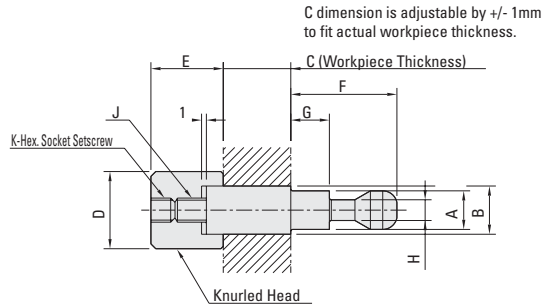
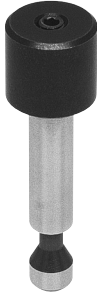
These clamps are similar to the pull clamps shown on page 27, however, they are designed for heavier work pieces and machining loads. They consist of a clamp used with a user-modified pin or standard clamping screw. By rotating the handle, the clamp pulls the pin or screw downward and secures it in position. Four screws and a locating pin hole allows for secure fastening and precise locating of the clamp. See information on next page to order clamping pins or clamping screws. Mounting bases are also available to provide top side mounting. Three holes for mounting handle. Recommended work piece thickness tolerance is +/- .5mm for the 400 series and +/- .8mm for the 500 series. The maximum handle load is 134 lbs. Maximum allowable load that can be applied to the underside of the workpiece is 1,798 pounds for the 400 series and 3,147 pounds for the 500 series. The body and clamp ring are made from SAE-4140 alloy steel. The handle shaft is made from SAE-1045 alloy steel. Parts are heat treated with black oxide finish. Handle is black plastic.

Part #	Clamping Direction	T mm	D mm	D1 mm	(F7) D2 mm	D3 mm	Dp mm	L mm	±0.01 H mm	H1 mm	R mm	Stroke S mm	Clamping Force Lbs.
QLPDH400R	CW	M8X1.25 (14mm Depth)	65	28	12	26	40	10	50	32.8	160	2	1348
QLPDH400L	CCW	M8X1.25 (14mm Depth)	65	28	12	26	40	10	50	32.8	160	2	1348
QLPDH500R	CW	M10x1.5 (18mm Depth)	80	34	16	28	50	12	63	41.1	180	2.5	1798

See page 561 for F7 tolerance specifications.

PULL CLAMP PINS FOR PDH SERIES

ONE-TOUGH
Clamps

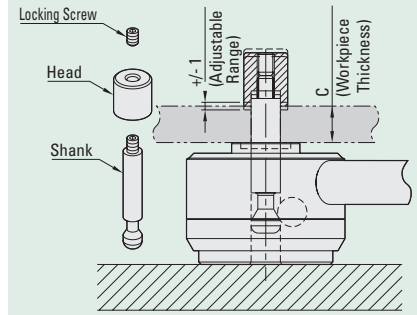


For use with the heavy duty pull clamps shown on previous page. The pins are designed to be modified by the user to fit the actual work piece thickness. The shank is made from SAE-4135 alloy steel, precision ground and the shank end is heat treated. The head is made from SAE-1045, heat treated with black oxide finish.

Part #	(f7) A mm	(f7) B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	Use with Clamp
QLPDH400-12-100	12	12	100	18	23	38	21.5	6.5	M8X1.25	M8X1.25-8L	QLPDH400R
QLPDH400-16-100	12	16	100	24	23	38	21.5	6.5	M8X1.25	M8X1.25-8L	QLPDH400R
QLPDH500-16-120	16	16	120	24	29	48	28	9.5	M10X1.5	M10X1.5-10L	QLPDH500R
QLPDH500-20-120	16	20	120	30	29	48	28	9.5	M10X1.5	M10X1.5-10L	QLPDH500R

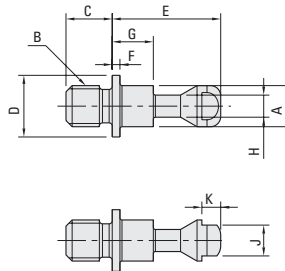
See page 561 for f7 tolerance specifications.

How To Use



PULL CLAMP SCREWS FOR PDH SERIES

ONE-TOUGH
Clamps

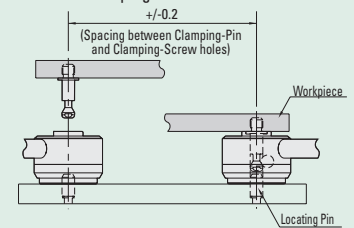


For use with the heavy duty pull clamps shown on previous page. These clamping screws attach directly to the bottom of the work piece or fixture completely eliminating any protrusion on the surface. The shank is made from SAE-4135 alloy steel, heat treated with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	Use with Clamp
QLPDH400-M12	12	M12X1.75	13	20	38	2	21.5	6.5	10	4	QLPDH400R
QLPDH400-M16	12	M16X2	17	20	38	2	21.5	6.5	10	4	QLPDH400R
QLPDH500-M16	16	M16X2	17	25	48	2.5	28	9.5	13	5	QLPDH500R
QLPDH500-M20	16	M20X2.5	21	25	48	2.5	28	9.5	13	5	QLPDH500R

How To Use

Recommended Spacing Tolerance
in Use of Clamping Screws





PUSH CLAMPS - PU SERIES

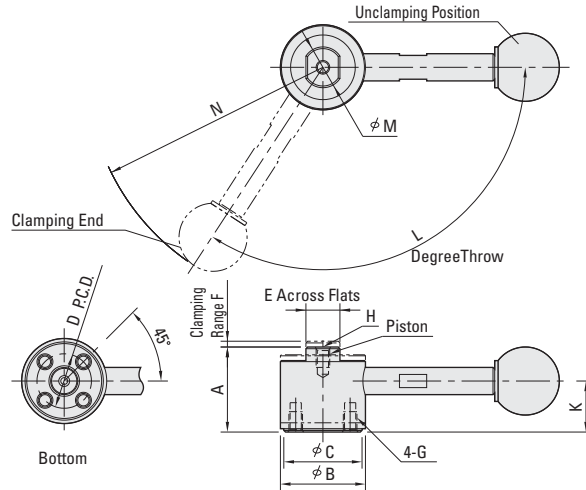
ONE-TOUGH
Clamps



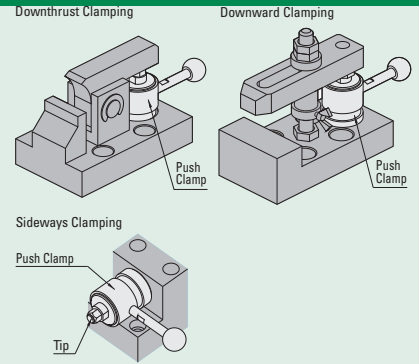
with handle



without handle



How To Use



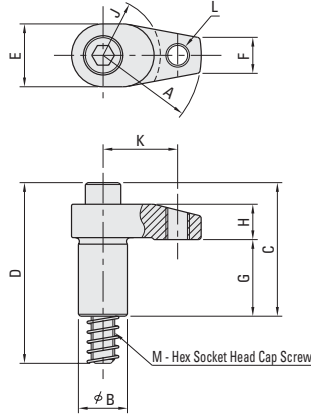
When installing a tip on the piston, lock the shaft using a wrench to prevent the clamp from receiving any torque.

By rotating the handle, the center piston rises to exert pressure against a clamp or work piece. Releasing the handle lowers the piston allowing the user to release the pressure and remove the work piece. The tapped hole in the piston allows the user to customize the tip to fit the application or allow for additional height. Can be used in the horizontal or vertical position. Four screws and two locating holes allow for secure fastening and precision locating. Mounting bases are also available to provide top side mounting and height adjustment. The 150 series provides up to 670 lbs of clamping force and the 200 series provides up to 890 lbs of clamping force. The cam is made from SAE-4140 alloy steel. The piston made from SAE-1045 alloy steel. Parts are heat treated with black oxide finish. The handle knob is made from black plastic.

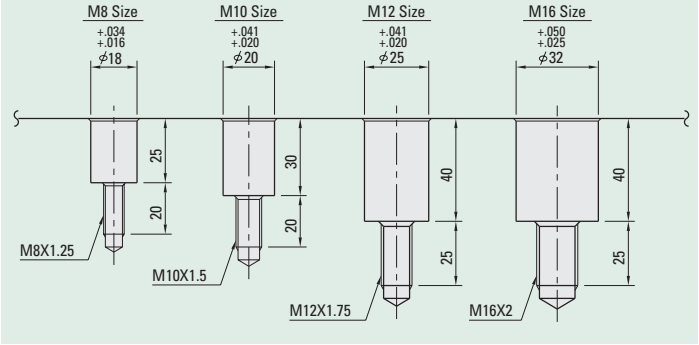
With Handle Part #	w/o Handle Part #	A mm	B mm	C mm	P.C.D.* D mm	E mm	F mm	G mm	H mm	K mm	L Degree	M mm	N mm	Clamping Force Lbs.
QLPU150R	QLPU150NR	25	25	23	16	10	1.7	M4X0.7	M4X0.7	15.0	123	12	69.5	650
QLPU200R	QLPU200NR	32	32	30	20	13	2.5	M6X1	M6X1	19.5	135	15	103.0	900

*Pitch Circle Diameter

HOOK CLAMPS - RECESSED MOUNT



How To Install

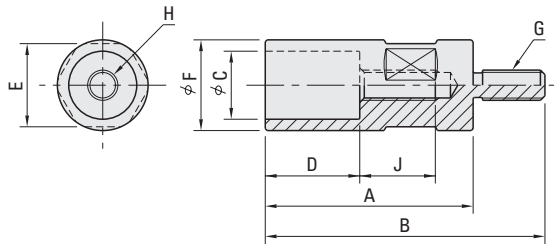


The clamps hold work pieces securely and can be swiveled out of the way for part insertion and removal. The spring lifts the clamp arm up as the clamp is released. They can be used with hook clamp holders shown below or installed in blocks using the above references. Made from SAE-4135 alloy steel, heat treated. Precision ground with black oxide finish.

Part #	A mm	(h7) B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft Lbs.
BJ130-08020	20	18	37	58	22	10	23	12	15	-	-	M8X1.25X50	3,372	28
BJ130-08025	25	18	37	58	22	10	23	12	15	-	-	M8X1.25X50	2,697	24
BJ130-08030	30	18	37	58	22	10	23	12	20	-	-	M8X1.25X50	2,248	22
BJ130-10030	30	20	54	75	24	12	30	15	20	-	-	M10X1.5X65	2,922	28
BJ130-10040	40	20	54	75	24	12	30	15	25	-	-	M10X1.5X65	2,248	23
BJ130-12040	40	25	66	92	32	18	39	16	25	-	-	M12X1.75X80	4,046	44
BJ130-12050	50	25	68	92	32	18	39	18	25	-	-	M12X1.75X80	3,147	36
BJ130-12060	60	25	68	92	32	18	39	18	25	-	-	M12X1.75X80	2,697	33
BJ130-12140	40	25	66	92	32	18	39	16	25	31	M12X1.75	M12X1.75X80	4,046	44
BJ130-12150	50	25	68	92	32	18	39	18	25	38	M12X1.75	M12X1.75X80	3,147	36
BJ130-12160	60	25	68	92	32	18	39	18	25	46	M12X1.75	M12X1.75X80	2,697	33
BJ130-16040	40	32	75	101	36	22	39	21	25	-	-	M16X2X85	8,542	125
BJ130-16050	50	32	75	101	36	22	39	21	25	-	-	M16X2X85	6,968	110
BJ130-16060	60	32	75	101	36	22	39	21	25	-	-	M16X2X85	5,849	95
BJ130-16150	50	32	75	101	36	22	39	21	25	38	M12X1.75	M16X2X85	6,968	110
BJ130-16160	60	32	75	101	36	22	39	21	25	46	M12X1.75	M16X2X85	5,849	95

See page 561 for h7 tolerance specifications.

HOOK CLAMP HOLDERS

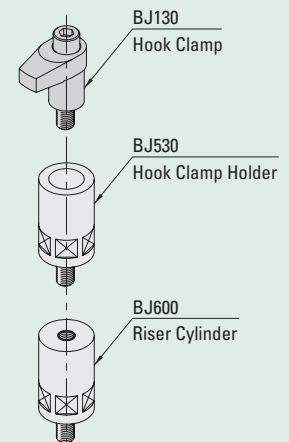


For use with hook clamps shown above. Can also be used with riser cylinders on next page for additional height. Made from SAE-1045 alloy steel with black oxide finish.

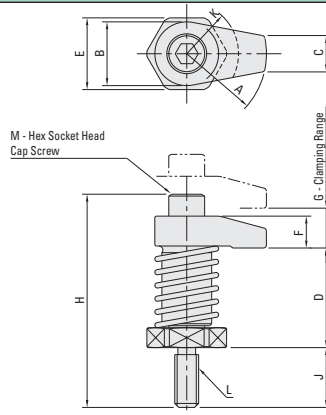
Part #	A mm	B mm	(F7) C mm	D mm	E mm	F mm	G mm	H mm	J mm
BJ530-08055	55	74	18	25	22	24	M8X1.25	M8X1.25	20
BJ530-10063	63	93	20	30	30	32	M12X1.75	M10X1.5	21
BJ530-10080	80	110	20	30	30	32	M12X1.75	M10X1.5	23
BJ530-12080	80	110	25	40	36	40	M12X1.75	M12X1.75	25
BJ530-12100	100	130	25	40	36	40	M12X1.75	M12X1.75	25
BJ530-16080	80	110	32	40	46	50	M16X2	M16X2	25
BJ530-16100	100	130	32	40	46	50	M16X2	M16X2	25

See page 561 for F7 tolerance specifications.

How To Use



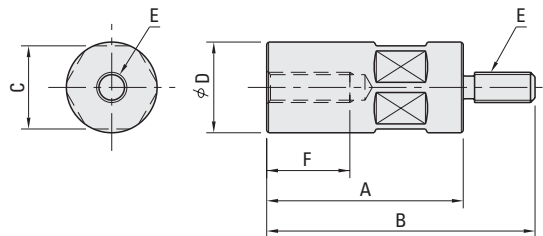
HOOK CLAMPS - TOP MOUNT



The clamps hold work pieces securely and can be swiveled out of the way for part insertion and removal. The spring lifts the clamp arm up as the clamp is released. Made from SAE-4135 alloy steel, heat treated. Precision ground with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft Lbs.
BJ131-08020	20	22	10	35	22	12	10	68	19	15	M8X1.25	M8X1.25 X 30	1,775	14
BJ131-08025	25	22	10	35	22	12	10	68	19	15	M8X1.25	M8X1.25 X 30	1,641	14
BJ131-08030	30	22	10	35	22	12	10	68	19	20	M8X1.25	M8X1.25 X 30	1,506	14
BJ131-08120	20	22	10	45	22	12	10	78	19	15	M8X1.25	M8X1.25 X 30	1,775	14
BJ131-08125	25	22	10	45	22	12	10	78	19	15	M8X1.25	M8X1.25 X 30	1,641	14
BJ131-08130	30	22	10	45	22	12	10	78	19	20	M8X1.25	M8X1.25 X 30	1,506	14
BJ131-12040	40	32	18	50	36	16	15	107	30	25	M12X1.75	M12X1.75 X 45	3,034	33
BJ131-12050	50	32	18	50	36	18	15	109	30	25	M12X1.75	M12X1.75 X 45	2,832	33
BJ131-12060	60	32	18	50	36	18	15	109	30	25	M12X1.75	M12X1.75 X 45	2,630	33
BJ131-12140	40	32	18	65	36	16	15	122	30	25	M12X1.75	M12X1.75 X 45	3,034	33
BJ131-12150	50	32	18	65	36	18	15	124	30	25	M12X1.75	M12X1.75 X 45	2,832	33
BJ131-12160	60	32	18	65	36	18	15	124	30	25	M12X1.75	M12X1.75 X 45	2,630	33
BJ131-16040	40	36	22	50	36	21	15	116	30	25	M16X2	M16X2 X 55	3,012	44
BJ131-16050	50	36	22	50	36	21	15	116	30	25	M16X2	M16X2 X 55	2,787	44
BJ131-16060	60	36	22	50	36	21	15	116	30	25	M16X2	M16X2 X 55	2,697	44
BJ131-16140	40	36	22	65	36	21	15	131	30	25	M16X2	M16X2 X 55	3,012	44
BJ131-16150	50	36	22	65	36	21	15	131	30	25	M16X2	M16X2 X 55	2,787	44
BJ131-16160	60	36	22	65	36	21	15	131	30	25	M16X2	M16X2 X 55	2,697	44

RISER CYLINDERS

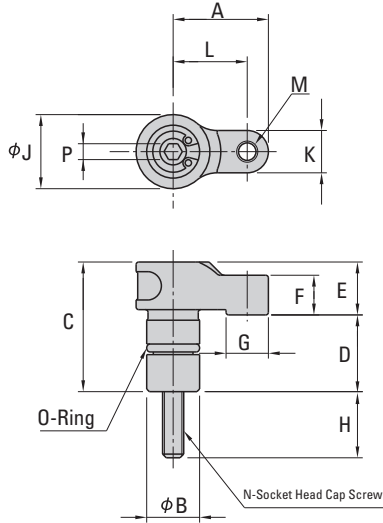


Can be used with hook clamp holders shown on previous page for additional height. Made from SAE-1045 alloy steel with black oxide finish.

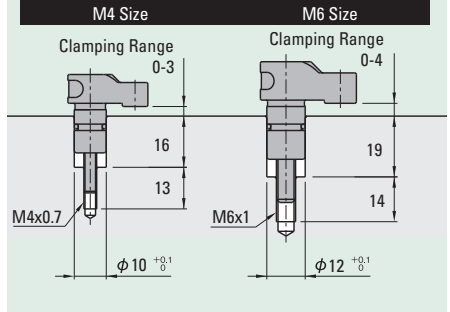
Part #	A mm	B mm	C mm	D mm	E mm	F mm
BJ600-08032	32	51	22	24	M8X1.25	20
BJ600-08040	40	59	22	24	M8X1.25	20
BJ600-08050	50	69	22	24	M8X1.25	20
BJ600-08065	65	84	22	24	M8X1.25	20
BJ600-12050	50	80	36	40	M12X1.75	35
BJ600-12065	65	95	36	40	M12X1.75	35
BJ600-12080	80	110	36	40	M12X1.75	35

Part #	A mm	B mm	C mm	D mm	E mm	F mm
BJ600-12100	100	130	36	40	M12X1.75	35
BJ600-12125	125	155	36	40	M12X1.75	35
BJ600-16050	50	80	46	50	M16X2	35
BJ600-16065	65	95	46	50	M16X2	35
BJ600-16080	80	110	46	50	M16X2	35
BJ600-16100	100	130	46	50	M16X2	35
BJ600-16125	125	155	46	50	M16X2	35

HOOK CLAMPS - COMPACT STYLE



How To Use

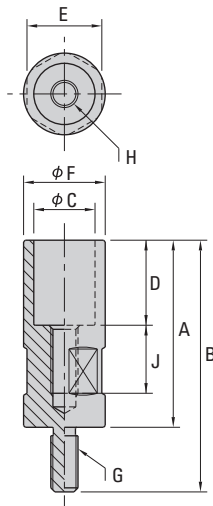


Part #	Clamping Force lbs.	Max Torque Ft/lbs.
BJ132-04018	450	2
BJ132-06022	787	5

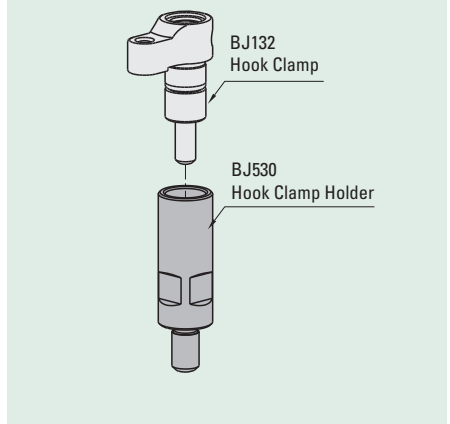
These hook clamps combine high clamping forces and compact design. They are ideal for applications where space is limited. Hook clamps are commonly used to hold down fixture and work pieces on a wide variety of machines. The clamp is actuated in both directions with the hex screw on top of the clamp to prevent galling of the work piece. The clamp arm can be swiveled out of the way for easy part insertion and removal. The arm is tapped for mounting a contact bolt. They can be mounted with the hook clamp holders shown below or installed in a custom block. Made from SAE-4140 alloy steel, heat treated with black oxide finish.

Part #	-0.02/-0.10													
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm
BJ132-04018	18	10	24.5	14.5	10	7.5	8	12.5	14	8	14	M4X0.7	M4X0.7 - 30L	3
BJ132-06022	22	12	30.5	17.5	13	9.5	10	13.5	16	10	17	M5X0.8	M6X1 - 35L	5

CYLINDRICAL HOOK CLAMP HOLDERS FOR COMPACT STYLE



How To Use

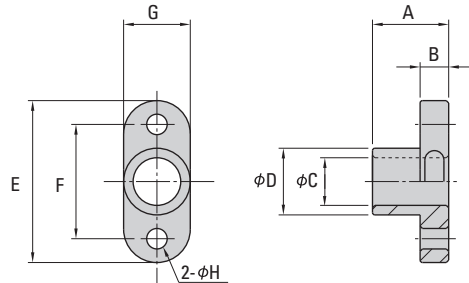


These cylindrical holders are designed for use with the compact hook clamps shown above. They provide additional clamping height as well as easy installation and operation of the hook clamps. Made from SAE-1045 alloy steel, heat treated with black oxide finish.

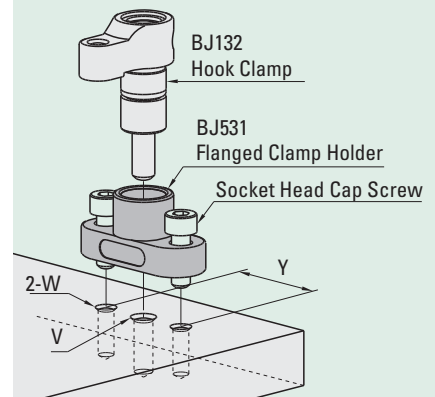
Part #	A mm	B mm	(F7) C mm	D mm	E mm	F mm	G mm	H mm	J mm
	BJ530-04035	35	46	10	16	12	14	M6X1	M4X0.7
BJ530-06040	40	54	12	19	13	16	M8X1.25	M6X1	14

See page 561 for F7 tolerance specifications.

FLANGED HOOK CLAMP HOLDERS FOR COMPACT STYLE



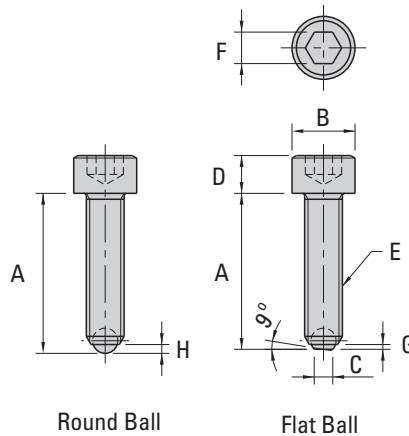
How To Use



These cylindrical holders are designed for use with the compact hook clamps shown on the previous page. They provide a low profile as well as easy installation and operation of the hook clamps. Made from SAE-1045 alloy steel, heat treated with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	V mm	W mm	Y mm
BJ531-04016	16	6	10	14	34	24	14	4.3	M4X0.7 - 13D	M4X0.7	24
BJ531-06019	19	8	12	16	40	28	16	5.3	M6X1 - 14D	M5X0.8	28

SOCKET HEAD BALL SCREWS



These socket head ball screws have either a round or flat ball end. The ball rotates in the screw socket as force is applied allowing contact to be maintained on moving or contoured surfaces as force is applied. The flat ball swivels nine degrees. The screw is made from SAE-4135 alloy steel with black oxide finish. The ball is made from SAE-52100 alloy steel and hardened to Rc 56/60. The screws are used on the clamps and work supports shown on page 36, 37 and 146.

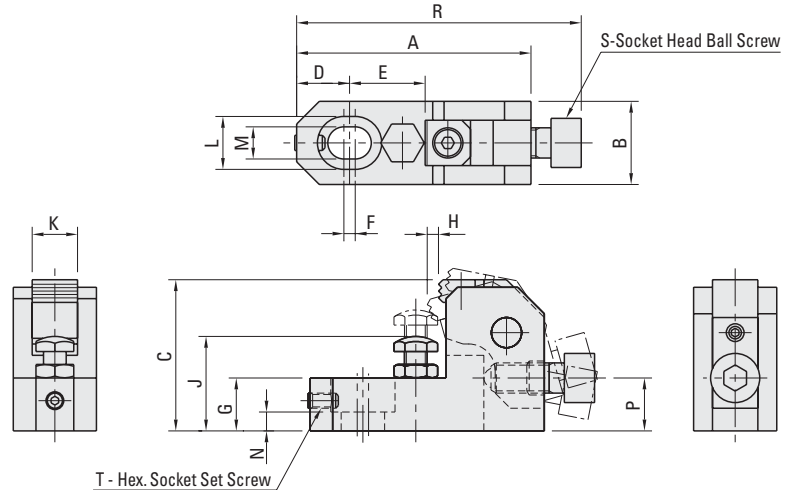
Round Ball Style

Part#	A mm	B mm	C mm	D mm	E mm	F mm	Ball Dia. mm	Fits Clamp #
BCR-8X20	21.3	13	8	M8X1.25	6	1.9	5.5	CP100-08040
BCR-8X35	36.3	13	8	M8X1.25	6	1.9	5.5	CP101-08040 & CP102-08040
BCR-10X25	26.7	16	10	M10X1.5	8	2.4	7	CP100-10050
BCR-10X40	41.7	16	10	M10X1.5	8	2.4	7	CP101-10050 & CP102-10050
BCR-12X30	32	18	12	M12X1.75	10	2.85	8.7	CP100-12060
BCR-12X50	52	18	12	M12X1.75	10	2.85	8.7	CP101-12060 & CP102-12060
BCR-16X40	43	24	16	M16X2	14	4	12	CP100-16080
BCR-16X60	63	24	16	M16X2	14	4	12	CP101-16080

Flat Ball Style

Part#	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Ball Dia. mm	Fits Clamp #
BCF-6X16	16	10	3.3	6	M6X1	5	0.5	4	BJ350-06001 & BJ351-06001
BCF-8X20	20	13	4.6	8	M8X1.25	6	0.6	5.5	BJ350-08001 & BJ351-08001
BCF-10X25	25	16	6	10	M10X1.5	8	0.7	7	BJ350-10001 & BJ351-10001
BCF-12X30	30	18	7.4	12	M12X1.75	10	0.85	8.7	BJ350-12001 & BJ351-12001

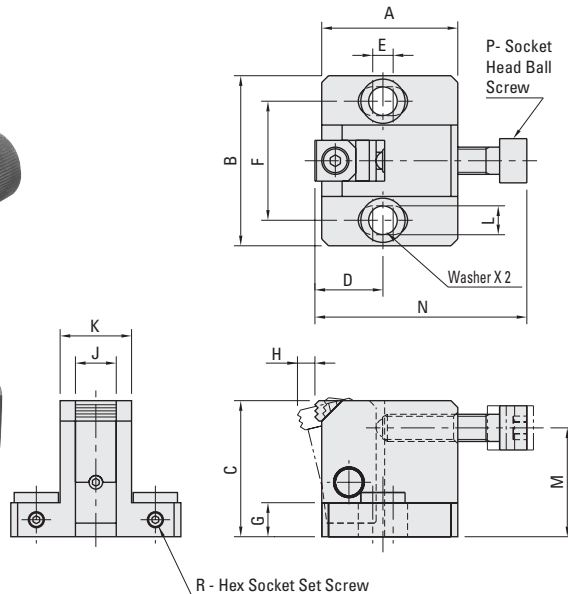
SIDE CLAMPS - CENTER MOUNT - CP100 SERIES



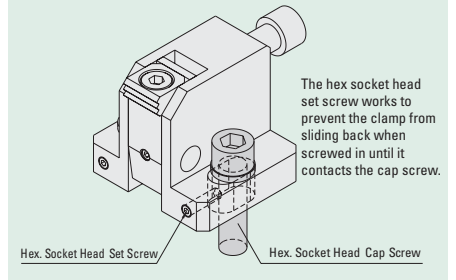
These side clamps utilize smaller clamping space which allows for greater machine clearance. Mounting screw and work support are under the work piece minimizing clamping space. Tightening the ball screw forces the clamp forward and downward against the work piece supports and stops. The hex socket set screw works to prevent the clamp from sliding back when clamping. The body is made from SAE-1045 alloy steel, heat treated. The arm is made from SAE-1045 alloy steel. The replaceable serrated jaw provides positive holding and is made from M-2 high speed steel, hardened to Rc 60/62. Parts have a black oxide finish.

Part#	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	R mm	S mm	T mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP100-08040	62	22	40	14	20	3	14	3.0	25-32	12	14	8.5	5	14.0	75.5	M8X1.25	M4X0.7	1,348	11
CP100-10050	78	25	50	18	25	4	18	3.7	32-40	16	17.5	11.0	7	17.5	95.0	M10X1.5	M5X0.8	2,248	22
CP100-12060	93	32	60	21	30	5	21	4.5	40-48	20	20	13.0	8	21.0	113.0	M12X1.75	M6X1	3,821	47
CP100-16080	124	38	80	28	40	6	27	6.0	50-65	25	26	17.0	10	28.0	151.0	M16X2	M8X1.25	5,620	95

SIDE CLAMPS - SINGLE JAW - CP101 SERIES



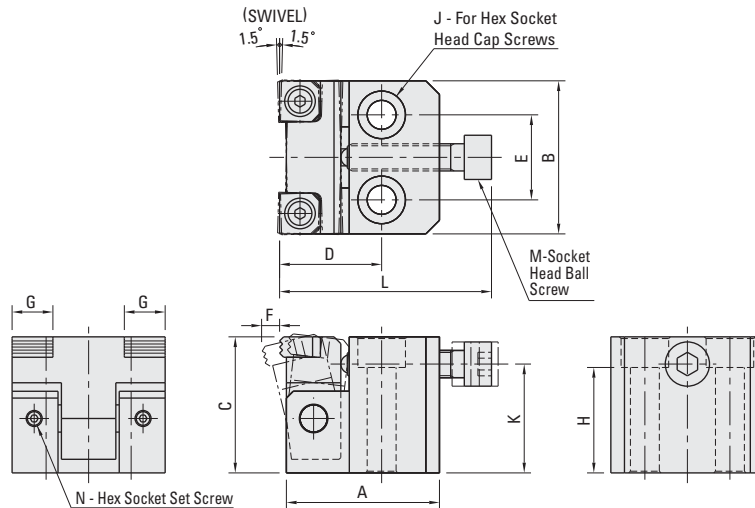
How To Use and Install



These side clamps utilize smaller clamping space which allows clamping larger work pieces. Tightening the ball screw forces the clamp forward and downward against the work piece supports and stops. The hex socket set screw works to prevent the clamp from sliding back when clamping. Two flat washers included. The body is made from SAE-1045 alloy steel. The arm is made from SAE-1045 alloy steel, heat treated. The replaceable serrated jaw provides positive holding and is made from M-2 high speed steel, hardened to Rc 60/62. Parts have a black oxide finish.

Part#	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	R mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP101-08040	40	50	40	20	6	35	10	5.3	12	21	8.5	32	62.5	M8X1.25	M4X0.7	2,742	18
CP101-10050	50	65	50	25	8	45	12	7.1	16	27	11.0	40	74.0	M10X1.5	M4X0.7	4,046	36
CP101-12060	60	70	60	30	10	50	15	8.0	20	31	13.0	48	91.0	M12X1.75	M5X0.8	5,620	66
CP101-16080	80	90	80	40	15	65	20	10.2	25	39	17.0	64	115.0	M16X2	M6X1	10,340	147

SIDE CLAMPS - WIDE JAW - CP102 SERIES

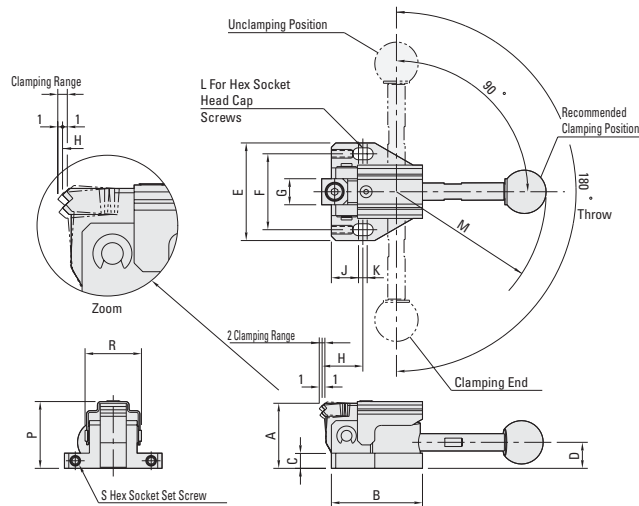


The jaws move forward and downward as the ball screw is tightened. The jaws swivel 1.5 degrees from center to allow for clamping on uneven surfaces. Tightening the ball screw forces the clamp forward and downward against the workpiece supports and stops. The body is made from SAE-1045 alloy steel. The arm is made from SAE-1045 alloy steel, heat treated. The replaceable jaws are serrated for positive holding and are made from M-2 high speed steel, hardened to Rc 60/62. Parts have black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP102-08040	45	45	40	30	25	5.3	12	31	M8	32	62.5	M8X1.25	M4X0.7	2,470	18
CP102-10050	55	55	50	40	30	7.1	16	39	M10	40	74.0	M10X1.5	M4X0.7	4,046	36
CP102-12060	65	65	60	45	35	8.0	20	47	M12	48	91.0	M12X1.75	M5X0.8	5,620	66

SIDE CLAMPS - W/ AND W/O HANDLE - CS SERIES

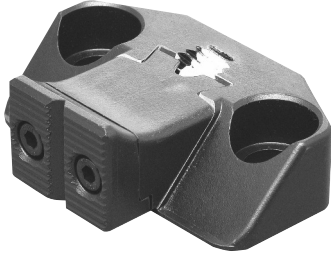
ONE-TOUCH
Clamps



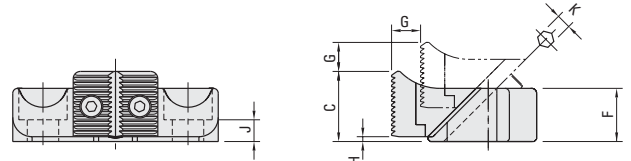
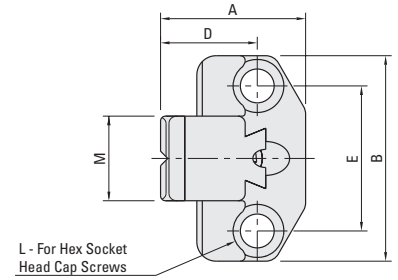
These side clamps have a moving jaw which moves forward and slightly downward for secure workholding. Moving the handle 45 degrees pushes the clamping jaw forward 2mm. When releasing the clamp, the jaws move back for easy insertion and removal of the work piece. The 150 series provides up to 670 lbs of clamping force and the 200 series provides up to 890 lbs of clamping force. User can attach custom jaws to fit special application. These clamps work very well for repetitive clamping operations. The base is made from SAE-1045 alloy steel, heat treated. The replaceable serrated jaw provides positive holding and is made from M-2 high speed steel, hardened to Rc 60/62. Parts have a black oxide finish. The ball knob is black plastic.

With Handle Part #	w/o Handle Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	P mm	R mm	S mm	Clamping Force Lbs.
QLSC150R	QLSC150NR	30	42	7	12	45	35	12	19	12.5	4	M5	69	31	36	M4X0.7	650
QLSC200R	QLSC200NR	40	62	10	16	65	50	16	28	18.5	5	M8	104	31	38	M4X0.7	900

COMPACT SIDE CLAMPS - CP105 SERIES



These side clamps have a low profile to keep the clamp out of the way from machining operations. Clamp moves downward and forward as it is engaged, forcing the work piece against the supports and stops. Clamping surface is serrated for greater gripping strength. Install by drilling and tapping a cap screw hole. Flat washer included. The body and jaws are made from SAE-4140 alloy steel, heat treated with black oxide finish.

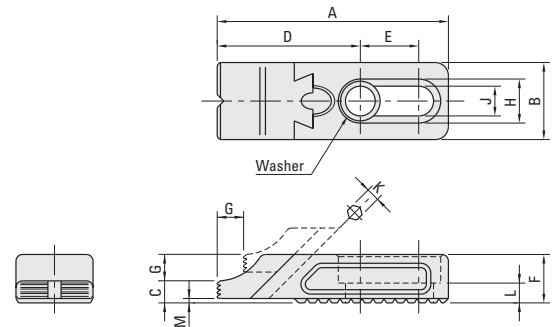


Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP105-08016	39.5	65	19.5	25	45	16	7	1.5	7	4	M8	25	890	5.9
CP105-12022	60.0	85	29.0	40	60	22	12	2.0	9	6	M12	35	2,020	19.0
CP105-16030	77.0	100	38.0	50	70	30	14	2.0	13	8	M16	40	3,800	44.0

ADJUSTABLE TOE CLAMPS - LOW PROFILE - J101 SERIES



These adjustable toe clamps have a low profile to keep the clamp out of the way from machining operation. The clamp moves downward and forward as it is engaged, forcing the work piece against the supports and stops. Clamping surface is serrated for greater gripping strength. The body and jaws are made from SAE-4140 alloy steel, heat treated with black oxide finish.

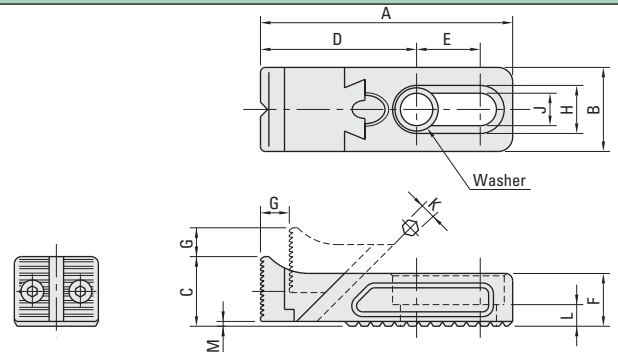


Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
BJ101-08016	72.0	25	7.5	45.5	16.5	16	7	14	8.5	4	7	1.5	800	4.7
BJ101-12022	105.0	35	10.0	65.0	26.5	22	12	20	13.0	6	9	2.0	1,663	14.0
BJ101-16030	137.0	40	14.0	89.5	30.0	30	14	26	17.0	8	13	2.0	2,630	23.0

ADJUSTABLE SIDE CLAMPS - J102 SERIES

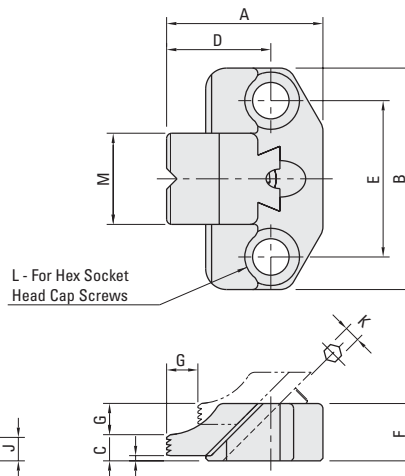


The tall jaws offer larger clamping surface. The clamping surface is serrated for greater clamping strength. The jaws move downward and forward as it is engaged, forcing the work piece against the supports and stops. Allows for quick removal and insertion of parts. The body and jaws are made from SAE-4140 alloy steel, heat treated with black oxide finish.



Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
BJ102-08016	72	25	19.5	45.5	16.5	16	7	14	8.5	4	7	1.5	800	4.7
BJ102-12022	105	35	29.0	65.0	26.5	22	12	20	13.0	6	9	2.0	1,663	14.0
BJ102-16030	137	40	38.0	89.5	30.0	30	14	26	17.0	8	13	2.0	2,630	23.0

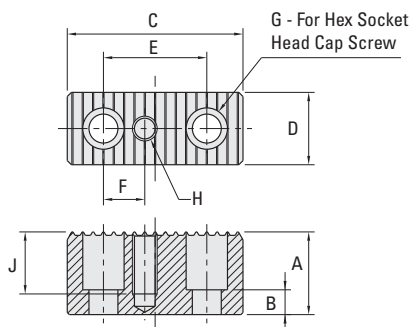
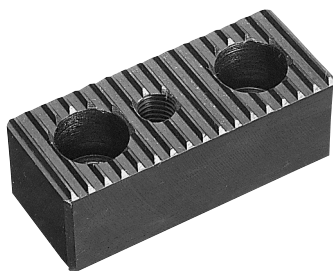
COMPACT TOE CLAMPS - LOW PROFILE - CP104 SERIES



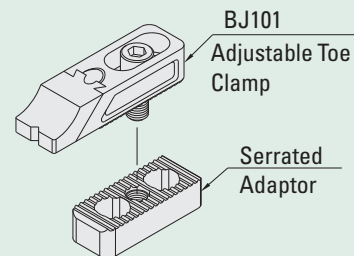
These adjustable toe clamps have a low profile to keep clamp out of the way from machining operation. The serrated clamp jaws move downward and forward as it is engaged, forcing the work piece against the supports and stops. Allows for quick removal and insertion of parts. The body and jaw are made from SAE-4140 alloy steel, heat treated with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP104-08016	39.5	65	7.5	25	45	16	7	1.5	7	4	M8	25	890	5.9
CP104-12022	60.0	85	10.0	40	60	22	12	2.0	9	6	M12	35	2,020	19.0
CP104-16030	77.0	100	14.0	50	70	30	14	2.0	13	8	M16	40	3,800	44.0

SERRATED ADAPTERS



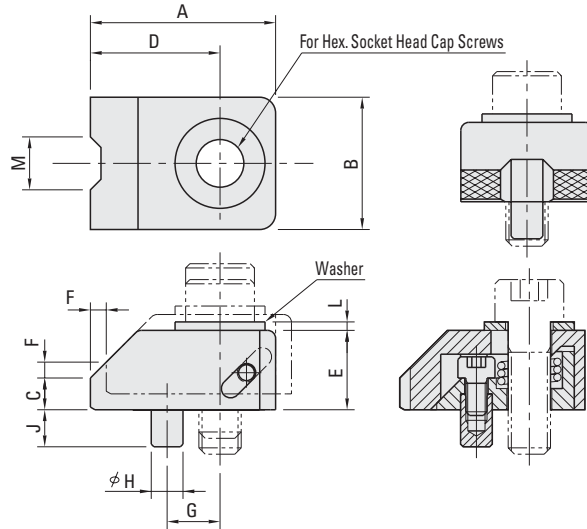
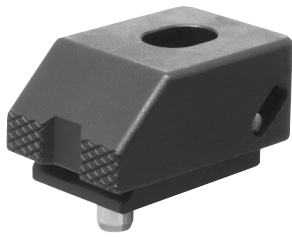
How To Use



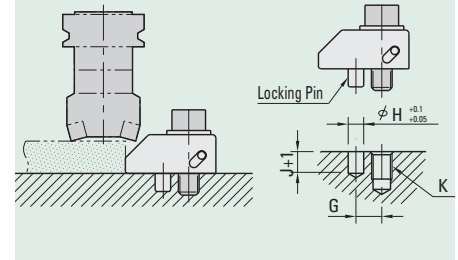
These serrated adapters are used with the adjustable clamps shown on previous page. They are serrated on the top to match the serrations on the bottom of the clamps. These serrated adapters are ideal for raising the height and firmly positioning these clamps. They have a tapped hole to mount the clamps. The adapters mount with socket head cap screws. Made from SAE-1045 alloy steel with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm
BJ500-08516	16	7	50	25	25	12.5	M8	M8X1.25	Through
BJ500-08520	20	9	50	25	25	12.5	M8	M8X1.25	Through
BJ500-08525	25	13	50	25	25	12.5	M8	M8X1.25	20
BJ500-08532	32	20	50	25	25	12.5	M8	M8X1.25	20
BJ500-08540	40	28	50	25	25	12.5	M8	M8X1.25	20
BJ500-08550	50	38	50	25	25	12.5	M8	M8X1.25	20
BJ500-12020	20	5	85	35	50	20	M12	M12X1.75	Through
BJ500-12025	25	10	85	35	50	20	M12	M12X1.75	Through
BJ500-12032	32	12	85	35	50	20	M12	M12X1.75	Through
BJ500-12040	40	12	85	35	50	20	M12	M12X1.75	30
BJ500-12050	50	12	85	35	50	20	M12	M12X1.75	35
BJ500-16025	25	6	90	40	50	25	M16	M16X2	Through
BJ500-16032	32	13	90	40	50	25	M16	M16X2	Through
BJ500-16040	40	15	90	40	50	25	M16	M16X2	30
BJ500-16050	50	15	90	40	50	25	M16	M16X2	35
BJ500-16063	63	15	90	40	50	25	M16	M16X2	35

TOE CLAMPS - LOW PROFILE - CP106 SERIES



How To Use and Install

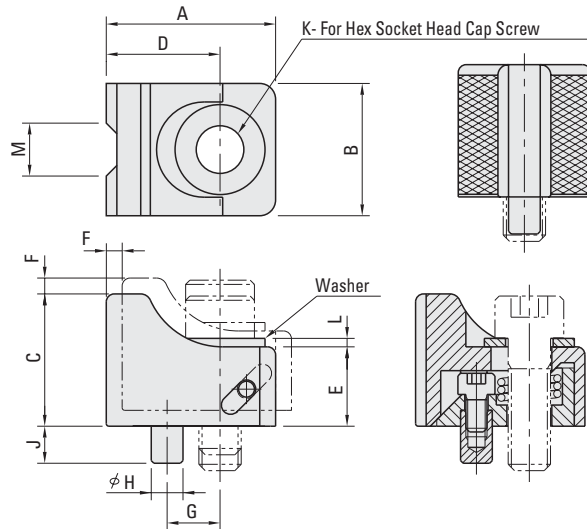


These toe clamps offer high holding power and low profile. Clamp moves downward and forward as it is engaged, forcing the work piece against the supports and stops. The low profile clamping surface is serrated for greater gripping strength. Install by drilling and tapping a cap screw hole and locking pin hole. Flat washer included. Made from SAE-1045 alloy steel, heat treated with black oxide finish.

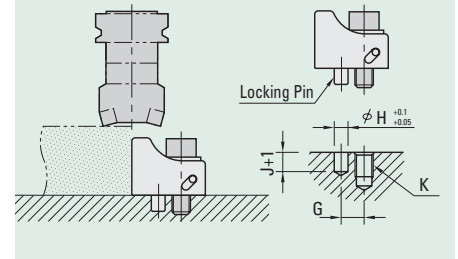
Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	(h7) H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP106-08015	35	25	6	24.5	15	3	10	6	7	M8	1.6	10	1,570	18
CP106-10019	43	30	8	29.0	19	4	12	6	7	M10	2.0	11	1,910	36
CP106-12023	54	35	9	37.0	23	5	16	8	10	M12	2.3	12	4,490	66
CP106-16025	65	40	10	45.0	25	6	20	10	10	M16	3.2	14	8,990	147

See page 561 for h7 tolerance specifications.

SIDE CLAMPS - CP107 SERIES



How To Use and Install

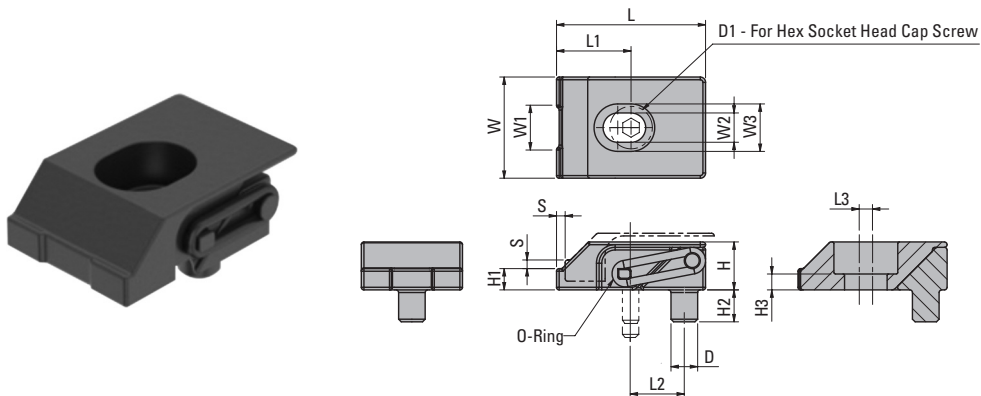


Clamp moves downward and forward as it is engaged, forcing the work piece against the supports and stops. The large clamping surface is serrated for greater gripping strength. Install by drilling and tapping a cap screw hole and locking pin hole. Flat washer included. Made from SAE-1045 alloy steel, heat treated with black oxide finish.

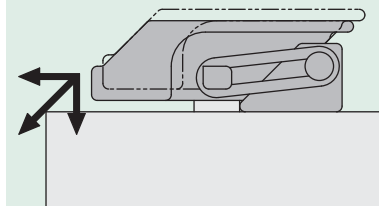
Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	(h7) H mm	J mm	K mm	L mm	M mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP107-08015	32	25	25	21.5	15	3	10	6	7	M8	1.6	10	1,570	18
CP107-10019	40	30	32	26.0	19	4	12	6	7	M10	2.0	11	1,910	36
CP107-12023	50	35	38	33.0	23	5	16	8	10	M12	2.3	12	4,490	66
CP107-16025	60	40	45	40.0	25	6	20	10	10	M16	3.2	14	8,990	147

See page 561 for h7 tolerance specifications.

TOE CLAMP - COMPACT - CP133 SERIES



How To Use

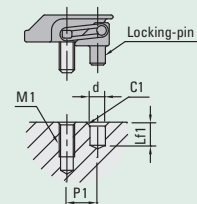


Clamp moves downward and forward as it is engaged, forcing the workpiece against the supports and stops.

These compact toe clamps have a low profile to keep clamp out of the way from machining operation. The clamp moves downward and forward as it is engaged, forcing the work piece against the supports and stops. Allows for quick removal and insertion of parts. Install by drilling and tapping a cap screw hole and locking pin hole. Body made from SCM440 steel, Rc 33/39, with a black oxide finish. O-ring made from fluoro rubber.

Part #	D mm	D1 mm	L mm	L1 mm	L2 mm	L3 mm	W mm	W1 mm	W2 mm	W3 mm	H mm	H1 mm	H2 mm	H3 mm	S mm	Clamping Force Lbs.	Allowable Screw Torque Ft Lbs.
CP133-04007	4	M4	23	12	8	2	15	5	4.5	8	7	3	5	2	2	449	1.9
CP133-05009	5	M5	28	14	10	2.5	19	7	5.5	9.5	9	4	6	3	2.5	674	3.9

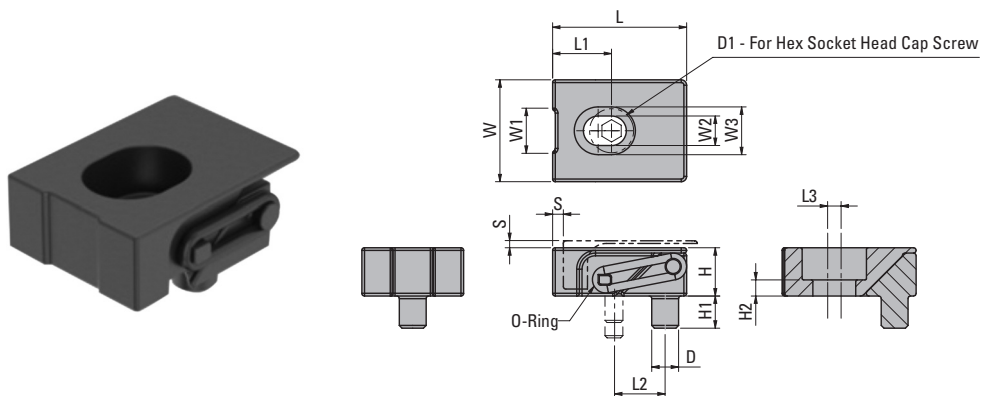
How To Install



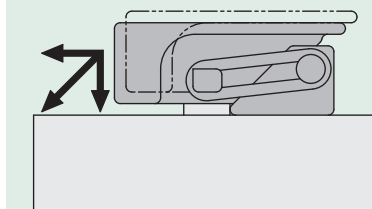
Drill a tapped hole and a locking-pin hole as specified below.

Part Number	M1	d (+0.3/0)	Lf1	P1
CP133-04007	M4	4	6	8
CP133-05009	M5	5	7	10

SIDE CLAMP - COMPACT - CP134 SERIES



How To Use

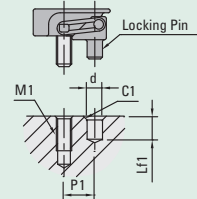


Clamp moves downward and forward as it is engaged, forcing the workpiece against the supports and stops.

These compact side clamps have a low profile to keep clamp out of the way from machining operation. The clamp moves downward and forward as it is engaged, forcing the work piece against the supports and stops. Allows for quick removal and insertion of parts. Install by drilling and tapping a cap screw hole and locking pin hole. Body made from SCM440 steel, Rc 33/39, with a black oxide finish. O-ring made from fluoro rubber.

Part #	D mm	D1 mm	L mm	L1 mm	L2 mm	L3 mm	W mm	W1 mm	W2 mm	W3 mm	H mm	H1 mm	H2 mm	S mm	Clamping Force Lbs.	Allowable Screw Torque Ft Lbs.
CP134-04007	4	M4	20	9	8	2	15	5	4.5	8	7	5	2	2	562	1.9
CP134-05009	5	M5	25	11	10	2.5	19	7	5.5	9.5	9	6	3	2.5	786	3.9

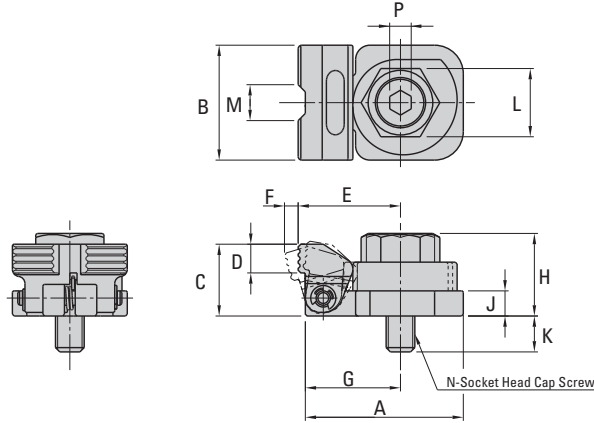
How To Install



Drill a tapped hole and a locking-pin hole as specified below.

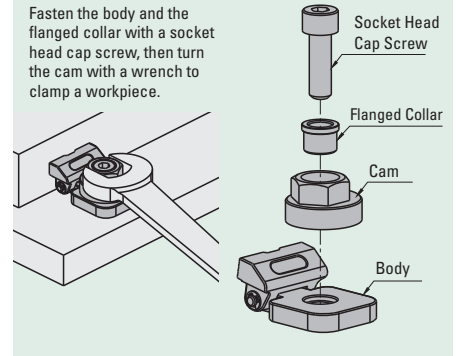
Part Number	M1	d (+0.3/0)	Lf1	P1
CP134-04007	M4	4	6	8
CP134-05009	M5	5	7	10

SPIRAL CAM EDGE CLAMPS - J162 SERIES



How To Use

Fasten the body and the flanged collar with a socket head cap screw, then turn the cam with a wrench to clamp a workpiece.

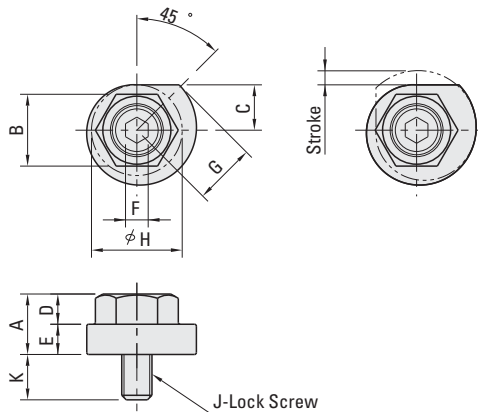


These cam edge clamps offer a low profile design, high holding forces and easy to use operations. The low profile and small size allow for faster set up and more parts per load. Turning the cam nut on the top of the clamp forces the serrated jaw forward and downward against the work piece. Easily installs with a socket head cap screw. The body and jaw are made from SAE-4140 alloy steel, heat treated with black oxide finish. The cam is made from SAE-4135 alloy steel with black oxide finish.

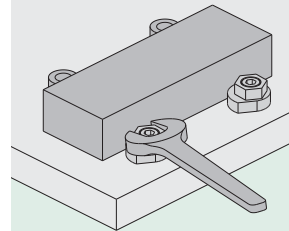
Part #	Clamping Force lbs.	Max Torque Ft./lbs.
BJ162-08001	788	33
BJ162-10001	1,238	41
BJ162-12001	1,575	52

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm
BJ162-08001	44	32	20	8	28.5	4	26.5	23	7	15	19	10	M8X1.25 - 30L	6
BJ162-10001	54	40	25	10	35	5	33	29	9	16	24	12	M10X1.5 - 35L	8
BJ162-12001	62	46	30	12	39.5	5.5	37.5	35	11	17	27	14	M12X1.75 - 40L	10

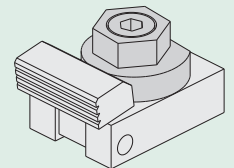
SPIRAL CAM CLAMPS - J161 SERIES



How To Use



Provides Positive Clamping

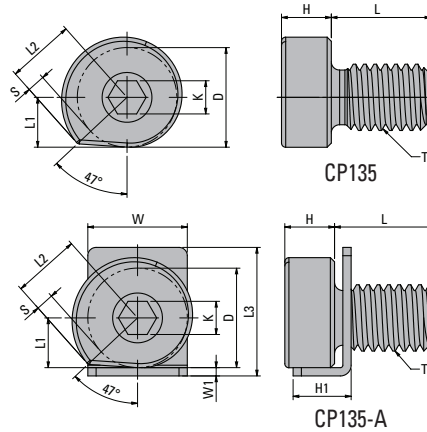


Can also be used as clamping mechanism for custom clamps.

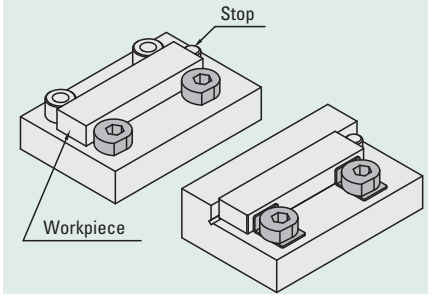
Compact design for low profile positive clamping. These clamps permit faster loading and unloading of work piece. To install, lock the flange collar into the cam using the locking screw and then tighten up the cam with a wrench. The cam and locking screw are made from SAE-4135 alloy steel. The flanged collar is made from SAE-1095 alloy steel. Parts are heat treated with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	Stroke mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
BJ161-08001	16	19	12	8	8	6	16.38	24	M8X1.25	12	4	1,168	36
BJ161-10001	20	24	15	10	10	8	20.47	30	M10X1.50	15	5	1,798	55
BJ161-12001	24	27	17	12	12	10	23.20	34	M12X1.75	18	6	2,090	66

SPIRAL CAM CLAMP - COMPACT - CP135 SERIES



How To Use

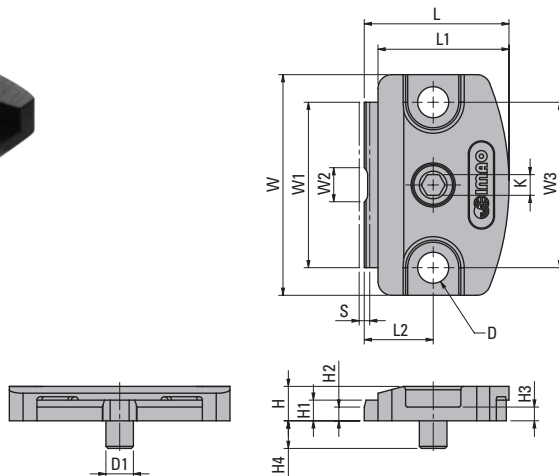


Mount a stop on the right side of the workpiece.
Tighten clockwise to clamp the workpiece.

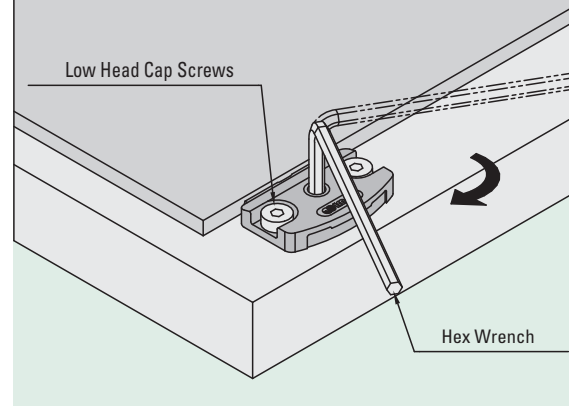
These spiral cam clamps offer a low-profile design and high holding forces. The low profile and small size allow for faster set up and more parts per load. Turning the cam clockwise forces the cam forward against the work piece. CP135A includes a bracket plate to prevent marring. Clamp made from SCM440 steel, Rc 33/39, with a black oxide finish. Clamping plate made from SUS304CSP. For complete technical information, search for the part number at www.fixtureworks.net.

Part #	T mm	D mm	L mm	L1 mm	L2 mm	L3 mm	W mm	W1 mm	H mm	H1 mm	K mm	S mm	Clamping Force Lbs.
CP135-06001	M6X1	10	9	5	6.8	-	-	-	5	-	4	1.8	494
CP135-08001	M8X1.25	12	12	6	8.2	-	-	-	6	-	5	2.2	1,056
CP135-10001	M10X1.5	14	15	7	9.5	-	-	-	7	-	6	2.5	1,775
CP135-12001	M12X1.75	16	18	8	10.9	-	-	-	8	-	8	2.9	3,147
CP135-06001A	M6X1	10	9	5	6.8	13	10	1	5	6	4	1.8	494
CP135-08001A	M8X1.25	12	12	6	8.2	15.5	12	1	6	7	5	2.2	1,056
CP135-10001A	M10X1.5	14	15	7	9.5	18	14	1	7	8	6	2.5	1,775
CP135-12001A	M12X1.75	16	18	8	10.9	20	16	1	8	9	8	2.9	3,147

SIDE CLAMP - LOW PROFILE CAM EDGE - MINI - QLSCCL SERIES



How To Use



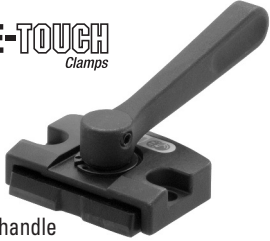
These low profile cam edge clamps feature a cam that forces the jaws forward for fast and secure workholding. Releasing the cam allows the spring loaded jaws to move back for loading and unloading of the workpiece. The cam is activated with a hex wrench and eliminates workpiece interference. Mounts from the top with two low head cap screws. The jaws and cam are made from hardened SAE-4140 alloy steel. The body is made from SAE-1045 alloy steel. Black oxide finish. For complete technical information, search for the part number at www.fixtureworks.net.

Part #	D mm	D1 mm	L mm	L1 mm	L2 mm	W mm	W1 mm	W2 mm	W3 mm	H mm	H1 mm	H2 mm	H3 mm	H4 mm	K mm	Stroke S mm	Screw Torque Ft Lbs.	Clamping Force Lbs.
QLSCL05NR	4.5	4	21	19	10	32	24	5	24	5	3	2	2	4	3	0.8	1.5	292

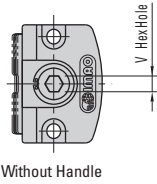
LOW PROFILE CAM EDGE CLAMPS - SCL SERIES

ONE-TOUCH Clamps

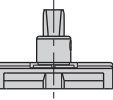
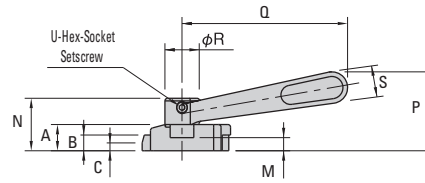
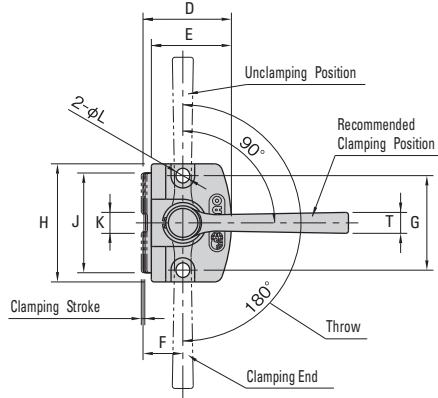
with handle



without handle



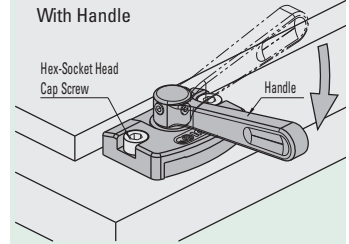
Without Handle



With Handle

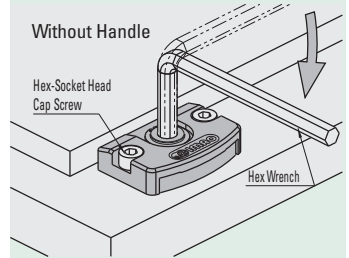
How To Use

With Handle



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.

Without Handle



Use the without-handle style in applications where the handle lies in the way.

Part #	Clamping Stroke mm	Clamping Force Lbs.	Operating Load* Lbs.	Screw Torque Ft/Lbs.
QLSCL10R	1	900	38	-
QLSCL15R	2	1,348	62	-
QLSCL10NR	1	900	-	7
QLSCL15NR	2	1,348	-	19

*Allowable load to operate handle

These low profile cam edge clamps feature a cam that forces the jaws forward for fast and secure workholding. Releasing the cam allows the spring loaded jaws to move back for loading and unloading of the work piece. They are available with a handle or without a handle. The style with a handle allows the user to activate the clamp without the use of tools. The handle can be positioned so it does not interfere with the work piece. The style without a handle is activated with a hex wrench and eliminates work piece interference. Mounts from the top with two mounting holes. The jaws and cam are made from hardened SAE-4140 alloy steel. The body and handle are made from SAE-1045 alloy steel with a black oxide finish.

With Handle Part #	w/o Handle Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	Q mm	R mm	S mm	T mm	U mm	V mm
QLSCL10R	QLSCL10NR	10	6	3	33.5	30.5	15	36	45	38	8	5.2	5	20	30	63	13	12	8	M4X0.7 - 4L	6
QLSCL15R	QLSCL15NR	15	9	5	50	46	22	55	70	60	12	8.2	7	30	46	100	19	18	12	M5X0.8 - 5L	10

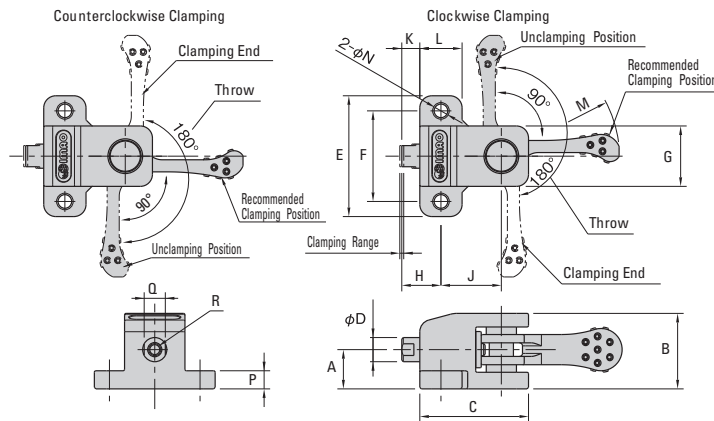
CAM PUSH CLAMPS - CP SERIES

ONE-TOUCH Clamps

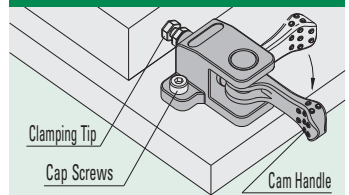


Part #	Clamping Range mm	Operating Load Lbs.*	Clamping Force Lbs.
QLCP080R / L	1.2	18	202
QLCP150R / L	1.6	33	539

*Allowable load to operate handle



How To Use



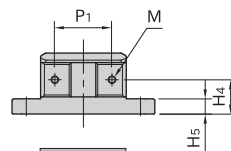
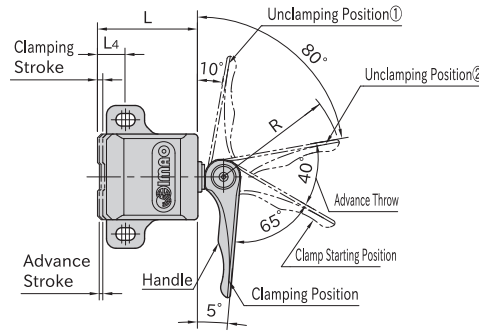
Turning the handle in the clamping direction lets the cam work to project the piston for clamping. Turning the handle back lets the spring work to retract the piston for unclamping.

These low profile cam push clamps are activated by turning the cam handle which extends the piston for fast accurate clamping. The spring loaded piston retracts when the cam handle is released for loading and unloading parts. The piston is tapped for installing a clamping tip. Mounts from the top with two mounting holes. Part numbers ending with R have a clockwise clamping direction and part numbers ending in L have a counter clockwise clamping direction. The body and piston are made from SAE-1045 alloy steel. The handle is made from SAE-4140 alloy steel with a black oxide finish.

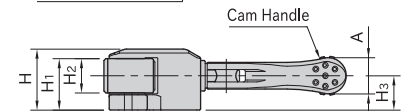
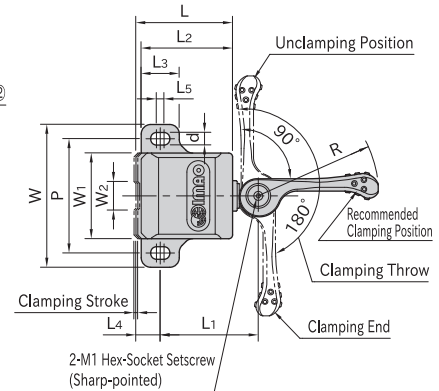
Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	Q mm	R mm
QLCP080R	13	25	36	8	40	30	20	13	20	6	14	40	4.5	6	7	M4X0.7 X 8 Deep
QLCP080L	13	25	36	8	40	30	20	13	20	6	14	40	4.5	6	7	M4X0.7 X 8 Deep
QLCP150R	18	33	50	12	55	40	26	19	28	9	20	63	6.6	10	10	M6X1 X 12 Deep
QLCP150L	18	33	50	12	55	40	26	19	28	9	20	63	6.6	10	10	M6X1 X 12 Deep

CAM EDGE CLAMPS - QLSCH SERIES

ONE-TOUCH Clamps



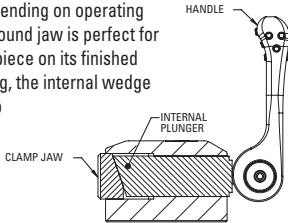
QLSCH-L
(Light-Duty)



QLSCH
(Standard)

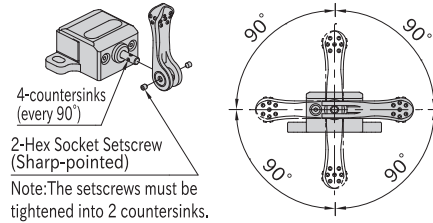
Features

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 internal wedge design of the clamp jaw and plunger prevent the workpiece from lifting.



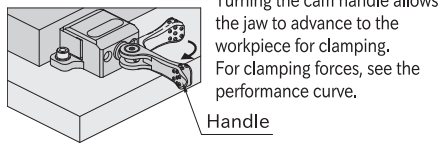
Changing Handle Position

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



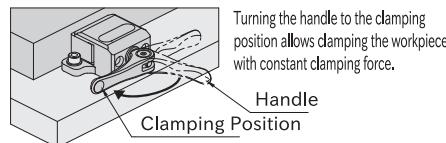
How To Use

Standard



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

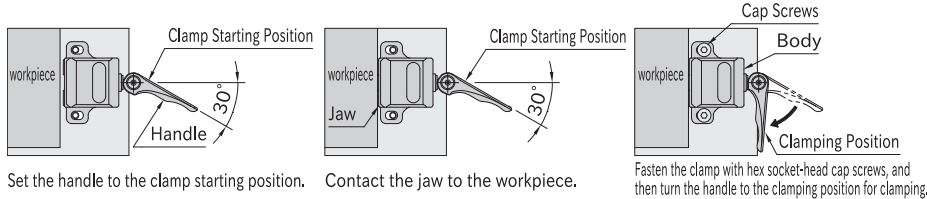
Light-Duty Style



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.



These cam edge clamps feature a cam that forces the jaws forward and downward for fast and secure workholding. Releasing the cam on the light duty style allows the spring loaded jaws to retract for loading and unloading of the work piece. Releasing the cam on the standard style draws the jaws back for loading and unloading. The handle position can be changed to avoid interference. The precision ground jaw allows for clamping on finished surfaces. Mounts from the top with two mounting holes. The body is made from SAE-1045 alloy steel with black oxide finish. The jaws are made from SAE-1045 steel, hardened and precision ground. The handles are made from steel. The light duty handles are electroless plated and the standard styles have a black oxide finish.

Light-Duty Style

Part Number	A	Clamping Stroke *)	Advance Stroke	Operating Load (N) **)	Clamping Force (N)
QLSCH32L	14	0.3	0.8	40	600
QLSCH40L	18	0.4		50	1,200

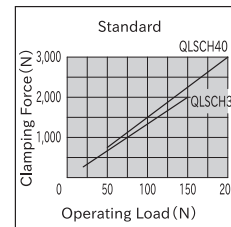
*) Dimensional variations between workpieces should be 0.1mm or less.
**) Load needed to turn the handle to clamping position

Standard Style

Part Number	A	Clamping Stroke	Handle Number	Operating Load (N) ***)	Clamping Force (N)
QLSCH32	19	1.6	QLCA-06	150	2,000
QLSCH40	24	2.2	QLCA-08	200	3,000

***) Allowable load to operate the handle

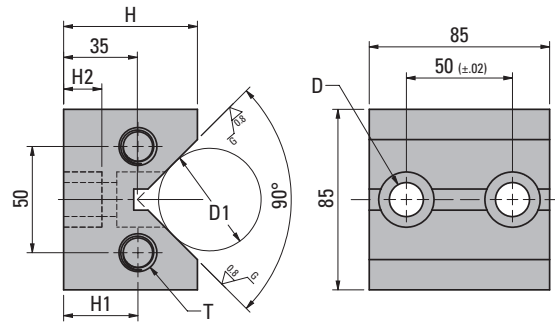
Performance Curve



Part #	d	H	H1	H2	H3	H4	H5	L	L1	L2	L3	L4	L5	M	M1	P	P1	R	W	W1	W2
QLSCH32L	6.6	32	27	18	18	18	8	51	51.5	48	20	13	3	M4X0.7X6	M4X0.7-5L	60	30	63	75	45	15
QLSCH40L	8.6	40	33	22	22	22	10	67	67	63	26	17	4	M5X0.8X8	M5X0.8-6L	80	40	80	100	60	20
QLSCH32	6.6	32	27	18	18	18	8	51	51.5	48	20	13	3	M4X0.7X6	M4X0.7-5L	60	30	63	75	45	15
QLSCH40	8.6	40	33	22	22	22	10	67	67	63	26	17	4	M5X0.8X8	M5X0.8-6L	80	40	80	100	60	20

HORIZONTAL V-BLOCK - BJ440 SERIES

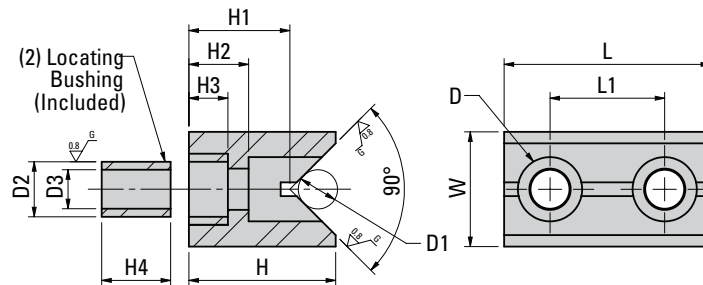
Standard



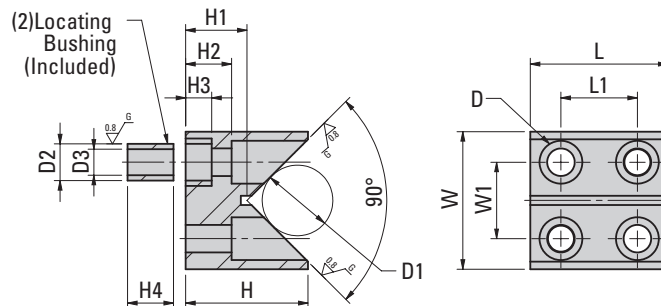
Made from S45C steel, precision ground, quenched and tempered Rc 45/55, with a black oxide finish.

Part #	T mm	F7 D mm	D1 Min mm	D1 Max mm	H mm	H1 mm	H2 mm	Use with Locating Screws
BJ440-12063	M12X1.75X30	12	15	80	63	34.72	22	BJ700-12055
BJ440-12075	M12X1.75X30	12	15	100	75	39.65	22	BJ700-12055
BJ440-16063	M16X2X35	16	35	80	63	34.72	25	BJ700-16065
BJ440-16075	M16X2X35	16	15	100	75	39.65	25	BJ700-16065

Mini



BJ440-08032

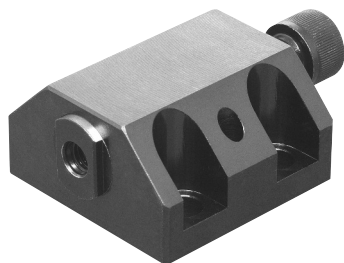
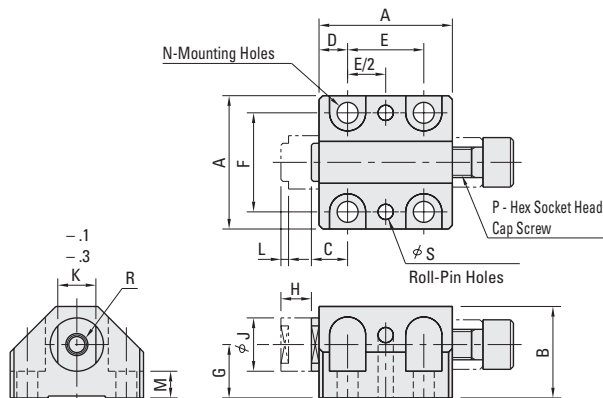


BJ440-08040

For accurately and securely holding round stock. Includes two locating bushings. Made from induction hardened S45C steel, precision ground, with a black oxide finish.

Part #	D for SHCS	D1 min mm	D1 max mm	h6 D2 mm	D3 mm	L mm	±.01 L1 mm	W mm	±.01 W1 mm	H mm	H1 mm	H2 mm	H3 mm	H4 mm
BJ440-08032	M8	10	25	12	8.5	45	25	25	-	32	22	13	8.5	15
BJ440-08040	M8	15	50	12	8.5	45	25	45	25	40	20	15	8.5	15

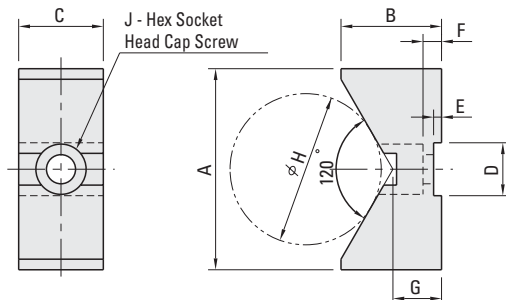
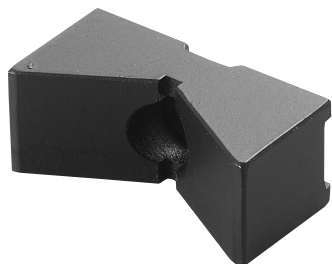
BLOCK PUSH CLAMPS


 CP110
(Cap Screw Style)


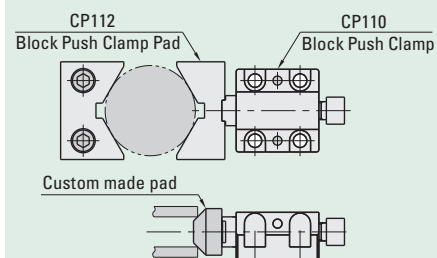
Designed to be used with the V-pads shown below for clamping round pieces. Custom pads can be made to fit your application. The body, piston and knob are made from SAE-1045 alloy steel. The piston is heat treated. Black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	N mm	P mm	R mm	S mm	Clamping Force Lbs.	Screw Torque Ft. Lbs.
CP110-08024	35	24	9.5	7.5	20	26	14	8	14	10	2.0	7	M5	M8X1.25	M5X0.8X8	4	1,393	7.3
CP110-10029	45	29	12.0	10.0	25	35	16	10	18	12	2.0	8	M6	M10X1.5	M6X1X10	4	2,472	16.2
CP110-12031	55	31	15.0	12.5	30	40	18	12	20	14	2.5	8	M8	M12X1.75	M8X1.25X12	6	4,496	35.4
CP110-16037	70	37	18.0	15.0	40	50	20	16	25	19	3.0	8	M10	M16X2	M10X1.5X15	8	8,317	81.

BLOCK PUSH CLAMP V-PADS



How To Use and Install

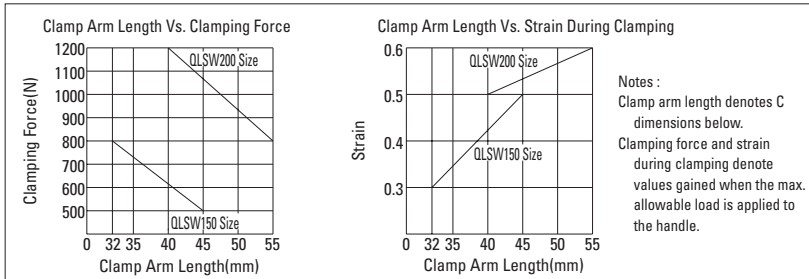
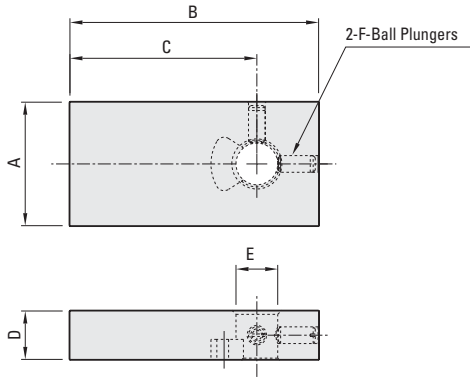


Designed for use with the Block Push Clamps shown above for holding round work pieces. Can be used with either the cap screw or knurled handle styles. Made from SAE-1045 alloy steel, heat treated with black oxide finish.

Custom pads can be mounted on the Block Push Clamps

Part #	A mm	B mm	C mm	+1 D mm	E mm	F mm	G mm	Min H mm	Max H mm	J mm	Use with Clamp
CP112-08001	38	19	16	10	1.5	3.5	9.2	15	60	M5	CP110-08024
CP112-10001	50	24	19	12	1.5	4.5	11.0	20	80	M6	CP110-10029
CP112-12001	65	32	22	14	2.0	5.5	15.0	25	100	M8	CP110-12031
CP112-16001	75	38	25	19	2.5	7.5	18.7	30	120	M10	CP110-16037

MACHINABLE CLAMP ARMS - FOR SW SERIES



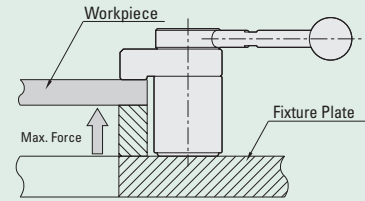
These machinable clamp arms are used with the standard swing clamps on page 11. They allow the user to machine a custom arm to meet custom clamping specifications. Made from SAE-1045 alloy steel with black oxide finish.

Part #	A mm	B mm	C mm	D mm	(F8) E mm	F mm	Use with Swing Clamp Series
QLSW150-SH	30	60	45	12	10	M4	QLSW150
QLSW200-SH	40	75	55	16	16	M5	QLSW200

Note: The maximum allowable weight of a clamping tip that mounts on the end of the clamp arm must not weigh over .22 lbs. See page 561 for F8 tolerance specifications.

Technical Information

Allowable Loads in Machining of Workpiece Bottom

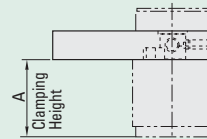


Series	Allowable Force To Workpiece Bottom(Per Clamp)
QLSW150	Max. 472 lbs.
QLSW200	Max. 606 lbs.

How To Use

Use for clamp arm customization Machine to your clamping requirements

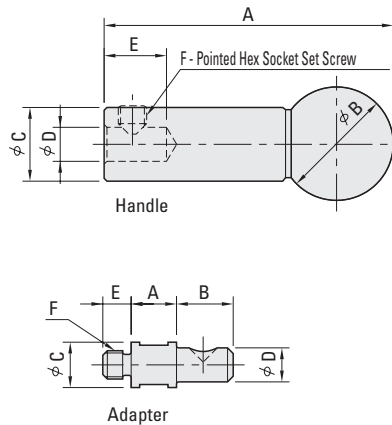
(Clamping Height in Use of Machinable Clamp Arms)



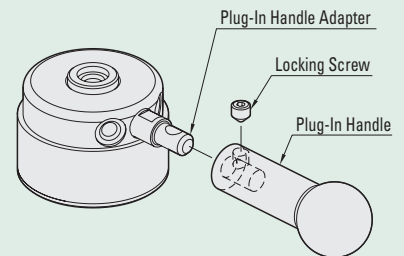
Part Number	A
QLSW150-SH	34**
QLSW200-SH	47***

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

PLUG IN - TWO PIECE HANDLES



How To Use



Secure the Plug In Handle to the Adapter with the locking screw if necessary

These handles can be used with any of the standard 150/200 series clamps listed on pages 11, 27, 31 and 37. Simply screw the adapter into the clamp. The two piece design allows the handle to be quickly attached and detached for machine operations. Set screw can be used for more secure attachment. The adapter is intended to stay attached to the clamp. The handle and adapter must be purchased separately. Note: The QLSL150-RL and QLSL150-RA can be used with any of the 150 series clamps, the QLSL200-RL and QLSL200-RA can be used with any 200 series clamps. The handle is made from SAE-1045 alloy steel and the adapter is made from SAE-4135 alloy steel. Parts have black oxide finish. Ball knob is plastic.

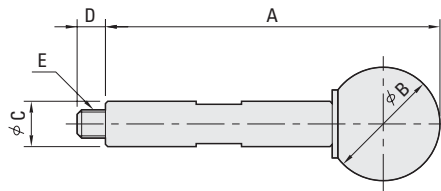
Handles Only

Part #	A mm	B mm	C mm	D mm	E mm	F mm
QLSL150-RL	51	20	13	6	11	M5X0.8X5
QLSL200-RL	79	25	15	8	13	M6X1X6

Adapters Only

Part #	A mm	B mm	C mm	D mm	E mm	F mm
QLSL150-RA	8	10	8	6	5	M5X0.8
QLSL200-RA	10	12	10	8	6	M6X1

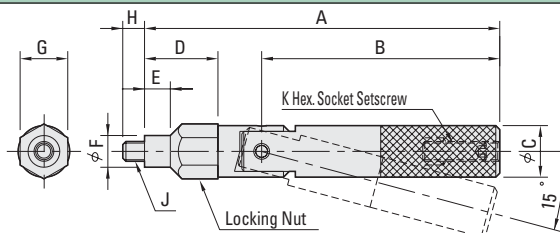
ONE PIECE HANDLE



These handles can be used with any of the standard 150/200 series clamps listed on pages 11, 27, 31 and 37. Simply screw them into the clamp. Note: The QLSL150 can be used with any of the 150 series clamps, the QLSL200 can be used with any 200 series clamps. They are made from SAE-1045 alloy steel with black oxide finish. Ball knob is plastic.

Part #	A mm	B mm	C mm	D mm	E mm
QLSL150	59	20	8	5	M5X0.8
QLSL200	89	25	10	6	M6X1

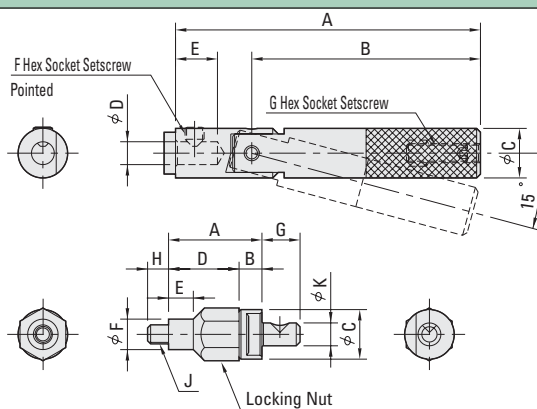
SCREW IN - ADJUSTABLE TORQUE HANDLES



These handles can be used with any of the standard 150/200 series clamps listed on pages 11, 27, 31 and 37. Simply screw them into the clamp. These adjustable torque handles "release" when the desired clamping force is reached to prevent the operator from over clamping the work piece. The torque can be easily adjusted by turning the set screw inside the handle. Note: The QLTL120 can be used with any of the 150 series clamps, the QLTL160 and can be used with any 200 series clamps. The handle is made from SAE-1045 alloy steel, heat treated with black oxide finish.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm	Handle Operating Load Lbs.
QLTL120	89.5	60	13	18.5	6.5	8	12	5.5	M5X0.8	M5X0.8X16	7-27
QLTL160	119.0	84	15	23.0	8.0	10	14	6.5	M6X1	M6X1X20	11-36

PLUG IN - TWO PIECE ADJUSTABLE HANDLES



These adjustable torque handles can be used with any of the standard 150/200 series clamps listed on pages 11, 27, 31 and 37. Simply screw the adapter into the clamp. The two piece design allows the handle to be quickly attached and detached for machine operations. Set screw can be used for more secure attachment. The adapter is intended to stay attached to the clamp. The handle and adapter must be purchased separately. Note: The QLTL120-RL and QLTL120-RA can be used with any of the 150 series clamps, the QLTL160-RL and QLTL160-RA can be used with any 200 series clamps. Handle operating load is 7-27 lbs. for the 120 series and 11-36 lbs. for the 160 series. The handle is made from SAE-1045 alloy steel and the adapter is made from SAE-4135 alloy steel. Parts are heat treated with black oxide finish.

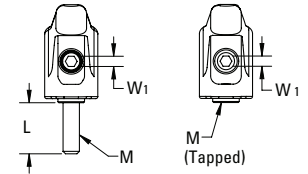
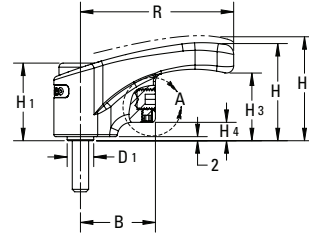
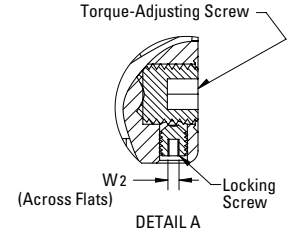
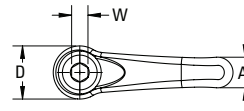
Handles Only

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm
QLTL120-RL	80	60	13	6	11	M5X0.8X5	M5X0.8
QLTL160-RL	107	84	15	8	13	M6X1X6	M6X1

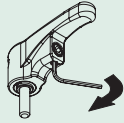
Adapters Only

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K mm
QLTL120-RA	24.5	6	13	18.5	6.5	8	12	5.5	M5X0.8	6
QLTL160-RA	30.0	7	15	23.0	8	10	14	6.5	M6X1	8

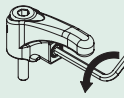
ADJUSTABLE TORQUE HANDLES - ATCL SERIES



How To Set Torque

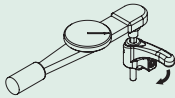


Loosen the locking screw by inserting a hex wrench into the underside of the handle.

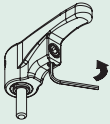


Adjust the torque by turning the torque-adjusting screw in the side of the handle. To reach the minimum torque, loosen the torque-adjusting screw until the screw is flush with the body. (Ensure that the torque adjusting screw does not protrude from the body when loosening it.)

To achieve maximum torque, rotate the torque-adjusting screw three-quarters of a rotation for ATCL6 and ATCL10 handles or one full rotation for ATCL8 handles.

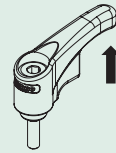


Measure the torque with a torque wrench. Connect a torque wrench to the adjustable torque handle. Apply a load in the tightening direction, and fine adjust the depth of torque-adjusting screw to reach the desired torque when the handle clicks.

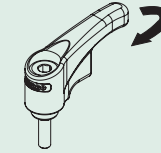


When the desired torque is reached, tighten the locking screw.

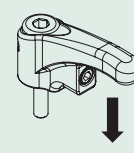
How To Clamp



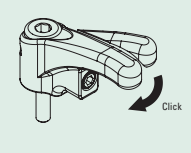
Lift the handle to disengage.



Rotate the handle to the desired position.



Release the handle. The return spring automatically engages the teeth again for further tightening. The handle can be positioned every 30 degrees.

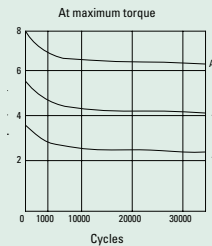


Rotate the handle to apply clamping force. The handle clicks to indicate completed tightening at desired tightening torque.

These adjustable torque handles allow the user to set a specified torque to prevent over-tightening by the operator. They are ideal for applications where a consistent force is required or where over-tightening can damage or distort a workpiece. The handle clicks when the specified torque is reached. The amount of torque is set by adjusting the screw in the handle. On the tapped style handles, a bolt can be passed through the top to secure the handle. The handle is made from SAE-4140 quenched and tempered steel with a black or orange finish. The ratchet is made from SCM415 carburized steel with black oxide finish.

Torque Performance

For the initial several thousand cycles, the tightening torque decreases. Measure the torque regularly and adjust as needed. The tightening torque will vary (max. +/- 15%). Not recommended for applications where precise tightening torque is required.



Stud Style

Black Part #	Orange Part #	L mm	R mm	H mm	D mm	H1 mm	H2 mm	M mm	D1 mm	H3 mm	H4 mm	A mm	B mm	W mm	W1 mm	W2 mm	Teeth	Torque Range Nm	Tightening Force N
ATCL6X15-BK	ATCL6X15-OG	15	60	40	22	32	44	M6X1	10	27.5	8	13	30	6	5	2	12	1 - 3.5	800 - 2,900
ATCL6X20-BK	ATCL6X20-OG	20	60	40	22	32	44	M6X1	10	27.5	8	13	30	6	5	2	12	1 - 3.5	800 - 2,900
ATCL6X25-BK	ATCL6X25-OG	25	60	40	22	32	44	M6X1	10	27.5	8	13	30	6	5	2	12	1 - 3.5	800 - 2,900
ATCL6X30-BK	ATCL6X30-OG	30	60	40	22	32	44	M6X1	10	27.5	8	13	30	6	5	2	12	1 - 3.5	800 - 2,900
ATCL8X20-BK	ATCL8X20-OG	20	75	48	26	38	52.5	M8X1.25	13	33	9	15	37	8	6	2.5	12	2 - 5.4	1,300 - 3,400
ATCL8X25-BK	ATCL8X25-OG	25	75	48	26	38	52.5	M8X1.25	13	33	9	15	37	8	6	2.5	12	2 - 5.4	1,300 - 3,400
ATCL8X30-BK	ATCL8X30-OG	30	75	48	26	38	52.5	M8X1.25	13	33	9	15	37	8	6	2.5	12	2 - 5.4	1,300 - 3,400
ATCL8X40-BK	ATCL8X40-OG	40	75	48	26	38	52.5	M8X1.25	13	33	9	15	37	8	6	2.5	12	2 - 5.4	1,300 - 3,400
ATCL10X20-BK	ATCL10X20-OG	20	90	57	32	45	62.5	M10X1.5	16	39.5	10.5	18	39	10	6	2.5	12	3 - 8	1,500 - 4,000
ATCL10X25-BK	ATCL10X25-OG	25	90	57	32	45	62.5	M10X1.5	16	39.5	10.5	18	39	10	6	2.5	12	3 - 8	1,500 - 4,000
ATCL10X30-BK	ATCL10X30-OG	30	90	57	32	45	62.5	M10X1.5	16	39.5	10.5	18	39	10	6	2.5	12	3 - 8	1,500 - 4,000
ATCL10X40-BK	ATCL10X40-OG	40	90	57	32	45	62.5	M10X1.5	16	39.5	10.5	18	39	10	6	2.5	12	3 - 8	1,500 - 4,000

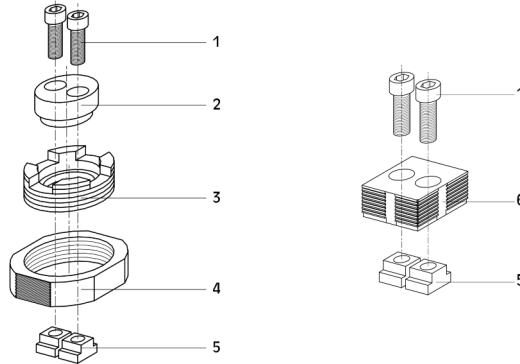
Tapped Style

Black Part #	Orange Part #	Lf mm	R mm	H mm	D mm	H1 mm	H2 mm	M mm	D1 mm	H3 mm	H4 mm	A mm	B mm	W mm	W1 mm	W2 mm	Teeth	Torque Range Nm	Tightening Force N
ATCL6-BK	ATCL6-OG	18	60	40	22	32	44	M6X1	10	27.5	8	13	30	6	5	2	12	1 - 3.5	800 - 2,900
ATCL8-BK	ATCL8-OG	22	75	48	26	38	52.5	M8X1.25	13	33	9	15	37	8	6	2.5	12	2 - 5.4	1,300 - 3,400
ATCL10-BK	ATCL10-OG	25	90	57	32	45	62.5	M10X1.5	16	39.5	10.5	18	39	10	6	2.5	12	3 - 8	1,500 - 4,000

CAM CLAMPING SYSTEMS

The Cam Clamping System line has been designed and patented to make it easy to clamp varied forms of workpieces. This compact product enables double locking (axial and radial) using the eccentric cam and propeller principle. With a rotation of approximately 15 degrees, contact is made with the workpiece and complete clamping face of the system cam. The clamp moves forward and downward on the workpiece. T-Type and S-Type clamping systems are sold as complete sets including the proper T-nuts and screws for specific machine tool cross slots. A custom fixed block and cam clamp are also available that are built to meet customers' size specifications.

Cam Clamping Set | T-Type



Item	Description
1	Screw
2	Central element
3	Eccentric element
4	Clamping element
5	T-nuts
6	Fixed block

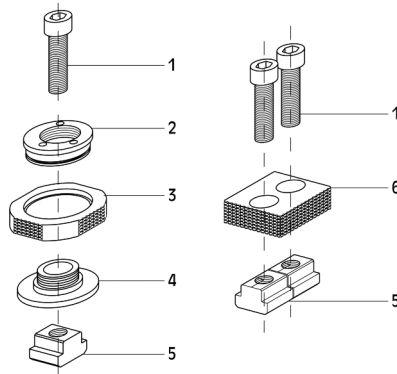
The T-Type cam system clamps workpieces with a clamping force of 8,800 lbs. This complete set includes four cam clamps, four fixed blocks and eight pairs of T-nuts with screws (T-nuts also sold separately). One T-Type clamping key and a wood packing case are also included. See the individual clamps on the following page for dimensions.

Part #	T-Nut Size in Set mm	*T-Nut Part #
F677-584414	14	F658-442593
F677-584416	16	F658-442594
F677-584418	18	F658-442595

Part #	T-Nut Size in Set mm	*T-Nut Part #
F677-584420	20	F658-442596
F677-584422	22	F658-442597

*T-Nuts with screws included in set, and offered separately.

Cam Clamping Set | S-Type



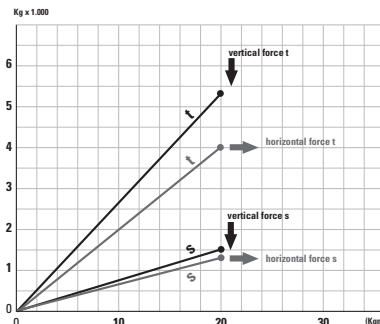
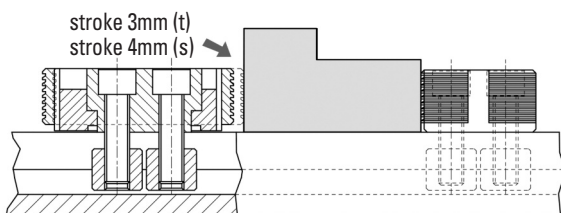
Item	Description
1	Screw
2	Eccentric element
3	Clamping element
4	Central element
5	T-nuts
6	Fixed block

This S-Type cam system clamps workpieces with a clamping force of 4,400 lbs. This complete set includes four cam clamps, four fixed blocks and six pairs of T-nuts with screws (T-nuts also sold separately). One S-Type clamping key and a wood packing case are also included. See the individual clamps on the following pages.

Part #	T-Nut Size in Set mm	*T-Nut Part #
F677-584314	14	F658-432593
F677-584316	16	F658-432594
F677-584318	18	F658-432595

Part #	T-Nut Size in Set mm	*T-Nut Part #
F677-584320	20	F658-432596
F677-584322	22	F658-432597

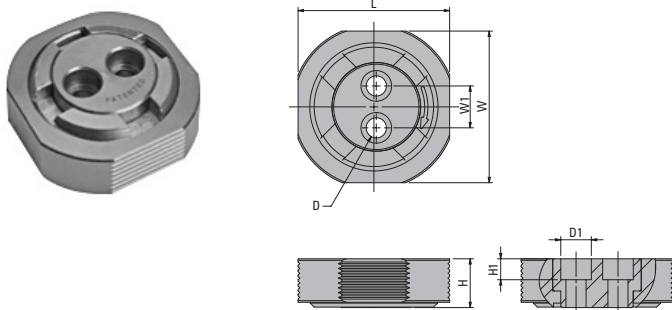
*T-Nuts with screws included in set, and offered separately.





CAM CLAMPING SYSTEMS

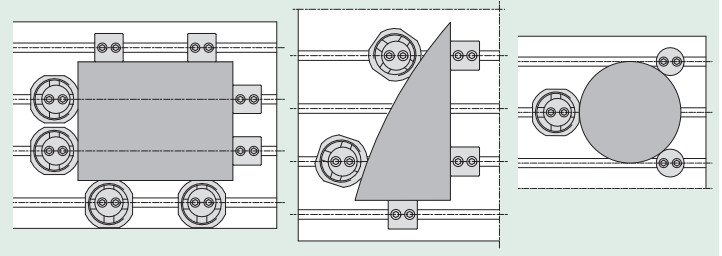
Cam Clamp | T-Type



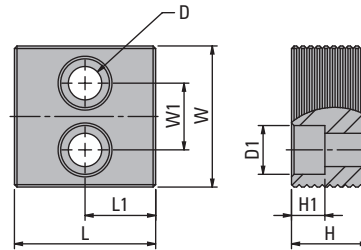
This cam clamp is used for the Type-T cam system. The clamping element has both a smooth surface and a grooved clamping surface to meet particular clamping needs.

Part #	D mm	D1 mm	L mm	W mm	W1 mm	H mm	H1 mm
F658-445010	12.5	9	94	94	26	27	13

How To Use



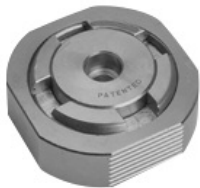
Fixed Block | T-Type



This fixed block is used for the T-Type cam system. The block features a serrated surface.

Part #	D mm	D1 mm	L mm	L1 mm	W mm	W1 mm	H mm	H1 mm
F658-440400	17	10.5	50	25	50	26	18	11

Cam Clamp | Custom



This cam clamp is used with the custom fixed block when the customer is specifying block dimensions. The cam clamp has both a smooth surface and a grooved clamping surface to meet particular clamping needs.

Part #
F658-445020

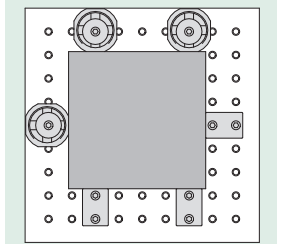
Fixed Block | Custom



This block is fixed and built to match the length, width, and height specifications supplied by customer. The block features a serrated surface. Contact Fixtureworks with specifications or for more information.

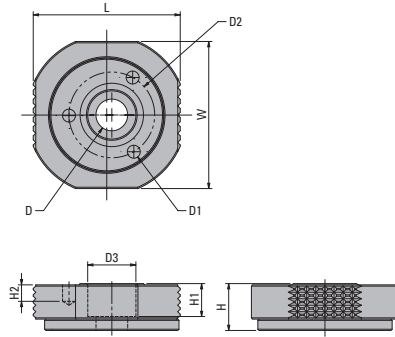
Part #
F658-441400

How To Use

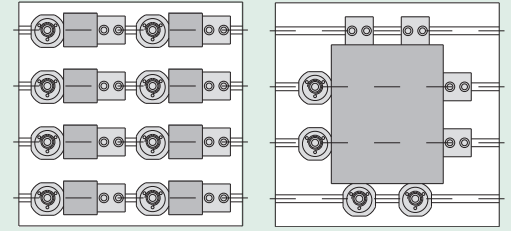


CAM CLAMPING SYSTEMS

Cam Clamp | S-Type



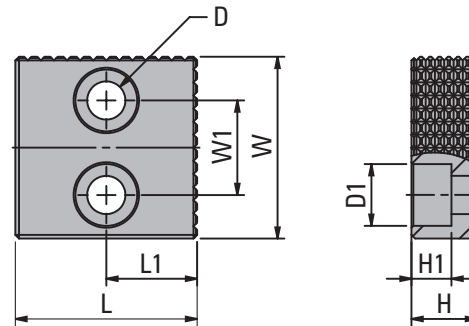
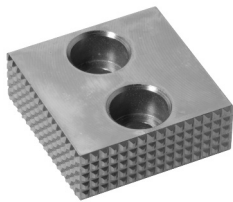
How To Use



This cam clamp is used for the Type-S cam clamping system. The clamping element has both a smooth surface and a grooved clamping surface to meet particular clamping needs.

Part #	D mm	D1 mm	D1 mm	D2 mm	D3 mm	W mm	H mm	H1 mm	H2 mm
F658-435000	19	5.1	33.8	13	58	58	19	13	6.5

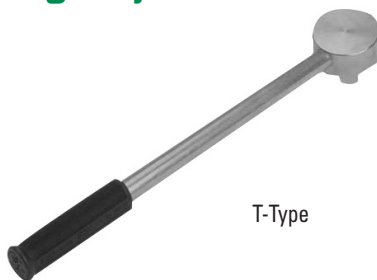
Fixed Block | S-Type



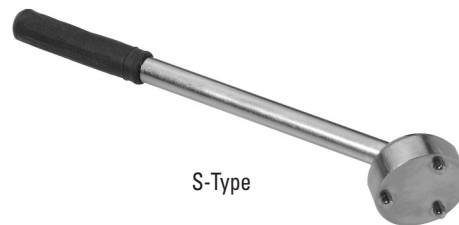
This fixed block is used for the S-Type cam clamping system. The block features a serrated surface.

Part #	D mm	D1 mm	L mm	L1 mm	W mm	W1 mm	H mm	H1 mm
F658-430400	10.5	17	50	25	50	26	18	11

Clamping Keys



T-Type



S-Type

A clamping key is available for both the T and S-Type clamping systems.

Part #	Cam Type
F658-440800	T

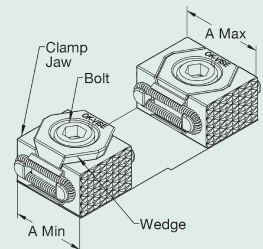
Part #	Cam Type
F658-430800	S

WEDGE CLAMPS

OK-Vise clamps provide a fast and flexible workholding solution. These universal fixturing clamps can be used to hold a variety of materials including steel, brass, aluminum, plastic, etc. These low profile clamps expand evenly on both vertical and horizontal planes as they are tightened down. They thrust the work piece against a stop and prevent movement on the fastening base. They are designed to fit between the work pieces so parts can be ganged together for machining. They provide high clamping pressure while taking up little space on the fastening base. The clamps are fastened with one bolt making them ideal for quick set up and part changing. Jaws and wedge are manufactured from tool steel except for the stainless steel style. The bottom mounting surfaces on all versions are fully ground. A metal retaining spring retracts the jaws when pressure is released except on the economy versions where a Viton o-ring is used. Mounting screws are not included. Replacement components are available.

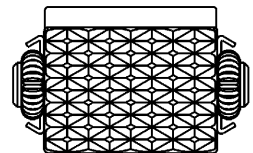
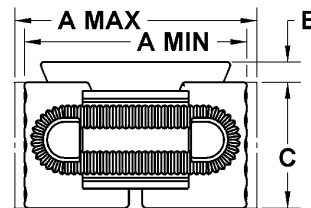
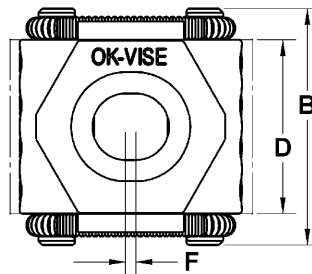
How To Use

Single Wedge OK-Vise Clamp



As the bolt is tightened the wedge is pulled down between the clamp jaws making the clamp expand.

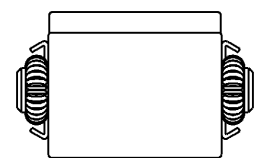
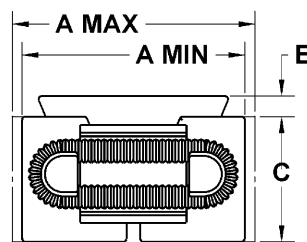
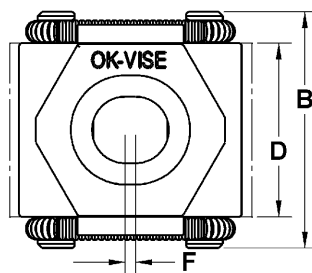
Single Wedge | Serrated Jaws



Part #	Min A	Optimum A	Max A	B	C	D	E	F	Socket Head Screw	Max Jaw Force Lbs.	Max Tightening Torque Ft/Lbs.	Jaw Hardness RC
OKBK2-VT-0*	1.06	1.14	1.22	1.14	.59	.83	.10	.04	5/16 OR M8	3,370	18	48-52
OKBK2-VT	1.06	1.14	1.22	1.14	.59	.83	.10	.04	5/16 OR M8	5,620	32	48-52
OKDK2-VT	1.65	1.77	1.93	1.61	.87	1.18	.16	.08	M12	14,612	107	48-52
OKDK2-VTI	1.65	1.77	1.93	1.61	.87	1.18	.16	.08	1/2	14,612	107	48-52
OKFK2-VT	2.24	2.40	2.56	2.20	1.14	1.65	.20	.12	5/8 OR M16	24,728	226	48-52

*The economy styles are supplied with Viton O-Rings instead of metal retaining springs and the internal wear surfaces are not ground.

Single Wedge | Smooth Jaws



The ends of the jaws are smooth for no marring on softer materials.

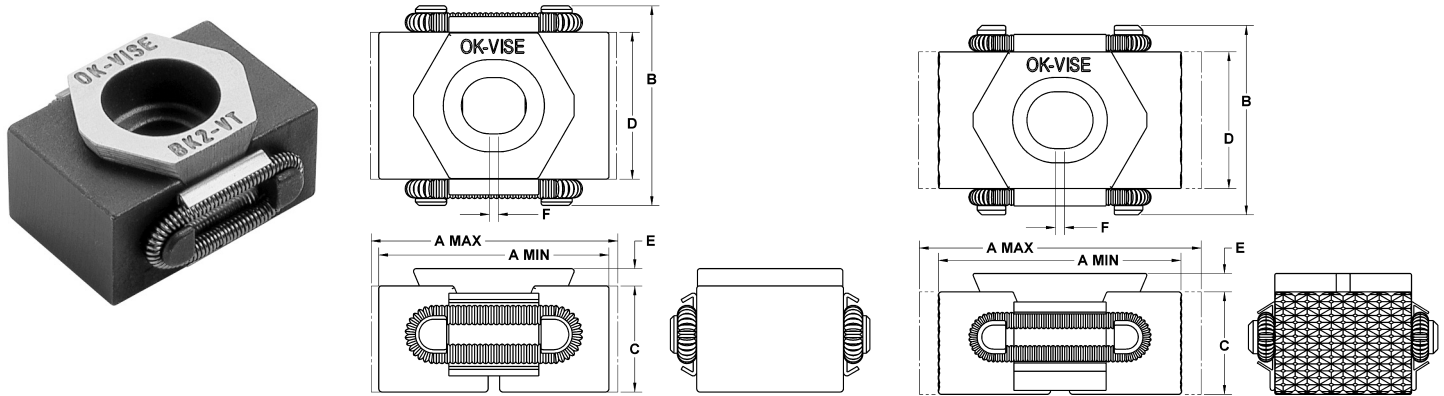
Part #	Min A	Optimum A	Max A	B	C	D	E	F	Socket Head Screw	Max Jaw Force Lbs.	Max Tightening Torque Ft/Lbs.	Jaw Hardness RC
OKAK2-VT-S0*	.79	.91	.98	.87	.43	.59	.17	—	3/16 OR M5	2,248	7	48-52
OKBK2-VT-S0*	1.06	1.14	1.22	1.14	.59	.83	.10	.04	5/16 OR M8	3,370	18	48-52
OKBK2-VT-S	1.06	1.14	1.22	1.14	.59	.83	.10	.04	5/16 OR M8	5,620	32	48-52
OKBK2-VT-SS**	1.06	1.14	1.22	1.14	.59	.83	.10	.04	5/16 OR M8	5,620	32	48-52
OKDK2-VT-S	1.65	1.77	1.93	1.61	.87	1.18	.16	.08	M12	14,612	107	48-52
OKDK2-VTI-S	1.65	1.77	1.93	1.61	.87	1.18	.16	.08	1/2	14,612	107	48-52
OKFK2-VT-S	2.24	2.40	2.52	2.20	1.14	1.65	.20	.12	5/8 OR M16	24,728	266	48-52

*The economy styles are supplied with Viton O-Rings instead of metal retaining springs and the internal wear surfaces are not ground.

** The jaws, wedge and all components are made from stainless steel.

WEDGE CLAMPS

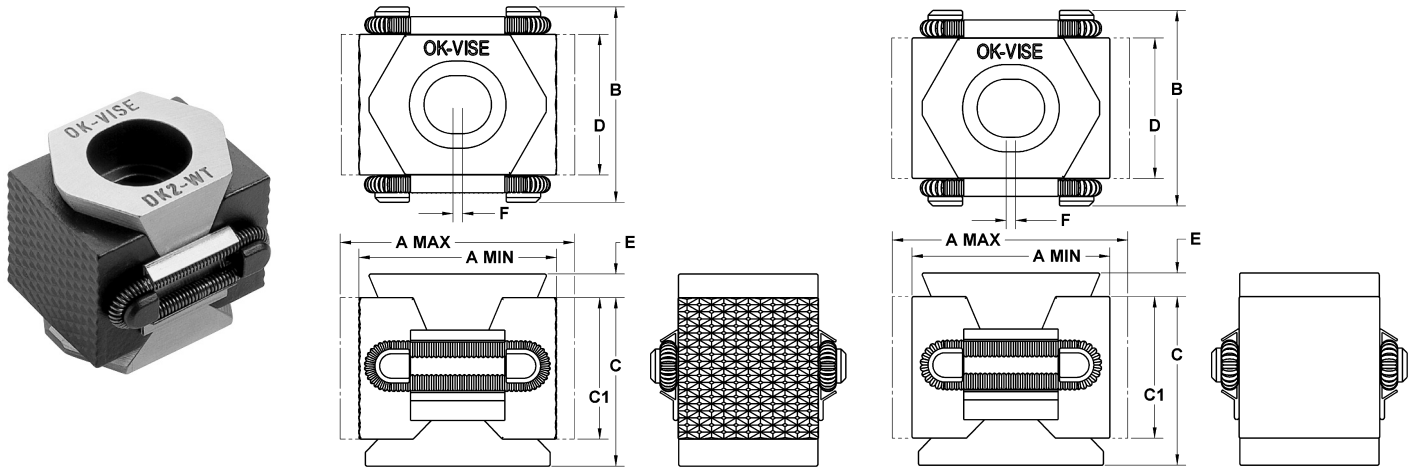
Single Wedge | Machinable Jaws



The jaws of the clamps are left soft and are oversized for custom machining to adapt the jaws to your application.

Part #	Min A	Optimum A	Max A	B	C	D	E	F	Socket Head Screw	Max Jaw Force Lbs.	Max Tightening Torque Ft/Lbs.	Jaw Hardness RC	Jaw Type
OKBK2-VT+3	1.30	1.38	1.46	1.14	.59	.83	.10	.04	5/16 OR M8	4,964	32	30-34	Smooth
OKDK2-VT+5	2.05	2.17	2.32	1.61	.87	1.18	.16	.08	M12	12,364	107	30-34	Serrated
OKDK2-VTI+5	2.05	2.17	2.32	1.61	.87	1.18	.16	.08	1/2	12,364	107	30-34	Serrated
OKFK2-VT+5	2.64	2.76	2.95	2.20	1.14	1.65	.20	.12	5/8 OR M16	22,480	266	30-34	Serrated

Double Wedge | Serrated and Smooth Jaws

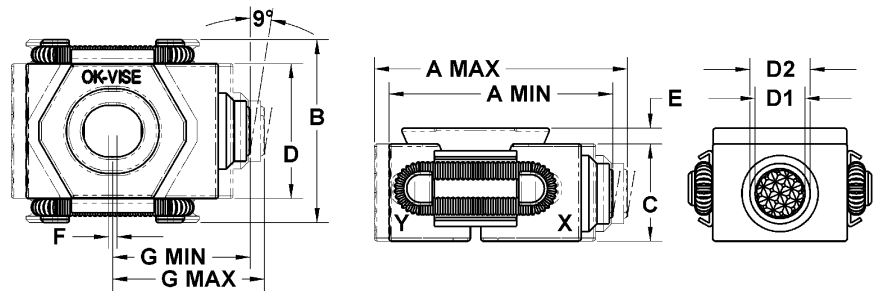


These double wedge clamps generate a double wedge action for additional jaw force pressing the work piece toward the fixture base.

Part #	Min A	Optimum A	Max A	B	C	C1	D	E	F	Socket Head Screw	Max Jaw Force Lbs.	Max Tightening Torque Ft/Lbs.	Jaw Hardness RC	Jaw Type
OKDK2-WT	1.65	1.81	1.93	1.61	1.42	1.18	1.18	.20	.08	M12	20,232	107	48-52	Serrated
OKDK2-WT-S	1.65	1.81	1.93	1.61	1.42	1.18	1.18	.20	.08	M12	20,232	107	48-52	Smooth
OKDK2-WTI	1.65	1.81	1.93	1.61	1.42	1.18	1.18	.20	.08	1/2	20,232	107	48-52	Serrated
OKDK2-WTI-S	1.65	1.81	1.93	1.61	1.42	1.18	1.18	.20	.08	1/2	20,232	107	48-52	Smooth
OKFK2-WT	2.28	2.40	2.60	2.20	1.97	1.65	1.65	.20	.12	5/8 OR M16	33,720	266	48-52	Serrated
OKFK2-WT-S	2.28	2.40	2.60	2.20	1.97	1.65	1.65	.20	.12	5/8 OR M16	33,720	266	48-52	Smooth

WEDGE CLAMPS

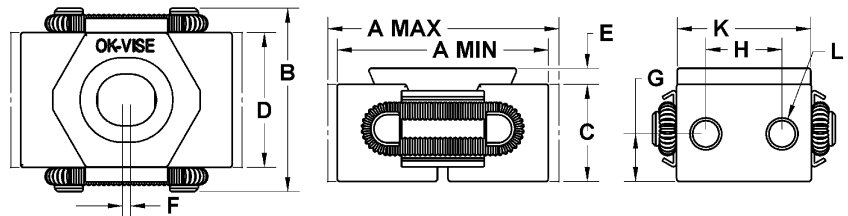
Single Wedge | Self-Adjusting Jaws



One end of the clamp features a swivel pad that moves 9 degrees to compensate for uneven clamping surfaces.

Part #	Min A	Optimum A	Max A	B	C	D1	D2	E	F	Min G	Optimum G	Max G	Socket Head Screw	Max Jaw Force Lbs.	Max Tightening Torque Ft/Lbs.	Jaw Hardness RC X	Jaw Hardness RC Y
OKBK2-VT-B	1.30	1.38	1.46	1.14	.59	.28	.33	.10	.04	.77	.80	.86	5/16 OR M8	4,946	32	30-34	48-52
OKDK2-VTI-B	2.05	2.17	2.32	1.61	.87	.42	.47	.16	.08	1.21	1.29	1.37	1/2	12,364	107	30-34	48-52
OKDK2-VT-B	2.05	2.17	2.32	1.61	.87	.42	.47	.16	.08	1.21	1.29	1.37	M12	12,364	107	30-34	48-52

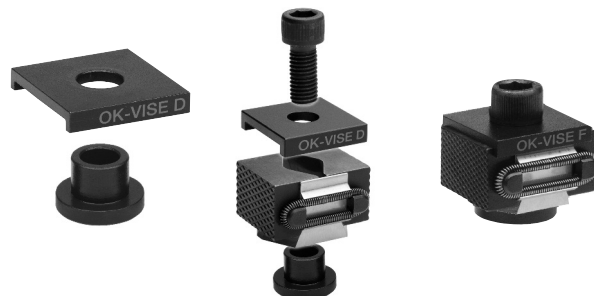
Single Wedge | Threaded Jaws



The jaws have a female thread on the end of the jaw to allow for quick and easy special attachments to the jaw. It is designed for short run jobs when the shape of the workpiece changes and does not justify making custom or dedicated fixtures.

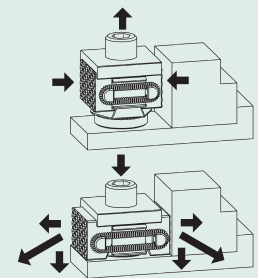
Part #	Min A	Optimum A	Max A	B	C	D	E	F	G	H	K	L	Socket Head Screw	Max Jaw Force Lbs.	Max Tightening Torque Ft/Lbs.	Jaw Hardness RC
OKBK2-VT-T	1.30	1.38	1.46	1.14	.59	.83	.10	.04	.30	.47	—	4 X M5	5/16 OR M8	4,964	32	30-34
OKDK2-VT-T	1.81	1.93	2.09	1.61	.87	1.18	.16	.08	.43	.71	1.10	4 X M5	M12	12,364	107	30-34
OKDK2-VTI-T	1.81	1.93	2.09	1.61	.87	1.18	.16	.08	.43	.71	1.10	4 X M5	1/2	12,364	107	30-34
OKFK2-VT-T	2.40	2.56	2.76	2.20	1.14	1.65	.20	.12	.57	1.02	1.57	4 X M5	5/8 OR M16	22,480	266	30-34

Pull Down Kits



These pull down kits include a plate and bushing and are used with single acting OK Vise clamps. (The clamps are used in the upside-down position) The plate and bushing allow the OK Vise clamps to produce downward force as well as lateral force when the bolt is tightened. The fastening bolt and OK Vise clamp are not included with the pull down kit. (The part numbers below only include the plate and bushing)

How To Use

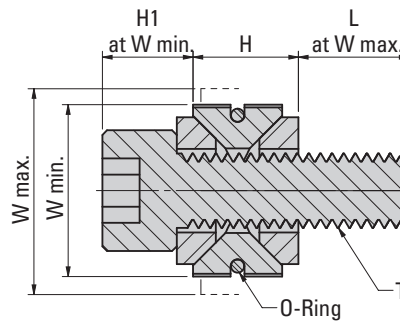
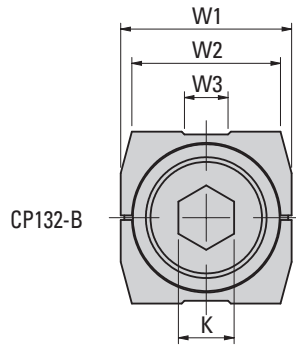
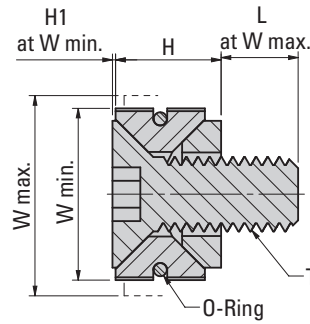
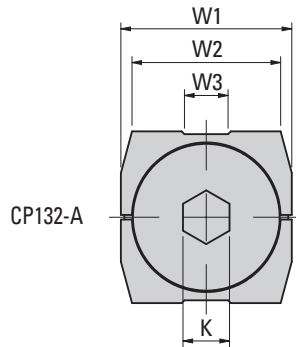


Pull down kits position single wedge clamps so downward clamping force is applied to the work piece as the jaws expand.

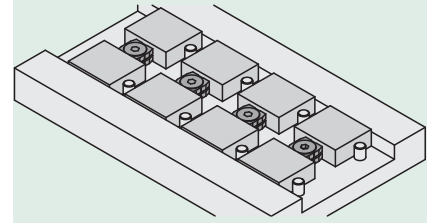
Part # Use With OK Vise Clamps Number

OKPDK-BK	OKBK2-VT-0, OKBK2-VT-S0, OKBK2-VT, OKBK2-VT-S, OKBK2-VT+3, OKBK2-VT-T, OKBK2-VT-B
OKPDK-DK	OKDK2-VT, OKDK2-VT-S, OKDK2-VT+5, OKDK2-VT-T, OKDK2-VT-B, OKDK2-VTI, OKDK2-VTI-S, OKDK2-VTI+5, OKDK2-VTI-T, OKDK2-VTI-B
OKPDK-FK	OKFK2-VT, OKFK2-VT-S, OKFK2-VT+5, OKFK2-VT-T

WEDGE CLAMP - COMPACT – CP132 SERIES



How To Use

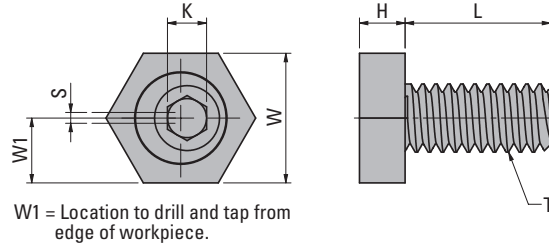


Compact design allows to utilize machining area and clamp multiple workpieces.

Tightening the hex screw expands the jaws outward and downward, preventing workpiece lift. Clamp two workpieces against fixed stops. The low profile and small size allow for faster set up and more parts per load. CP132-A uses a countersunk head screw. CP132-B uses a socket head cap screw. Jaws made from SNCM439 steel, Rc 33/39, with a black oxide finish. Washer made from SCM435 steel with a black oxide finish. O-ring made from fluoro rubber.

Part #	T mm	L mm	W min mm	W max mm	W1 mm	W2 mm	W3 mm	H at W min mm	H at W max mm	H1 at L min mm	K mm	Clamping Force Lbs.	Allowable Screw Torque Ft Lbs.
CP132-05001A	M5X0.8X15	9.5	12	14	12	10	3.3	7.2	6.2	.3	3	449	3.2
CP132-06001A	M6X1X16	9.3	15	17	14.8	12	4.0	8.5	7.5	.3	4	786	5.4
CP132-08001A	M8X1.25X20	11.3	18.5	21.5	18.4	16	5.3	11.4	9.9	.4	5	1124	13.3
CP132-05001B	M5X0.8X16	9.6	12	14	12	10	3.3	7.2	6.2	6.2	4	674	4.0
CP132-06001B	M6X1X18	10.2	15	17	14.8	12	4.0	8.5	7.5	7.3	5	1011	6.7
CP132-08001B	M8X1.25X25	14.9	18.5	21.5	18.4	16	5.3	11.4	9.9	9.8	6	2023	16.2

FIXTURE CLAMPS



These fixture clamps are made up of a hardened steel socket cap screw with an offset head and a brass or stainless hex washer. By tightening down on the screw, the washer is forced towards the work piece to provide fast, strong clamping. The low profile and small size allow for faster set up and more parts per load. Please note: clockwise location is recommended. The work piece stop should be on the right of the clamp.

INCH											
Brass Part #	Thread T	L	W	W1*	H	Total Travel S	K	Torque Ft Lbs.	Max Holding Force Lbs.	Cam Screw Only	Hex Washer Only
MB-10202	8-32	.350	.312	.150	.110	.030	5/64	1.5	205	MB-10363	MB-10580
MB-10207	10-32	.340	.500	.250	.160	.040	3/32	2.5	350	MB-10366	MB-10587
MB-10204	1/4-20	.470	.625	.308	.190	.040	1/8	6.2	800	MB-10365	MB-10582
MB-10205	5/16-24	.460	.812	.400	.180	.040	3/16	8.3	800	MB-10369	MB-10584
MB-10201	5/16-18	.460	.812	.400	.180	.040	3/16	8.3	800	MB-10367	MB-10584
MB-10206	3/8-16	.710	.812	.400	.250	.050	3/16	20.8	2,000	MB-10371	MB-10586
MB-10208	1/2-13	.900	1.000	.500	.375	.100	5/16	65.0	4,000	MB-10373	MB-10588
MB-10210	5/8-11	1.125	1.187	.590	.500	.100	3/8	100.0	6,000	MB-10375	MB-10592
Stainless											
MB-10214	8-32	.350	.312	.150	.110	.030	5/64	1.5	205	MB-10362	MB-10581
MB-10203	1/4-20	.470	.625	.308	.190	.040	1/8	6.2	800	MB-10364	MB-10583
MB-10213	5/16-18	.460	.812	.400	.250	.040	3/16	8.3	800	MB-10368	MB-10585

METRIC											
Brass Part #	Thread T mm	L mm	W mm	W1* mm	H mm	Total Travel S mm	K mm	Torque Ft Lbs.	Max Holding Force Lbs.	Cam Screw Only	Hex Washer Only
MB-50204	M4	9.60	7.93	3.80	2.80	.76	3	1.4	204	MB-50363	MB-10580
MB-50206	M6	11.20	15.86	7.80	4.75	1.01	4	6.2	799	MB-50365	MB-10582
MB-50208	M8	15.00	20.61	10.15	4.55	1.01	5	8.3	799	MB-50367	MB-10584
MB-50210	M10	19.00	20.61	10.15	6.35	1.27	7	20.6	1999	MB-50369	MB-10586
MB-50212	M12	22.80	25.38	12.70	9.52	2.03	8	64.9	3999	MB-50371	MB-10590
MB-50216	M16	28.50	30.13	15.00	12.70	2.54	12	92.1	5997	MB-50373	MB-10592
Stainless											
MB-50214	M4	9.60	7.93	3.80	2.80	.76	3	1.4	204	MB-50361	MB-10580
MB-50205	M6	11.20	15.86	7.80	4.75	1.01	4	6.2	799	MB-50364	MB-10583
MB-50207	M8	15.00	20.60	10.15	6.35	1.01	5	8.3	799	MB-50366	MB-10585

*Location to drill and tap from the edge of the work place.

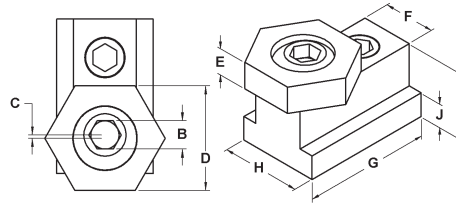
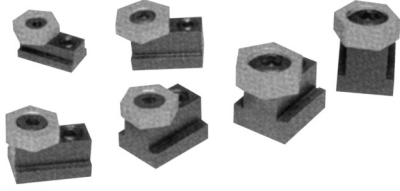
KNIFE EDGE CLAMPS



These clamps are similar to the clamps above, however, the edges are grooved for clamping rough cut stock, castings and other material that requires a hardened clamping element. Made from brass.

Part #	A	B	Total Travel C	D	E	F	G	Torque (in/Lbs.)	Max Holding Force Lbs.
MB-22584	3/8-16	3/16	.050	.812	.250	.710	.400	199	2,000
MB-22588B	1/2-13	5/16	.080	1.000	.375	.900	.500	624	4,000
MB-22592	5/8-11	3/8	.100	1.187	.500	1.125	.590	960	6,000

T-SLOT CLAMPS

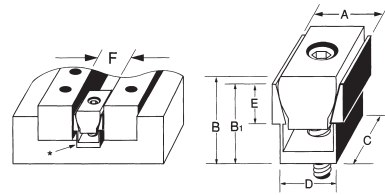
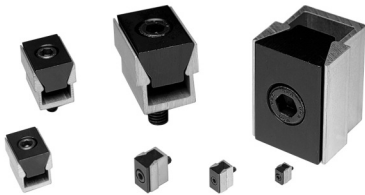


These T-Slot clamps combine the cam action fixture clamps with a T-nut. They lock into a machine T-slot for low profile clamping and makes set up quick and easy.

INCH														
Part #	Cam Screw	T-Slot Size	B	Total Travel		D	E	F	G	H	I	J	Torque (in/Lbs.)	Max Holding Force Lbs.
MB-10420	1/4-20	3/8	1/8	.040	.625	.190	.365	.89	.500	.375	.155	74	800	
MB-10421	5/16-18	7/16	3/16	.040	.812	.190	.425	1.10	.625	.625	.225	100	800	
MB-10422	3/8-16	1/2	3/16	.050	.812	.250	.490	1.20	.750	.625	.235	250	2,000	
MB-10423	3/8-16	9/16	3/16	.050	.812	.250	.550	1.20	.875	.750	.300	250	2,000	
MB-10424	1/2-13	5/8	5/16	.100	1.000	.375	.620	1.27	1.000	.875	.360	540	3,000	
MB-10426	1/2-13	11/16	5/16	.100	1.000	.375	.675	1.37	1.000	1.000	.420	540	3,000	

METRIC														
Part #	Cam Screw mm	T-Slot Size mm	B mm	Total Travel mm		D mm	E mm	F mm	G mm	H mm	I mm	J mm	Torque (Nm)	Max Holding Force (N)
MB-50422	M6X1.0	8	5	1.01	15.86	4.75	8	23.2	12.7	9.5	8	8.5	3,558	
MB-50424	M6X1.0	10	5	1.01	15.86	4.75	10	23.2	14.2	14.2	10	8.5	3,558	
MB-50426	M8X1.25	12	5	1.01	20.62	4.75	12	27.9	15.9	15.9	12	11.3	5,355	
MB-50428	M10X1.50	14	7	1.52	20.62	6.35	14	30.5	22.4	22.2	14	28.0	8,900	
MB-50430	M12X1.75	16	8	2.03	25.40	9.53	16	30.9	25.4	22.2	16	61.0	13,340	
MB-50432	M12X1.75	18	8	2.03	25.40	9.53	18	34.7	28.6	28.6	18	61.0	13,340	
MB-50434	M16X2	20	12	2.54	30.15	12.70	20	39.2	31.8	31.8	20	135.0	26,700	
MB-50436	M16X2	22	12	2.54	30.15	12.70	22	44.3	34.9	41.3	22	135.0	26,700	

UNIFORCE CLAMPS



These compact and economical clamps enable you to fixture more parts on the machine table. The steel wedge spreads the clamping force uniformly on both sides of the 7075-T6 aluminum channel. These clamps allow you to hold two parts with equilateral clamping action. They work on both flat and round stock.

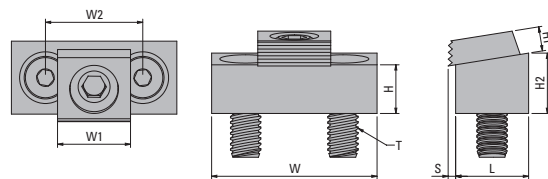
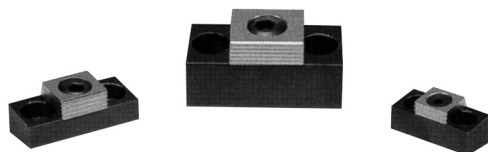
INCH											
Part #	A	B	B1	C	D*	E	F**	Thread	Spread	Torque (in/Lbs.)	Max Holding Force Lbs.
MB-60250	.240	.27	.250	.320	.210	.140	.250	2-56	.260	6	200
MB-60375	.360	.38	.375	.470	.310	.185	.375	4-40	.390	13	310
MB-60500	.485	.58	.500	.625	.410	.220	.500	8-32	.530	30	500
MB-60750	.735	.77	.750	.940	.635	.375	.750	1/4-20	.785	130	1,500
MB-61000	.980	1.02	1.000	1.250	.820	.500	1.000	5/16-18	1.050	125	2,000
MB-61500	1.470	1.52	1.500	1.875	1.215	.750	1.500	1/2-13	1.560	340	3,500
MB-62000	1.960	2.03	2.000	2.500	1.625	1.000	2.000	5/8-11	2.080	660	6,000

METRIC											
Part #	A mm	B mm	B1 mm	C mm	D* mm	E mm	F** mm	Thread mm	Spread mm	Torque (Nm)	Max Holding Force (N)
MB-80250	6.1	6.9	6.40	8.1	5.3	3.6	6.4	M2	6.7	.70	880
MB-80375	9.1	9.7	9.50	11.9	7.9	4.7	9.5	M2.5	10.0	1.50	1,350
MB-80500	12.3	14.5	12.70	15.9	10.4	5.6	12.7	M4	13.2	3.40	2,225
MB-80750	18.6	19.0	19.05	23.8	16.1	9.5	19.0	M6	20.3	14.30	6,675
MB-81000	24.8	25.9	25.40	31.7	20.8	12.7	25.4	M8	26.9	14.50	8,900
MB-81500	37.3	38.6	38.10	47.6	30.9	19.0	38.1	M12	39.9	38.40	15,575
MB-82000	49.7	51.5	50.80	63.5	41.2	25.4	50.8	M16	53.0	74.60	26,700

* A milled slot wider than D will insure clamp remains in line with the work piece. Clamp sides should not come in contact with slot walls during expansion.

** F is the distance needed between work pieces for clamp clearance. Drill and tap mounting hole on the center of the F dimension.

COMPACT TOE CLAMPS



These cam action clamps provide positive down force while using very little space on a fixture. The work piece can be clamped in series by using the back surface of a clamp to locate the next work piece. The hardened steel clamping element has both a smooth surface for machined work and a serrated clamping surface for rougher work. The height of the clamp can be adjusted by milling the slot deeper in the fixture plate. Mounting screws included.

INCH

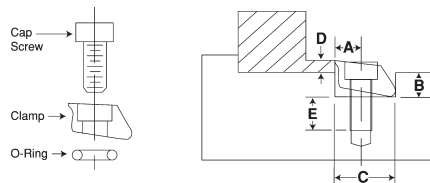
Part #	W	L	H	W2	Stroke S*	W1	H1	H2	Total Movement Distance	Mounting Screw	Torque Ft Lbs.	Max Holding Force Lbs.
MB-24106	1.70	.75	.50	1.00	.09	.75	.25	.62	.050	5/16-18	20.8	2,000
MB-24108	2.12	1.00	.45	1.32	.11	1.00	.38	.62	.100	3/8-16	65.0	4,000
MB-24110	2.95	1.50	.99	2.00	.13	1.50	.50	1.25	.100	1/2-13	100.0	6,000

METRIC

Part #	W mm	L mm	H mm	W2 mm	Stroke S* mm	W1 mm	H1 mm	H2 mm	Total Movement Distance mm	Mounting Screw	Torque Ft Lbs.	Max Holding Force Lbs.
MB-54110	43.2	19.0	12.7	25.4	2.3	19.0	6.4	15.75	1.6	M8X16	20.8	2,000
MB-54112	54.0	25.4	11.4	33.5	2.8	25.4	9.7	15.75	2.0	M10X20	65.0	4,000
MB-54116	75.0	38.1	25.2	50.8	3.3	38.1	12.7	31.75	2.5	M12X30	100.0	6,000

* S is the distance between the front of the clamp base and the workpiece.

PITBULL LOW PROFILE CLAMPS



These clamps offer positive down force and a low gripping profile. They use a standard cap screw held in place with an o-ring. The knife edge style bites into the material more aggressively than the blunt edge clamp which is less likely to mar the material. The brass style is designed for softer materials.

INCH

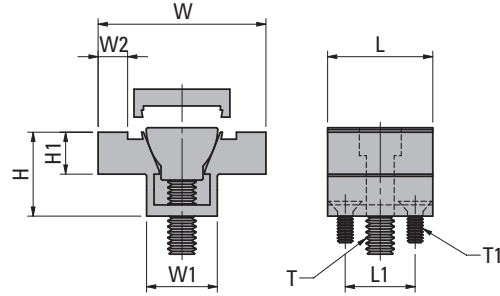
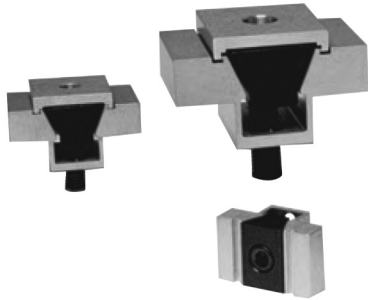
Part #	Edge Type	A	B	C	D*	E	Clamp Width	Screw Size	Torque (in/Lbs.)	Max Holding Force (Lbs.)	Total Throw
MB-26000	Steel - Knife	.150	.140	.375	.075	.26	.375	4-40	16	650	.0075
MB-26010	Steel - Blunt	.150	.140	.375	.075	.26	.375	4-40	16	650	.0075
MB-26015	Brass - Blunt	.150	.140	.375	.075	.22	.375	4-40	5	200	.0075
MB-26020	Steel - Knife	.200	.187	.500	.100	.39	.500	8-32	44	1,500	.0160
MB-26030	Steel - Blunt	.200	.187	.500	.100	.39	.500	8-32	44	1,500	.0160
MB-26040	Brass - Blunt	.200	.187	.500	.100	.34	.500	8-32	24	400	.0160
MB-26050	Steel - Knife	.300	.280	0.750	.150	.57	.750	1/4-20	174	3,600	.0240
MB-26060	Steel - Blunt	.300	.280	0.750	.150	.57	.750	1/4-20	174	3,600	.0240
MB-26065	Brass - Blunt	.300	.280	0.750	.150	.44	.750	1/4-20	49	950	.0240
MB-26070	Steel - Knife	.400	.450	1.000	.250	.71	1.000	3/8-16	360	6,000	.0500
MB-26075	Steel - Blunt	.400	.450	1.000	.250	.71	1.000	3/8-16	360	6,000	.0500
MB-26080	Steel - Knife	.600	.640	1.500	.375	.77	1.500	1/2-13	1,300	12,000	.0750
MB-26085	Steel - Blunt	.600	.640	1.500	.375	.77	1.500	1/2-13	1,300	12,000	.0750

METRIC

Part #	Edge Type	A mm	B mm	C mm	D* mm	E mm	Clamp Width mm	Screw Size mm	Torque (Nm)	Max Holding Force (N)	Total Throw mm
MB-56000	Steel - Knife	3.81	3.55	9.52	1.90	8	9.52	M2.5	1.80	2,800	.190
MB-56010	Steel - Blunt	3.81	3.55	9.52	1.90	8	9.52	M2.5	1.80	2,800	.190
MB-56015	Brass - Blunt	3.81	3.55	9.52	1.90	8	9.52	M2.5	.56	875	.190
MB-56020	Steel - Knife	5.08	4.75	12.70	2.54	12	12.70	M4	5.60	6,600	.406
MB-56030	Steel - Blunt	5.08	4.75	12.70	2.54	12	12.70	M4	5.60	6,600	.406
MB-56040	Brass - Blunt	5.08	4.75	12.70	2.54	12	12.70	M4	2.80	1,750	.406
MB-56050	Steel - Knife	7.62	7.11	19.05	3.81	16	19.05	M6	22.50	16,000	.610
MB-56060	Steel - Blunt	7.62	7.11	19.05	3.81	16	19.05	M6	22.50	16,000	.610
MB-56065	Brass - Blunt	7.62	7.11	19.05	3.81	16	19.05	M6	5.60	4,200	.610
MB-56070	Steel - Knife	10.16	6.53	25.40	6.35	25	25.40	M10	40.60	26,000	1.270
MB-56075	Steel - Blunt	10.16	6.53	25.40	6.35	25	25.40	M10	40.60	26,000	1.270
MB-56080	Steel - Knife	15.24	9.52	38.10	9.52	30	38.10	M12	200.00	37,500	1.900
MB-56085	Steel - Blunt	15.24	9.52	38.10	9.52	30	38.10	M12	200.00	37,500	1.900

* D - Clamp Height

WEDGE CLAMPS - MACHINABLE



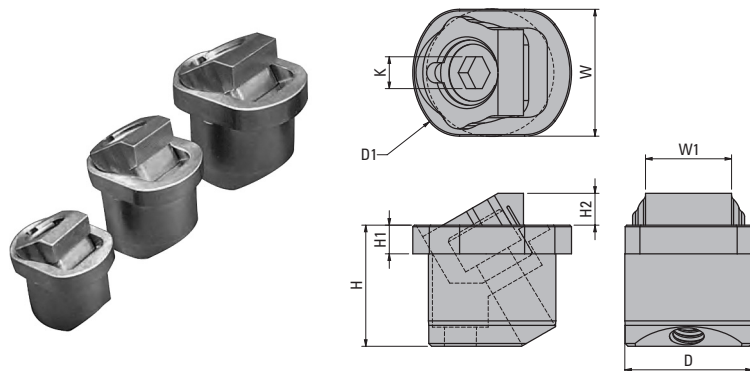
These compact and economical clamps enable you to fixture more parts on the machine table. The steel wedge spreads the clamping force uniformly on both sides of the aluminum channel. The extra material on the clamping jaws can be machined to conform to the shape of the workpiece, allowing you to fixture unusual applications. These clamps allow you to hold two parts with equilateral clamping action. They work on both flat and round stock. The locking plate allows you to expand the clamp for machining. When the clamp is used to hold flat stock, use the locking plate to machine the faces parallel. A mounting screw is included. The channel is made from 7075-T6 aluminum. The wedge is made from steel.

INCH													Max Torque	Holding Force		
with locking plate	w/o locking plate	T	T1	L	L1	W	W1	W2	H	H1		Ft Lbs.	Lbs.	Wedge Only	Channel only	
Part #	Part #															
MB-60050	MB-60055	8-32	2-56	.62	.400	1.125	.420	.18	.50	.25		2.5	500	MB-60310	MB-60140	
MB-60075	MB-60080	1/4-20	6-32	.94	.625	1.500	.632	.26	.75	.37		10.8	1,500	MB-60320	MB-60125	
MB-60100	MB-60105	5/16-18	6-32	1.25	.812	2.000	.820	.39	1.00	.50		10.4	2,000	MB-60330	MB-60135	
MB-60150	MB-60153	1/2-13	10-32	1.87	1.200	3.000	1.215	.62	1.50	.75		28.3	3,500	MB-60340	MB-60160	
MB-60200	MB-60203	5/8-11	1/4-20	2.50	1.625	4.000	1.625	.80	2.00	1.00		55.0	6,000	MB-60350	MB-60180	

METRIC													Max Torque	Holding Force		
with locking plate	w/o locking plate	T	T1	L	L1	W	W1	W2	H	H1		Ft Lbs.	Lbs.	Wedge Only	Channel only	
Part #	Part #	mm	mm	mm	mm	mm	mm	mm	mm	mm						
MB-80050	MB-80055	M4	M2	15.7	10.16	28.6	10.67	4.6	12.7	6.3		2.5	500	MB-60310	MB-60140	
MB-80075	MB-80080	M6	M4	23.9	15.87	38.1	16.05	6.6	19.1	9.4		10.8	1,500	MB-60320	MB-60125	
MB-80100	MB-80105	M	M4	31.8	20.62	50.8	20.83	9.9	25.4	12.7		10.4	2,000	MB-60330	MB-60135	
MB-80150	MB-80155	M12	M5	47.5	30.48	76.2	30.86	15.7	38.1	19.1		28.3	3,500	MB-60340	MB-60160	
MB-80200	MB-80205	M16	M6	63.5	41.28	101.6	41.28	20.3	50.8	25.4		55.0	6,000	MB-60350	MB-60180	

W - The distance needed between workpieces for clamp clearance. Drill and tap the mounting holes on the center of the W dimension.
W2 - The amount of machinable stock in the jaws.

DYNA FORCE CLAMPS

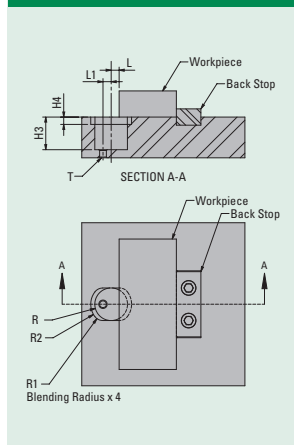


Part #	Description	T	+0.1/-0	R	+0.1/-0	L	L1	±0.1	±0.1
		mm	R	mm	R	mm	mm	mm	mm
MB-28314	Smooth 34RC	M5 or 10-24	20.00	6.00	25.00	4.90	5.00	20.00	4.50
MB-28318	Serrated 44RC	M5 or 10-24	20.00	6.00	25.00	4.90	5.00	20.00	4.50
MB-28320	Smooth 34RC	M6 or 1/4-20	25.00	6.50	30.00	5.65	6.00	25.00	5.00
MB-28322	Serrated 44RC	M6 or 1/4-20	25.00	6.50	30.00	5.65	6.00	25.00	5.00
MB-28324	Smooth 34RC	M8 or 5/16-18	30.00	8.00	38.00	7.05	7.50	30.00	7.00
MB-28328	Serrated 44RC	M8 or 5/16-18	30.00	8.00	38.00	7.05	7.50	30.00	7.00

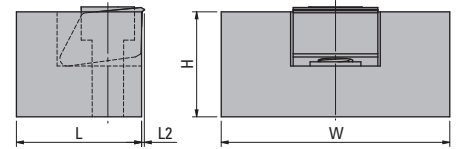
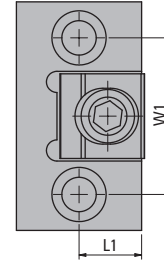
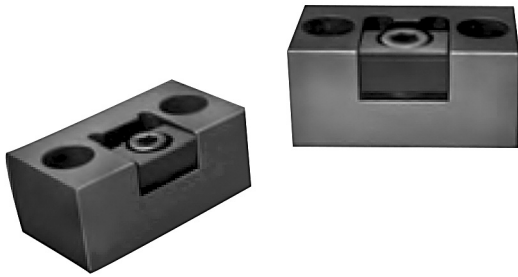
These clamps feature jaws that advance on an angle for positive down-force. Most of the clamp is below the surface of the fixture to maintain a low profile. Made from 17-4 PH stainless steel. Screw made from alloy steel. Stainless steel screw and retaining rings are available for EDM applications. For complete technical information, search for the part number at www.fixtureworks.net.

Part #	Description	D	D1	W	W1	H	H1	H2	H2	H2	Clamp Drive	Max	Holding			
		mm	mm	mm	mm	mm	mm	mm	mm	mm	Travel	Torque	Force	Insert Only		
								Min	Optimum	Max	mm	Ft Lbs.	Lbs.			
MB-28314	Smooth 34RC	20.00	24.90	19.90	13.50	19.00	4.50	3.25	5.00	6.75	5	2.0	6	7.3	2,000	MB-28480
MB-28318	Serrated 44RC	20.00	24.90	19.90	13.50	19.00	4.50	3.25	5.00	6.75	5	2.0	6	7.3	2,000	MB-28482
MB-28320	Smooth 34RC	25.00	29.90	24.90	15.00	24.00	5.00	4.50	6.50	8.25	6	2.2	8	17.6	2,600	MB-28320
MB-28322	Serrated 44RC	25.00	29.90	24.90	15.00	24.00	5.00	4.50	6.50	8.25	6	2.2	8	17.6	2,600	MB-28486
MB-28324	Smooth 34RC	30.00	37.90	29.90	20.00	29.00	7.00	4.50	7.50	10.75	8	3.8	10	35.3	3,200	MB-28488
MB-28328	Serrated 44RC	30.00	37.90	29.90	20.00	29.00	7.00	4.50	7.50	10.75	8	3.8	10	35.3	3,200	MB-28490

How To Install



PIT BULL CLAMPS - MODULAR - COMPACT

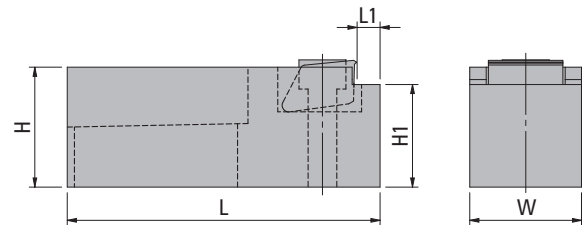
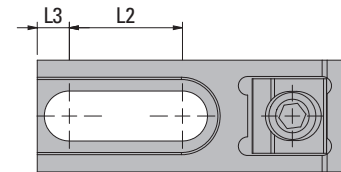


These clamps are ideal for clamping workpieces in series by using the back surface of the clamp to locate the next workpiece. The back of the clamp is ground square for precise location of parts. The height of the clamp can be adjusted by the depth of the milled slot used to locate the clamp. Made from steel.

INCH										
Knife Edge Part #	Blunt Edge Part #	Mounting Screw	L	L1	Clamp Travel L2	W	W1	H	Max Torque Ft. Lbs.	Holding Force Lbs.
MB-26220	MB-26225	5/16	1.23	.62	.24	2.25	1.50	.98	14.5	3,600
MB-26230	MB-26235	3/8	1.48	.74	.050	2.70	1.86	1.24	30.0	6,000

METRIC										
Knife Edge Part #	Blunt Edge Part #	Mounting Screw	L mm	L1 mm	Clamp Travel L2 mm	W mm	W1 mm	H mm	Max Torque Ft. Lbs.	Holding Force Lbs.
MB-56220	MB-56225	M8	32.242	15.7	.61	57.1	38.1	25.1	16.5	3,596
MB-56230	MB-56235	M10	37.592	18.8	1.27	68.6	47.0	31.5	29.9	5,845

PIT BULL CLAMPS - MODULAR - SLOTTED

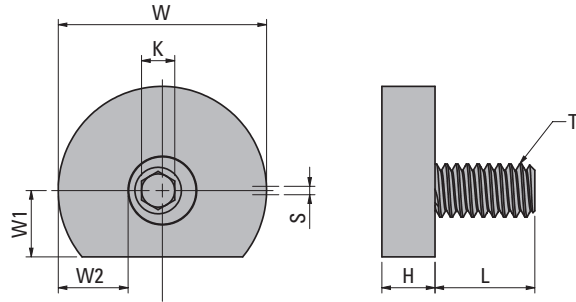


These clamps support workpieces off the machining table with a unique riser step design. Ideal for use on work cubes and machine tables for tapped holes or T-slot configurations. Made from steel.

INCH												
Knife Edge Part #	Blunt Edge Part #	Mounting Screw	L	L1	L2	L3	W	H	+0.0000 -.0005 H1	Clamp Travel	Max Torque Ft. Lbs.	Holding Force Lbs.
MB-26240	MB-26245	1/2	4.08	.36	1.70	.50	1.25	.99	.7300	.024	14.5	3,600
MB-26250	MB-26255	5/8	4.20	.36	1.52	.43	1.50	1.61	1.3780	.050	30.0	6,000

METRIC												
Knife Edge Part #	Blunt Edge Part #	Mounting Screw mm	L mm	L1 mm	L2 mm	L3 mm	W mm	H mm	+0.0000 -.013 H1 mm	Clamp Travel mm	Max Torque Ft. Lbs.	Holding Force Lbs.
MB-56240	MB-56245	M12	103.6	9.1	43.2	12.7	31.700	25.1	18.542	.61	16.5	3,596
MB-56250	MB-56255	M16	107.0	9.1	38.6	10.9	38.100	40.9	35.000	1.27	29.9	5,845

FIXTURE CLAMPS - MACHINABLE



These low profile clamps hold round or irregularly shaped workpieces directly to a fixture plate or stop. The flat edge is used where higher clamping forces are required. Mounting screw included. Made from mild steel.

INCH

Part #	T	L	W	W1	W2	H	K	S	Max Torque		Cam Screw Only	Washer Only
									Ft Lbs.	Holding Force Lbs.		
MB-10504	1/4-20	.470	.980	.308	.250	.250	1/8	.040	6.2	800	MB-10365	MB-10604
MB-10506	3/8-16	.710	1.230	.400	.275	.350	3/16	.050	20.8	2,000	MB-10371	MB-10606
MB-10508	1/2-13	.900	1.480	.500	.300	.450	5/16	.100	65.0	4,000	MB-10373	MB-10608
MB-10510	5/8-11	1.125	1.730	.590	.350	.550	3/8	.100	100.0	6,000	MB-10375	MB-10610

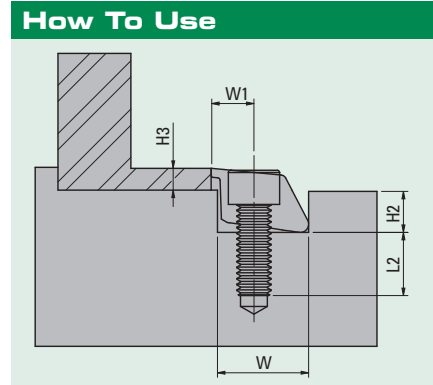
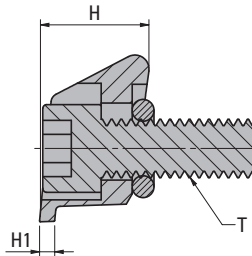
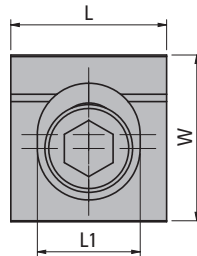
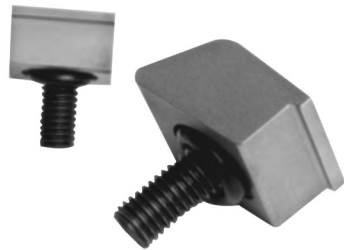
METRIC

Part #	T mm	L mm	W mm	W1 mm	W2 mm	H mm	K mm	S mm	Max Torque		Cam Screw Only	Washer Only
									Ft Lbs.	Holding Force Lbs.		
MB-50506	M6	11.9	24.9	7.8	6.4	6.4	4	1.01	6.2	800	MB-50365	MB-10604
MB-50510	M10	18.0	31.2	10.2	7.0	8.89	7	1.52	20.8	2,000	MB-50369	MB-10606
MB-50512	M12	22.9	37.6	12.7	7.6	11.4	8	2.03	65.0	4,000	MB-50371	MB-10612
MB-50516	M16	28.6	43.9	15.0	8.9	14.0	12	2.54	100.0	6,000	MB-50373	MB-10610

W1=Center of drill/tapped hole to edge of workpiece to use the flat face.

W2=Machinable stock

PIT BULL CLAMPS - MACHINABLE



These clamps provide positive down-force and a very low gripping profile. Ideal for machining pieces complete in one set-up. The additional material on the clamping face is intended for machining a radius to conform to the workpiece. Made from tool steel and heat treated to approx. 43RC. Includes a dowel pin to locate the clamp while machining the radius.

INCH

Part #	Screw Size		L1	L2	W	W1	H	H1	H2	H3	Dowel Throw	Pin	Max Torque Ft Lbs.	Total Holding Force Lbs.
	T	L												
MB-26077	3/8-16	1.00	.66	.710	1.07	.400	.70	.10	.450	.250	.050	1/8	30.0	6,000
MB-26088	1/2-13	1.50	.83	.770	1.71	.600	1.04	.22	.640	.375	.075	1/4	108.3	12,000

METRIC

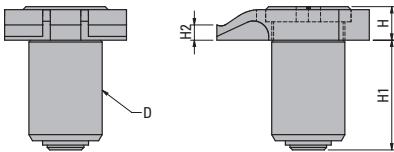
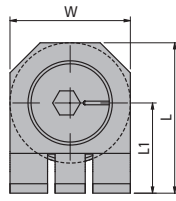
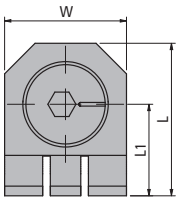
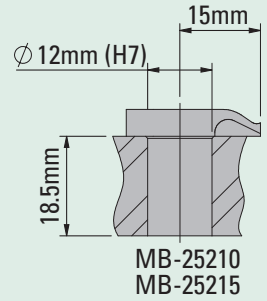
Part #	Screw Size		L1 mm	L2 mm	W mm	W1 mm	H mm	H1 mm	H2 mm	H3 mm	Dowel Throw mm	Pin mm	Max Torque Ft Lbs.	Total Holding Force Lbs.
	T mm	L mm												
MB-56077	M10	25.4	16.7	18.0	27.2	10.16	17.8	2.5	11.43	6.35	1.27	3.18	30.0	6,000
MB-56088	M12	38.3	21.2	19.6	43.4	15.24	26.6	5.6	16.26	9.52	1.90	6.35	108.3	12,000

H1 = Minimum clamping height

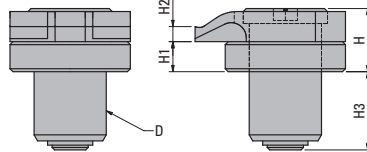
KOPAL CLAMPS - MINI



How To Install



MB-25210

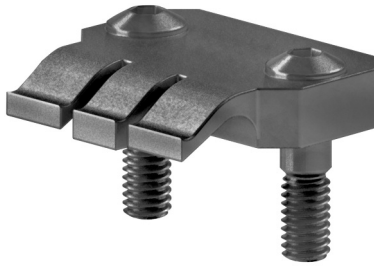


MB-25215

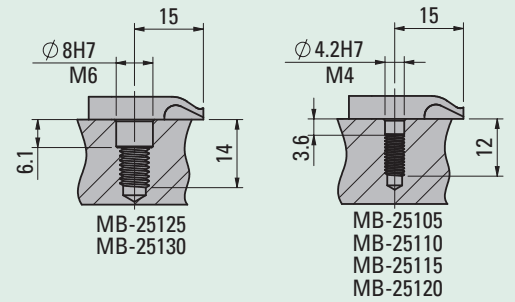
These low profile cam clamps have a holding force of 880 lbs. The clamping element rotates 360 degrees around the eccentric insert for clamping in all directions. The clamping range is .047". The fingers provide downward force when clamping. Made from spring steel.

Part #	D mm	L	L1	W	H	H1	H2	H3
MB-25210	12	1.00	.59	.79	.22	.71	.100	-
MB-25215	12	1.00	.59	.79	.41	.20	.100	.51

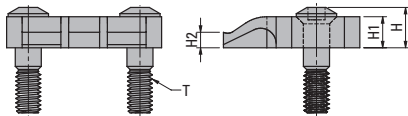
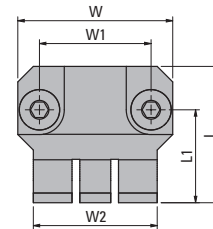
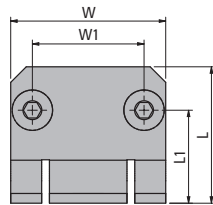
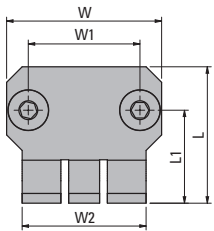
KOPAL STOPS - MINI



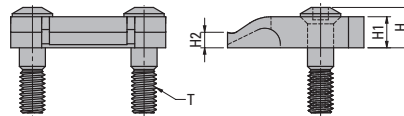
How To Install



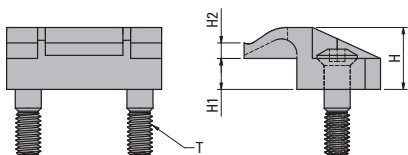
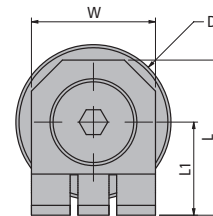
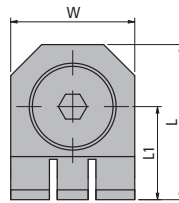
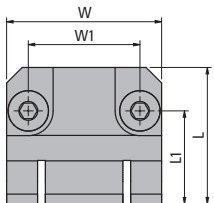
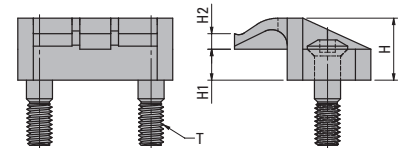
Requires metric tapped & reamed holes.



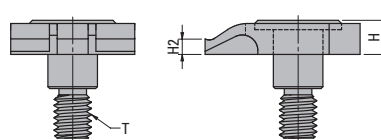
MB-25105



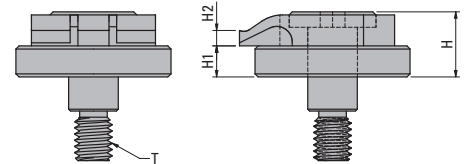
MB-25110



MB-25120



MB-25125

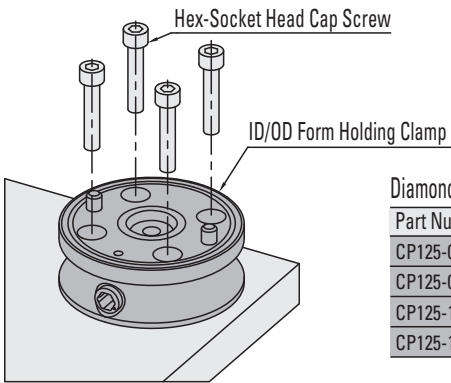
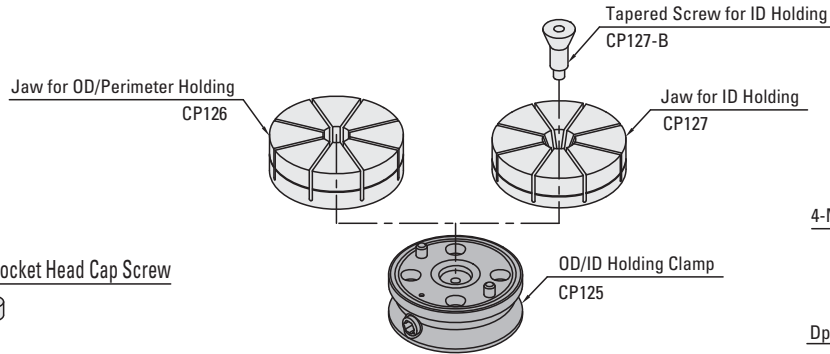
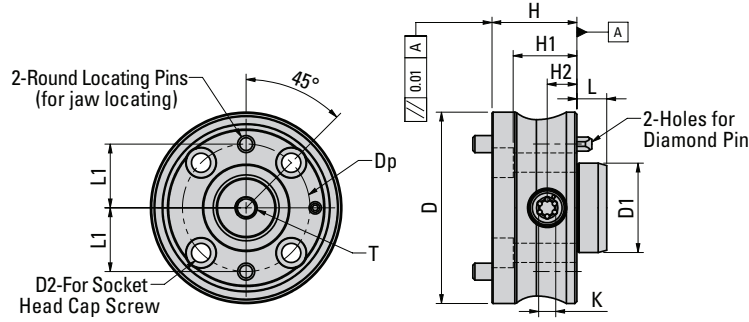


MB-25130

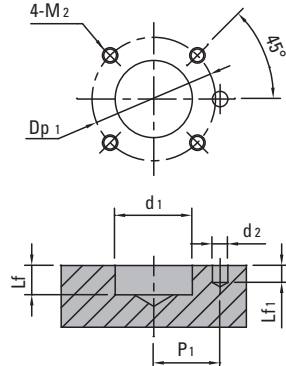
These low profile cam stops have a holding force of 880 lbs. The fingers provide downward force when clamping. The stops are mounted with special screws for precise locating. Use MB-25105 and MB-25115 for workpieces over 1.75" in length. Use MB-2110 and MB-25120 for smaller workpieces. Metric tapped and reamed holes are required for mounting. Mounting screws included. Made from spring steel.

Part#	Thread									
	T	D	L	L1	W	W1	W2	H	H1	H2
MB-25105	M4	-	.87	.59	1.00	.708	.79	.25	.20	.100
MB-25110	M4	-	.87	.59	1.00	.708	-	.25	.20	.100
MB-25125	M6	-	1.00	.59	.79	-	-	.22	-	.100
MB-25115	M4	-	.87	.59	1.00	.708	.79	.39	.20	.100
MB-25120	M4	-	.87	.59	1.00	.708	-	.39	.20	.100
MB-25130	M6	1.10	1.00	.59	.79	-	-	.41	.20	.100

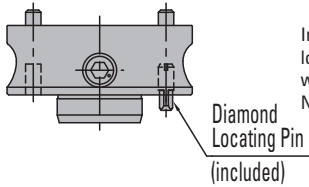
ID/OD FORM HOLDING CLAMP BASE— CP125 SERIES



Diamond Locating Pin	
Part Number	Diameter
CP125-06501	6 (h6)
CP125-09001	8 (h6)
CP125-12001	10 (h6)
CP125-16001	12 (h6)



Part Number	d ₁ (H7)	L _f	d ₂ (G7)	L _{f1}	P ₁ (±0.02)	M ₂	D _{p1}
CP125-06501	28	13	6	6	22	M6x1	42
CP125-09001	42	15	8	8	30	M8x1.25	60
CP125-12001	55	19	10	11	43	M10 x1.50	80
CP125-16001	63	25	12	13	60	M12 x1.75	110



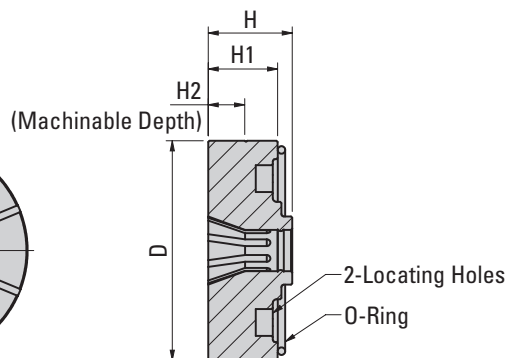
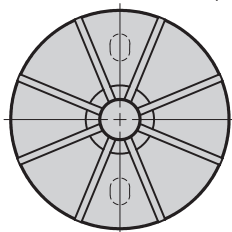
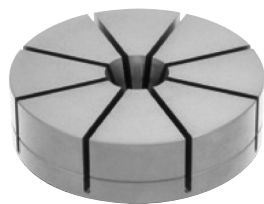
Insert an included diamond pin into the body for locating and secure the body to the fixture plate with four socket-head cap screws.
 Note: Use either of the holes for diamond locating pin for your application.

These clamps hold workpieces on the ID or OD using machinable jaws (available separately). For OD clamping, the aluminum jaws can be machined to custom fit the workpiece. For ID clamping, the workpiece is placed over ID jaws, which expand outward using a tapered pin (available separately). The part repeatability is +/- 0.03 mm, and the jaw locating repeatability of +/- 0.02 mm. The clamping stroke of each jaw is .3 mm for both OD and ID clamping. The body is made from S45C steel with an electroless nickel plated finish. The pull cylinder is made from SCM415 steel, carburized-hardened with a black oxide finish. The cam cylinder is made from SCM435 steel, quenched and tempered, with a black oxide finish. Jaws and tapered pins must be purchased separately. Note: Do NOT actuate the clamp without a workpiece to avoid damaging the clamp and jaws. For complete technical information, search for the part number at www.fixtureworks.net.

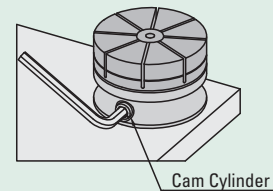
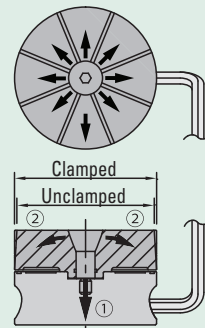
Part #	T mm	D mm	g6 D1 mm	D2 mm	Dp mm	L mm	±0.02 L1 mm	±0.01 H mm	H1 mm	H2 mm	K mm	Clamping Stroke mm	Allowable Screw Torque Ft Lbs.	Clamping Force - OD Holding Lbs.	Clamping Force - ID Holding Lbs.
CP125-06501	M8X1.25	65	28	M6	42	12	22	35	27	12	8	0.3	11	1,011	1,011
CP125-09001	M10X1.5	90	42	M8	60	14	30	40	30	14	8	0.3	18	1,573	1,573
CP125-12001	M10X1.5	120	55	M10	80	18	43	45	33	16	10	0.3	29	2,248	2,248
CP125-16001	M12X1.75	160	63	M12	110	24	60	50	36	18	10	0.3	29	2,697	2,248

See page 561 for g6 tolerance specifications.

JAWS FOR ID HOLDING – CP127 SERIES



How To Use

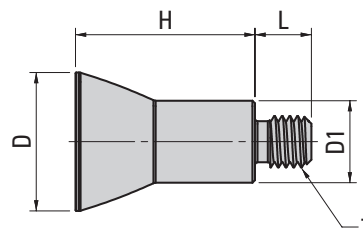
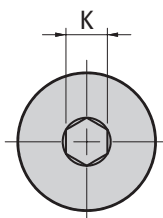


- ① When the cam cylinder is tightened, the tapered screw is pulled down.
- ② At the same time, the eight jaw sections expand to clamp the internal form of a part.

For ID clamping with ID/OD Form Holding Clamps (CP125) using a Tapered Screw (127-B). When the tapered screw is pulled down by the cam cylinder, jaws are expanded outward to clamp the workpiece on the OD. The clamping stroke of each jaw is 0.15 mm. Furnished with an O-ring. The jaws are made from A7075 aluminum with a natural finish. Tapered screw is not included and must be purchased separately. For complete technical information, search for the part number at www.fixtureworks.net.

Part #	D mm	H mm	H1 mm	Machinable Depth		For Holding Clamp	Use with Screw
				H2 mm			
CP127-06501	65	28.5	25	10		CP125-06501	CP127-06501B
CP127-09001	90	34.5	30	15		CP125-09001	CP127-09001B
CP127-12001	120	40.5	35	20		CP125-12001	CP127-12001B
CP127-16001	160	46.5	40	25		CP125-16001	CP127-16001B

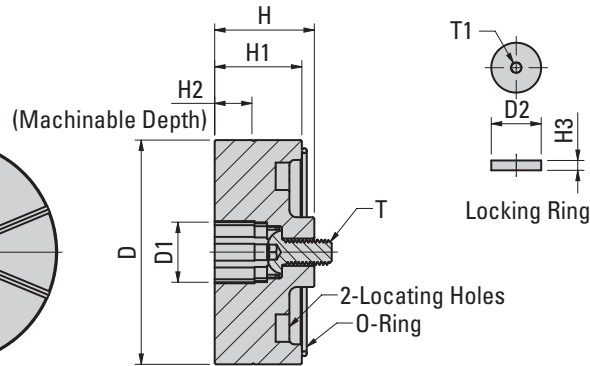
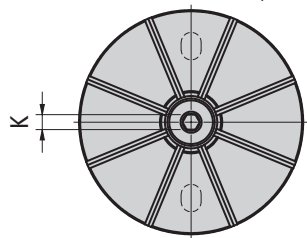
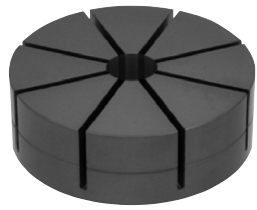
TAPERED SCREWS FOR ID HOLDING – CP127-B SERIES



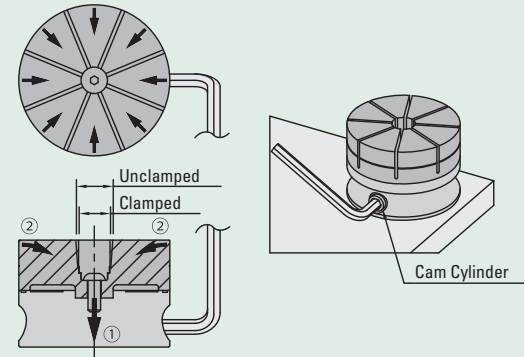
For use with ID Holding Jaws (CP127) on Form Holding Clamps (CP125). Made from SCM435 steel, quenched and tempered, with an electroless nickel plated finish.

Part #	T mm	D mm	D1 mm	L mm	H mm	K mm	For Jaw
CP127-06501B	M8X1.25	22.5	13.2	10	29	6	CP127-06501
CP127-09001B	M10X1.5	27	16	11	35	8	CP127-09001
CP127-12001B	M10X1.5	29	16	13	41	8	CP127-12001
CP127-16001B	M12X1.75	33	18	14	47	10	CP127-16001

JAWS FOR OD HOLDING – CP126 SERIES



How To Use

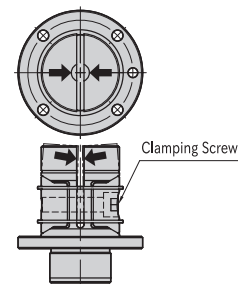
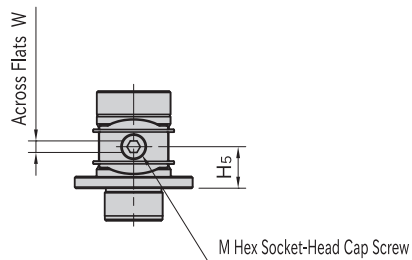
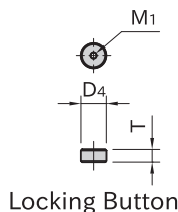
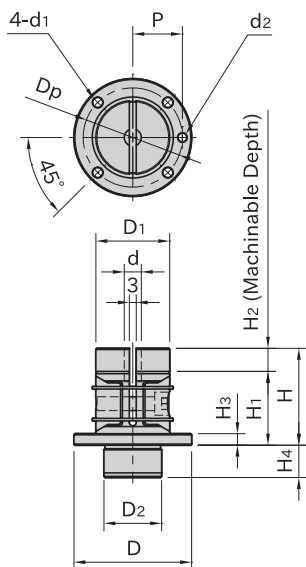


- ① When the cam cylinder is tightened, the central part of the jaw is pulled down.
- ② At the same time, the eight jaw sections tilt toward the center to clamp the perimeter of a part.

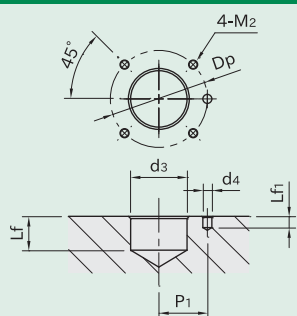
For OD clamping with ID/OD Form Holding Clamps (CP125). The jaws are machined to receive a workpiece. When the clamp is tightened, the center of the jaws is pulled down, tilting the jaw sections toward the center. The clamping stroke of each jaw section is 0.15 mm. Furnished parts include: O-ring (1), locking ring (1), BHCS (1). The jaws are made from A7075 aluminum with a blue finish. The body is made from SCM415 steel. For complete technical information, search for the part number at www.fixtureworks.net.

Part #	T mm	T1 mm	D mm	D1 mm	D2 mm	H mm	H1 mm	Machinable Depth H2 mm	H3 mm	K mm	For Holding Clamp
CP126-06501	M8X1.25X20	M5X0.8	65	21	20	29	25	10	4	5	CP125-06501
CP126-09001	M10X1.50X20	M6X1	90	25	24	40	35	15	5	6	CP125-09001
CP126-12001	M10X1.50X25	M6X1	120	25	24	46	40	20	5	6	CP125-12001
CP126-16001	M12X1.75X25	M8X1.25	160	29	28	52	45	25	6	8	CP125-16001

OD HOLDING CLAMPS - ROUND WEDGE STYLE - CP123 SERIES



Mounting Hole Dimensions



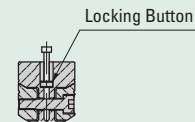
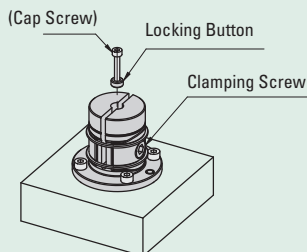
Part Number	d ₃ (H7)	Lf	d ₄ (+0.12)	Lf ₁	P ₁ (±0.05)	M ₂	Dp
CP123-03201	25	15	5	5	21.5	M4×0.7	43
CP123-05001	40	20	6	7	32.5	M5×0.8	65

Part #	Clamping Force Lbs.	Max Screw Torque Ft./Lbs.
CP123-03201	674	6.5
CP123-05001	1,574	31

How To Machine Jaws

1. Setting the Locking Button

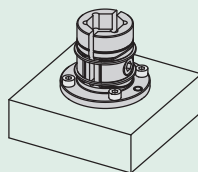
Insert the locking button into the jaw and then tighten the clamp screw to fasten the locking button. (Using a cap screw facilitates setting the locking button)



Note: The locking button must be inserted onto the bottom.

2. Machining the Jaw

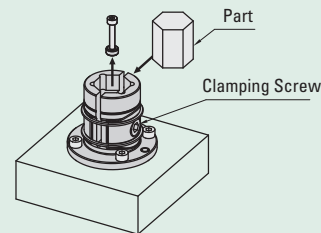
Cut the jaw to the contours of the part.



Note: Do not cut beyond the machineable depth.

3. Loading the Part

Loosen the clamping screw to remove the locking button. Load the part and tighten the clamping screw for clamping.

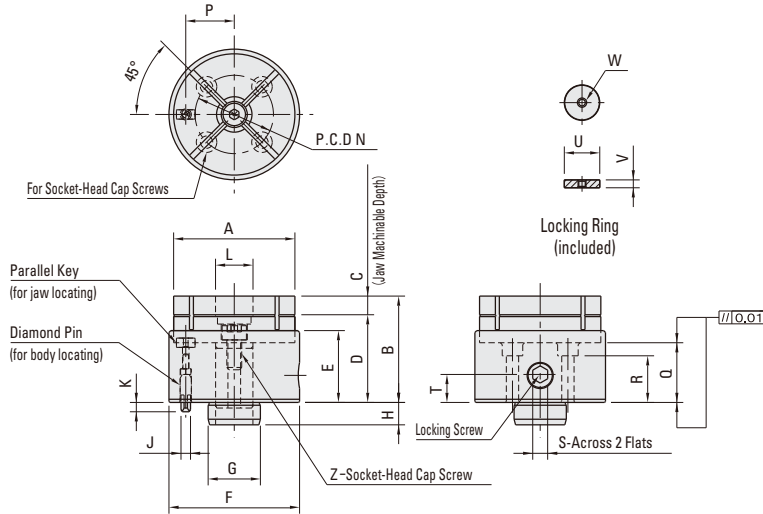


These O.D. clamps allow for holding on the circumference of a work piece. The aluminum jaws are designed to be machined to custom fit contoured or odd shaped parts. When the clamp is tightened, both jaws move towards the center clamping the circumference of the work piece. These clamps allow for part locating repeatability of +/- 0.08mm. The clamping stroke is .5mm. The body is made from SAE-4140 alloy steel, hardened with black oxide finish. Supplied with locking nut and spring pin. The jaws are made from aluminum with natural anodized finish.

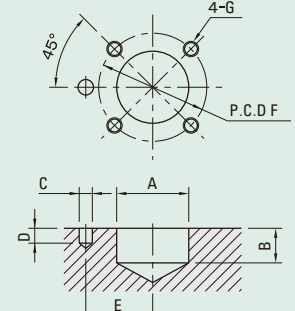
Part #	D mm	d mm	D1 mm	d1 mm	(g7) D2 mm	d2 mm	D4 mm	Dp mm	H mm	H1 mm	H2 mm	H3 mm	H4 mm	H5 mm	M mm	M1 mm	P mm	T mm	W mm
CP123-03201	51	7.4	32	4.5	25	5	7	43	42	32	10	5	14	18	M6X1X25	M3X0.5	21.5	3.5	5
CP123-05001	75	11.4	50	5.5	40	6	11	65	63	48	15	7	19	27	M10X1.5X35	M3X0.5	32.5	5.5	8

See page 561 for g7 tolerance specifications.

OD HOLDING CLAMPS - CP120 SERIES

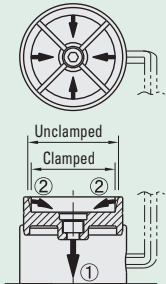


Hole Preparation



Part Number	A (H7)	B (G7)	C (D)	E (±0.02)	F (P.C.D)	G
CP120-06501	28	13	6	6	26	42 M6X1
CP120-09001	42	15	8	8	36	60 M8X1.25

Features



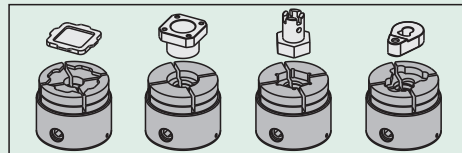
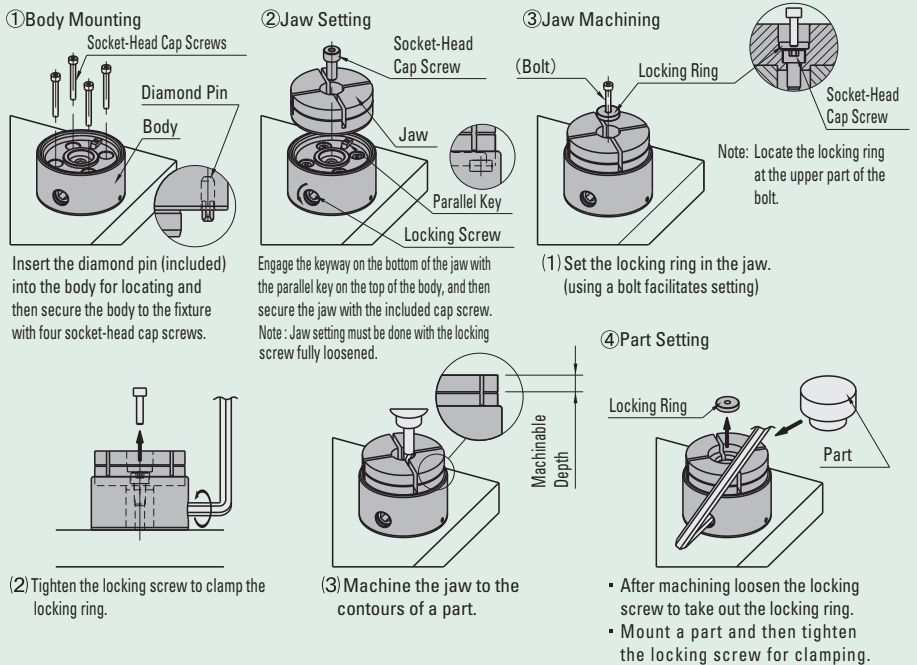
- When the locking screw is tightened, the central bottom part of the jaw is pulled down.
- At the same time the 4 jaw sections tilt toward the center to clamp the circumference of a part.

- The diaphragm clamping mechanism allows secure clamping with 4 jaw sections.
- Irregularly-shaped parts can be clamped.
- 0.15mm clamping stroke of each jaw section is ideal for clamping die-cast parts, extruded parts, solid-drawn parts, prefinished parts, etc.

Part #	Clamping Force Lbs.	Max Screw Torque Ft/Lbs.
CP120-06501	900	44
CP120-09001	1,350	73

These O.D. clamps allow for holding on the circumference of the work piece. The four part aluminum jaws can be machined to custom fit the part. These clamps allow for part repeatability of +/-0.03mm and jaw locating repeatability of +/-0.02. The clamping stroke of each jaw is .15mm. The body is made from SAE-1045 alloy steel. The shaft and locking screw are made from SAE-4135 alloy steel – hardened with black oxide finish. The part numbers include the clamps, jaws, locking ring, diamond pin and socket head cap screw. Additional sets of jaws can be purchased separately.

How To Use



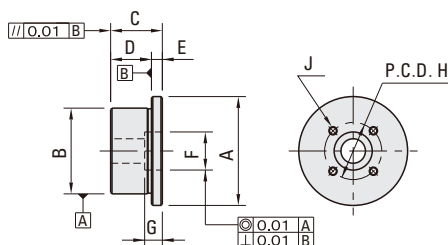
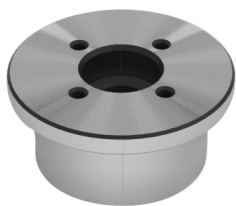
- Tightening the locking screw on the side of the body allows holding a part on its circumference.
- Machinable jaws allow clamping parts of various shapes.
- Ideal way to hold parts for machining on small-size machining centers, tapping centers, small-size 5-axis machines, CNC rotary tables, etc.

Part #	A mm	B mm	C mm	D mm	E mm	F mm	G (g6) mm	H (h6) mm	J mm	K mm	L mm	M mm	N mm	P (P.C.D.* ±0.02) mm	Q (±0.01) mm	R mm	S mm	T mm	U mm	V mm	W mm	Z mm
CP120-06501	65	57	10	47	39	70	28	12	6	5	19	M6	42	26	32	25	8	15	18	4	M4X0.7	M8X1.25-15L
CP120-09001	90	72	15	57	46	95	42	14	8	7	23	M8	60	36	38	28	10	17	22	6	M5X0.8	M10X1.5-20L

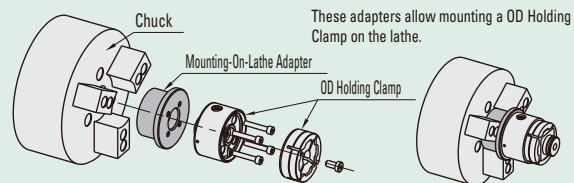
*Pitch Circle Diameter

See page 561 for g6 and h6 tolerance specifications.

OD HOLDING CLAMP - LATHE ADAPTERS - CP122 SERIES



How To Use



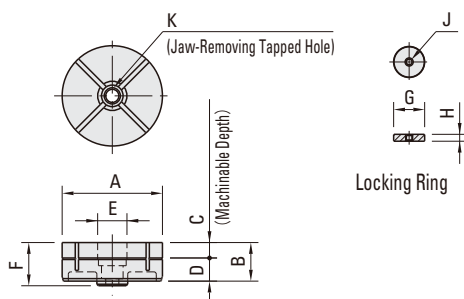
Note : The diamond pin included with an OD Holding Clamp is not required in this combination use.

These adapters are designed to be used with the O.D. Holding Clamps shown on page 70. They allow the OD Holding Clamps to be mounted on a lathe. Made from alloy steel, hardened with black oxide finish.

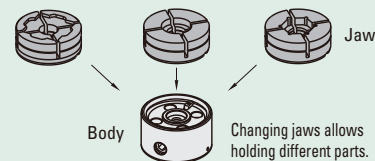
Part #	+/-0.01		C	D	+/-0.01 (H7)		G	H	J	Use with Clamp
	A	B			E	F				
CP122-06501	80	63	38	30	8	28	13	42	M6X1 - 12 Deep	CP120-06501
CP122-09001	100	80	43	35	8	42	15	60	M8X1.25 - 16 Deep	CP120-09001

See page 561 for H7 tolerance specifications.

JAWS FOR OD HOLDING CLAMP- CP121 SERIES

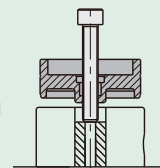


How To Use



How To Remove Jaw

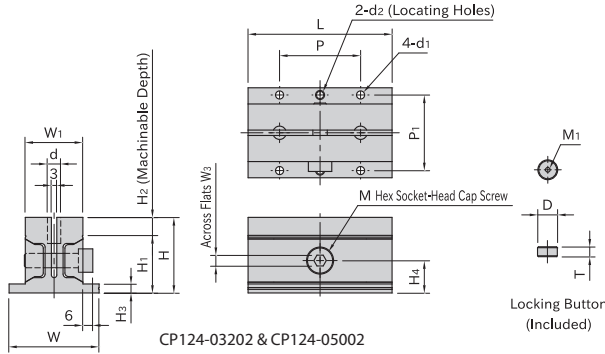
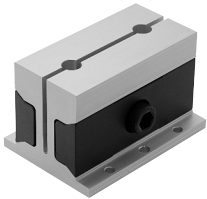
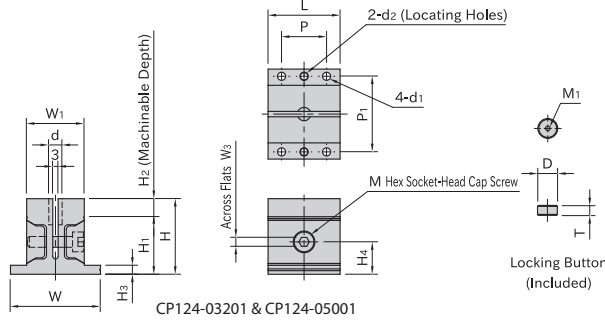
When it is hard to remove the jaw by hand, screw a bolt into the jaw-removing tapped hole to push against the body, for easier removal.



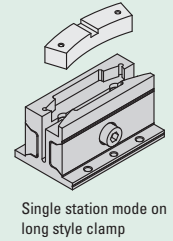
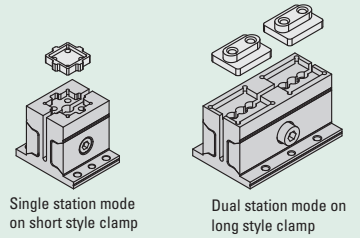
These clamp jaws are used with the O.D. Holding Clamps shown on page 70. They are designed to be modified to hold a wide variety of parts. The jaws are made from aluminum. Locking ring is made from steel.

Part #	A	B	C	D	E	F	G	H	J	K	Use with Clamp
CP121-06501	65	25	10	15	19	28	18	4	M4X0.7	M10X1.5 (Prepared Hole 8.5 Dia.)	CP120-06501
CP121-09001	90	34	15	19	23	39	22	6	M5X0.8	M12X1.75 (Prepared Hole 10.2 Dia.)	CP120-09001

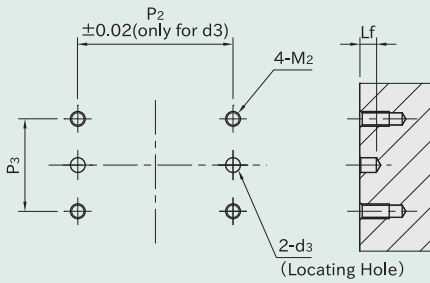
OD HOLDING CLAMPS - WEDGE STYLE - CP124 SERIES



How To Use



Mounting Hole Preparation

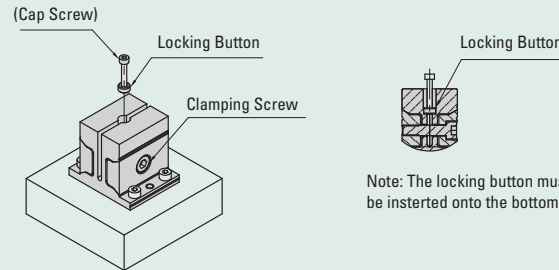


Part Number	d ₃ (H7)	Lf	M ₂	P ₂	P ₃
CP124-03201	5	5	M4×0.7	42	25
CP124-03202	5	5	M4×0.7	42	45
CP124-05001	6	8	M5×0.8	62	30
CP124-05002	6	8	M5×0.8	62	58

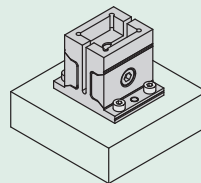
Body	Jaw
Aluminum (A6N01)	Steel (SAE-4140)
Anodized	Black oxide finished
Natural color	Quenched & tempered

How To Machine Jaws

1. Setting the Locking Button
Insert the locking button into the jaw and then tighten the clamp screw to fasten the locking button. (Using a cap screw facilitates setting the locking button)

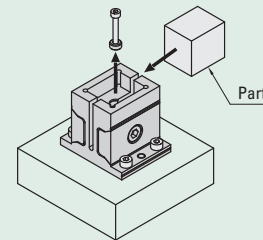


2. Machining the Jaw
Cut the jaw to the contours of the part.



Note: Do not cut beyond the machineable depth.

3. Loading the Part
Loosen the clamping screw to remove the locking button. Load the part and tighten the clamping screw for clamping.

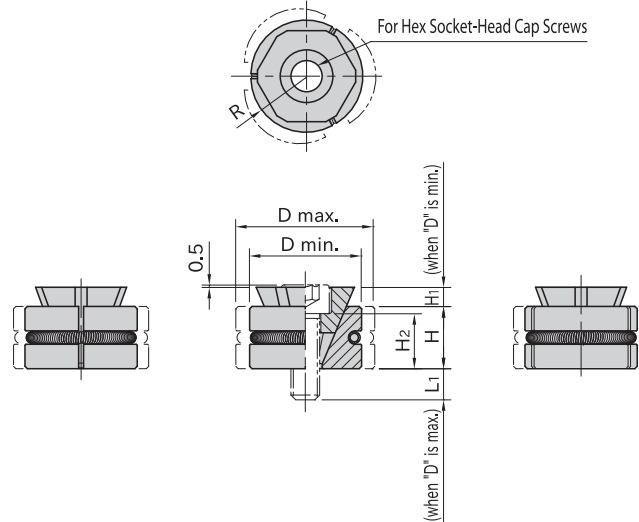


These O.D. clamps allow for holding on the circumference of slender work pieces. The aluminum jaws are designed to be machined to custom fit contoured or odd shaped parts. When the clamp is tightened, both jaws move towards the center clamping the circumference of the work piece. These clamps allow for part repeatability of +/- 0.08mm. The clamping stroke is .5mm. The body is made from SAE-4140 alloy steel, hardened with black oxide finish. The jaws are made from aluminum with natural anodized finish. Clamps are supplied with locking button and locating pins.

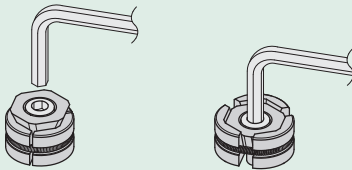
Part #	D mm	d mm	d1 mm	(H7) d2 mm	H mm	H1 mm	H2 mm	H3 mm	H4 mm	L mm	M mm	M1 mm	P mm	P1 mm	W mm	W1 mm	W3 mm	T mm	Clamping Force Lbs.	Max Screw Torque Ft/Lbs.
CP124-03201	7	7.4	4.5	5	42	32	10	5	18	40	M6X1X25	M3X0.5	25	42	50	32	5	3.5	562	5
CP124-03202	7	7.4	4.5	5	42	32	10	5	18	80	M8X1.25X30	M3X0.5	45	42	50	32	6	3.5	562	10
CP124-05001	11	11.4	5.5	6	63	48	15	7	27	50	M10X1.5X40	M3X0.5	30	62	72	50	8	5.5	1,236	19
CP124-05002	11	11.4	5.5	6	63	48	15	7	27	100	M12X1.75X45	M3X0.5	58	62	72	50	10	5.5	1,236	34

See page 561 for H7 tolerance specifications.

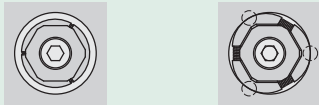
ID HOLDING CLAMPS - CP130 SERIES



How To Use

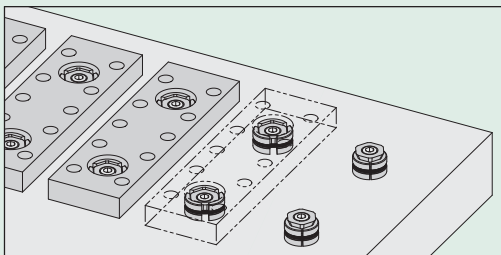


Note: The clamp makes a line at contact with the workpiece in the clamping mode. The contact can mar the surface of the workpiece depending on the material. Using these clamps for accurately finished holes is not recommended.



Unclamping Mode

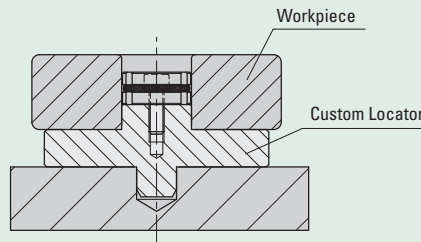
Clamping Mode



Example of application where two I.D. Holding Clamps are used.

Note

For accurate locating, use these clamps with a locator as shown below.



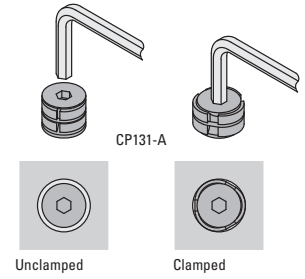
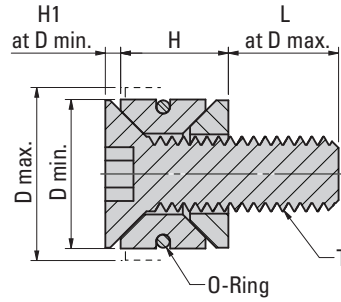
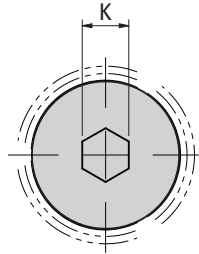
These I.D. clamps allow for holding the inside of work pieces. The steel jaws are forced outward as the cap screw is tightened. Because the clamp expands and wedges against the I.D. of the work piece, they are ideal for parts where there may be variations in the inside diameter of the part such as cast iron or rough finish holes. The body is made from alloy steel, hardened with black oxide finish. The springs are made from stainless steel.

Part #	D Min mm	D Max mm	H mm	H1 mm	H2 Min mm	H2 Max mm	L1 mm	R mm	Cap Screw mm	Clamping Force Lbs.	Max Screw Torque Ft/Lbs.
CP130-04001	19.5	24	9	2.5	8	2.6	9.4	9.5	M4X12L	450	2.3
CP130-06001	23.5	29	13	4	11.5	5	13	11.5	M6X18L	1,124	7.7
CP130-08001	28.5	36	17	5.5	15	6	19	14	M8X25L	2,023	18.4

ID HOLDING CLAMP - COMPACT – CP131 SERIES



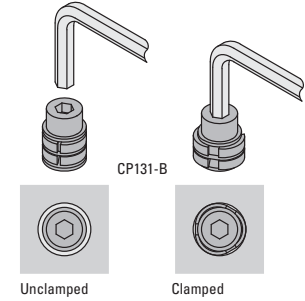
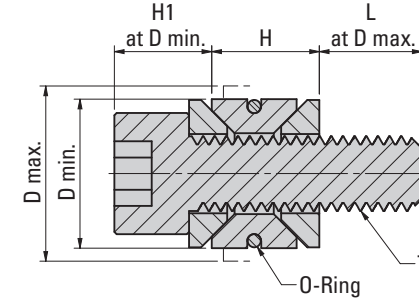
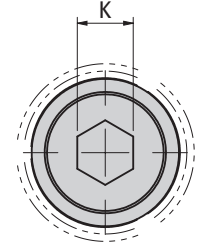
CP131-A



Unclamped

Clamped

CP131-B

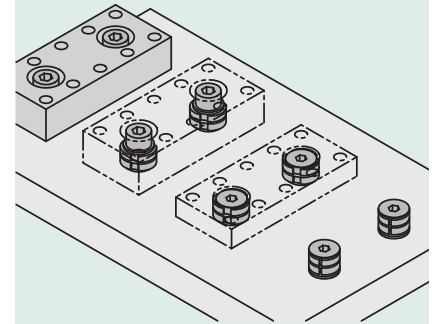


Unclamped

Clamped

Holds workpieces on the ID. Tightening the hex screw expands the jaws outward and downward, preventing workpiece lift. Because the clamp expands and wedges against the ID of the work piece, they are ideal for parts where there may be variations in the inside diameter of the part such as cast iron or rough finish holes. The contact can mar the surface of the workpiece, depending on the material. Using these clamps for accurately finished holes is not recommended. CP131-A uses a countersunk head screw. CP131-B uses a socket head cap screw. Jaw made from SNCM439 steel, HRC33-39, with a black oxide finish. Washer made from SCM435 steel with a black oxide finish. O-Ring made from fluoro rubber.

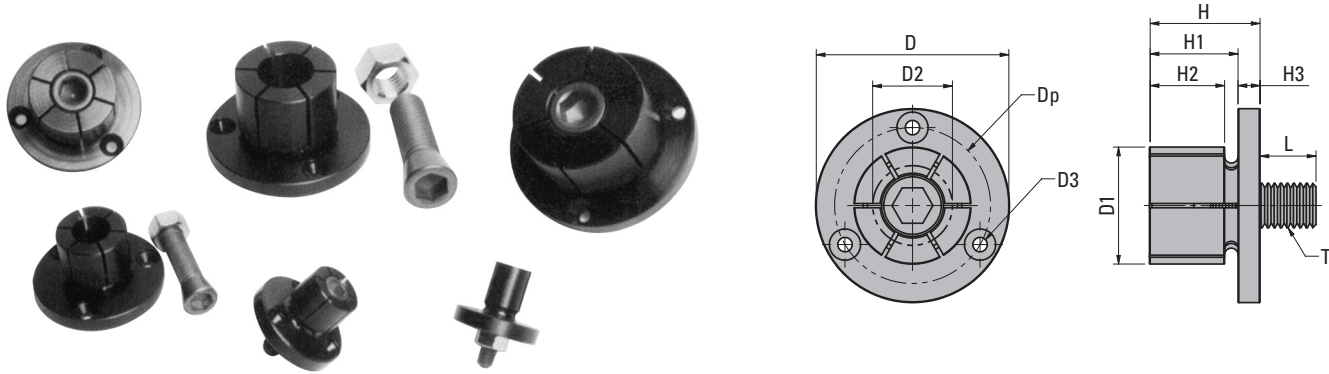
How To Use



Example of application where two Compact ID Holding Clamps are used.

Part #	T mm	D min mm	D max mm	L mm	H at D Min mm	H at D Max mm	H1 mm	K mm	Clamping Force Lbs.	Allowable Screw Torque Ft Lbs.
CP131-04001A	M4X0.7X12	8	10.3	7.3	5.5	4.6	.9	2.5	202	1.6
CP131-05001A	M5X0.8X15	10	12.3	9.1	6.4	5.6	1.1	3	337	3.2
CP131-06001A	M6X1X18	12	16.3	11.2	8.6	7	1.3	4	472	5.4
CP131-08001A	M8X1.25X25	16	22	16.2	11.5	9.4	1.6	5	899	13.3
CP131-04001B	M4X0.7X12	8	10.3	7.1	5.5	4.6	5.1	3	337	2.0
CP131-05001B	M5X0.8X15	10	12.3	9	6.4	5.6	6.2	4	562	4.0
CP131-06001B	M6X1X18	12	16.3	10.6	8.6	7	7.9	5	1,124	6.7
CP131-08001B	M8X1.25X25	16	22	15.4	11.5	9.4	10.4	6	2,023	18.4

ID EXPANSION CLAMPS



The ID expansion clamps are an ideal way to hold parts on an inside diameter for multiple machining on a vertical or horizontal machining center. Can hold internal diameters from .29" to 9.85" (7.4 mm to 250.2 mm). User can machine the mild steel clamp to match the bore of the part ensuring proper fit. The clamps can be quickly tightened with a hex key or can be mated to hydraulic pull cylinders for automation. The clamp screw is heat treated. Mounting screws are included. MB-31550 and MB-38550 made from 7075-T6 aluminum.

INCH

Part #	T	+0.000/-0.002 D	D1	D2*	D3	Dp	L	H	H1	H2	H3	Torque Ft. Lbs.	Holding Force Lbs	Tapered Screw Only
MB-31000	2-56	.787	.29	.16	2-56	.540	.16	.42	.30	.24	.12	0.5	250	MB-31001
MB-31050	8-32	1.170	.49	.28	6-32	.825	.30	.86	.63	.59	.23	3.6	950	MB-31002
MB-31100	1/4-20	1.240	.56	.48	6-32	.910	.5	.98	.75	.59	.23	13.3	1,900	MB-31010
MB-31150	5/16-18	1.476	.79	.53	6-32	1.140	.56	.98	.75	.59	.23	27.6	2,500	MB-31020
MB-31200	3/8-16	1.968	1.06	.71	8-32	1.550	.71	1.13	.88	.69	.25	49.3	4,500	MB-31032
MB-31250	1/2-13	2.205	1.39	.90	8-32	1.790	.71	1.25	1.00	.81	.25	120.0	5,900	MB-31042
MB-31300	5/8-11	2.736	1.65	1.15	10-32	2.200	.79	1.56	1.25	1.06	.31	224.0	10,000	MB-31052
MB-31350	5/8-11	2.972	2.03	1.15	10-32	2.515	.79	1.56	1.25	1.06	.31	224.0	10,000	MB-31052
MB-31400	5/8-11	4.232	3.06	1.15	1/4-20	3.646	.79	1.79	1.48	1.27	.31	2214.0	10,000	MB-31072
MB-31450	5/8-11	5.232	4.06	1.15	1/4-20	4.648	.79	1.79	1.48	1.27	.31	224.0	10,000	MB-31072
MB-31500	5/8-11	5.232	6.89	1.15	1/4-20	4.648	.79	1.79	1.48	1.27	.31	224.0	10,000	MB-31072
MB-31550	5/8-11	6.000	9.85	1.15	1/4-20	5.250	.79	1.79	1.48	1.27	.31	125.0	6,000	MB-31072

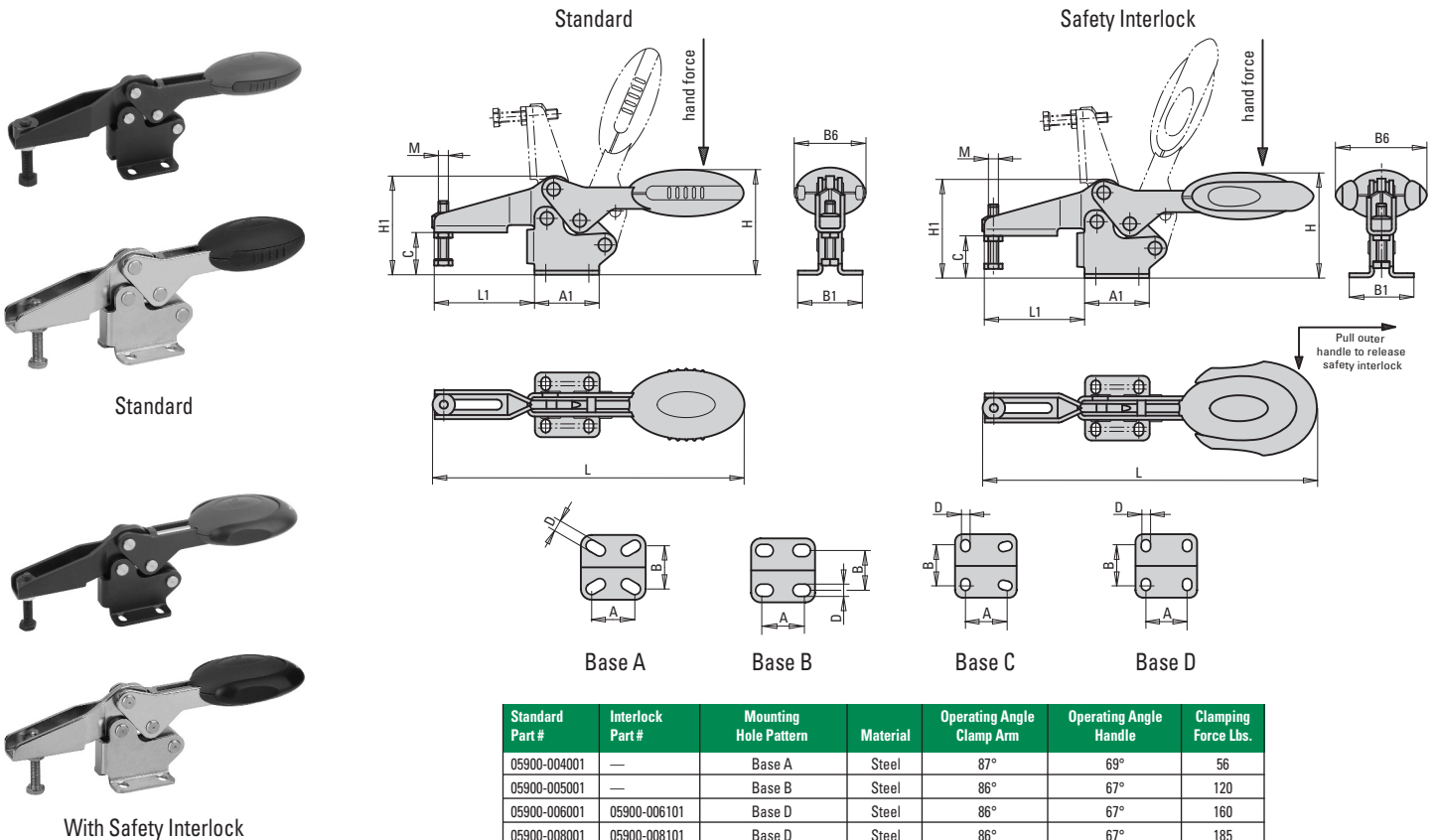
METRIC

Part #	T mm	+0.000/-0.005 D mm	D1 mm	D2* mm	D3 mm	Dp mm	L mm	H mm	H1 mm	H2 mm	H3 mm	Torque Ft. Lbs.	Holding Force Lbs	Tapered Screw Only
MB-38000	M2	20.00	7.40	4.1	M2	13.7	4.1	10.7	7.6	6.1	3.0	0.5	250	MB-38001
MB-38050	M4	29.72	12.40	7.1	M3	20.95	7.2	21.8	16.0	15.0	5.9	3.6	950	MB-38002
MB-38100	M6	31.50	14.20	12.2	M3	23.1	11.2	24.9	19.0	15.0	5.9	12.5	1,900	MB-38010
MB-38150	M8	37.50	20.00	13.5	M3	29.0	13.2	24.9	19.0	15.0	5.9	25.0	2,500	MB-38020
MB-38200	M10	50.00	27.00	18.0	M4	39.4	16.3	28.6	22.2	17.5	6.4	44.2	4,500	MB-38032
MB-38250	M12	56.00	35.30	23.0	M4	45.5	20.3	31.8	25.4	20.6	6.4	110.6	5,900	MB-38042
MB-38300	M16	69.50	42.00	29.3	M5	55.9	21.4	39.6	31.8	27.0	7.9	206.5	10,000	MB-38052
MB-38350	M16	75.50	51.50	29.3	M5	63.9	21.4	39.6	31.8	27.0	7.9	206.5	10,000	MB-38052
MB-38400	M16	107.50	77.70	29.3	M6	92.6	19.3	45.5	37.6	32.3	7.9	206.5	10,000	MB-38072
MB-38450	M16	132.90	103.0	29.3	M6	118.06	19.3	45.5	37.6	32.3	7.9	206.5	10,000	MB-38072
MB-38500	M16	132.90	175.0	29.3	M6	118.06	19.3	45.5	37.6	32.3	7.9	206.5	10,000	MB-38072
MB-38550	M16	152.40	250.2	29.3	M6	133.35	19.3	45.5	37.6	32.3	7.9	125.0	6,000	MB-38072

* D2 is the minimum diameter the D1 dimension can be machined or turned down to.

ERGONOMIC TOGGLE CLAMPS

Horizontal | Flat Base | Steel & Stainless Steel



Standard Part #	Interlock Part #	Mounting Hole Pattern	Material	Operating Angle Clamp Arm	Operating Angle Handle	Clamping Force Lbs.
05900-004001	—	Base A	Steel	87°	69°	56
05900-005001	—	Base B	Steel	86°	67°	120
05900-006001	05900-006101	Base D	Steel	86°	67°	160
05900-008001	05900-008101	Base D	Steel	86°	67°	185
05900-010001	05900-010101	Base D	Steel	90°	71°	265
05900-012001	05900-012101	Base C	Steel	88°	68°	225
05900-104001	—	Base A	SS	87°	69°	56
05900-105001	—	Base B	SS	86°	67°	120
05900-106001	05900-106101	Base D	SS	86°	67°	160
05900-108001	05900-108101	Base D	SS	86°	67°	185

Kipp toggle clamps offer a high quality, durable alternative to standard toggle clamps. The non-slip ergonomic handle allows for easy and comfortable use with smooth edges to prevent snagging. These clamps feature high quality bushings that won't score and are designed to withstand over 300,000 cycles. They operate very smoothly without slop or play during clamping and unclamping while providing constant operating forces. Their attractive appearance provides a high quality look to finished products. The handle is made from high quality polyamide. The steel clamps are nitro-carburized with a non-reflective black oxide finish. The stainless steel clamps have a natural finish. The safety interlock protects against accidental release. To unlock the clamp, the user must pull on the outer edge of the grip handle before releasing the clamp. See page 80 for accessories.

Standard

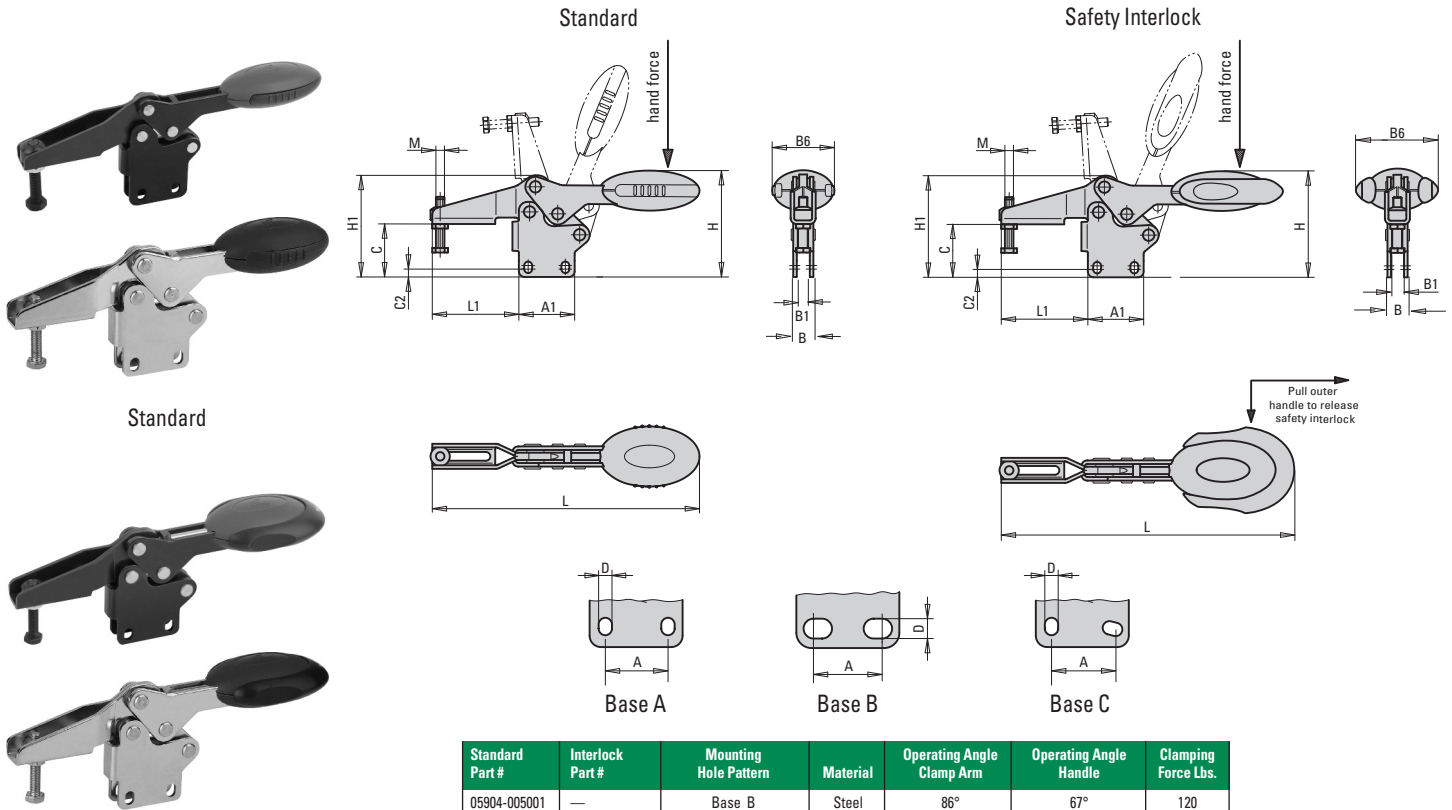
Steel Part #	Stainless Steel Part #	M mm	A mm	A1 mm	B mm	B1 mm	B6 mm	C mm	D mm	H mm	H1 mm	L mm	L1 mm
05900-004001	05900-104001	M4X16	16	24	16	24	20	11.7	4.2	29.3	26.3	91.8	23.7
05900-005001	05900-105001	M5X25	18	27	16.8	27	22.5	17.2	5.5	43.4	38.9	125.7	41.8
05900-006001	05900-106001	M6X35	26	39	28	39	43.5	25.5	5.5	63.7	59.5	186.6	60.5
05900-008001	05900-108001	M8X45	26	44	31	45	41.5	32.2	6.2	73.9	70	223.2	74.9
05900-010001	—	M10X55	41.5	59	43	59	47	40	8.8	94.8	87.9	279.4	103.9
05900-012001	—	M12X70	44	65	42	67	47	52.3	8.5	104.8	101.6	314.7	122

With Safety Interlock

Steel Part #	Stainless Steel Part #	M mm	A mm	A1 mm	B mm	B1 mm	B6 mm	C mm	D mm	H mm	H1 mm	L mm	L1 mm
05900-006101	05900-106101	M6X35	26	39	28	39	53.4	25.4	5.5	63.7	59.5	193.3	60.5
05900-008101	05900-108101	M8X45	26	44	31	45	51.1	32.2	6.2	73.9	70	230.3	74.9
05900-010101	—	M10X55	41.5	59	43	59	56.5	40	8.8	94.8	87.9	286	103.9
05900-012101	—	M12X70	44	65	42	67	56.5	52.3	8.5	104.8	101.6	321.3	122

ERGONOMIC TOGGLE CLAMPS

Horizontal | Straight Base | Steel & Stainless Steel



Standard

With Safety Interlock

Standard Part #	Interlock Part #	Mounting Hole Pattern	Material	Operating Angle Clamp Arm	Operating Angle Handle	Clamping Force Lbs.
05904-005001	—	Base B	Steel	86°	67°	120
05904-006001	05904-006101	Base A	Steel	86°	67°	160
05904-008001	05904-008101	Base A	Steel	86°	67°	185
05904-010001	05904-010101	Base A	Steel	90°	71°	265
05904-012001	05904-012101	Base C	Steel	88°	68°	225
05904-105001	—	Base B	SS	86°	67°	120
05904-106001	05904-106101	Base A	SS	86°	67°	160
05904-108001	05904-108101	Base A	SS	86°	67°	185

Kipp toggle clamps offer a high quality, durable alternative to standard toggle clamps. The non-slip ergonomic handle allows for easy and comfortable use with smooth edges to prevent snagging. These clamps feature high quality bushings that won't score and are designed to withstand over 300,000 cycles. They operate very smoothly without slop or play during clamping and unclamping while providing constant operating forces. Their attractive appearance provides a high quality look to finished products. The handle is made from high quality polyamide. The steel clamps are nitro-carburized with a non-reflective black oxide finish. The stainless steel clamps have a natural finish. The safety interlock protects against accidental release. To unlock the clamp, the user must pull on the outer edge of the grip handle before releasing the clamp. See page 80 for accessories.

Standard

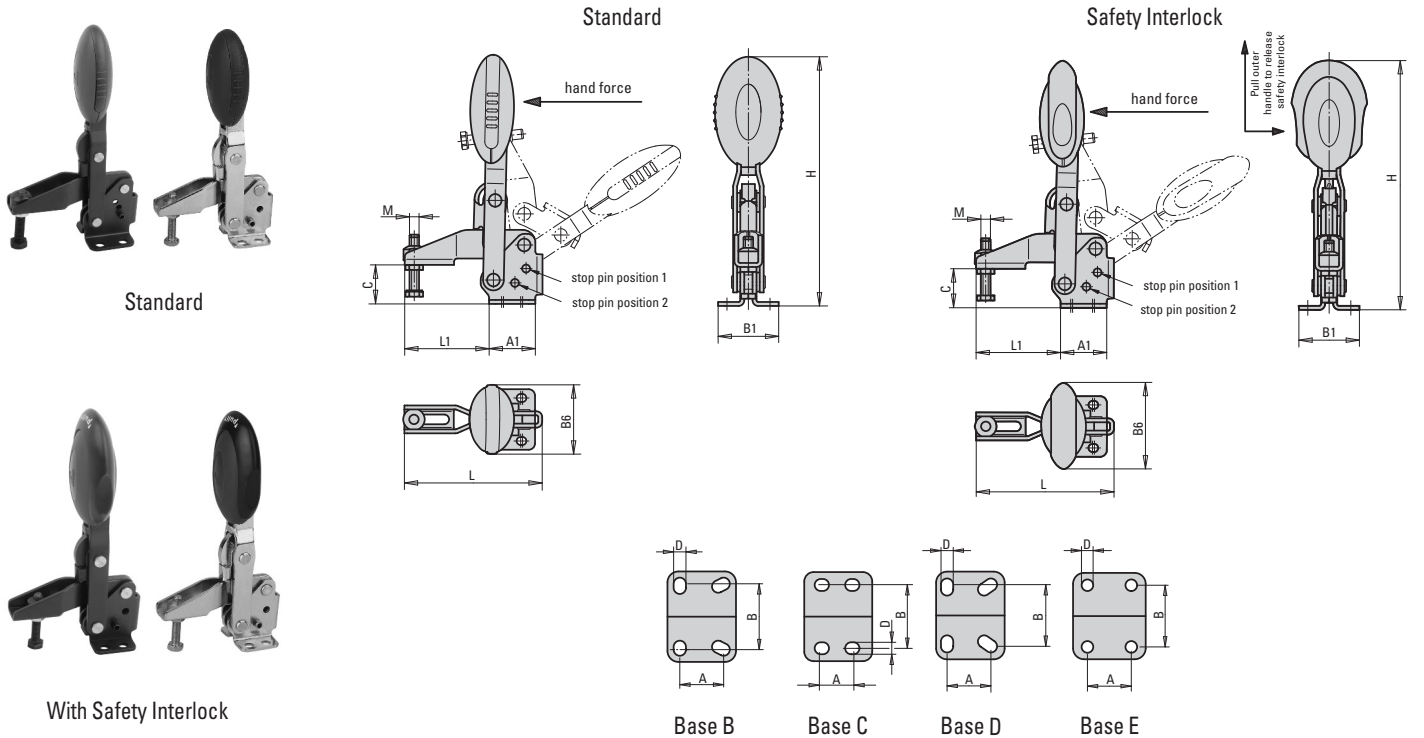
Steel Part #	Stainless Steel Part #	M	A	A1	B	B1	B6	C	C2	D	H	H1	L	L1
05904-005001	05904-105001	M5X25	18	27	8.1	4.1	22.5	26.2	5.1	5.5	52.2	47.9	125.7	41.8
05904-006001	05904-106001	M6X35	26	39	14.1	9.1	43.5	36.9	5.5	5.5	75.2	71	186.6	60.5
05904-008001	05904-108001	M8X45	26	44	14.1	9.1	41.5	46.5	7	6.2	88.2	84.3	223.1	74.9
05904-010001	—	M10X55	41.5	59	16.2	9.2	47	59.6	8	8.8	114.4	107.5	279.3	103.9
05904-012001	—	M12X70	44	65	16.2	9.2	47	75.9	13.5	8.5	128.4	125.2	314.7	122

With Safety Interlock

Steel Part #	Stainless Steel Part #	M	A	A1	B	B1	B6	C	C2	D	H	H1	L	L1
05904-006101	05904-106101	M6X35	26	39	14.1	9.1	53.4	36.9	5.5	5.5	75.2	71	193.7	60.5
05904-008101	05904-108101	M8X45	26	44	14.1	9.1	51.1	46.5	7	6.2	88.2	84.3	230.3	74.9
05904-010101	—	M10X55	41.5	59	16.2	9.2	56.5	59.6	8	8.8	114.3	107.5	286.4	103.9
05904-012101	—	M12X70	44	65	16.2	9.2	56.5	75.9	13.5	8.5	128.4	125.2	321.3	122

ERGONOMIC TOGGLE CLAMPS

Vertical | Flat Base | Steel & Stainless Steel



Standard Part #	Interlock Part #	Mounting Hole Pattern	Material	Stop Pin Position 1 Operating Angle Clamp Arm	Stop Pin Position 2 Operating Angle Clamp Arm	Stop Pin Removed Operating Angle Clamp Arm	Stop Pin Position 1 Operating Angle Handle	Stop Pin Position 2 Operating Angle Handle	Stop Pin Removed Operating Angle Handle	Clamping Force Lbs.
05908-005001	—	Base B	Steel	100°	—	147°	64°	—	83°	135
05908-006001	05908-006101	Base C	Steel	56°	83°	152°	46°	56°	83°	200
05908-008001	05908-008101	Base C	Steel	13°	93°	158°	26°	61°	86°	210
05908-010001	05908-010101	Base D	Steel	6°	97°	176°	19°	59°	91°	335
05908-012001	05908-012101	Base E	Steel	11°	88°	164°	24°	60°	91°	310
05908-105001	—	Base B	SS	100°	—	147°	64°	—	83°	135
05908-106001	05908-106101	Base C	SS	56°	83°	152°	46°	56°	83°	200
05908-108001	05908-108101	Base C	SS	13°	93°	158°	26°	61°	86°	210

Kipp toggle clamps offer a high quality, durable alternative to standard toggle clamps. The non-slip ergonomic handle allows for easy and comfortable use with smooth edges to prevent snagging. These clamps feature high quality bushings that won't score and are designed to withstand over 300,000 cycles. They also offer a stop pin that can be moved to vary the handle and clamping opening to best meet your application needs. They operate very smoothly without slop or play during clamping and unclamping while providing constant operating forces. Their attractive appearance provides a high quality look to finished products. The handle is made from high quality polyamide. The steel clamps are nitro-carburized with a non-reflective black oxide finish. The stainless steel clamps have a natural finish. The safety interlock protects against accidental release. To unlock the clamp, the user must pull on the outer edge of the grip handle before releasing the clamp. See page 80 for accessories.

Standard

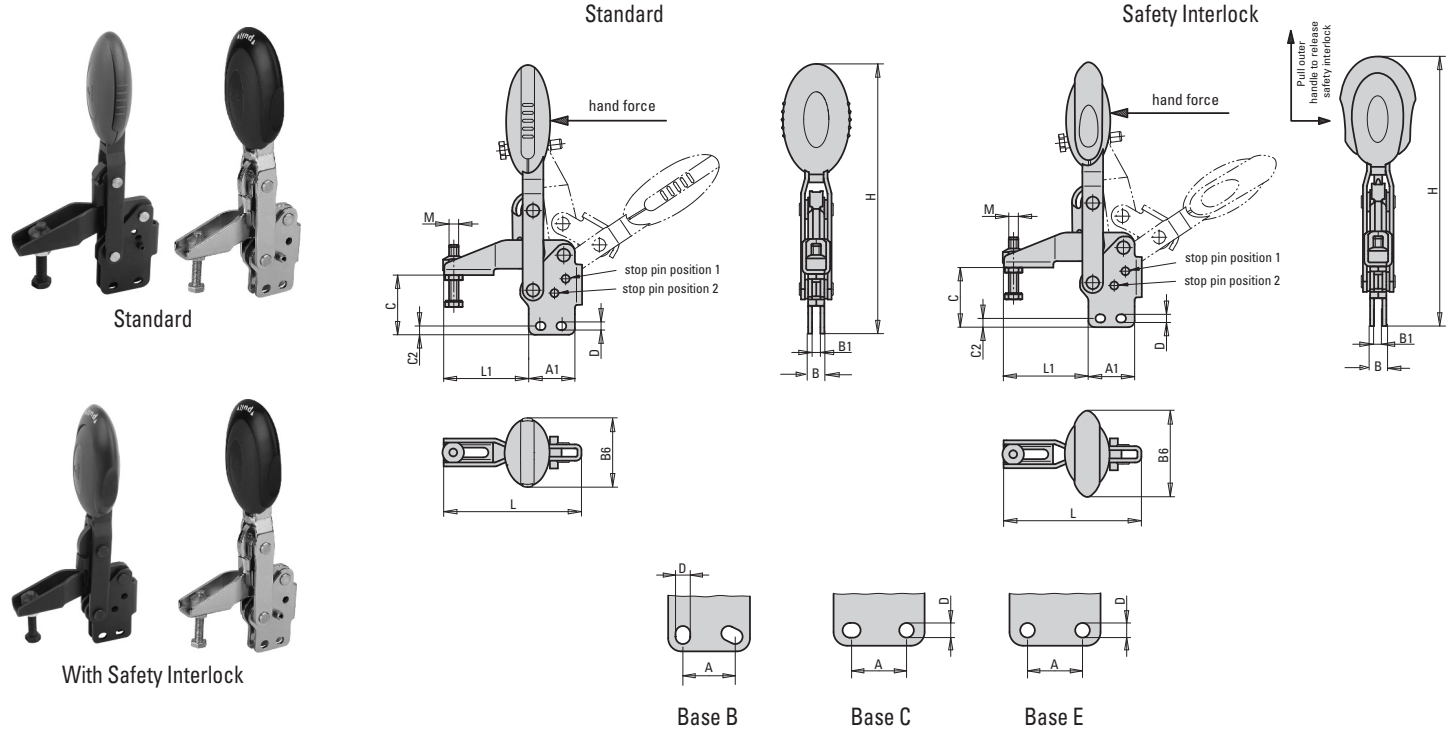
Steel Part #	Stainless Steel Part #	M mm	A mm	A1 mm	B mm	B1 mm	B6 mm	C mm	D mm	H mm	L mm	L1 mm
05908-005001	05908-105001	M5X25	16	25	24	33	22.5	19.1	4.5	108.5	66.5	35
05908-006001	05908-106001	M6X35	14	29	27	38	43.5	24.7	5.5	156.1	87.5	53
05908-008001	05908-108001	M8X45	21	39	32	45	41.5	32.7	6.8	184.2	107	62
05908-010001	—	M10X55	32	50	45	64	47	38.7	9	222.9	153	95
05908-012001	—	M12X70	32	53	45	63	47	46.7	8.8	242.4	173.5	113.5

With Safety Interlock

Steel Part #	Stainless Steel Part #	M mm	A mm	A1 mm	B mm	B1 mm	B6 mm	C mm	D mm	H mm	L mm	L1 mm
05908-006101	05908-106101	M6X35	14	29	27	38	53.4	24.7	5.5	162.8	87.5	53
05908-008101	05908-108101	M8X45	21	39	32	45	51.1	32.7	6.8	191.4	107.5	62
05908-010101	—	M10X55	32	50	45	64	56.5	38.7	9	230.5	153	95
05908-012101	—	M12X70	32	53	45	63	56.5	46.7	8.8	249.1	173.5	113.5

ERGONOMIC TOGGLE CLAMPS

Vertical | Straight Base | Steel & Stainless Steel



Standard Part #	Interlock Part #	Mounting Hole Pattern	Material	Stop Pin Position 1 Operating Angle Clamp Arm	Stop Pin Position 2 Operating Angle Clamp Arm	Stop Pin Removed Operating Angle Clamp Arm	Stop Pin Position 1 Operating Angle Handle	Stop Pin Position 2 Operating Angle Handle	Clamping Force Lbs.
05912-005001	—	B	Steel	100°	—	129°	64°	—	135
05912-006001	05912-006101	C	Steel	56°	83°	141°	46°	56°	200
05912-008001	05912-008101	C	Steel	13°	93°	158°	26°	61°	210
05912-010001	05912-010101	B	Steel	6°	97°	176°	19°	59°	335
05912-012001	05912-012101	E	Steel	11°	88°	164°	24°	60°	310
05912-105001	—	B	SS	100°	-	129°	64°	—	135
05912-106001	05912-106101	C	SS	56°	83°	141°	46°	56°	200
05912-108001	05912-108101	C	SS	13°	93°	158°	26°	61°	210

Kipp toggle clamps offer a high quality, durable alternative to standard toggle clamps. The non-slip ergonomic handle allows for easy and comfortable use with smooth edges to prevent snagging. These clamps feature high quality bushings that won't score and are designed to withstand over 300,000 cycles. They also offer a stop pin that can be moved to vary the handle and clamping opening to best meet your application needs. They operate very smoothly without slop or play during clamping and unclamping while providing constant operating forces. Their attractive appearance provides a high quality look to finished products. The handle is made from high quality polyamide. The steel clamps are nitro-carburized with a non-reflective black oxide finish. The stainless steel clamps have a natural finish. The safety interlock protects against accidental release. To unlock the clamp, the user must pull on the outer edge of the grip handle before releasing the clamp. See page 80 for accessories.

Standard

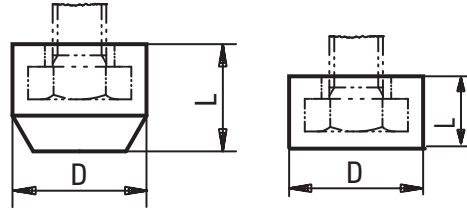
Steel Part #	Stainless Steel Part #	M mm	A mm	A1 mm	B mm	B1 mm	B6 mm	C mm	C2 mm	D mm	H mm	L mm	L1 mm
05912-005001	05912-105001	M5X25	16	25	8.1	4.1	22.5	30.9	5.5	4.5	120.3	63.5	35
05912-006001	05912-106001	M6X35	14	29	10.2	5.2	43.5	37.6	5.5	5.5	169	86.5	53
05912-008001	05912-108001	M8X45	21	39	10.2	5.2	41.5	49	6.5	6.8	200.3	107	62
05912-010001	—	M10X55	32	50	14.1	7.1	47	62.3	13	9	247.4	153	95
05912-012001	—	M12X70	32	53	14.1	7.1	47	69.8	9	8.8	265.5	173.5	113.5

With Safety Interlock

Steel Part #	Stainless Steel Part #	M mm	A mm	A1 mm	B mm	B1 mm	B6 mm	C mm	C2 mm	D mm	H mm	L mm	L1 mm
05912-006101	05912-106101	M6X35	14	29	10.2	5.2	53.4	37.6	5.5	5.5	175.7	86.5	53
05912-008101	05912-108101	M8X45	21	39	10.2	5.2	51.1	49	6.5	6.8	207.6	107	62
05912-010101	—	M10X55	32	50	14.1	7.1	56.5	62.3	13	9	254	153	95
05912-012101	—	M12X70	32	53	14.1	7.1	56.5	69.8	9	8.8	271.1	173.5	113.5

TOGGLE CLAMP ACCESSORIES

Protective Caps

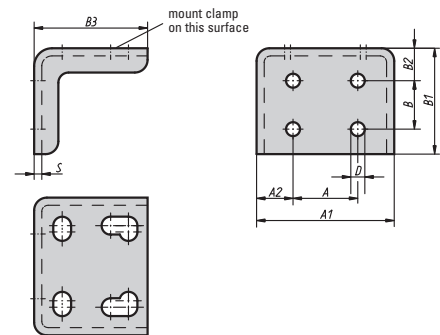


05280-06

The protective caps fit over the spindles of the toggle clamps shown on the previous pages to provide non-marring contact. They are made from rubber except the 05280-06 which is made from white nylon.

Part #	D mm	L mm	For Screws
05280-06	9	4	M3
05280-01	11	8.5	M4
05280-02	12.5	10	M5
05280-03	15	12	M6
05280-04	19	15	M8
05280-07	23	18	M10
05280-05	26	20	M12

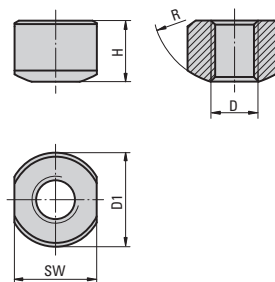
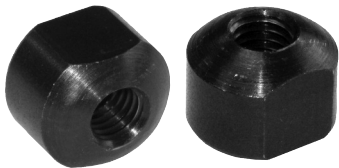
Angle Mounting Brackets



These steel mounting brackets offer the user different mounting options for the toggle clamps listed below.

Part #	A mm	A1 mm	A2 mm	B mm	B1 mm	B2 mm	B3 mm	D mm	S mm	Use with Toggle Clamp
05880-02	18	43	12.5	15	36.5	13.5	29.5	5	2	05900-004001, 05900-005001, 05908-005001, 05908-006001, 05908-006101
05880-04	25.4	54	14.2	19	41.5	12.7	44.5	5.5	3	05900-006001, 05900-006101, 05900-008001, 05900-008101, 059908-008001, 05908-008101
05880-06	44	76	16	32	62	21	66	8.6	4	05900-010001, 05900-010101, 05908-012001, 05908-012101

Mounting Nuts



Made from steel with black oxide finish.

Part #	D mm	H mm	D1 mm	SW mm	R mm
05990-04	M4	5.2	8	7	7
05990-05	M5	6.7	10	9	9
05990-06	M6	9.5	13.5	12.2	10
05990-08	M8	12.8	18	15.3	12
05990-10	M10	12.1	20	18.2	14
05990-12	M12	14.8	23	20	16

How To Use

suitable for welding

