

CLAMPS & WORKHOLDING



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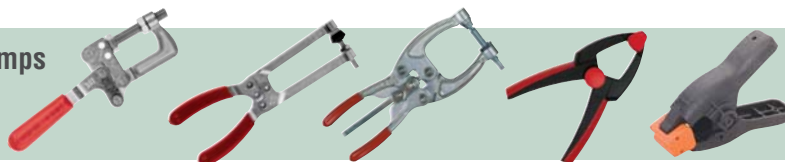
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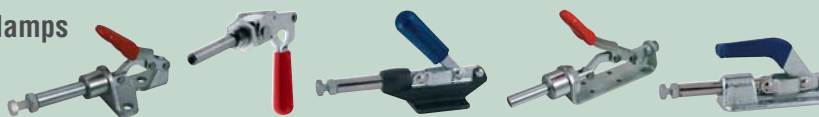
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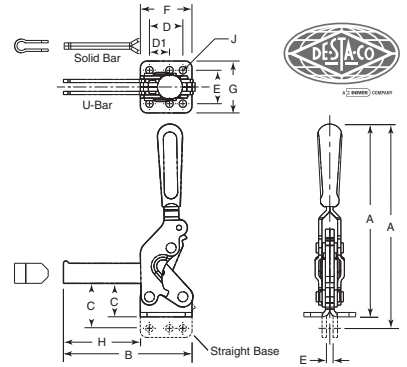
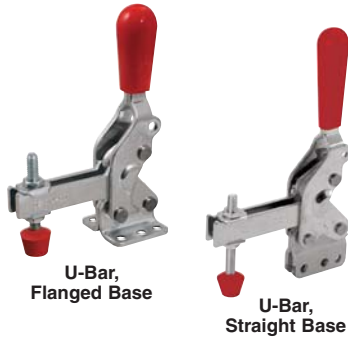


VERTICAL HANDLE HOLD DOWN CLAMPS

Buy One or
Buy Bulk & SAVE

Series TC-2002, 2007, 2010

Now you can save valuable space in all your applications without sacrificing holding capacity or clamp performance. The open "U" bar has a knob on the end to prevent the spindle from slipping off the end of the arm. Unique design delivers greater hand clearance in the open position, eliminating pinch points and improving safety and ergonomics. Clamp comes complete with ergonomic handle grip, two flanged washers and spindle assembly ("U" bar models only). All "S" bar models supplied with bolt retainer.



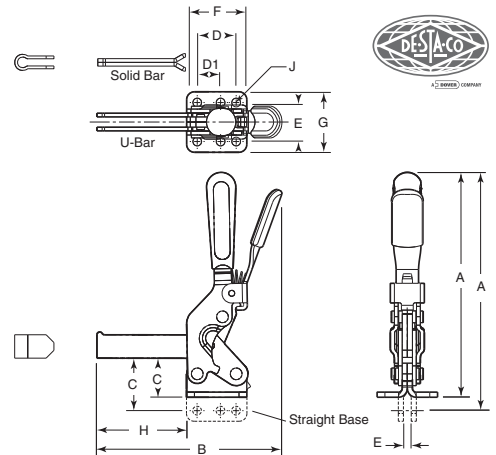
Item No.	A	B	C	D	D1	E	F	G	H	J	Bar Type	Base Type	Handle Moves (degrees)	Bar Opening (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-2002-S	4.73	3.29	.95	.90	.50	1.06	1.36	1.52	1.93	.22	Solid	Flanged	85	75	600	1
TC-2002-S207	5.01	3.39	1.25	.90	—	1.25	1.34	1.76	1.95	.22	S-Bar	Flanged	72	90	600	1
TC-2002-SB	5.07	3.29	1.27	.90	.50	.25	1.36	—	1.93	.22	Solid	Straight	85	75	600	1
TC-2002-U	4.73	3.29	.95	.90	.50	1.06	1.36	1.52	1.93	.22	U-Bar	Flanged	85	75	600	1
TC-2002-U207	5.01	3.39	1.25	.90	.50	1.25	1.34	1.76	1.95	.22	U-Bar	Flanged	72	90	600	1
TC-2002-UB	5.07	3.29	1.27	.90	.50	.25	1.36	—	1.93	.22	U-Bar	Straight	85	75	600	1
TC-2007-S	7.21	4.81	1.25	1.25	.75	1.25	1.93	1.94	2.88	.28	Solid	Flanged	76	65	1,000	1
TC-2007-UR	7.21	4.81	1.25	1.25	.75	1.25	1.93	1.94	2.88	.28	U-Bar	Flanged	76	65	1,000	1
TC-2007-SB	7.64	4.81	1.68	1.25	.75	.25	1.93	—	2.88	.28	Solid	Straight	76	65	1,000	1
TC-2007-UB	7.64	4.81	1.68	1.25	.75	.25	1.93	—	2.88	.28	Solid	Straight	76	65	1,000	1
TC-2010-S	9.00	6.09	1.70	1.25	—	1.78	2.53	2.62	3.56	.34	Solid	Flanged	83	69	1,400	1
TC-2010-U	9.00	6.09	1.70	1.25	—	1.78	2.53	2.62	3.56	.34	Solid	Flanged	83	69	1,400	1
TC-2010-UB	9.612	6.09	2.20	1.25	—	.25	2.53	—	3.56	.34	U-Bar	Straight	83	69	1,400	1

Toggle Lock Plus clamps have a locking release lever for improved safety. Used in applications where there is severe stress or vibration on the clamps, or for over-head installations.

Series TC-2002R, 2007R, 2010R
DE-STA-CO® Toggle Lock Plus

Designed with maximum safety and ergonomic benefits as its foundation, these Toggle Lock Plus clamps offer many outstanding features, including:

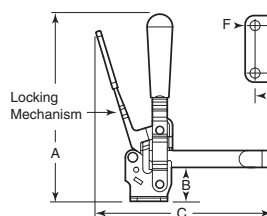
- Bushings at major pivot points for longer life
- Stop point locations at the base for added durability
- Greater hand clearance for ease of use
- Elimination of pinch points for added safety
- Extended handle length for improved ergonomics
- Longer clamping arm for greater flexibility
- Spindle contacts workpiece in vertical position for less workpiece marring or movement
- Clamping arm completely clears workpiece for easy load/unload
- Keeps part locked in place in closed position and keeps the clamp from falling back down while in open position



Item No.	A	B	C	D	D1	E	F	G	H	J	Bar Type	Base Type	Bar Opening (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-2002-SR	4.73	4.17	.95	.90	.50	1.06	1.36	1.52	1.93	.22	Solid	Flanged	85	600	1
TC-2002-SR207	5.01	3.39	1.25	.90	—	1.25	1.34	1.76	1.95	.22	S-Bar	Flanged	75	600	1
TC-2002-UR	4.73	4.17	.95	.90	.50	1.06	1.36	1.52	1.93	.22	U-Bar	Flanged	85	600	1
TC-2002-UR207	5.01	3.39	1.25	.90	.50	1.25	1.34	1.76	1.95	.22	U-Bar	Flanged	75	600	1
TC-2002-SBR	5.07	4.17	1.27	.90	.50	.25	1.36	—	1.93	.22	Solid	Straight	85	600	1
TC-2002-UBR	5.07	4.17	1.27	.90	.50	.25	1.36	—	1.93	.22	U-Bar	Straight	85	600	1
TC-2007-SR	7.21	5.94	1.25	1.25	.75	1.25	1.93	1.94	2.88	.28	Solid	Flanged	76	1,000	1
TC-2007-UR	7.21	5.94	1.25	1.25	.75	1.25	1.93	1.94	2.88	.28	U-Bar	Flanged	76	1,000	1
TC-2007-SBR	7.64	5.94	1.68	1.25	.75	.25	1.93	—	2.88	.28	Solid	Straight	76	1,000	1
TC-2007-UBR	7.64	5.94	1.68	1.25	.75	.25	1.93	—	2.88	.28	U-Bar	Straight	76	1,000	1
TC-2010-SR	9.00	7.28	1.70	1.25	—	1.78	2.53	2.62	3.56	.34	Solid	Flanged	83	1,400	1
TC-2010-UR	9.00	7.28	1.70	1.25	—	1.78	2.53	2.62	3.56	.34	U-Bar	Flanged	83	1,400	1

Series TC-207, 210
DE-STA-CO® Toggle Lock Plus

These clamps lock in both clamped and unclamped positions. Bolt retainer supplied with solid bar models. Flanged washers supplied with U-bar models. Series 207 accommodates any 5/16" or M8 spindle. Series 210 accommodates any 3/8" or M10 spindle.

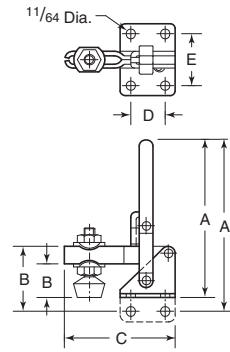


Item No.	A	B	C	D	E	F	Bar Type	Base Type	Bar Opening (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-207-LR	6.90	1.25	4.58	.75	1.25	.28	Solid	Flanged	100	500	1
TC-207-UR	6.90	1.25	4.58	.75	1.28	.25	U-Bar	Flanged	100	375	1
TC-210-SR	8.00	1.68	6.61	1.25	1.75	.33	Solid	Flanged	103	750	1
TC-210-UR	8.00	1.68	6.61	1.25	1.75	.33	U-Bar	Flanged	103	600	1



VERTICAL HANDLE HOLD DOWN CLAMPS

Series TC-201

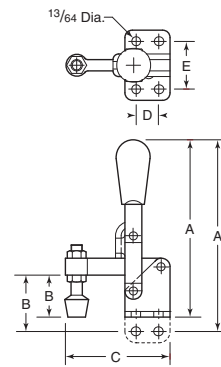


Steel models furnished with a low cushion neoprene tipped M5 spindle (TC-305208-M), flanged washers and lock nuts. Stainless models furnished with stainless steel hex head spindle (TC-201943), without neoprene tip.

Item No.	A	B	C	D	E	Handle Type	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel												
TC-201-U	3.03	.63	2.02	.63	.94	Straight	U-Bar	Flanged	55	100	100	1
TC-201-TU	2.25	.63	2.02	.63	.94	Tee	U-Bar	Flanged	55	100	100	1
TC-201-UB	3.13	.88	2.02	.63	.16	Straight	U-Bar	Straight	55	100	100	1
Stainless Steel												
TC-201-USS	3.03	.63	2.02	.63	.94	Straight	U-Bar	Flanged	55	100	100	1

Note: Also available as power Model TC-812.

Series TC-202

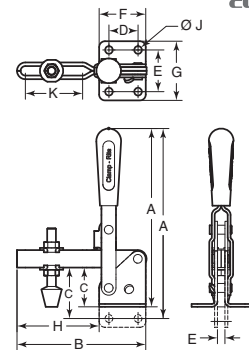


Steel models furnished with M6 spindle (TC-202208-M) and lock nuts. U-bar models also include flanged washers.

Item No.	A	B	C	D	E	Handle Type	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel												
TC-202	4.21	.94	2.31	.50	1.06	Straight	Fixed	Flanged	65	105	200	1
TC-202-T	2.81	.94	2.31	.50	1.06	Tee	Fixed	Flanged	65	105	200	1
TC-202-TU	2.81	.94	2.69	.50	1.06	Tee	U-Bar	Flanged	65	105	200	1
TC-202-B	4.40	1.13	2.31	.50	.25	Straight	Fixed	Straight	65	105	200	1
TC-202-U	4.21	.94	2.73	.50	1.06	Straight	U-Bar	Flanged	65	105	200	1
TC-202-UL	4.21	.94	3.27	.50	1.06	Straight	U-Bar	Flanged	65	105	200	1
TC-202-UB	4.40	1.13	2.73	.50	.25	Straight	U-Bar	Straight	65	105	200	1
Stainless Steel												
TC-202-SS	4.21	.94	2.31	.50	1.06	Straight	Fixed	Flanged	65	105	200	1
TC-202-USS	4.21	.94	2.73	.50	1.06	Straight	U-Bar	Flanged	65	105	200	1

Note: Also available as power Model TC-802.

Vertical Handle Hold-Down Clamps



All models have a blue vinyl grip handle. Supplied with spindle assembly.

Item No.	A	B	C	D	E	F	G	H	J	K	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-11011	3.38	2.07	.73	.63	.95	1.00	1.32	1.06	.17	.77	U-Bar	Flanged	Straight	10-24 x 1.38 Bonded	56	100	100	1
ETC-11012	3.65	2.04	1.00	.63	.14	1.00	—	1.03	.17	.82	U-Bar	Straight	Straight	10-24 x 1.38 Bonded	56	100	100	1
ETC-11020	4.01	2.50	.98	.51	1.00	.98	1.50	1.28	.21	—	Solid	Flanged	Straight	1/4-20 x 1.75 Bonded	60	100	200	1
ETC-11021	4.01	2.68	.95	.52	1.03	.98	1.50	1.68	.20	1.08	U-Bar	Flanged	Straight	1/4-20 x 1.75 Bonded	60	100	200	1
ETC-11022	4.27	2.68	1.18	.51	.26	.98	—	1.68	.21	1.08	U-Bar	Straight	Straight	1/4-20 x 1.75 Bonded	60	100	200	1
ETC-11025	4.23	2.48	1.15	.72	.24	.98	—	1.24	.21	—	Solid	Straight	Straight	1/4-20 x 1.75 Bonded	60	100	200	1



VERTICAL HANDLE HOLD DOWN CLAMPS

Buy One or Buy Bulk & SAVE

Series TC-207



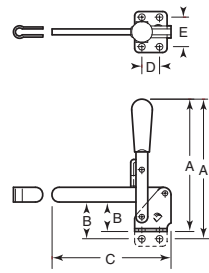
Solid Bar, Straight Base Straight Handle



U-Bar, Flanged Base Tee Handle



U-Bar, Flanged Base Straight Handle



Bolt retainers are furnished with solid bar models. Two flanged washers are furnished with U-bar models. Accommodates any 5/16" or M8 spindle.

Item No.	A	B	C	D	E	Handle Type	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel												
TC-207-L	6.89	1.25	5.02	.75	1.25	Straight	Solid	Flanged	57	99	500	1
TC-207-LB	7.48	1.55	5.02	.75	.25	Straight	Solid	Flanged	57	99	500	1
TC-207-S	6.89	1.25	3.75	.75	1.25	Straight	Solid	Flanged	57	99	500	1
TC-207-SB	7.48	1.55	3.75	.75	.25	Straight	Solid	Flanged	57	99	500	1
TC-207-U*	6.89	1.25	3.68	.75	1.25	Straight	U-Bar	Flanged	57	99	375	1
TC-207-UB*	7.48	1.55	3.68	.75	.25	Straight	U-Bar	Flanged	57	99	375	1
TC-207-TU	4.36	1.25	3.75	.75	1.25	Tee	U-Bar	Flanged	57	99	375	1
TC-207-UL*	6.89	1.25	5.41	.75	1.25	Straight	U-Bar	Flanged	57	99	375	1
TC-207-ULB*	7.48	1.55	5.41	.75	.25	Straight	U-Bar	Flanged	57	99	375	1
TC-207-TUL	4.36	1.25	5.41	.75	1.25	Tee	U-Bar	Flanged	57	99	375	1
Stainless Steel												
TC-207-USS	5.63	1.25	4.38	.75	1.25	Straight	U-Bar	Flanged	57	99	375	1

*Supplied with spindle TC-225208-M

Note: Also available as power Model TC-807-L, and as Toggle Lock Plus Model TC-207-LR and TC-207-UR.

Economy Vertical Handle Hold-Down Clamps



U-Bar, Flanged Base Straight Handle



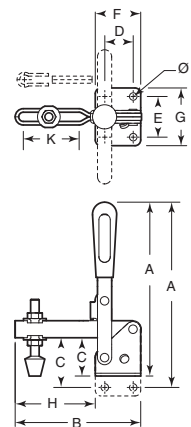
U-Bar, Straight Base Straight Handle



U-Bar, Flanged Base Tee Handle



Solid Bar, Flanged Base Straight Handle



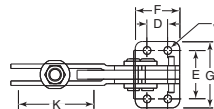
All models have a blue vinyl grip handle. Supplied with spindle assembly.

Item No.	A	B	C	D	E	F	G	H	J	K	L	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-11018	5.60	5.43	1.25	.78	1.25	1.38	1.77	3.75	.27	2.79	—	Long U-Bar	Flanged	Straight	5/16-18 x 2.50 Bonded	60	100	500	1
ETC-11071	5.88	4.59	1.23	.75	1.25	1.38	1.82	2.85	.27	2.05	—	U-Bar	Flanged	Straight	5/16-18 x 2.50 Bonded	60	100	200	1
ETC-11072	5.93	4.61	1.57	.75	.25	1.38	—	2.85	.27	2.03	—	U-Bar	Straight	Straight	5/16-18 x 2.50 Bonded	60	100	375	1
ETC-11073	4.10	4.60	1.23	.75	1.25	1.38	1.77	2.86	.27	2.10	3.86	U-Bar	Flanged	Tee	5/16-18 x 2.50 Bonded	60	100	375	1
ETC-11074	5.90	3.75	1.26	.75	1.25	1.38	1.80	2.24	.27	—	—	Solid Bar	Flanged	Straight	5/16-18 x 2.50 Bonded	60	100	375	1

TC-229



U-Bar, Flanged Base



Featuring a unique cam action, these clamps will hold workpieces of inconsistent height. Ideal for castings or forgings. Overall clamping range is 1/16 in. Furnished with 1/2 in. spindle assembly.

Item No.	A	B	C	D	E	F	G	H	I	J	K	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-229	9.94	7.13	2.06	.88	2.0	1.88	2.75	5.25	1/2-13	.33	2.75	180	115	1,000	1



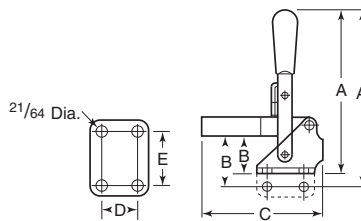
Series TC-210



**U-Bar, Flanged Base
Straight Handle**



**Solid Bar, Straight Base
Straight Handle**



Two flanged washers (TC-235106) furnished with U-bar models and bolt retainer (TC-210114) supplied with solid bar models. Accommodates any 3/8 in. or M10 spindle.

Item No.	A	B	C	D	E	Handle Type	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel												
TC-210-U*	8.19	1.67	5.53	1.25	1.78	Straight	U-Bar	Flanged	58	103	600	1
TC-210-UB*	9.11	2.19	5.53	1.25	.31	Straight	U-Bar	Straight	58	103	600	1
TC-210-S	8.19	1.67	5.53	1.25	1.78	Straight	Solid	Flanged	58	103	750	1
TC-210-SB	9.11	2.19	5.35	1.25	.31	Straight	Solid	Straight	58	103	750	1
TC-210-TU	5.38	1.69	5.35	1.25	1.78	Tee	U-Bar	Flanged	58	103	600	1
Stainless Steel												
TC-210-USS	7.66	1.69	5.35	1.25	1.78	Straight	U-Bar	Flanged	58	103	600	1

*Supplied with spindle TC-240208-M.

Note: Also available as power Model TC-810-U, and as Toggle Lock Plus Model TC-210-SR and TC-210-UR.

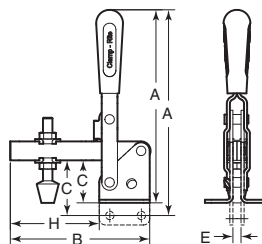
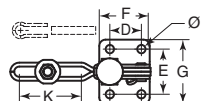
**Economy Vertical Handle
Hold-Down Clamps**



**U-Bar,
Flanged Base
Straight Handle**



**Solid Bar
Flanged Base
Straight Handle**



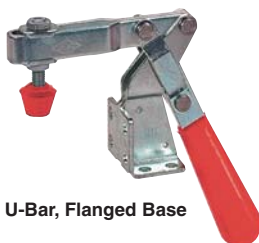
All models have a blue vinyl grip handle. Supplied with spindle assembly.

Item No.	A	B	C	D	E	F	G	H	J	K	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-11101	7.96	5.65	1.66	1.25	1.80	1.94	2.55	3.56	.31	2.31	U-Bar	Flanged	Straight	3/8-16 x 3.50 Bonded	58	105	600	1
ETC-11104	7.89	5.59	1.26	1.25	1.81	1.94	2.56	3.53	.31	—	Solid	Flanged	Straight	3/8-16 x 3.50 Bonded	58	105	750	1
ETC-11107	8.46	5.59	2.16	1.25	.31	1.94	—	3.59	.31	—	Solid	Straight	Straight	3/8-16 x 3.50 Bonded	58	105	750	1

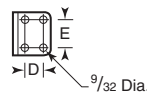
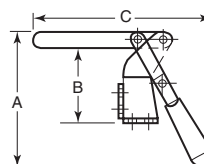
Series TC-317



Solid Bar, Flanged Base



U-Bar, Flanged Base



U-Bar model furnished with M8 bonded neoprene tipped spindle, flanged washers and lock nuts.

Item No.	A	B	C	D	E	Bar Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-317-S	5.62	2.67	6.44	.63	1	Solid	60	185	375	1
TC-317-U	5.62	2.67	6.07	.63	1	U-Bar	60	185	375	1



VERTICAL HANDLE HOLD DOWN CLAMPS

Buy One or Buy Bulk & SAVE

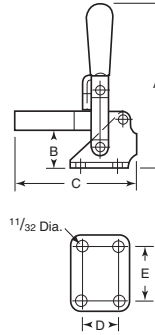
Series TC-247



U-Bar, Flanged Base



Solid Bar, Flanged Base



Bolt retainer furnished with solid bar models. Flanged washers furnished with U-bar models. Accommodates any 1/2 in. or M12 spindle.

Item No.	A	B	C	D	E	Handle Type	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-247-U	8.69	2	6.87	1.25	1.78	Straight	U-Bar	Flanged	67	120	1,000	1
TC-247-S	8.69	2	6.87	1.25	1.78	Straight	Solid	Flanged	67	120	1,000	1

Note: Also available as power Model TC-847.

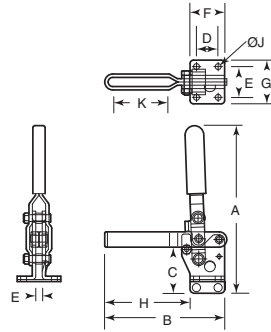
Economy Vertical Handle Hold-Down Action Clamps



U-Bar, Flanged Base



Solid Bar, Flanged Base



All models have a blue vinyl grip handle. Supplied with spindle assembly.

Item No.	A	B	C	D	E	F	G	H	J	K	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-11471	8.81	6.89	1.95	1.25	1.77	2.00	2.56	4.87	.35	2.98	U-Bar	Flanged	Straight	1/2-13 x 3.00 Plain	70	135	1,000	1
ETC-11474	8.81	7.12	2.00	1.25	1.79	2.00	2.56	4.95	.35	—	Solid	Flanged	Straight	1/2-13 x 3.00 Plain	70	135	1,000	1

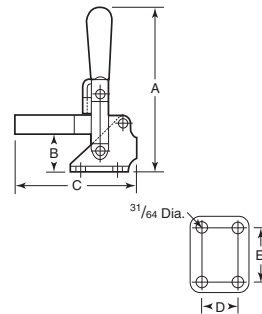
Series TC-267



U-Bar, Flanged Base



Solid Bar, Flanged Base



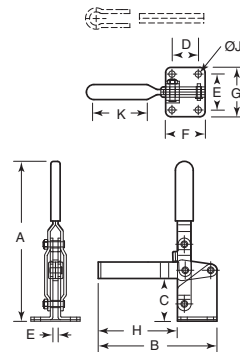
Bolt retainer furnished with solid bar models. Flanged washers furnished with U-Bar models. Accommodates any 5/8 in. or M16 spindle.

Item No.	A	B	C	D	E	Handle Type	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-267-U	11.88	3.08	8.92	2	2.75	Straight	U-Bar	Flanged	72	140	1,200	1
TC-267-S	11.88	3.08	8.88	2	2.75	Straight	Solid	Flanged	72	140	1,200	1

Economy Vertical Handle Hold-Down Action Clamps



U-Bar, Flanged Base



Model has a blue vinyl grip handle. Supplied with spindle assembly.

Item No.	A	B	C	D	E	F	G	H	J	K	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-11671	11.87	9.00	3.08	2.00	2.75	2.99	3.75	5.99	.48	4.33	U-Bar	Flanged	Straight	1/2-13 x 4.50 Plain	60	140	1,200	1



VERTICAL HANDLE HOLD DOWN CLAMPS

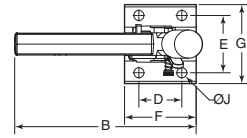
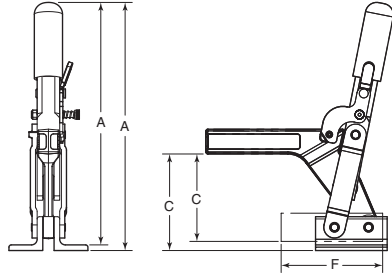
Vertical Handle Hold-Down Clamps TC-5105, 5110



**Solid Bar
Flanged Base**



**Solid Bar
Straight Base**



Features:

- High strength forged clamping arm for heavy-duty service
- Hardened steel pivot pins and bushings provide long life
- Black oxide finish
- Large clearance under the clamping bar

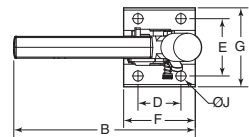
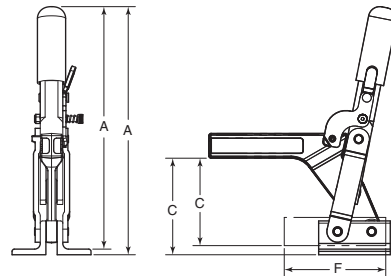
Item No.	A	B	C	D	E	F	G	J	Bar Type	Base Type	Bar Opening (degrees)	Holding Capacity Lbs.	Pack Qty.
TC-5105	6.54	4.13	2.54	1.00	1.46	1.62	2.24	.26	Solid	Flanged	89	700	1
TC-5105-B	6.14	4.13	2.14	—	—	1.00	—	—	Solid	Straight	89	700	1
TC-5110	8.70	6.33	3.37	1.00	2.00	2.50	2.76	.35	Solid	Flanged	74	1,150	1
TC-5110-B	8.39	6.33	3.05	—	—	1.50	—	—	Solid	Straight	74	1,150	1

Vertical Handle Hold Down Clamps TC-5105-R, 5110-R, 5105-BR, 5110-BR DE-STA-CO® Toggle Lock Plus



**Solid Bar
Flanged Base
w/ Toggle Lock Plus**

**Solid Bar
Straight Base
w/ Toggle Lock Plus**



Features:

- High strength forged clamping arm for heavy-duty service
- Hardened steel pivot pins and bushings provide long life
- Black oxide finish
- Large clearance under the clamping bar

Item No.	A	B	C	D	E	F	G	J	Bar Type	Base Type	Bar Opening (degrees)	Holding Capacity Lbs.	Pack Qty.
TC-5105-R	6.54	4.13	2.54	1.00	1.46	1.62	2.24	.26	Solid	Flanged	89	700	1
TC-5105-BR	6.14	4.13	2.14	—	—	1.00	—	—	Solid	Straight	89	700	1
TC-5110-R	8.70	6.33	3.37	1.00	2.00	2.50	2.76	.35	Solid	Flanged	74	1,150	1
TC-5110-BR	8.39	6.33	3.05	—	—	2.50	—	—	Solid	Straight	74	1,150	1

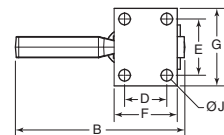
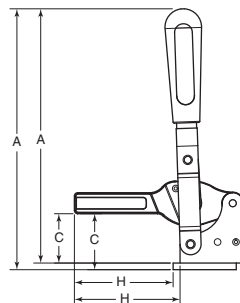
Vertical Handle Hold-Down Clamps TC-5905, 5910, 5915



**Solid Bar
Flanged Base**



**Solid Bar
Straight Base**



Features:

- High strength forged clamping arm for heavy-duty service
- Hardened steel pivot pins and bushings provide long life
- Black oxide finish
- Large clearance under the clamping bar

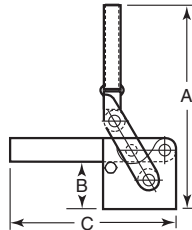
Item No.	A	B	C	D	E	F	G	H	J	Bar Type	Base Type	Handle Moves (degrees)	Bar Opening (degrees)	Holding Capacity Lbs.	Pack Qty.
TC-5905	6.75	4.00	1.51	1.00	1.50	1.50	2.13	2.49	.24	Solid	Flanged	70	135	750	1
TC-5905-B	6.24	4.00	1.27	—	—	1.51	—	2.74	—	Solid	Straight	70	135	750	1
TC-5910	9.27	6.01	1.99	1.50	2.00	2.24	2.76	3.76	.35	Solid	Flanged	71	132	1,600	1
TC-5910-B	8.72	6.01	1.75	—	—	2.25	—	4.01	—	Solid	Straight	71	132	1,600	1
TC-5915	11.25	7.99	3.72	2.00	2.75	2.95	3.88	5.00	.55	Solid	Flanged	74	132	2,750	1



TC-548, 578



Straight Base



Largest capacity clamps. The "bar-guide" feature provides extra support and improves rigidity and repeatability.

Item No.	A	B	C	Handle Type	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-548	9.44	2.25	7.50	Straight	Solid	Straight	129	199	2,500	1
TC-578	11.00	2.75	8.63	Straight	Solid	Straight	129	199	4,000	1



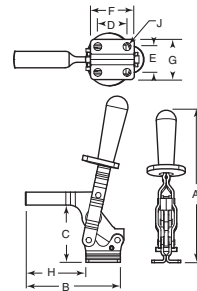
TC-518

Holding Capacity: 500 Lbs

Handle Moves: 75 Degrees, Bar Moves: 90 Degrees



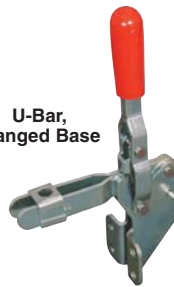
Flanged Base



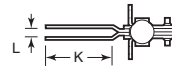
Features a forged hold-down bar and ergonomic plastic grip. Forged hold-down bar can be cut or welded to suit the fixture. Offers twice the normal clearance under the bar as other clamps this size.

Item No.	A	B	C	D	E	F	G	H	J	Pack Qty.
TC-518	6.88	4.28	2.5	1.00	.88	1.50	1.38	2.63	.29	1

TC-91090

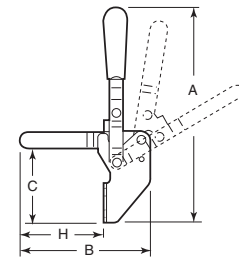


U-Bar, Flanged Base



Front flange mount for mounting flexibility on vertical surfaces. Stainless steel rivets for increased strength. Guide bars allow for more clamp stability. Supplied with two flanged washers. Accommodates any 5/16" or M8 spindle. Spindle not included.

Item No.	A	B	C	D	E	F	G	H	J	K	L	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-91090	7.68	4.72	2.68	.80	1.29	1.32	2.09	2.99	.28	2.40	.33	60	100	385	1



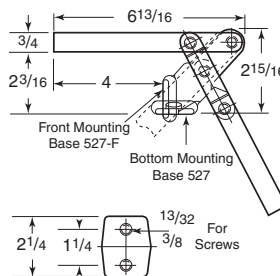
Series TC-528



Solid Bar, Flanged Base



Solid Bar, Front Mount Flanged Base



Item No.	Base Type	Handle Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-528	Flanged	Straight	177	180	1,000	1
TC-528-F	Front Mount/Flanged	Straight	177	180	1,000	1

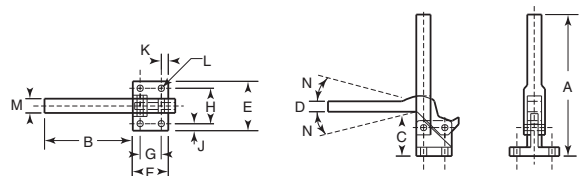
For tough, heavy-duty workholding. Clamp has square, cold drawn steel hold down bar. Pivot points have serrated, hardened bushings. Large Bar opening for greater part clearance.

Cam Action Clamps

Automatically compensates for variations in part thickness. A high to low limit clamping size range allows for normal part size variation and eliminates adjustments. Normalized cast steel construction for heavy duty use. Fast, one hand operation. Cam action resists vibration loosening. Accommodates from 1/8" to 1/4" part size variation.



Solid Bar Flanged Base

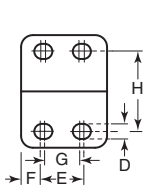
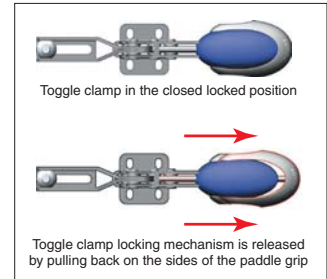
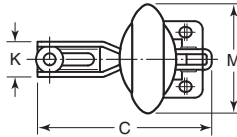
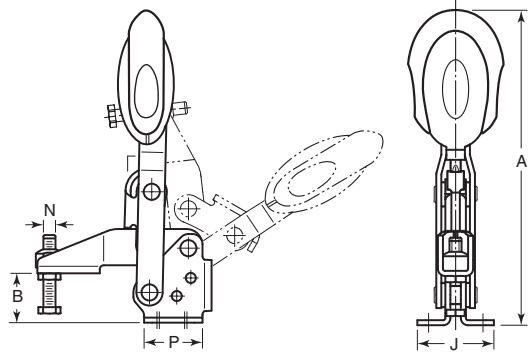


Item No.	A	B	C	D	E	F	G	H	J	K	L	M	N	Bar Moves (degrees)	Max. Holding Cap. Lbs.	Pack Qty.
TC-7-101	5.00	3.13	1.44	.50	1.75	1.25	.75	1.25	.25	.25	.22	.50	.13	10	475	1
TC-7-58	7.00	2.55	1.88	.56	2.25	1.69	1.00	1.62	.31	.34	.28	.50	.13	12	600	1
TC-7-59	8.50	3.50	2.19	.63	2.50	2.06	1.38	1.88	.31	.39	.34	.63	.19	11	1,000	1
TC-7-60	9.50	4.38	2.50	.88	2.88	2.44	1.62	2.12	.38	.44	.41	.75	.25	12	1,600	1

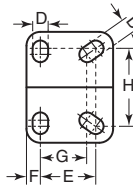


VERTICAL HANDLE HOLD DOWN CLAMPS

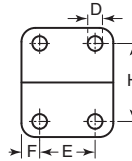
Vertical Hold Down Clamps with Safety Interlock With Flat Foot and Adjustable Clamping Spindle Series 05908



Hole arrangement for Item No. KC-350 and KC-355



Hole arrangement for Item No. KC-360

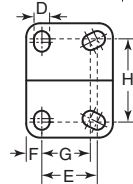
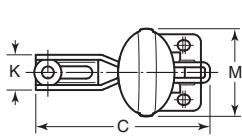
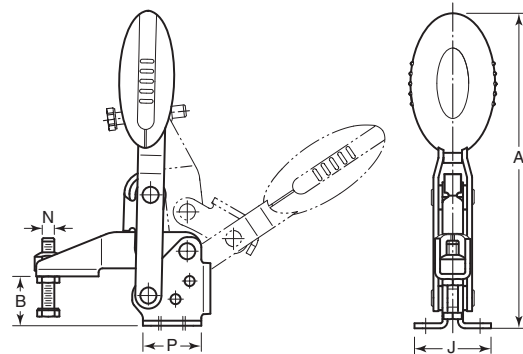


Hole arrangement for Item No. KC-365

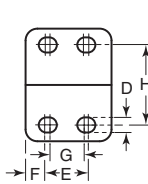
Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile. Includes an internal bar lock with automatic safety.

Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-350	162.9	24.7	86.5	5.5	14	7	12	27	38	53.4	M6 x 35	29.0	207	1
KC-355	191.4	32.7	107.0	6.8	21	9	19	32	45	51.1	M8 x 45	39.0	211	1
KC-360	230.5	38.7	153.0	9.0	32	8	27	45	64	56.5	M10 x 55	50.0	337	1
KC-365	249.1	46.7	173.5	8.8	32	10.5	—	45	63	56.5	M12 x 70	53.0	315	1

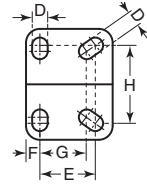
Vertical Hold Down Clamps With Flat Foot and Adjustable Clamping Spindle Series 05908



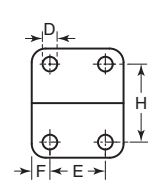
Hole arrangement for Item No. KC-300



Hole arrangement for Item No. KC-305 and KC-310



Hole arrangement for Item No. KC-315



Hole arrangement for Item No. KC-320

Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile.

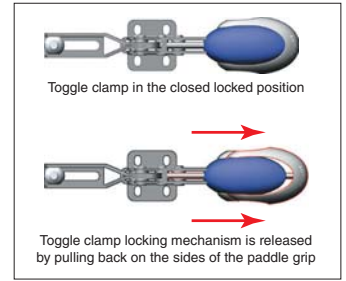
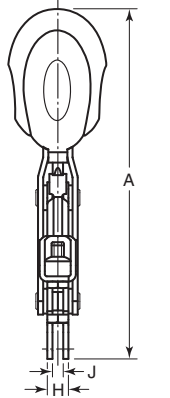
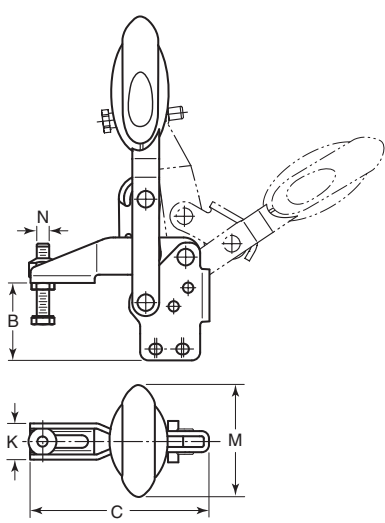
Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-300	108.5	19.1	63.5	4.5	16	4.5	14	24	33	22.5	M5 x 25	25	140	1
KC-305	156.2	24.7	86.5	5.5	14	7	12	27	38	43.5	M6 x 35	29	207	1
KC-310	183.9	32.7	107.0	6.8	21	9	19	32	45	41.5	M8 x 45	39	211	1
KC-315	222.9	38.7	153.0	9.0	32	8	27	45	64	47.0	M10 x 55	50	337	1
KC-320	242.4	46.7	173.5	8.8	32	10.5	—	45	63	47.0	M12 x 70	53	315	1



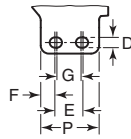
VERTICAL HANDLE HOLD DOWN CLAMPS

Buy One or Buy Bulk & SAVE

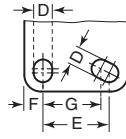
Vertical Hold Down Clamps with Safety Interlock With Straight Foot and Adjustable Clamping Spindle Series 05912



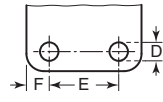
Hole arrangement for Item No. KC-450 and KC-455



Hole arrangement for Item No. KC-460



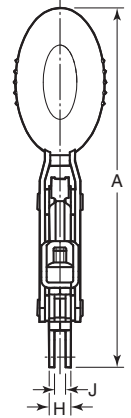
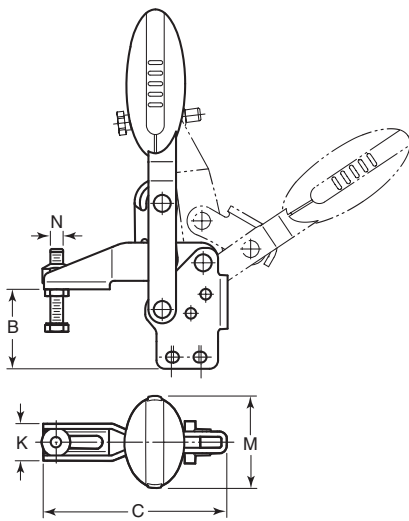
Hole arrangement for Item No. KC-465



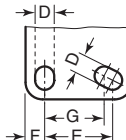
Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile. Includes an internal bar lock with automatic safety.

Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-450	175.7	37.6	86.5	5.5	14	7	12	10.2	5.2	53.4	M6 x 35	29	207	1
KC-455	207.6	49.0	107.0	6.8	21	9	19	10.2	5.2	51.1	M8 x 45	39	221	1
KC-460	254.0	62.3	153.0	9.0	32	8	27	14.1	7.1	56.5	M10 x 55	50	337	1
KC-465	271.9	69.8	173.5	8.8	32	10.5	—	14.1	7.1	56.5	M12 x 70	53	315	1

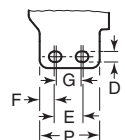
Vertical Hold-Down Clamps With Straight Foot and Adjustable Clamping Spindle Series 05912



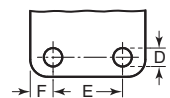
Hole arrangement for Item No. KC-400 and KC-415



Hole arrangement for Item No. KC-405 and KC-410



Hole arrangement for Item No. KC-420



Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile.

Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-400	120.3	30.8	63.5	4.5	16	4.5	14	8.1	4.1	22.5	M5 x 25	25	139	1
KC-405	169.1	37.6	86.5	5.5	14	7	12	10.2	5.2	43.5	M6 x 35	29	207	1
KC-410	200.1	49.0	107.0	6.8	21	9	19	10.2	5.2	41.5	M8 x 45	39	211	1
KC-415	247.4	62.3	153.0	9.0	32	8	27	14.1	7.1	47.0	M10 x 55	50	337	1
KC-420	265.5	69.8	173.5	8.8	32	10.5	—	14.1	7.1	47.0	M12 x 70	53	315	1

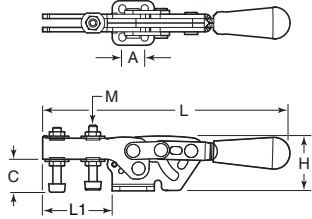
HORIZONTAL HOLD-DOWN CLAMPS



TC-2013-U, 2017-U, 2027-U Flanged Base



Flanged Base



Features:

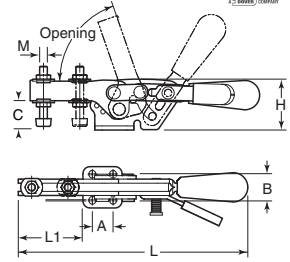
- Robust design offers increased holding capacity over TC-213-U, 217-U, 227-U
- Low arm deflection under load (greater stiffness)
- Mounting hole interchangeable with TC-213-U, 217-U, 227-U
- Large handle clearance reduces pinch points
- Fixed handle pivot provides smooth action

Item No.	A	C	H	L	L1	M	Bar Opening (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-2013-U	.53	.75	1.27	5.88	1.65	10-32	71	295	1
TC-2017-U	1.03	.98	1.95	8.62	2.53	1/4-20	73	560	1
TC-2027-U	1.03	1.32	2.20	9.88	2.86	3/8-18	68	840	1

Series TC-5305, 5310



Flanged Base



Features:

- Additional locking lever locks handle in closed and open positions
- Robust design offers increased holding capacity over TC-213-U, 217-U, 227-U
- Low arm deflection under load (greater stiffness)
- Mounting hole interchangeable with TC-213-U, 217-U, 227-U
- Large handle clearance reduces pinch points
- Fixed handle pivot provides smooth action

Item No.	A	B	C	H	L	L1	M	Bar Opening (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-2013-UR	.53	.70	.75	1.27	5.88	1.65	10-32	70	295	1
TC-2017-UR	1.03	1.21	.98	1.95	8.62	2.53	1/4-20	73	560	1
TC-2027-UR	1.03	1.21	1.32	2.20	9.88	2.86	3/8-18	70	840	1

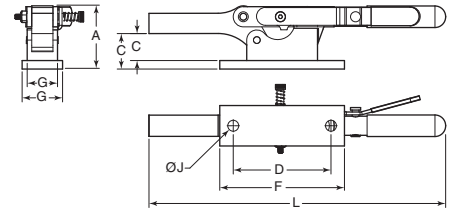
Horizontal Handle Hold-Down Clamps Series TC-5305, 5310



Solid Bar Flanged Base



Solid Bar Straight Base



Features:

- Solid clamping arm may be modified to suit requirements
- Hardened steel pivot pins and bushings provide long life
- Black oxide finish

Item No.	A	L	C	D	F	G	J	Bar Type	Base Type	Bar Opening (degrees)	Holding Capacity Lbs.	Pack Qty.
TC-5305	1.51	8.36	.81	2.50	3.15	.98	.35	Solid	Flanged	90	600	1
TC-5305-B	1.51	8.36	1.12	—	—	.79	—	Solid	Straight	90	600	1
TC-5310	2.00	11.13	1.00	3.63	4.63	1.50	.41	Solid	Flanged	90	1,300	1
TC-5310-B	2.00	11.13	1.31	—	—	1.13	—	Solid	Straight	90	1,300	1

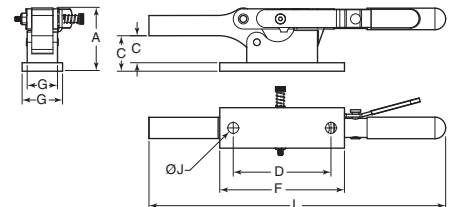
Series TC-5305, 5310 DE-STA-CO® Toggle Lock Plus



Solid Bar Flanged Base w/ Toggle Lock Plus



Solid Bar Straight Base w/ Toggle Lock Plus



Features:

- Solid clamping arm may be modified to suit requirements
- Hardened steel pivot pins and bushings provide long life
- Black oxide finish

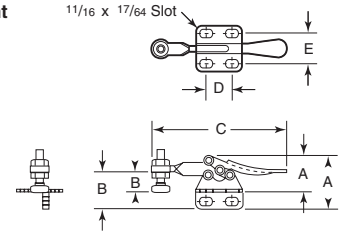
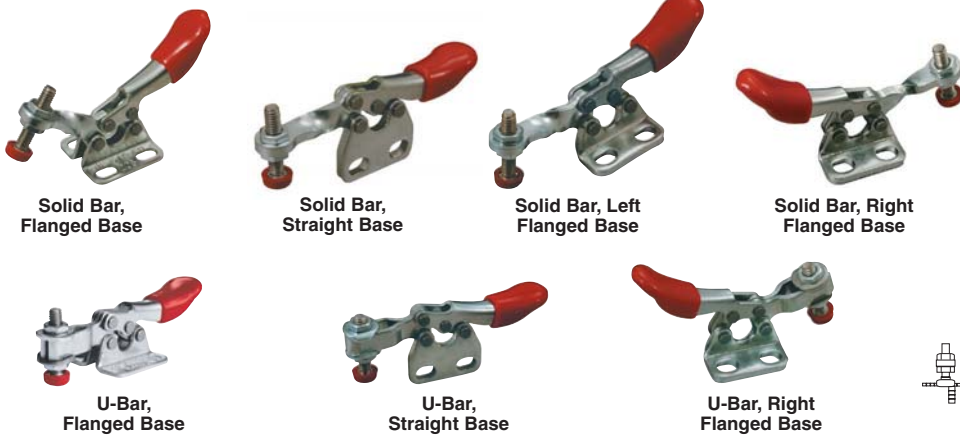
Item No.	A	L	C	D	F	G	J	Bar Type	Base Type	Bar Opening (degrees)	Holding Capacity Lbs.	Pack Qty.
TC-5305-R	1.51	8.36	.81	2.50	3.15	.98	.35	Solid	Flanged	90	600	1
TC-5305-BR	1.51	8.36	1.12	—	—	.79	—	Solid	Straight	90	600	1
TC-5310-R	2.00	11.02	1.00	3.63	4.63	1.50	.41	Solid	Flanged	90	1,300	1
TC-5310-BR	2.00	11.02	1.31	—	—	1.13	—	Solid	Straight	90	1,300	1



HORIZONTAL HOLD-DOWN CLAMPS

Buy One or Buy Bulk & SAVE

Series TC-205

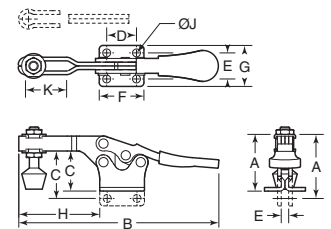


The smallest of the horizontal handle, horizontal bar clamps. Steel models supplied with M4 neoprene tipped spindle assembly (TC-205208-M). Stainless steel models supplied with stainless steel hex head spindle (TC-205943).

Item No.	A	B	C	D	E	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel											
TC-205-S	.67	.37	2.78	.53	.63	Solid	Flanged	80	90	60	1
TC-205-SB	.84	.63	2.78	.53	—	Solid	Straight	80	90	60	1
TC-205-SL	.67	.37	2.78	.53	—	Solid	Left Flanged	80	90	60	1
TC-205-SR	.67	.37	2.78	.53	—	Solid	Right Flanged	80	90	60	1
TC-205-U	.67	.31	2.65	.53	.63	U-Bar	Flanged	80	90	60	1
TC-205-UB	.84	.53	2.65	.53	—	U-Bar	Straight	80	90	60	1
TC-205-UL	.67	.31	2.65	.53	—	U-Bar	Left Flanged	80	90	60	1
TC-205-UR	.67	.31	2.65	.53	—	U-Bar	Right Flanged	80	90	60	1
Stainless											
TC-205-SSS*	.67	.37	2.75	.53	.63	Solid	Flanged	80	90	60	1
TC-205-USS*	.67	.31	2.66	.53	.63	U-Bar	Flanged	80	90	60	1

*Handle does not have vinyl grip.

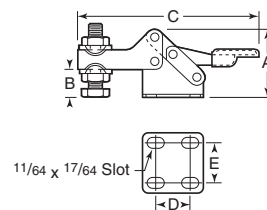
Economy Horizontal Handle Hold-Down Clamps



All models have a blue handle grip. Supplied with spindle assembly.

Item No.	A	B	C	D	E	F	G	H	J	K	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-14051	.70	3.10	.34	.42	.65	.95	.98	.78	.17	.48	U-Bar	Flanged	Horizontal	8-32 x .75 Nylon	80	90	60	1
ETC-14054	.73	3.24	.42	.41	.64	.95	.98	.87	.17	—	Solid	Flanged	Horizontal	8-32 x .75 Nylon	80	90	60	1
ETC-14351	2.55	10.40	1.73	1.62	1.60	2.25	2.23	4.29	.31	2.75	U-Bar	Flanged	Horizontal	3/8-16 x 3.50 Bonded	50	85	750	1

Series TC-206-SS



Made of stainless steel. Offers good clearance height under the bar, while maintaining a low profile. Optional high bar provides even more space to clamp for thicker material. Furnished with flanged washers (TC-105906) and stainless steel spindle assembly (TC-205943), two 8-32 jam nuts and one 8-32 x 3/4" bolt.

Item No.	A	B	C	D	E	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Stainless Steel											
TC-206-SS	1.06	.40	2.75	.53	.63	Low U-Bar	Flanged	90	90	100	1
TC-206-HSS	1.06	.75	2.75	.53	.63	High U-Bar	Flanged	90	90	100	1

HORIZONTAL HOLD-DOWN CLAMPS

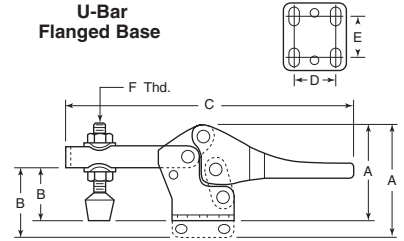


Series TC-213, 217, 227, 237, 245

Safety designed to give more hand clearance between the bar and handle when clamps are in full, open position. Bar guide feature gives extra lateral support and rigidity to hold-down bar at front of base. Steel models are supplied with a neoprene tipped spindle assembly and flanged washers. Stainless Steel models are supplied with a stainless steel hex head spindle assembly. U-bar type.



U-Bar Flanged Base



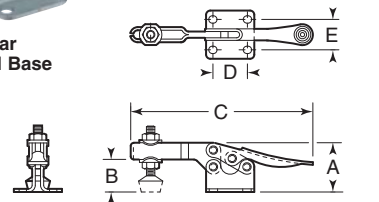
Item No.	A	B	C	D	E	F	Handle Moves (degrees)	Base Type	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.	
Steel												
TC-213-U	1.39	.72	4.12	.53	.70	M5	60	Flanged	90	150	1	
TC-217-U	1.95	.97	6.56	1.03	1.12	M6	76	Flanged	92	200	1	
TC-227-U	2.43	1.30	7.56	1.03	1.22	M8	62	Flanged	92	500	1	
TC-237-U	3.20	1.62	10.67	1.63	1.69	M10	63	Flanged	92	750	1	
TC-245-U	4.25	2.25	12.33	1.63	1.63	1/2-13	67	Flanged	105	1,000	1	
Stainless Steel												
TC-213-USS	1.36	.75	3.94	.53	.69	10-32	60	Flanged	90	150	1	
TC-217-USS	1.97	.97	6.30	1.03	1.15	1/4-20	76	Flanged	92	250	1	
TC-227-USS	2.39	1.31	7.24	1.03	1.23	5/16-18	62	Flanged	92	600	1	

Series TC-215

Steel models furnished with M6 bonded neoprene spindle (TC-202208-M), jam nuts and flanged washers or bolt retainer. Stainless steel model supplied with stainless steel hex head spindle (TC-202943), without neoprene tip.



U-Bar Flanged Base



Item No.	A	B	C	D	E	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel											
TC-215-S	1.53	1.03	5.50	1	.88	Solid	Flanged	70	90	200	1
TC-215-U	1.53	1.03	5.50	1	.88	U-Bar	Flanged	70	90	200	1
Stainless Steel											
TC-215-USS*	1.53	1.03	5.50	1	.88	U-Bar	Flanged	70	90	200	1

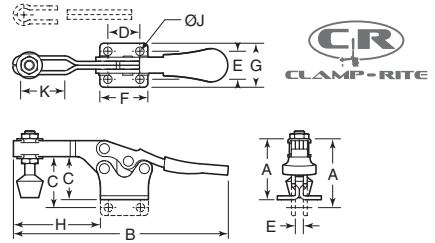
*Handle does not have vinyl grip.

Economy Horizontal Handle Hold-Down Clamps



U-Bar, Flanged Base Bonded Spindle

U-Bar, Straight Base Bonded Spindle



All models have a blue handle grip. Supplied with spindle assembly.

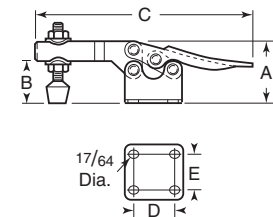
Item No.	A	B	C	D	E	F	G	H	J	K	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-14151	1.52	5.90	.96	.98	.87	1.46	1.36	2.29	.21	1.51	U-Bar	Flanged	Horizontal	1/4-20 x 2.13 Bonded	60	85	200	1
ETC-14152	1.76	5.90	1.23	.98	xx	1.46	—	2.28	.21	1.33	U-Bar	Straight	Horizontal	1/4-20 x 2.13 Bonded	60	85	200	1

Series TC-225

Steel model furnished with M8 bonded neoprene tipped spindle (TC-225208-M), flanged washers and lock nuts. Stainless steel model supplied with stainless steel hex head spindle (TC-207943), without neoprene tip.



U-Bar Flanged Base



Item No.	A	B	C	D	E	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel											
TC-225-U	1.84	1.32	6.70	1	.88	U-Bar	Flanged	70	92	500	1
Stainless Steel											
TC-225-USS*	1.84	1.32	6.70	1	.88	U-Bar	Flanged	70	92	600	1

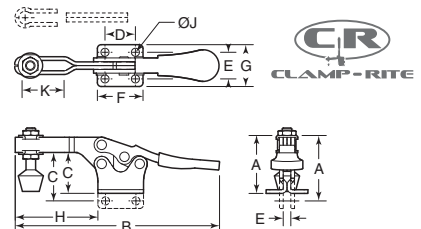
*Handle does not have vinyl grip.

Economy Horizontal Handle Hold-Down Clamps



U-Bar, Flanged Base Bonded Spindle

U-Bar, Straight Base Bonded Spindle



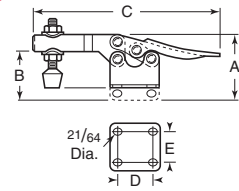
All models have a blue handle grip. Supplied with spindle assembly.

Item No.	A	B	C	D	E	F	G	H	J	K	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-14251	1.96	6.88	1.31	.99	.89	1.51	1.36	2.91	.28	1.31	U-Bar	Flanged	Horizontal	5/16-18 x 3.00 Bonded	65	90	500	1
ETC-14252	2.18	6.88	1.66	.99	xx	1.51	—	2.91	.28	1.42	U-Bar	Straight	Horizontal	5/16-18 x 3.00 Bonded	65	90	500	1



Series TC-235

Steel model furnished with M10 bonded neoprene tipped spindle (TC-240208-M), flanged washers and lock nuts. Stainless steel model supplied with stainless steel hex head spindle (TC-237943), without neoprene tip.

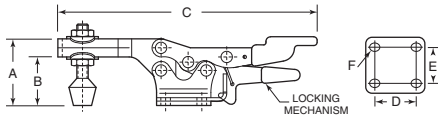


U-Bar Flanged Base

Item No.	A	B	C	D	E	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel											
TC-235-U	2.55	1.75	10.87	1.63	1.63	U-Bar	Flanged	55	90	750	1
Stainless Steel											
TC-235-USS	2.55	1.75	10.87	1.63	1.63	U-Bar	Flanged	55	90	750	1

TC-225-UR, 235-UR

DE-STA-CO® Toggle Lock Plus



U-Bar, Flanged Base M10 Bonded Neoprene Tipped Spindle

Equipped with a locking lever which locks in clamped position only. Large handle pad for greater comfort. TC-225-UR supplied with an M8 neoprene tipped spindle assembly (TC-225208-M) and two washers (TC-507107). TC-235-UR furnished with M10 bonded neoprene tipped spindle (TC-240208-M), flanged washers and jam nuts.

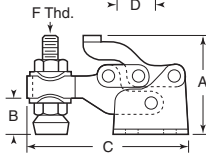
Item No.	A	B	C	D	E	F	Bar Type	Base Type	Handle Moves (degrees)	Bar Moves (degree)	Holding Cap. Lbs.	Pack Qty.
TC-225-UR	1.92	1.32	7.14	1.00	.88	.27	U-Bar	Flanged	70	92	500	1
TC-235-UR	2.50	1.75	10.50	1.63	1.63	.33	U-Bar	Flanged	70	92	750	1

Series TC-305, 307, 309

(305) - For #8 Screw
(307) - For 1/4" Screw
(309) - For 5/16" Screw



U-Bar Flanged Base

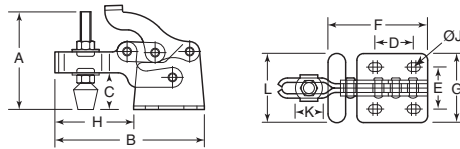
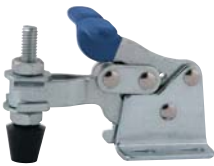


Small compact clamps provide considerable holding capacity in a small size. T-handle can be operated from either side or from behind. All have U-Bar and flanged base. Handles move 170 degrees, bars move 90 degrees. Steel versions supplied with neoprene tipped spindle except TC-309 which comes with slip on neoprene cap. Stainless steel versions supplied with hex head spindle.

Item No.	A	B	C	D	E	F	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel										
TC-305-U	1.38	.50	2.22	.53	.63	M8	170	90	150	1
TC-307-U	2.40	.87	3.60	.91	1.16	M8	170	90	350	1
TC-309-U	3.55	1.30	5.18	1.38	1.50	M10	170	90	750	1
Stainless Steel										
TC-305-USS	1.38	.50	2.22	.53	.63	M8	170	90	200	1
TC-307-USS	2.40	.87	3.60	.91	1.16	5/16-18	170	90	350	1
TC-309-USS	3.55	1.30	5.18	1.38	1.50	3/8-16	170	90	750	1



Economy Horizontal T-Handle Hold-Down Clamps



All models have a blue handle grip. Supplied with spindle assembly.

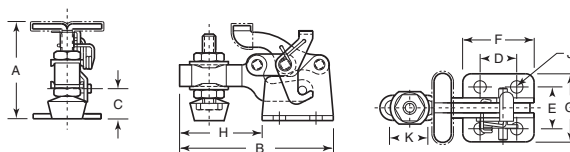
Item No.	A	B	C	D	E	F	G	H	J	K	L	Bar Type	Base Type	Handle Type	Spindle Size	Handle Moves (degrees)	Bar Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-16051	1.47	2.30	.65	.53	.66	1.03	1.03	1.26	.17	.44	1.32	U-Bar	Flanged	Tee	10-24 x 1.38 Bonded	170	90	150	1
ETC-16071	2.49	3.68	.89	.91	1.17	1.72	1.82	1.93	.28	.77	2.01	U-Bar	Flanged	Tee	5/16-18 x 2.50 Bonded	170	90	350	1
ETC-16091	3.73	5.33	1.31	1.38	1.50	2.52	2.52	2.81	.31	1.32	2.48	U-Bar	Flanged	Tee	3/8-16 x 3.50 Bonded	170	90	750	1

TC-305-UR, 307-UR

DE-STA-CO® Toggle Lock Plus



U-Bar Flanged Based



These clamps feature a compact locking lever, which locks in the clamped position only. Provided with red vinyl handle grip and flanged washers. Supplied with neoprene-tipped spindle assemblies.

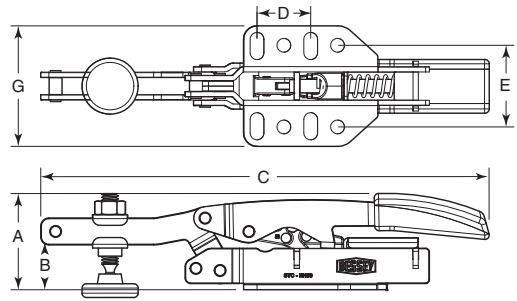
Item No.	A	B	C	D	E	F	G	H	J	K	Flanged Washer	Spindle Assembly	Handle Moves (degrees)	Bar Opening (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-305-UR	1.44	2.25	.50	.53	.63	1.03	1.00	1.22	.17	.50	TC-102111	TC-305208-M	175	92	150	1
TC-307-UR	2.44	3.61	.88	.91	1.16	1.72	1.81	1.89	.28	.75	TC-507107	TC-307208-M	175	92	350	1





AUTO-ADJUST HORIZONTAL HANDLE HOLD DOWN CLAMPS

Horizontal Toggle Clamps



Auto-Adjust - The Bessey auto-adjust toggle clamp automatically adjusts to variations in work piece dimensions while maintaining constant clamping force. No more time-consuming manual adjustment of the spindle height to maintain safe and correct clamping force. The removable non-marring plastic cap is included on the $\frac{7}{8}$ " diameter pads.

Adjusting Clamping Force - The integrated clamping force adjustment screw can be used to create an actually applied clamping force from 25 to 550 lbs. (max holding capacity 700 lbs.) One Bessey auto-adjust toggle clamp can replace a range of competitive clamps.

Adaptable Base Plate - The large ($2\frac{1}{4}$ " x $2\frac{1}{2}$ ") flange base is designed for use with $\frac{1}{4}$ " or M6 fasteners. Mounting holes are sized and spaced for easy mounting and versatility.

Extra Large Handle - The large 1" x $2\frac{1}{8}$ " handle offers greater user comfort and ease of operation.

Item No.	A	B	C	D	E	G	Opening	Clamping Force Range	Holding Cap. Lbs.	Pack Qty.
STC-HH50	1.79	.84	8.25	1.00	1.52	2.24	2.00	25-550	700	1
STC-HH70	2.50	1.54	8.25	1.00	1.52	2.24	2.75	25-550	700	1

Note: Clamping force range is variable and dependent on spindle settings, pressure screw setting, force applied, etc.

FOR QUICK PLUNGER ADJUSTMENTS...

...use these knobs with our hold-down clamps.



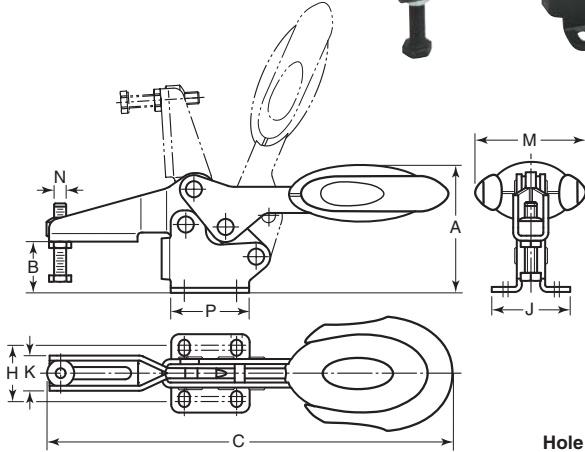
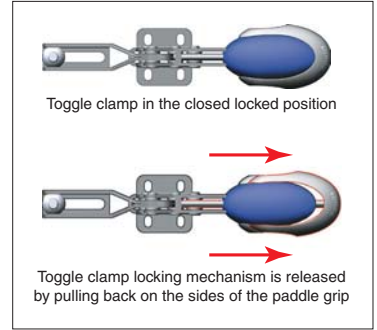
Pages 17, 22, 34, 36, 37



HORIZONTAL HOLD-DOWN CLAMPS

Buy One or Buy Bulk & SAVE

Horizontal Hold Down Clamps with Safety Interlock Flat Foot and Adjustable Clamping Spindle Series 05900



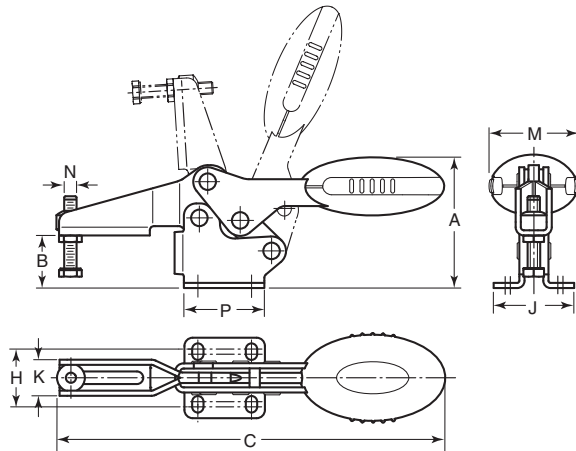
Hole arrangement for Item No. KC-150, KC-155, and KC-160

Hole arrangement for Item No. KC-165

Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile. Includes an internal bar lock with automatic safety.

Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-150	63.3	25.5	193.3	5.5	26.0	6.5	—	28	39	53.4	M6 x 35mm	39	162	1
KC-155	73.9	32.2	230.3	6.2	26.0	9	—	31	45	51.1	M8 x 45mm	44	187	1
KC-160	94.8	40.0	286.0	8.8	41.5	9	—	43	59	56.5	M10 x 55mm	59	270	1
KC-165	104.9	52.3	321.3	8.5	44.0	10	40	42	67	56.5	M12 x 70mm	65	225	1

Horizontal Hold Down Clamps With Flat Foot and Adjustable Clamping Spindle Series 05900



Hole arrangement for Item No. KC-110, KC-115, and KC-120

Hole arrangement for Item No. KC-125

Hole arrangement for Item No. KC-100

Hole arrangement for Item No. KC-105

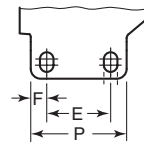
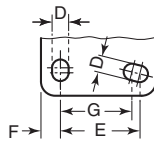
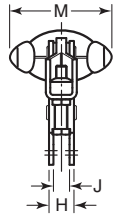
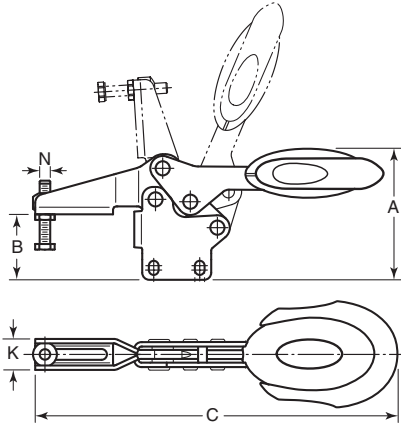
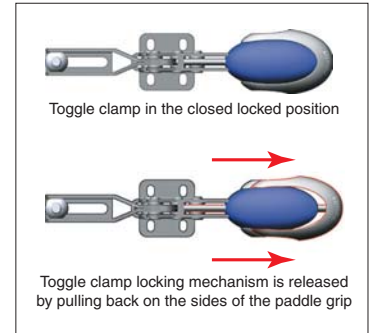
Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile.

Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-100	29.3	11.7	91.8	4.2	16.0	4	12.74	16.0	24	20.0	M4 x 16	24	56	1
KC-105	43.4	18.0	126.3	5.5	18.0	4.5	13.5	16.8	27	22.5	M5 x 25	27	124	1
KC-110	63.2	25.5	186.7	5.5	26.0	6.5	—	28.0	39	43.5	M6 x 35	39	162	1
KC-115	73.9	32.2	223.2	6.2	26.0	9	—	31.0	45	41.5	M8 x 45	44	187	1
KC-120	94.8	40.0	279.4	8.8	41.5	9	—	43.0	59	47.0	M10 x 55	59	270	1
KC-125	104.8	52.3	314.7	8.5	44.0	10	40	42.0	67	47.0	M12 x 70	65	225	1

HORIZONTAL HOLD-DOWN CLAMPS



Horizontal Hold Down Clamps with Safety Interlock With Straight Foot and Adjustable Clamping Spindle Series 05904



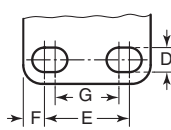
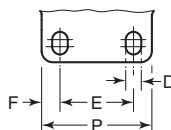
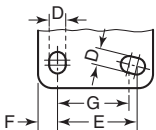
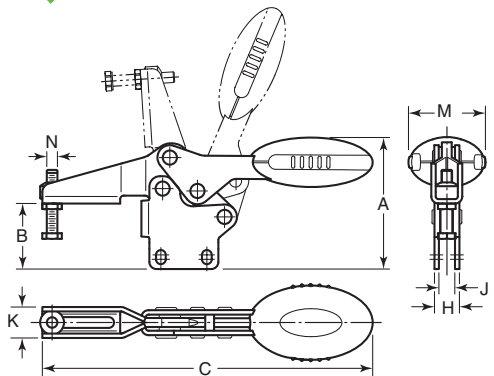
Hole arrangement for Item No. KC-265

Hole arrangement for Item No. KC-250, KC-255, and KC-260

Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile. Includes an internal bar lock with automatic safety.

Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-250	74.3	37.0	193.7	5.5	26.0	6.5	—	14.1	9.1	53.4	M6 x 35	39	162	1
KC-255	88.2	46.5	230.3	6.2	26.0	9	—	14.1	9.1	51.1	M8 x 45	44	187	1
KC-260	114.4	59.6	286.4	8.8	41.5	9	—	16.2	9.2	56.5	M10 x 55	59	270	1
KC-265	128.4	75.9	321.3	8.5	44.0	10	40	16.2	9.2	56.5	M12 x 70	65	225	1

Horizontal Hold Down Clamps With Straight Foot and Adjustable Clamping Spindle Series 05904



Hole arrangement for Item No. KC-220

Hole arrangement for Item No. KC-205, KC-210, and KC-215

Hole arrangement for Item No. KC-200

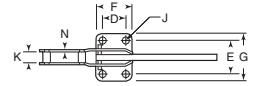
Maintenance-free, high quality swivel bushings. Constant use of force when opening and closing. Optimum stability is achieved through the conical clamping arm and U-profile.

Item No.	A	B	C	D	E	F	G	H	J	M	N	P	Holding Capacity Lbs.	Pack Qty.
KC-200	51.8	26.0	125.7	5.5	18.0	4.5	13.5	8.1	4.1	22.5	M5 x 25	27	124	1
KC-205	74.2	37.0	186.8	5.5	26.0	6.5	—	14.1	9.1	43.5	M6 x 35	39	162	1
KC-210	88.2	46.5	273.5	6.2	26.0	9	—	14.1	9.1	41.5	M8 x 45	44	187	1
KC-215	114.4	59.6	279.3	8.8	41.5	9	—	16.2	9.2	47.0	M10 x 55	59	270	1
KC-220	128.4	75.9	314.7	8.5	44.0	10	40	16.2	9.2	47.0	M12 x 70	65	225	1

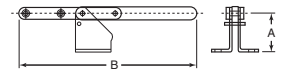


Series TC-301, 311

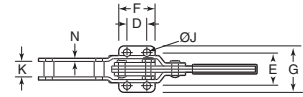
Fixed stop automatically limits handle travel at various clamping positions once the clamp is installed. Red vinyl handle for comfortable operation.



Item No.	A	B	D	E	F	G	J	K	N	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
Steel												
TC-301	1.91	8.40	.75	1.25	1.38	1.75	.28	.56	.12	4.00	375	1
TC-311	2.44	9.52	1.25	1.78	1.91	2.53	.33	.56	.13	3.38	1,200	1
Stainless Steel												
TC-301-SS	1.91	8.40	.75	1.25	1.38	1.75	.28	.56	.12	4.00	450	1

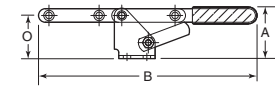


Economy Pull Action Latch Clamps



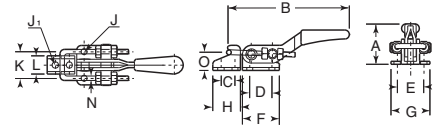
All models have a blue handle grip.

Item No.	A	B	D	E	F	G	J	K	N	O	Bar Type	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
ETC-12010	1.88	8.40	.75	1.22	1.38	1.72	.28	.60	.12	1.59	Fixed Hook	4.00	375	1



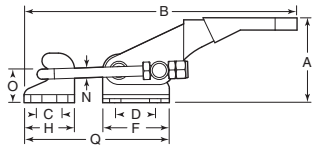
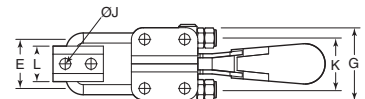
Series TC-323, 331, 341

The threaded U-bolt permits easy adjustment and provides a positive connection with the supplied latch plate. Furnished with a thumb control lever.



Item No.	A	B	C	D	E	F	G	H	Drawing Movement	J	J1	K	L	N	O	Holding Cap. Lbs.	Pack Qty.
Steel																	
TC-323	1.13	4.00	.39	.63	.75	1.02	1.11	.79	1.81	.17	.17	.75	.52	.13	.47	360	1
TC-331	1.96	5.97	.56	.75	1.25	1.56	1.75	1.00	1.75	.27	.27	1.00	.69	.17	.66	720	1
TC-341	2.89	7.50	.75	1.63	1.50	2.38	2.13	1.50	2.50	.33	.33	1.75	1.19	.31	.94	2,000	1
Stainless Steel																	
TC-323-SS	1.13	4.00	.39	.63	.75	1.02	1.11	.79	1.81	.17	.17	.75	.52	.13	.47	360	1
TC-331-SS	1.96	5.97	.56	.75	1.25	1.56	1.75	1.00	1.75	.27	.27	1.00	.69	.17	.66	720	1
TC-341-SS	2.89	7.50	.75	1.63	1.50	2.38	2.13	1.50	2.50	.33	.33	1.75	1.19	.31	.94	2,000	1

Economy Pull-Action Latch Clamps

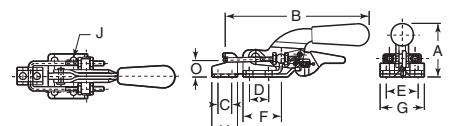


All models have a blue handle grip. Clamps are supplied with latch plates.

Item No.	A	B	C	D	E	F	G	H	J	K	L	N	O	Q Min.	Q Max.	Hook Size	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
ETC-12230	1.31	4.18	.40	.62	.76	1.03	1.12	.78	.17	.80	.55	.13	.44	1.84	2.57	M4	1.81	360	1
ETC-12310	1.91	6.56	.48	.78	1.25	1.52	1.75	1.01	.28	1.00	.79	.17	.50	2.53	3.69	M5	1.75	700	1
ETC-12410	2.75	8.48	.76	1.62	1.44	2.39	2.12	1.17	.34	1.75	1.17	.31	.83	4.39	5.37	M8	2.50	2,000	1

**Series TC-323-R, TC-331-R, 341-R
DE-STA-CO® Toggle Lock Plus**

Supplied with a locking lever catch which allows clamp to lock in closed position only. The threaded U-bolt provides easy adjustment and a positive connection with the supplied latch plate.

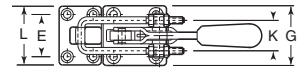
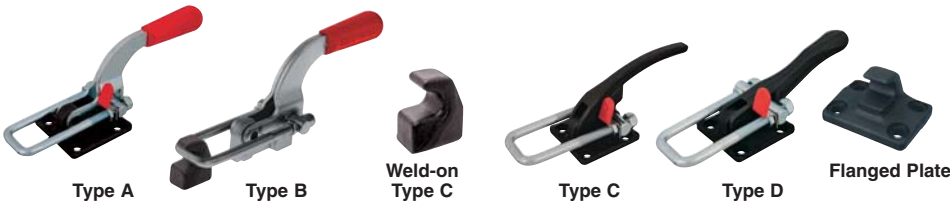


Item No.	A	B	C	D	E	F	G	H	J	O	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
Steel													
TC-323-R	1.23	4.00	.39	.63	.75	1.02	1.11	.79	.17	.47	1.17	360	1
TC-331-R	2.08	5.97	.56	.75	1.25	1.56	1.75	1.00	.27	.68	1.75	700	1
TC-341-R	2.89	7.50	.75	1.63	1.50	2.38	2.12	1.50	.33	.94	2.50	2,000	1
Stainless Steel													
TC-323-RSS	1.23	4.00	.39	.63	.75	1.02	1.11	.79	.17	.47	1.17	360	1
TC-331-RSS	2.08	5.97	.56	.75	1.25	1.56	1.75	1.00	.27	.68	1.75	720	1
TC-341-RSS	2.89	7.50	.75	1.63	1.50	2.38	2.12	1.50	.33	.94	2.50	2,000	1

HORIZONTAL PULL-ACTION LATCH CLAMPS

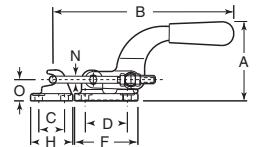


TC-375, 375-B, 385, 385-L



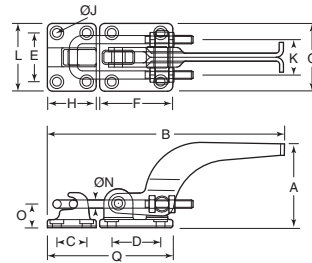
Latch plate is not included (except for TC-375-B). All models furnished with a thumb control lever.

Item No.	Type	A	B	C	D	E	F	G	H	K	L	N	O	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
TC-375	A	4.19	9.63	1.38	2.25	2.25	3.44	3.19	2.25	1.75	3.13	.39	1.13	3.50	4,000	1
TC-375-B*	B	4.19	9.63	—	—	—	2.81	1.00	1.38	1.75	.88	.39	1.13	3.50	4,000	1
TC-385	C	3.63	8.75	1.38	2.25	2.25	3.44	3.19	2.25	2.13	3.13	.47	1.13	2.1875	7,500	1
TC-385-L	D	1.94	9.16	1.38	2.25	2.25	3.44	3.19	2.25	2.13	3.13	.47	1.13	2.1875	7,500	1
TC-375509	Weld-on	Latch Plate For TC-375 Series and TC-385 Series														
TC-385102	Flanged	Latch Plate For TC-375 and TC-385 only														



*Narrow base

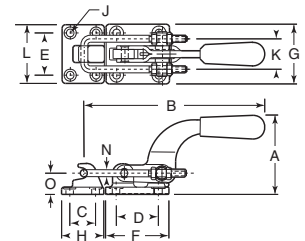
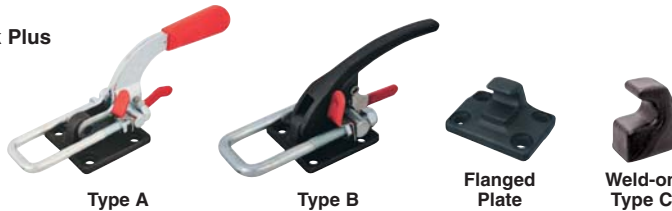
Economy Pull Action Latch Clamps



All models have a blue handle grip. Clamps are supplied with latch plates.

Item No.	Type	A	B	C	D	E	F	G	H	J	K	L	N	O	Q Min.	Q Max.	Hook Size	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
ETC-12750	A	3.96	11.39	1.37	2.24	2.28	3.43	3.21	2.32	.41	1.71	3.14	.39	1.17	6.22	7.21	M10	3.50	4,000	1
ETC-12850	B	3.63	10.18	1.37	2.24	2.26	3.43	3.17	2.32	.41	2.06	3.14	.46	1.08	6.13	7.25	M12	2.19	7,500	1

TC-375-R, 385-R DE-STA-CO® Toggle Lock Plus



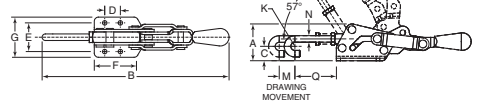
Heavy duty models. Supplied with a locking lever which locks into the forged steel base in closed position only. Latch plate not included.

Item No.	Type	A	B	C	D	E	F	G	H	J	K	L	N	O	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
TC-375-R	A	4.19	9.63	1.28	2.25	2.25	3.44	3.13	2.25	.41	1.75	3.13	.39	1.13	3.50	4,000	1
TC-385-R	B	3.63	8.75	1.38	2.25	2.25	3.44	3.19	2.25	.41	2.13	3.13	.47	1.13	2.19	7,500	1
TC-375509	Weld-on	Latch Plate For TC-375 Series and TC-385 Series															
TC-385102	Flanged	Latch Plate For TC-375 and TC-385 only															

TC-3051

Applications: Assembly checking and welding fixtures, closure devices for containers and latches for molds.

- Safe, single-handed operation
- Innovative controlled motion
- Simple setup and adjustment
- Clamp hook/arm moves and stays safely out of the way

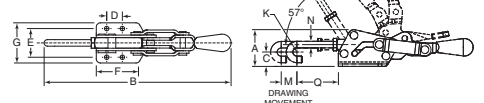


Item No.	A	B	C	D	E	F	G	K	N	Q Min.	Q Max.	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
TC-3051	1.77	8.98	.69	.75	1.38	2.03	1.93	.39	.31	1.99	2.50	.75	1,500	1

TC-3051-R DE-STA-CO® Toggle Lock Plus

Applications: Assembly checking and welding fixtures, closure devices for containers and latches for molds.

- Secure toggle locking action
- Safe single handed operation
- Innovative controlled motion
- Simple setup and adjustment
- Clamp hook/arm moves and stays safely out of the way



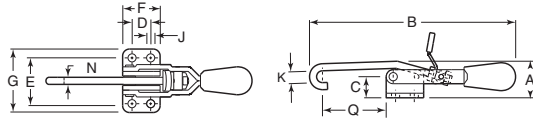
Item No.	A	B	C	D	E	F	G	K	N	Q Min.	Q Max.	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
TC-3051-R	1.77	8.98	.69	.75	1.38	2.03	1.93	.39	.31	1.99	2.50	.75	1,500	1



PULL-ACTION LATCH CLAMPS

Buy One or Buy Bulk & SAVE

Series TC-330, 351, 371, 381

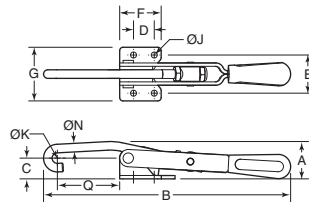


J-hook is threaded for convenient adjustment. Furnished with a thumb control lever.

Item No.	A	B	C	D	E	F	G	J	K	N	Q Min.	Q Max.	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
Steel															
TC-330	.90	5.64	.56	.50	1.23	1.00	1.69	.22	.31	.19	1.60	1.85	2.31	200	1
TC-351	1.34	8.56	.75	.75	1.38	1.50	1.94	.20	.38	.31	1.75	2.18	4.00	375	1
TC-351-B*	1.34	8.56	.86	1.50	—	2.00	.56	.27	.44	.31	1.75	2.18	4.00	375	1
TC-371	2.23	12.00	1.42	1.25	1.94	1.94	2.62	.34	.50	.39	2.02	2.83	5.38	750	1
TC-381	2.71	13.45	1.81	1.13	2.38	2.13	3.38	.41	.63	.47	2.17	3.10	6.13	1,000	1
Stainless Steel															
TC-330-SS	.90	5.64	.56	.50	1.23	1.00	1.69	.22	.31	.19	1.60	1.85	2.31	200	1
TC-351-SS	1.34	8.56	.75	.75	1.38	1.50	1.94	.20	.44	.31	1.75	2.18	4.00	375	1
TC-351-BSS*	1.34	8.56	.86	1.50	—	2.00	.56	.27	.44	.31	1.75	2.18	4.00	375	1
TC-371-SS	2.23	12.00	1.42	1.25	1.94	1.94	2.62	.34	.50	.39	2.02	2.83	5.38	750	1

*Narrow base

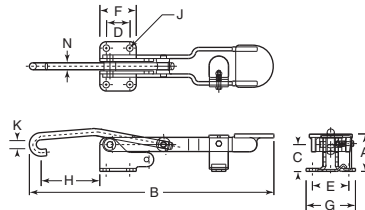
Economy Pull-Action Latch Clamps



All models have a blue handle grip.

Item No.	A	B	C	D	E	F	G	J	N	Q Min.	Q Max.	Hook Size	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
ETC-12510	1.45	8.33	.74	.94	1.44	1.50	1.99	.24	.30	1.53	3.11	M8	4.00	375	1
ETC-12710	2.17	11.46	.96	1.25	1.97	1.86	2.61	.35	.39	2.70	3.44	M10	5.38	750	1
ETC-12810	2.62	13.80	1.82	1.13	2.49	2.13	3.30	.41	.47	2.75	3.60	M12	6.13	1,000	1

TC-351-R, 371-R DE-STA-CO® Toggle Lock Plus



Supplied with a locking lever catch which allows the clamp to lock in closed position only. Large handle pad improves operability. J-hook is threaded for adjustment.

Item No.	A	B	C	D	E	F	G	H	J	K	N	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
TC-351-R	1.42	9.10	.75	.75	1.38	1.50	1.94	2.18	.22	.38	.31	4.00	375	1
TC-371-R	2.25	12.88	1.42	1.25	1.94	1.94	2.62	2.83	.34	.50	.39	5.38	750	1

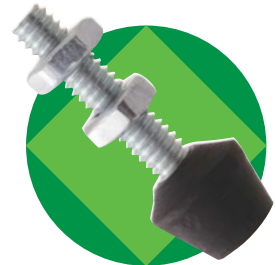
MORE ESSENTIAL SOLUTIONS



SOCKET HEAD CAP SCREWS
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LATCH PLATES
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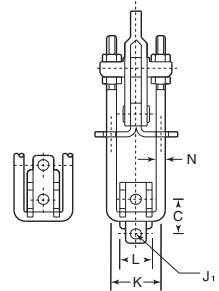
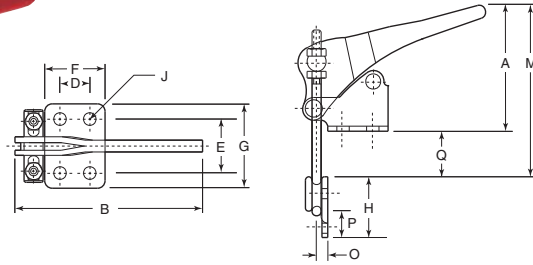


CLAMP SPINDLES
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VERTICAL PULL-ACTION LATCH CLAMPS



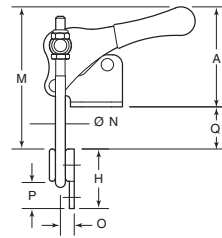
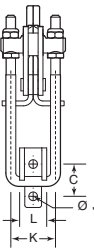
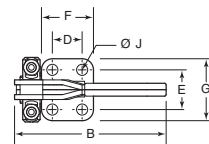
Series TC-324, 334, 344, 374



Latch plate included with all clamps listed below except TC-374. Furnished with a thumb control lever.

Item No.	A	B	C	D	E	F	G	H	J	J1	K	L	M	N	O	P	Q	Thread Size	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
Steel																					
TC-324	2.00	3.35	.56	.50	.88	1.00	1.38	1.00	.20	.17	.81	.53	2.69	.14	.19	.63	.91	M4	1.53	500	1
TC-334	2.44	4.25	.81	.75	1.00	1.31	1.56	1.50	.28	.22	1.13	.68	3.69	.25	.35	.69	1.35	M6	2.00	1,000	1
TC-344	3.24	5.35	1.06	1.25	1.44	1.94	2.13	2.13	.34	.34	1.75	1.19	5.31	.31	.50	1.25	1.93	M8	2.50	2,000	1
TC-374	2.67	5.69	.56	1.25	1.50	2.50	2.50	2.72	.41	.25	1.63	1.13	4.94	.39	.56	.75	2.34	M10	1.75	4,000	1
Stainless Steel																					
TC-324-SS	2.00	3.35	.56	.50	.88	1.00	1.38	1.00	.20	.17	.81	.53	2.69	.14	.19	.63	.91	M4	1.53	500	1
TC-334-SS	2.44	4.25	.81	.75	1.00	1.31	1.56	1.50	.28	.22	1.13	.68	3.69	.25	.35	.69	1.35	M6	2.00	1,000	1
TC-344-SS	3.25	5.35	1.06	1.25	1.44	1.94	2.13	2.13	.34	.34	1.75	1.19	5.31	.31	.50	1.25	1.93	M8	2.50	2,000	1

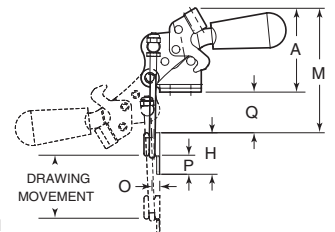
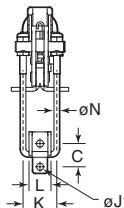
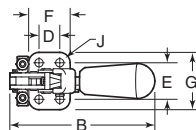
Economy Pull-Action Latch Clamps



All models have a blue handle grip. Clamps are supplied with latch plates.

Item No.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q Min.	Q Max.	Hook Size	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
ETC-12240	2.22	3.15	.57	.51	.87	1.02	1.39	1.00	.21	.86	.54	3.43	.12	.20	.43	.54	1.20	M4	1.53	500	1
ETC-12340	2.86	4.71	.81	.75	1.02	1.30	1.56	1.50	.28	1.06	.67	4.36	.23	.25	.64	.54	1.50	M6	2.00	1,000	1
ETC-12440	3.60	5.25	1.06	1.25	1.47	1.86	2.11	2.13	.35	1.74	1.19	5.75	.31	.50	.79	2.14	3.11	M8	2.50	2,000	1

Vertical Pull-Action Latch Clamps Series TC-324-R, 334-R, 344-R DE-STA-CO® Toggle Lock Plus



- Ergonomic thumb controlled locking lever
- Over-center toggle lock mechanism
- Durable carbon steel construction
- Locks to base

Applications: Ideal for quick clamping for the closure of covers and flaps on rotating or stationary containers, drums, boxes and molds—or any application where the possibility of unintentional opening exists due to vibration or abrupt movement.

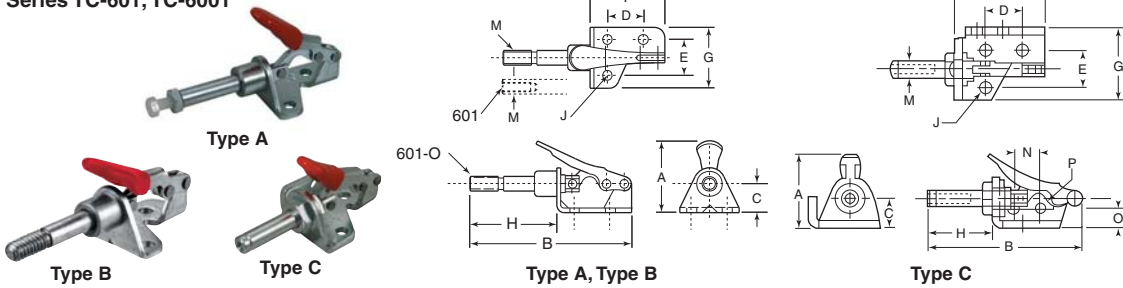
Item No.	A	B	C	D	E	F	G	H	J	J1	K	L	M	N	O	P	Q	Drawing Movement	Holding Cap. Lbs.	Pack Qty.
TC-324-R	2.07	3.47	.56	.50	.88	1.00	1.38	1.00	.20	.17	.81	.52	3.05	.14	.19	.46	.98	1.53	500	1
TC-334-R	2.55	4.12	.81	.75	1.00	1.38	1.56	2.13	.28	.22	1.13	.68	3.95	.25	.35	.69	1.40	2.04	1,000	1
TC-344-R	3.39	5.77	1.06	1.31	1.44	1.94	2.13	3.17	.34	.34	1.75	1.20	5.38	.31	.50	.92	1.99	2.46	2,000	1



STRAIGHT-LINE ACTION CLAMPS

Buy One or Buy Bulk & SAVE

Series TC-601, TC-6001



Smallest of the straight-line toggle clamps. Ideal for electronic applications and similar small fixturing. TC-601 has an 8-32 nylon spindle (TC-105203). TC-601-SS has an 8-32 stainless steel spindle (TC-205943). TC-601-0 and TC-601-0SS have externally threaded 1/4-20 plunger tips. TC-601-M has a M4 internal thread. TC-6001, TC-6001-M and TC-6001-SS are heavier duty versions and has 50% greater holding capacity. It is manufactured from heavy gauge material and has a more flexible mounting base to enable side-mounting the clamp. TC-6001-M has a M4 internal thread. TC-6001 and TC-6001-SS have a 8-32 internal thread.

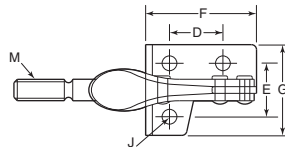
Item No.	Type	A	B	C	D	E	F	G	H	J	M	N	O	P	Plunger Type	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
Steel																		
TC-601	A	1.19	2.62	.50	.63	.63	1.33	1.05	1.29	.17	.25	—	—	—	8-32 Tap	.63	100	1
TC-601-M	A	1.19	2.62	.50	.63	.63	1.33	1.05	1.29	.17	.25	—	—	—	M4 Tap	.63	100	1
TC-601-0	B	1.19	2.86	.50	.63	.63	1.33	1.05	1.53	.17	—	—	—	—	1/4-20 Thd	.63	100	1
TC-6001	C	1.26	2.63	.50	.63	.63	1.54	1.23	1.10	.19	.28	.43	.28	.19	8-32 Tap	.63	150	1
TC-6001-M	C	1.26	2.63	.50	.63	.63	1.54	1.23	1.10	.19	.28	.43	.33	.19	M4 Tap	.63	150	1
Stainless Steel																		
TC-601-SS*	A	1.19	2.63	.50	.63	.63	1.33	1.05	1.29	.17	.25	—	—	—	8-32 Tap	.63	100	1
TC-601-0SS*	B	1.19	2.86	.50	.63	.63	1.31	1.05	1.53	.17	—	—	—	—	1/4-20 Thd	.63	100	1
TC-6001-SS*	C	1.26	2.63	.50	.63	.63	1.54	1.23	1.10	.19	.28	.43	.28	.19	8-32 Tap	.63	150	1
TC-6001-MSS	C	1.26	2.63	.50	.63	.63	1.54	1.23	1.10	.19	.28	.43	.33	.19	M4 Tap	.63	150	1

*Handle does not have vinyl grip

Note: Also available as power model TC-816.

Note 2: TC-601, TC-601-SS and TC-6001-MSS are supplied with a spindle.

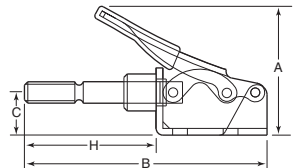
Economy Straight-Line Action Clamp



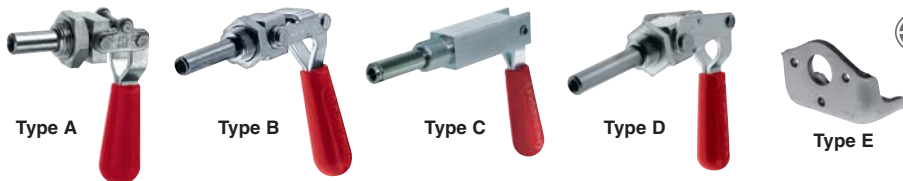
Model has a blue handle grip. Spindle is supplied.

Internal Thread

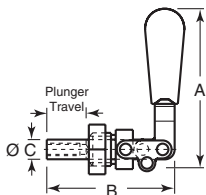
Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Spindle Size	Thread Type	Holding Cap. Lbs.	Pack Qty.
ETC-13010	1.57	2.67	.52	.63	.61	1.31	1.07	1.35	.17	.25	.63	8-32	Internal	100	1



Series TC-602, 604, 624

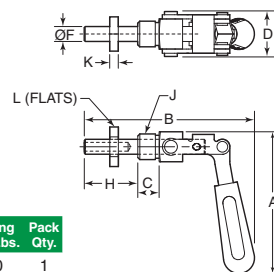


Fully retractable straight line action clamps mount directly through a member by a jam nut on the work side, or flush by drilling and tapping the member. Locks over-center in extended or retracted position. When flush mounted, plunger completely retracts from work area. An optional base mounting is available for TC-604 as TC-604106, and for TC-624 as TC-624108.



Item No.	Type	A	B	C	Thread	Internal Thread	Plunger Travel	Holding Cap. Lbs.	Pack Qty.	
Steel										
TC-602	A	3.14	2.44	.37	3/8-18	1/4-20 x 3/8	.75	200	1	
TC-602-MM	A	3.14	2.44	.37	M16 x 1.5	M6	.75	200	1	
TC-604	B	4.16	4.78	.44	3/4-16	3/8-18 x 1	1.50	300	1	
TC-604-MM	B	4.16	4.78	.44	M20 x 1.5	M8	1.50	300	1	
TC-6004	C	4.12	5.63	.50	3/4-16	3/8-18	1.50	450	1	
TC-6004-MM	C	4.12	5.63	.50	M20 x 1.5	M8	1.50	450	1	
TC-624	D	5.62	6.69	.62	1-14	3/8-16 x 1 1/4	2.63	700	1	
TC-604106	E	Optional Mounting Plate for TC-604 and TC-6004 only								1
Stainless Steel										
TC-602-SS	A	3.14	2.44	.38	3/8-18	1/4-20 x 3/8	.75	200	1	
TC-604-SS	B	4.16	4.78	.44	3/4-16	3/8-18 x 1	1.50	400	1	
TC-624-SS	C	5.62	6.69	.62	1-14	3/8-16 x 1 1/4	2.63	700	1	

Economy Straight-Line Action Clamp



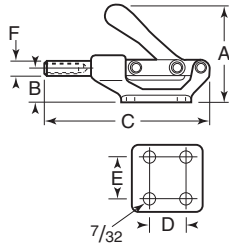
All models have a blue handle grip. Spindles are supplied.

Item No.	A	B	C	D	F	H	J	K	L	Plunger Travel	Spindle Size	Base Type	Holding Cap. Lbs.	Pack Qty.
ETC-13020	3.06	2.67	.48	1.03	.37	.81	.58	.26	.94	.75	1/4-20 x .63	Through Hole	200	1
ETC-13040	4.16	4.26	.63	1.28	.43	1.57	.73	.25	1.17	1.50	3/8-18 x 1.00	Through Hole	300	1
ETC-13240	5.43	6.73	.88	1.86	.63	2.80	1.05	.35	1.59	2.63	3/8-16 x 1.25	Through Hole	700	1

STRAIGHT-LINE ACTION CLAMPS



Series TC-603

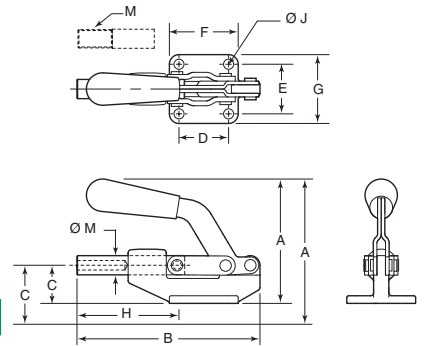


This straight-line action toggle clamp has a large holding capacity for its size. The TC-603 works well in confined areas because of its small size and low height. TC-603 plunger is tapped $\frac{5}{16}$ -18 x 1" deep for spindle. TC-603-M plunger has a M8x1.25 spindle thread.

Item No.	A	B	C	D	E	F	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
Steel									
TC-603	3.28	.97	4.71	1.44	1.31	.44	1 1/4	600	1
TC-603-M	3.28	.97	4.71	1.44	1.31	.44	1 1/4	600	1
Stainless Steel									
TC-603-SS	3.28	.97	4.71	1.44	1.31	.44	1 1/4	600	1

Note: Also available as Power Model TC-803.

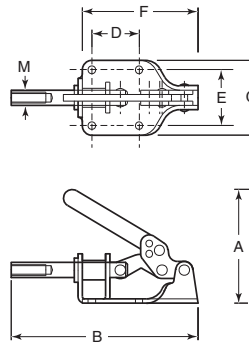
Economy Straight-Line Action Clamp



All models have a blue handle grip. Spindles are supplied.

Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Spindle Size	Handle Type (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-13030	3.34	4.88	.98	1.44	1.32	2.30	1.85	2.03	.23	.43	1.25	$\frac{5}{16}$ -18 x 1.00	Straight	600	1

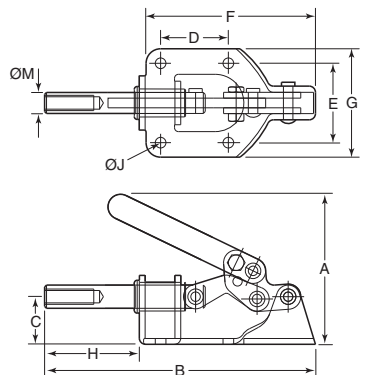
Series TC-605



For push and pull clamping. Furnished with red vinyl grip. Plunger on TC-605 is tapped $\frac{5}{16}$ -18 x 1" deep for adjustment spindle. Base is heat treated for added strength. TC-605-M has M8 x 1.25 spindle thread.

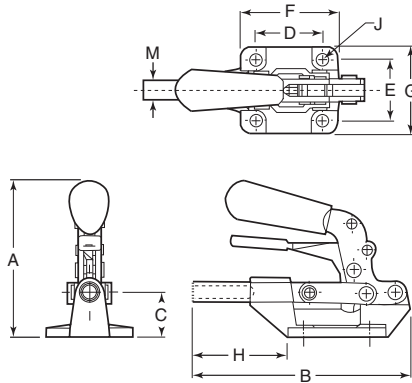
Item No.	A	B	C	D	E	F	G	M	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-605	3.16	5.47	.97	1.38	1.63	3.41	2.19	.44	1.25	300	1
TC-605-M	3.16	5.47	.97	1.38	1.63	3.41	2.19	.44	1.25	300	1

Economy Straight-Line Action Clamp



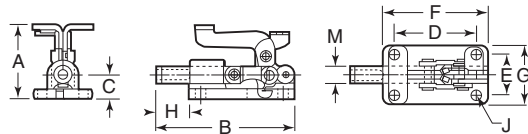
All models have a blue handle grip. Spindles are supplied.

Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Spindle Size	Holding Cap. Lbs.	Pack Qty.
ETC-13050	3.14	5.45	.98	1.38	1.64	3.55	2.22	1.90	.22	.47	1.25	$\frac{5}{16}$ -18 x 1.00	300	1

TC-603-R
DE-STA-CO® Toggle Lock Plus

For use in confined areas. The ergonomic handle is slanted forward to provide an adequate grip. Clamp locks over-center in both the extended and retracted positions while the locking lever secures the clamp in the extended position only. Plunger is tapped for $\frac{3}{16}$ -18 adjustment spindle or detail.

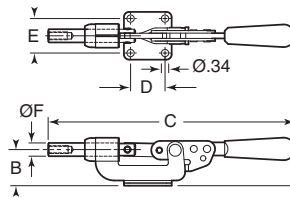
Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-603-R	3.42	4.69	.97	1.44	1.31	2.00	1.86	2.16	.27	.44	1.25	600	1

TC-6015-R and TC-6015-MR - Compact Size
DE-STA-CO® Toggle Lock Plus

Compact size allows use in confined areas and on small fixtures, where safety is a concern. Features a locking lever which locks in the clamped position only.

Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Thread	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-6015-R	1.60	2.95	.50	1.75	.88	2.25	1.25	.70	.22	.38	$\frac{1}{4}$ -20	.70	560	1
TC-6015-MR	1.60	2.95	.50	1.75	.88	2.25	1.25	.70	.22	.38	M6	.70	560	1

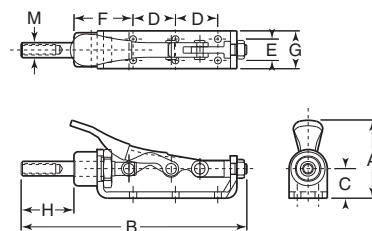
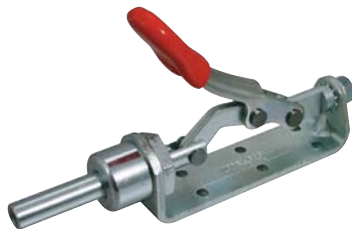
Series TC-620



TC-620 features a reverse handle action. As handle moves back and down to horizontal lock position, plunger moves forward. Can be positioned for angular clamping by drilling base or may be used without base. TC-620 plungers are tapped $\frac{3}{8}$ -16 x 1" deep. TC-620-M plunger has M10 thread.

Item No.	A	B	C	D	E	F	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-620	2.25	1.67	11.70	1.63	1.63	.62	1 $\frac{1}{2}$	600	1
TC-620-M	2.25	1.67	11.70	1.63	1.63	.62	1 $\frac{1}{2}$	600	1

TC-606



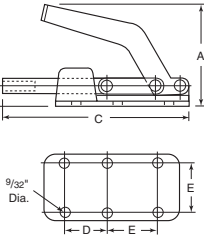
Features an unusual 180 degrees swiveling handle and linkage. Can be mounted in many positions with the handle remaining in an up-right or other convenient position. This feature along with a narrow base permits use where other clamps won't fit. Heat treated base. TC-606 has a $\frac{3}{16}$ " diameter plunger tapped $\frac{3}{16}$ -18 x 1" deep.

Item No.	A	B	C	D	E	F	G	M	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-606	2.62	6.72	.88	1.25	.63	1.75	1.13	.44	1 $\frac{1}{2}$	450	1

STRAIGHT-LINE ACTION CLAMPS



Series TC-607

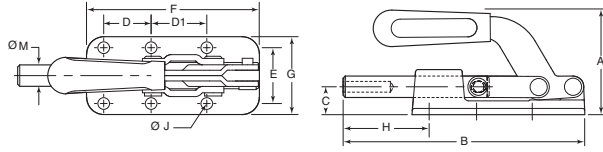


Compact, low silhouette clamp locks in either extended or retracted position. Available with 1/2" round plunger or 1/2" square plunger for multiple point locating. TC-607 and TC-607-SQ are drilled and tapped 5/16-18 x 1" deep for spindle and TC-607-M.



Item No.	A	B	C	D	E	Plunger Type	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-607	3.59	.69	6.02	1.38	1.63	1/2 dia.	1%	800	1
TC-607-M	3.59	.69	6.02	1.38	1.63	1/2 dia.	1%	800	1
TC-607-SQ	3.59	.69	6.02	1.38	1.63	1/2 sq.	1%	800	1

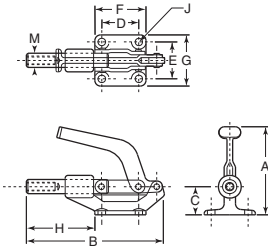
Economy Straight-Line Action Clamp



All models have a blue handle grip. Spindle assemblies are supplied.

Item No.	A	B	C	D	D1	E	F	G	H	J	M	Plunger Travel	Spindle Size	Holding Cap. Lbs.	Pack Qty.
ETC-13070	3.28	6.10	.68	1.38	1.63	1.63	4.30	2.18	1.86	.28	.51	1.63	5/16-18 x 1.00	800	1
ETC-13300	2.93	7.06	.88	1.38	1.39	1.63	5.25	2.24	1.82	.35	.63	2.00	3/8-16 x 1.25	2,500	1

TC-608

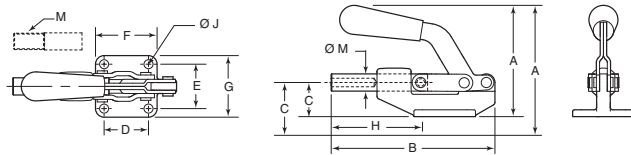


Low profile clamp with cast base. Plunger locks over-center in either retracted or extended positions. Plunger is tapped for 3/8-16 adjustment spindle.



Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-608	4.04	6.13	1.25	1.63	1.63	2.31	2.25	3.00	.33	.62	1%	850	1

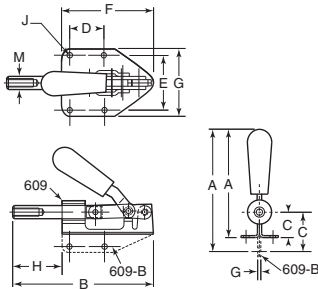
Economy Straight-Line Action Clamp



All models have a blue handle grip. Spindles are supplied.

Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Spindle Size	Handle Type (degrees)	Holding Cap. Lbs.	Pack Qty.
ETC-13485	4.19	6.41	1.25	1.62	1.63	2.33	2.25	3.13	.33	.63	1.65	3/8-16 x 1.25	Straight	850	1

Series TC-609

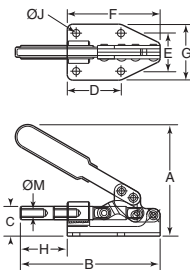


Locks over-center in either extended or retracted positions. The 1/2" diameter plunger is drilled and tapped 5/16-18 to accept customized fixture or neoprene tipped spindle. Plunger retracts completely to clear the work area. Available with a straight base, TC-609-B or a flanged base TC-609.



Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-609	3.25	5.48	.97	1.38	1.62	3.60	2.19	1.88	.27	.44	1/4	300	1
TC-609-B	4.28	5.48	1.56	1.38	—	3.60	.25	1.88	.27	.44	1/4	300	1

Economy Straight-Line Action Clamp

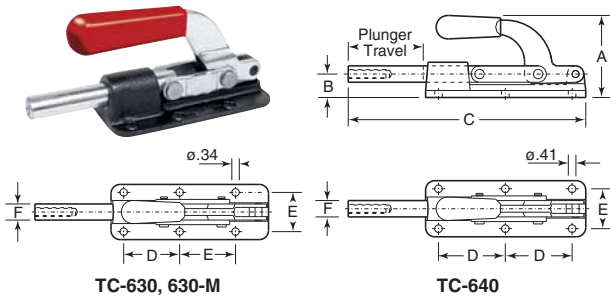


All models have a blue handle grip. Spindles are supplied.

Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Spindle Size	Holding Cap. Lbs.	Pack Qty.
ETC-13090	4.10	5.00	.85	1.57	1.33	3.27	1.95	1.71	.26	.47	1.25	5/16-18 x 1.00	300	1



Series TC-630, 640

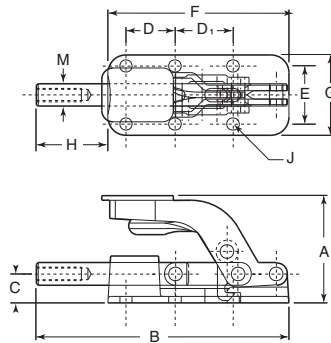


Forged alloy steel base designed for heavy duty service. Rugged handle features an ergonomic grip for easy operation. Low silhouette, maximum capacity for the size. Plunger locks over-center in extended or retracted position. TC-630 plunger is tapped $\frac{3}{8}$ -16 x $1\frac{1}{4}$ " deep for adjustment spindle. TC-640 plunger is tapped $\frac{1}{2}$ -13 x 2" deep for adjustment spindle. TC-630-M has M10 thread.

Item No.	A	B	C	D	E	F	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-630	3.09	.81	7.03	1.38	1.63	.63	2	2,500	1
TC-630-M	3.09	.81	7.03	1.38	1.63	.63	2	2,500	1
TC-640	4.38	1.25	12.66	3.56	2.12	.87	4	7,500	1

Note: Also available as Toggle Lock Plus Model TC-630-R.

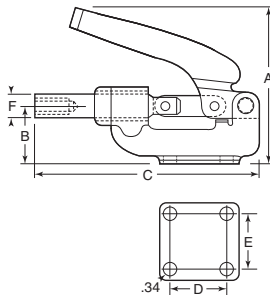
TC-630-R DE-STA-CO® Toggle Lock Plus



Locking lever locks into the rugged forged steel base. Large handle pad for greater comfort. Plunger is tapped $\frac{3}{8}$ -16 x $1\frac{1}{4}$ " deep to accommodate spindle assembly.

Item No.	A	B	C	D	D1	E	F	G	H	J	M	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-630-R	3.06	7.03	.81	1.38	1.63	1.63	5.03	2.30	2	.34	.62	2	2,500	1

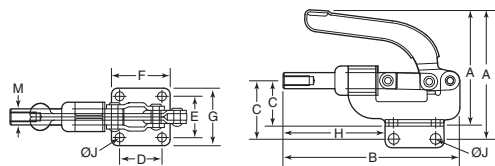
TC-610



TC-610 features balanced construction for rigid holding and assured long life. Plunger tip is drilled and tapped $\frac{3}{8}$ -16 x 1" deep for spindle.

Item No.	A	B	C	D	E	F	Base Type	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-610	4.38	1.70	6.72	1.63	1.63	.63	Flanged	1.63	800	1

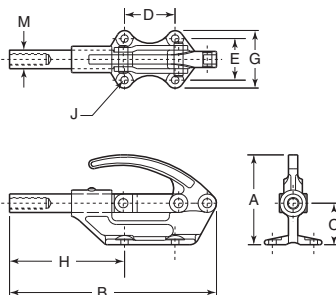
Economy Straight-Line Action Clamp



Model has a blue handle grip. Spindle assembly supplied.

Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Travel	Spindle Size	Holding Cap. Lbs.	Base Type	Pack Qty.
ETC-13100	5.04	6.82	1.75	1.63	1.58	2.25	2.20	4.23	.34	.62	1.63	$\frac{3}{8}$ -16 x 1.25	800	Flanged	1

TC-650



Largest holding capacity of the straight line action clamps. TC-650 is precision built with forged alloy steel handle and base. Removable pivot pin construction allows easy removal of plunger even after unit is mounted. TC-650 plunger is tapped $\frac{3}{8}$ -11 x 2" deep.

Item No.	A	B	C	D	E	G	H	J	M	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-650	4.88	11.25	2.25	2.75	2.25	3.13	6.25	.41	1	3	16,000	1

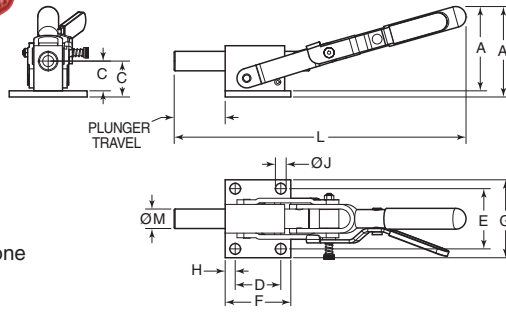
Note: Also available as Power Model TC-850.



STRAIGHT-LINE ACTION CLAMPS



Series TC-5130, 5131, 5133

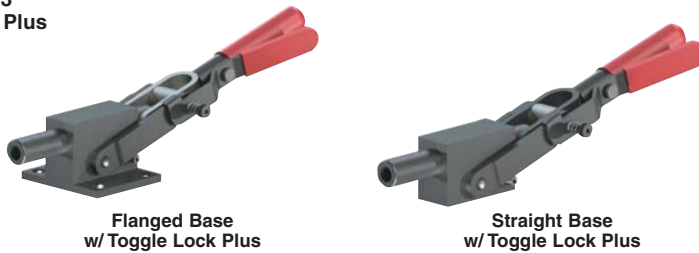


Features:

- Reverse action allows the handle to stay out of the work zone
- Hardened steel pivot pins and bushings provide long life
- Black oxide finish with hardened plungers

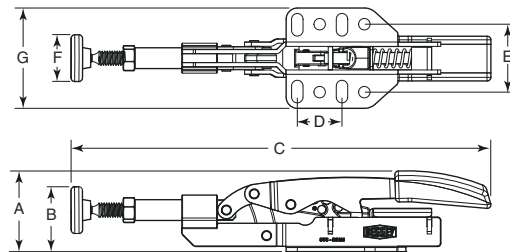
Item No.	A	L	C	D	E	F	G	H	J	M	Base Type	Plunger Travel	Holding Capacity Lbs.	Pack Qty.
TC-5130	3.63	11.11	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.75	5,800	1
TC-5130-M	3.63	11.11	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.75	5,800	1
TC-5130-B	3.40	11.11	1.14	—	—	—	—	—	—	.75	Straight	1.75	5,800	1
TC-5130-MB	3.40	11.11	1.14	—	—	—	—	—	—	.75	Straight	1.75	5,800	1
TC-5131	3.15	7.37	1.10	1.13	1.87	1.73	2.52	.30	.34	.51	Flanged	1.00	2,500	1
TC-5131-M	3.15	7.37	1.10	1.13	1.87	1.73	2.52	.30	.34	.51	Flanged	1.00	2,500	1
TC-5131-B	2.91	7.37	.87	—	—	—	—	—	—	.51	Straight	1.00	2,500	1
TC-5131-MB	2.91	7.37	.87	—	—	—	—	—	—	.51	Straight	1.00	2,500	1
TC-5133	4.22	12.89	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	3.13	4,600	1
TC-5133-M	4.22	12.89	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	3.13	4,600	1
TC-5133-B	3.98	12.89	1.14	—	—	—	—	—	—	.75	Straight	3.13	4,600	1
TC-5133-MB	3.98	12.89	1.14	—	—	—	—	—	—	.75	Straight	3.13	4,600	1

Series TC-5130, 5131, 5133 DE-STA-CO® Toggle Lock Plus



Item No.	A	L	C	D	E	F	G	H	J	M	Base Type	Plunger Travel	Holding Capacity Lbs.	Pack Qty.
TC-5130-R	3.63	11.11	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.75	5,800	1
TC-5130-MR	3.63	11.11	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.75	5,800	1
TC-5130-BR	3.40	11.11	1.14	—	—	—	—	—	—	.75	Straight	1.75	5,800	1
TC-5130-MBR	3.40	11.11	1.14	—	—	—	—	—	—	.75	Straight	1.75	5,800	1
TC-5131-R	3.15	7.37	1.38	1.13	1.87	1.73	2.52	.30	.34	.75	Flanged	1.00	2,500	1
TC-5131-MR	3.15	7.37	1.38	1.13	1.87	1.73	2.52	.30	.34	.75	Flanged	1.00	2,500	1
TC-5131-BR	2.91	7.37	.87	—	—	—	—	—	—	.75	Straight	1.00	2,500	1
TC-5131-MBR	2.91	7.37	.87	—	—	—	—	—	—	.75	Straight	1.00	2,500	1
TC-5133-R	4.22	12.89	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	3.13	4,600	1
TC-5133-MR	4.22	12.89	1.38	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	3.13	4,600	1
TC-5133-BR	3.98	12.89	1.14	—	—	—	—	—	—	.75	Straight	3.13	4,600	1
TC-5133-MBR	3.98	12.89	1.14	—	—	—	—	—	—	.75	Straight	3.13	4,600	1

Inline Toggle Clamp Auto-Adjust



Auto-Adjust - The Bessey auto-adjust toggle clamp automatically adjusts to variations in work piece dimensions while maintaining constant clamping force. No more time-consuming manual adjustment of the spindle height to maintain safe and correct clamping force. The removable non-marring plastic cap is included on the 7/8" diameter pads.

Adjusting Clamping Force - The integrated clamping force adjustment screw can be used to create an actually applied clamping force from 25 to 550 lbs. (max holding capacity 700 lbs.) One Bessey auto -adjust toggle clamp can replace a range of competitive clamps.

Adaptable Base Plate - The large (2 1/4" x 2 1/2") flange base is designed for use with 1/4" or M6 fasteners. Mounting holes are sized and spaced for easy mounting and versatility.

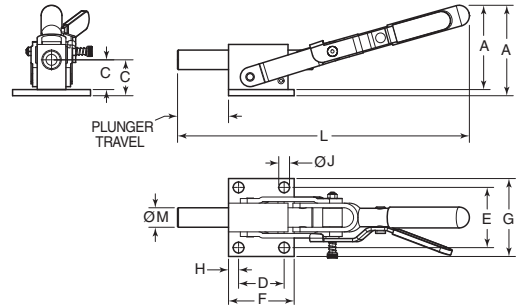
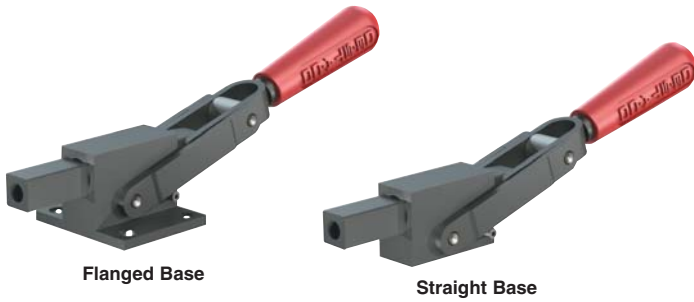
Extra Large Handle - The large 1" x 2 1/8" handle offers greater user comfort and ease of operation.

Item No.	A	B	C	D	E	F	G	Opening	Clamping Force Range	Holding Cap. Lbs.	Pack Qty.
STC-IHH25	1.80	1.45	9.39	1.00	1.52	1.00	2.24	1.00	25-550	700	1

Note: Clamping force range is variable and dependent on spindle settings, pressure screw setting, force applied, etc.



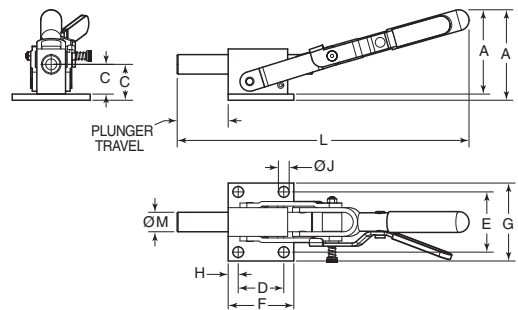
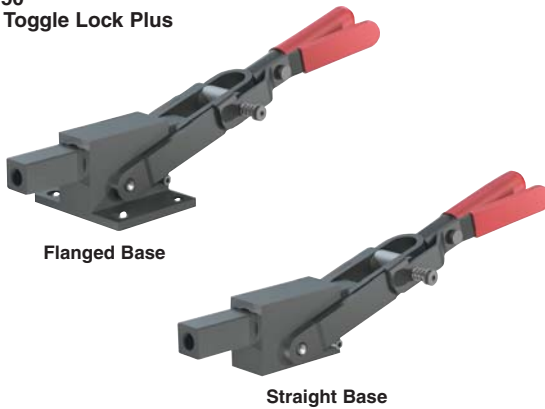
Series TC-5150



- Square plunger provides positive radial location
- Reverse action allows the handle to stay out of the work zone
- Hardened steel pivot pins and bushings provide long life
- Black oxide finish with hardened plungers

Item No.	A	L	C	D	E	F	G	H	J	M	Base Type	Plunger Travel	Holding Capacity Lbs.	Pack Qty.
TC-5150	3.84	11.68	1.37	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.00	5,800	1
TC-5150-M	3.84	11.68	1.37	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.00	5,800	1
TC-5150-B	3.60	11.68	1.14	—	—	—	—	—	—	.75	Straight	1.00	5,800	1
TC-5150-MB	3.60	11.68	1.14	—	—	—	—	—	—	.75	Straight	1.00	5,800	1

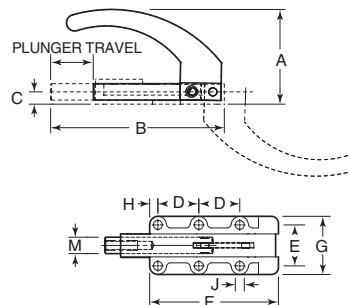
Series TC-5150 DE-STA-CO® Toggle Lock Plus



- Features:
- Square plunger provides positive radial location
 - Reverse action allows the handle to stay out of the work zone
 - Hardened steel pivot pins and bushings provide long life
 - Black oxide finish with hardened plungers

Item No.	A	L	C	D	E	F	G	H	J	M	Base Type	Plunger Travel	Holding Capacity Lbs.	Pack Qty.
TC-5150-R	3.63	11.55	1.37	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.00	5,800	1
TC-5150-MR	3.63	11.55	1.37	1.75	2.31	2.52	2.99	.38	.41	.75	Flanged	1.00	5,800	1
TC-5150-BR	3.89	11.55	1.14	—	—	—	—	—	—	.75	Straight	1.00	5,800	1
TC-5150-MBR	3.89	11.55	1.14	—	—	—	—	—	—	.75	Straight	1.00	5,800	1

TC-95030, 95040, 95050, 95060

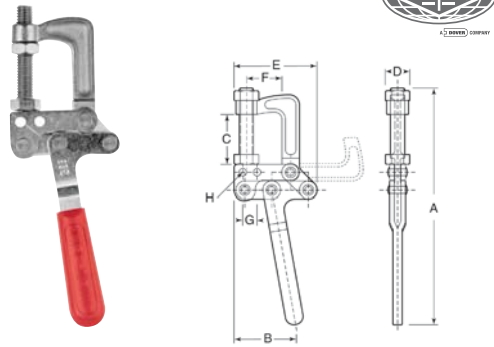


Low profile to use where overhead clearance is a problem. Plunger is tapped with metric thread.

Item No.	A	B	C	D	E	F	G	H	J	M	Plunger Thread	Plunger Travel	Holding Cap. Lbs.	Pack Qty.
TC-95030	2.32	4.13	.31	.98	.98	3.07	1.38	.20	.22	.39	M6	.98	550	1
TC-95040	3.00	5.91	.39	1.38	1.38	4.33	1.97	.33	.26	.55	M8	1.50	1,100	1
TC-95050	3.50	7.52	.55	1.77	1.77	5.59	2.56	.39	.33	.75	M12	1.97	1,650	1



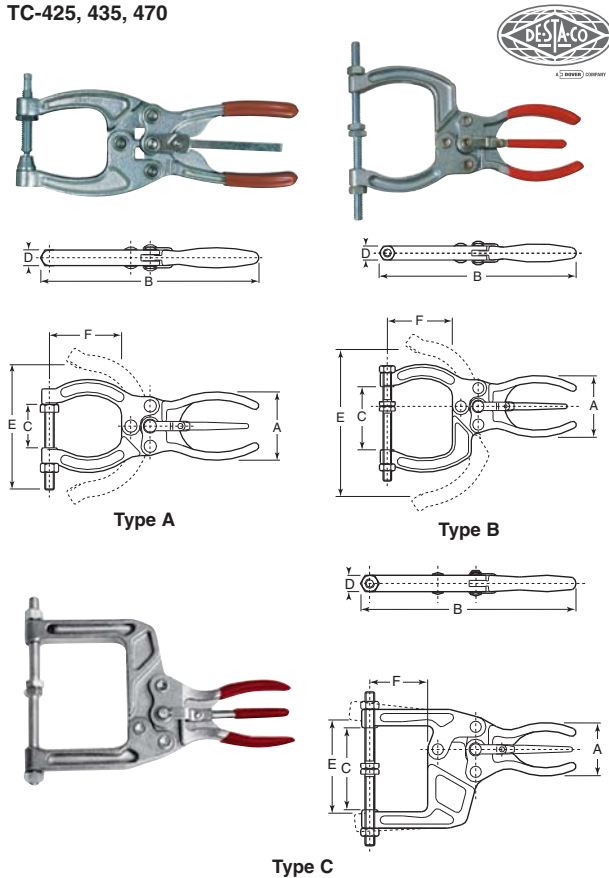
Series TC-325



Designed for attachment by welding front of top of base to container or cover. Forged alloy steel jaw moves 90 degrees to clear completely. Red vinyl grip provides easy operation and good-looking appearance. TC-325 is furnished with M12 hex head spindle (TC-325203-M) and jam nut. TC-325-SS furnished with stainless steel M12 hex head spindle (TC-325943-M) and jam nut.

Item No.	A	B	C	D	E	F	G	H	Jaw Moves (degrees)	Handle Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
Steel												
TC-325	8.68	2.62	1.78	.75	2.94	1.25	.50	.27	90	50	800	1
Stainless Steel												
TC-325-SS	8.68	2.62	1.78	.75	2.94	1.25	.50	.27	90	50	800	1

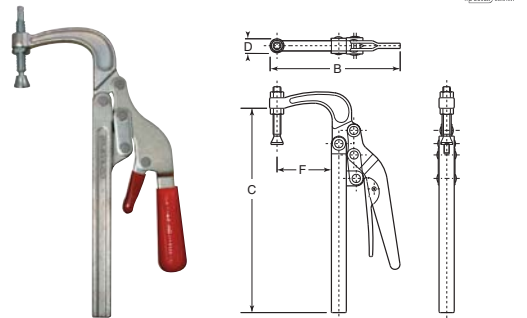
TC-425, 435, 470



These high strength squeeze action clamps are ideal for rugged clamping applications. Made from SAE 1045 steel for strength. Two way trigger release allows for fast unclamping. Supplied with spindle.

Item No.	Type	A	B	C	D	E	F	Spindle Supplied	Holding Cap. Lbs.	Pack Qty.
TC-425	A	1.63	5.55	1.10	.39	2.56	1.83	(1) M6 x 1.0	500	1
TC-435	B	1.63	5.55	1.77	.39	3.23	1.83	(2) M6 x 1.0	500	1
TC-470	C	2.00	8.27	3.35	.63	5.63	2.76	(2) M10 x 1.0	2,000	1

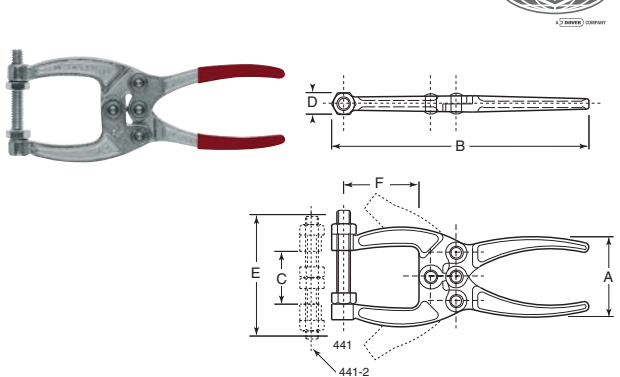
TC-345



Designed for bolting or welding to a fixture at any point along base, or base can be cut off for end welding. This model has a forged steel jaw with M10 swivel foot spindle assembly (TC-468206-M).

Item No.	B	C	D	F	Spindle Thread	Jaw Moves (degrees)	Handle Moves (degrees)	Holding Cap. Lbs.	Pack Qty.
TC-345	6.56	10.12	.69	2.69	M10	86	60	800	1

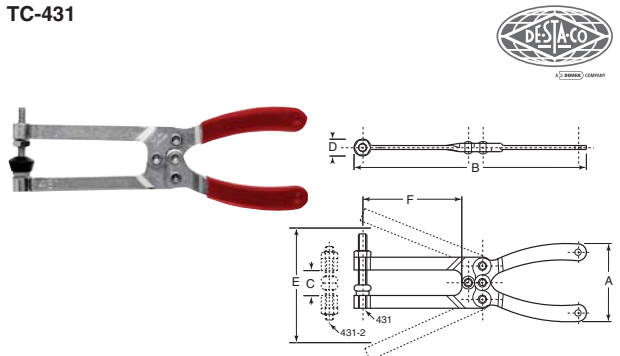
Series TC-441



TC-441 has a M8 adjustment spindle (TC-441203-M). TC-441-2 has two adjustment spindles (TC-461203-M). Maximum jaw opening is 2⁵⁹/₆₄".

Item No.	A	B	C	D	E	F	Holding Cap. Lbs.	Pack Qty.
TC-441	1.97	6.06	1.25	.50	2.86	1.77	350	1
TC-441-2	1.97	6.06	1.25	.50	2.86	1.77	350	1

TC-431



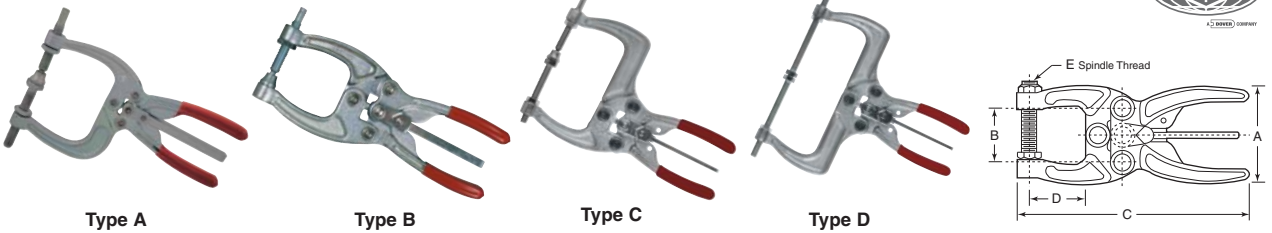
Tempered spring-steel jaws have exceptional 2¹⁵/₁₆" jaw depth. TC-431 has single neoprene tipped adjustment spindle (TC-424208-M). Maximum opening is 3¹/₁₆".

Item No.	A	B	C	D	E	F	Holding Cap. Lbs.	Pack Qty.
TC-431	2.41	6.88	.75	.50	3.06	2.92	100	1



PLIER CLAMPS & MAGNETIC HOLDERS

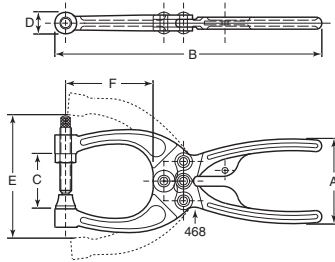
Squeeze Action Plier Clamps TC-463, 491, 482, 484, 486



Most models have trigger release for easy one hand operation. Ideal for clamping and fixturing, holding and processing, etc.

Item No.	Type	No. of Spindles	Spindle(s) Furnished	Trigger Release	A	B	C	D	E Spindle Thread	Holding Cap. Lbs.	Pack Qty.
TC-463	A	2	TC-468206-M & TC-210203-M	Yes	2.69	8.50	3.00	2.72	M10	700	1
TC-482	B	1	TC-468206-M	Yes	2.80	9.19	1.70	2.56	M10	1,200	1
TC-484	C	2	TC-468206-M & TC-210203-M	Yes	2.69	9.06	3.83	2.56	M10	1,200	1
TC-486	D	2	TC-240203-M	Yes	2.88	9.22	6.00	2.56	M10	1,000	1

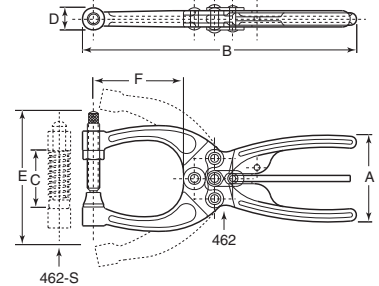
TC-468



Furnished with M10 swivel foot adjustment spindle assembly (TC-468206-M). Forged alloy steel components and clevis type construction with stainless steel rivets.

Item No.	A	B	C	D	E	F	Holding Cap. Lbs.	Pack Qty.
TC-468	2.66	8.47	1.75	.69	4.10	2.75	700	1

Squeeze Action Plier Clamp TC-462



Furnished with M10 swivel-foot adjustment spindle (TC-468206-M) and two-way trigger release. Forged alloy steel components, clevis type construction with stainless steel rivets.

Item No.	A	B	C	D	E	F	Holding Cap. Lbs.	Pack Qty.
TC-462	2.69	8.47	1.75	.69	4.10	2.78	700	1

Magnetic Welding Squares



Holds two pieces at 90 degrees



Extra Heavy Duty



Adjustable



Standard

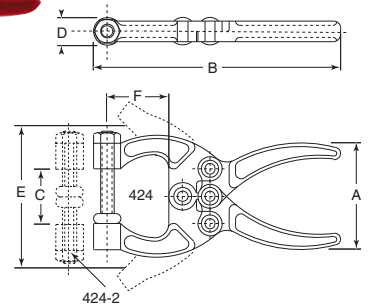
Features:

- Used for a wide variety of jobs including workholding, welding and assembly
- Ideal for welders that need fast set-up and accurate holding of steel sheet stock, plate and tubing
- IM-343 and IM-344 models feature "Breakaway Handle"
- IM-342 and IM-344 models feature weld spatter resistant covers

Item No.	Description	Length	Height	Width	Pull Lbs.	Pack Qty.
IM-338	10 Angle	3 $\frac{3}{8}$ "	2 $\frac{9}{16}$ "	$\frac{1}{2}$ "	23	1
IM-339	Standard	3 $\frac{3}{8}$ "	3 $\frac{3}{8}$ "	$\frac{5}{8}$ "	55	1
IM-340	Adjustable	6 $\frac{1}{8}$ "	3 $\frac{3}{8}$ "	$\frac{5}{8}$ "	110	1
IM-341	Standard Heavy Duty	3 $\frac{3}{8}$ "	4 $\frac{3}{8}$ "	$\frac{3}{4}$ "	75	1
IM-342	Covered Heavy Duty	3 $\frac{3}{8}$ "	4 $\frac{3}{8}$ "	$\frac{3}{4}$ "	75	1
IM-343*	Extra Heavy Duty	3 $\frac{3}{8}$ "	4 $\frac{3}{8}$ "	1 $\frac{1}{2}$ "	150	1
IM-344*	Super Heavy Duty	8"	8"	1 $\frac{1}{2}$ "	325	1

*Includes "Breakaway Handle" for easier parts release

Squeeze Action Plier Clamps Series TC-424



Smallest of the forged alloy steel squeeze action clamps. TC-424 has a single M6 neoprene tipped adjustment spindle (TC-424208-M). TC-424-2 has two neoprene tipped adjustment spindles (TC-431208-M). Maximum jaw opening is 2 $\frac{1}{16}$ ".

Item No.	A	B	C	D	E	F	Holding Cap. Lbs.	Pack Qty.
TC-424	1.94	4.75	1	.50	2.06	1.08	200	1
TC-424-2	1.94	4.75	1	.50	2.06	1.08	200	1



Clamp Accessories
Hex Head Assemblies with Jam Nuts



Nylon Bolt

Item No.	Thread	Thread Lgth.	OAL	Pack Qty.
Steel - Inch				
TC-105203	8-32 Nylon Bolt	.75	.84	1
TC-305203	10-32	1.00	1.09	1
TC-205203	1/4-20	1.69	1.88	1
TC-202203	1/4-20	3.00	3.13	1
TC-461203	5/16-18	.81	1.00	1
TC-441203	5/16-18	1.75	1.94	1
TC-207203	5/16-18	2.50	2.75	1
TC-491203	3/8-16	1.25	1.50	1
TC-210203	3/8-16	2.75	3.00	1
TC-240203	3/8-16	4.00	4.25	1
TC-527203	3/8-16	5.00	5.25	1
TC-325203	1/2-13	2.50	2.75	1
TC-220203	1/2-13	3.00	3.31	1
TC-250203	5/8-11	4.00	4.38	1



Stainless Steel Bolt

Item No.	Thread	Thread Lgth.	OAL	Pack Qty.
Steel - Metric				
TC-205203-M	M6	1.77	1.93	1
TC-461203-M	M8	.81	1.00	1
TC-207203-M	M8	2.76	2.97	1
TC-441203-M	M8	1.75	1.94	1
TC-491203-M	M10	1.25	1.50	1
TC-210203-M	M10	2.76	3.03	1
TC-240203-M	M10	4.00	4.25	1
TC-325203-M	M12	2.56	2.83	1
TC-267203-M	M16	4.72	5.12	1
Stainless Steel - Inch				
TC-205943	8-32	.75	.86	1
TC-201943	10-32	1.03	1.13	1
TC-202943	1/4-20	1.38	1.50	1
TC-207943	5/16-18	2.31	2.50	1
TC-237943	3/8-16	2.25	2.50	1
Stainless Steel - Metric				
TC-207943-M	M8	2.56	2.77	1

Clamp Accessories
Flat-Tip Bonded Assemblies with Neoprene Cap and Jam Nuts



Flat Tip

Item No.	Thread	Thread Lgth.	OAL	Pack Qty.
Flat Tip - Inch				
TC-201208	10-32	1.00	1.38	1
TC-431208	1/4-20	.63	1.00	1
TC-424208	1/4-20	1.13	1.50	1
TC-202208	1/4-20	1.25	1.63	1
TC-215208	1/4-20	1.66	2.19	1
TC-225208	5/16-18	1.50	2.25	1
TC-507208	5/16-18	2.31	3.06	1
TC-240208	3/8-16	2.31	3.31	1
TC-527208	3/8-16	2.50	3.50	1
TC-235208	1/2-13	4.88	5.88	1
TC-247208	1/2-13	2.69	4.00	1
TC-267208	5/8-11	3.63	5.00	1



Low Cushion

Item No.	Thread	Thread Lgth.	OAL	Pack Qty.
Flat Tip - Metric				
TC-431208-M	M6	.63	1.00	1
TC-424208-M	M6	1.13	1.50	1
TC-202208-M	M6	1.25	1.73	1
TC-215208-M	M6	1.66	2.19	1
TC-225208-M	M8	1.50	2.25	1
TC-507208-M	M8	2.31	3.06	1
TC-240208-M	M10	2.31	3.31	1
TC-235208-M	M10	4.88	5.88	1
TC-247208-M	M12	2.68	3.82	1
Flat Tip Low Cushion w/ Jam Nuts - Metric				
TC-205208-M	M4	.76	.87	1
TC-201208-M	M4	1.06	1.26	1
TC-213208-M	M5	1.14	1.34	1
TC-305208-M	M5	.94	1.14	1
TC-307208-M	M8	1.34	1.69	1

Clamp Accessories
Neoprene Caps



Slip on the heads of the hex head spindles.

Item No.	OD	Height	ID	For Spindle Dia.	Pack Qty.
TC-215119	.63	.44	.25	1/4	1
TC-225119	.75	.50	.31	5/16	1
TC-235119	.78	.53	.38	3/8	1

Clamp Accessories
Neoprene Caps



Designed to fit over the threaded end of a spindle.

Item No.	For Spindle Dia.	Pack Qty.
TC-235110	1/32	1
TC-424107	7/32	1

Clamp Accessories
Cone-Tip Bonded Neoprene Cap Assemblies with Jam Nuts



Item No.	Thread	Thread Lgth.	OAL	Pack Qty.
TC-305208	10-32	1.00	1.44	1
TC-213208	1/4-20	1.50	2.13	1
TC-509208	5/16-18	2.25	2.94	1
TC-519208	5/16-18	4.75	5.38	1
TC-210208	3/8-16	2.50	3.44	1

Clamp Accessories
Plunger-Matic Assemblies



Automatically compensates for variations in part thicknesses. To be mounted to plunger clamps.

Item No.	Thread	Thread Lgth.	OAL	Lbs. Pressure	Max. Spring Compression	Pack Qty.
TC-905	5/16-18	.75	2.50	135	3/16	1
TC-920	3/8-16	1.13	3.63	308	3/8	1

Note: Pressure value is per 1/8 deflection.

Clamp Accessories
Swivel Foot Assemblies with Jam Nuts



Fully Threaded **Knurled End**

Item No.	Thread	Thread Lgth.	OAL	Pack Qty.
Inch				
TC-207206	1/4-20	1.50	2.38	1
TC-507206	5/16-18	1.94	2.75	1
TC-468206*	3/8-16	2.00	3.00	1
TC-210206	3/8-16	2.44	3.38	1
TC-250206	1/2-13	3.50	4.63	1
Metric				
TC-468206-M	M10	2.00	3.00	1

*Threaded to the foot with knurled end

Clamp Accessories
Neoprene Swivel Foot Assemblies



Item No.	Thread	Thread Lgth.	OAL	Pad Dia.	Pack Qty.
TC-207209	1/4-20	1.50	2.63	1.00	1
TC-507209	5/16-18	1.94	3.00	1.50	1
TC-210209	3/8-16	2.44	3.63	2.00	1

Clamp Accessories
Polyurethane Caps



Flat Tip



Cone Tip

Internally threaded to screw on to spindle. High oil and abrasion resistance. Good memory.

Item No.	For Spindle Dia.	Pack Qty.
Flat Tip		
TC-215219	1/4	1
TC-225219	5/16	1
TC-235219	3/8	1
Cone Tip		
TC-215319	1/4	1
TC-225319	5/16	1
TC-235319	3/8	1



Clamp Accessories
Latch Plates



Bolt-on
Type A



Bolt-on
Type B



Weld-on
Type C



Flanged Plate



Item No.	Type	For Use w/ Clamp	Pack Qty.	Item No.	Type	For Use w/ Clamp	Pack Qty.
Steel				Stainless Steel			
TC-323104-M	A	TC-323	1	TC-323104-MSS	A	TC-323-SS	1
TC-324101	B	TC-324	1	TC-331905	A	TC-331-SS	1
TC-331005	A	TC-331, 331-R	1	TC-341905	A	TC-341-SS	1
TC-334101	B	TC-334	1	TC-324901	B	TC-324-SS	1
TC-341005	A	TC-341,341-R	1	TC-334901	B	TC-334-SS	1
TC-344101	B	TC-344	1				
TC-375509	C	Series TC-375 & TC-385	1				
TC-385102	D	TC-375, 385	1				

Clamp Accessories
Flanged Washers for U-Bar Clamps



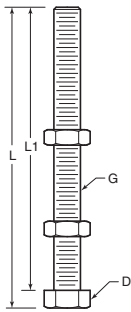
Item No.	For Spindle Dia.	Pack Qty.	Item No.	For Spindle Dia.	Pack Qty.
Steel			Stainless Steel		
TC-102111	#10 Spindle	1	TC-102911	#10 Spindle	1
TC-105106	#8 Spindle	1	TC-105906	#8 Spindle	1
TC-215105	1/4 Spindle	1	TC-215905	1/4 Spindle	1
TC-507107	5/16 Spindle	1	TC-507907	5/16 Spindle	1
TC-235106	3/8 Spindle	1	TC-235906	3/8 Spindle	1
TC-247109	1/2 Spindle	1			
TC-267102	5/8 Spindle	1			

Clamp Accessories
Bolt Retainers for Clamps with Solid Hold Down Bars



Item No.	Description	Pack Qty.
TC-207105	1.25 Bolt Retainer for 5/16 Spindle	1
TC-210114	1.50 Bolt Retainer for 3/8 Spindle	1
TC-247110	1.63 Bolt Retainer for 1/2 Spindle	1
TC-110122	1.88 Bolt Retainer for 5/8 Spindle	1

Economy Clamp Accessories
Hex Head Spindles



Item No.	D	G	L	L1	Pack Qty.
ETC-19338	.55	5/16-16	3.23	3.00	1
ETC-19310	.74	1/2-13	3.31	3.00	1
ETC-19112	.43	1/4-20	1.65	1.50	1
ETC-19212	.49	5/16-18	2.71	2.50	1

Clamp Accessories
Hook Assemblies with Locknuts



U-Hook



J-Hook

Item No.	Style	For Use w/ Clamp	Pack Qty.	Item No.	Style	For Use w/ Clamp	Pack Qty.
Steel				Stainless Steel			
TC-323215	U-Hook	TC-323	1	TC-323915	U-Hook	TC-323-SS	1
TC-324215	U-Hook	TC-324	1	TC-331915	U-Hook	TC-331-SS	1
TC-331215	U-Hook	TC-331	1	TC-341915	U-Hook	TC-341-SS	1
TC-334215	U-Hook	TC-334	1	TC-344915	U-Hook	TC-344-SS	1
TC-341215	U-Hook	TC-341	1	TC-324915	U-Hook	TC-324-SS	1
TC-344215	U-Hook	TC-344	1	TC-334915	U-Hook	TC-334-SS	1
TC-375215	U-Hook	TC-375, 375-R	1	TC-330915*	J-Hook	TC-330-SS	1
TC-385215	U-Hook	TC-385	1	TC-351915	J-Hook	TC-351-SS	1
TC-351215	J-Hook	TC-351	1	TC-371915	J-Hook	TC-371-SS	1
TC-330215*	J-Hook	TC-330	1				
TC-371215	J-Hook	TC-371	1				

*Supplied with two jam nuts

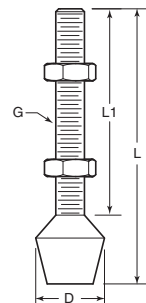
Clamp Accessories
Ergonomic Grips



Provides a safe and comfortable gripping surface for vertical hold down clamps. The additional guard helps protect against potential pinch points.

Item No.	Description	Pack Qty.
TC-202305	Fits 202 and 2002 series clamps	1
TC-207305	Fits 207 and 2007 series clamps	1

Economy Clamp Accessories
Bonded Neoprene Spindles



Item No.	D	G	L	L1	Pack Qty.
ETC-19312	.88	5/16-16	3.44	2.60	1
ETC-19218	.59	1/4-20	2.17	1.59	1
ETC-19316	.49	5/16-18	3.05	2.31	1



Pneumatic cylinders provides the activating force for these over-center toggle clamps. Built to perform repetitive production operations. Portable and economical for use on short run jobs with temporary fixturing. By adding a sensing switch, the position of the cylinder can be sensed. All these models come with magnetic ring for sensing capability.



TC-812



Type A

Smallest of hold-down models, this miniature clamp is the power version of TC-201. The 10-32 spindle is adjustable for height and location along the bar. Cylinder has built in speed controls for smooth operation. Clamp and base are stainless steel. Bar opens 90 degrees. TC-812 uses the TC-810156 reed switch.

TC-802-U



Type B

TC-802 provides 200 lbs. holding capacity in a package less than 7" long. Threaded spindle is adjustable to accommodate work piece height and is neoprene tipped for part protection. Double acting power cylinder has

built-in speed control (restriction) and needs only to be hooked up to a controlled air or hydraulic power source. Hold down bar opens 95 degrees to facilitate easy part loading/unloading.

TC-807



Type C

Two versions available. TC-807-S with solid steel hold-down bar and TC-807-U (illustrated) with U-bar. TC-807-S is furnished with a separate bolt retainer which can be welded onto the hold-

down bar (bar can be cut or modified). TC-807-U is furnished with flanged washers. A wide range of spindles are available to suit your application. Bar opens 92 degrees.

TC-8021, 8071, 8101



Type D

Ideal for dirty environments such as spot and MIG welding. Similar to TC-802, TC-807-U and TC-810-U, except the internal mechanism is totally enclosed.

Stationary cylinder allows hard piping. Low and narrow mounting profile. U-bar opens 90 degrees. Comes with magnetic ring for sensing switches as a standard feature.

TC-810



Type E

Similar to Series 807 but larger and higher capacity. TC-810-S with solid bar and TC-810-U with U-bar. Bar opens 90 degrees. Accommodates any 3/8-16 spindle assembly (not included).

TC-846, 847



Type F

TC-846 is the pneumatic version of the TC-516. TC-847-S (solid bar) and TC-847-U have patented bar guide feature. This provides additional side support to the hold-down bar and allows a take-up adjustment to compensate for misalignment or wear. Other features are similar to preceding models. The hold-down bar opens 95 degrees. Accommodates any 1/2-13 spindle assembly (not included).



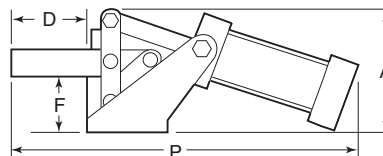
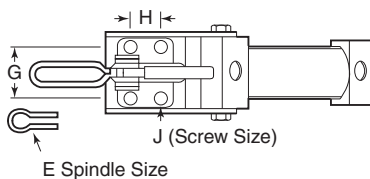
Type G

TC-858



Type H

Heavy-duty model uses forged alloy steel links and steel components machined to close tolerances. Base is a 1/2" thick steel plate. All pivot points have hardened bushings fitted with hardened steel pivot pins. The 1" x 1 3/8" steel hold-down bar may be cut, drilled, tapped or welded to adapt to application. Bar opens 92 degrees.



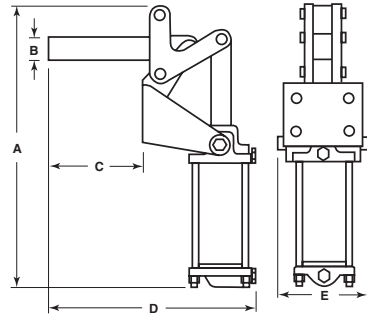
See page 350 for sensor options.

Item No.	Type	A	D	E Spindle Size	F	G	H	J	P	Port Size	Cyl. Bore	Max. Inlet Press. at Max. MA psig	Exert. Force 80 psig Lbs.	Max. Holding Cap. Lbs.	Pack Qty.
TC-812	A	1.50	1.02	10-32	.69	.94	.69	.17	5.60	10-32 NF	.75	80	98 - 135	150	1
TC-802-U	B	2.34	1.72	M6	1.06	1.06	.50	.22	7.39	1/8 NPT	1.13	40	160 - 200	200	1
TC-807-S	C	3.00	3.13	3/16	1.38	1.25	.75	.28	9.96	1/8 NPT	1.13	80	150 - 500	500	1
TC-807-U	C	3.00	2.50	3/16	1.38	1.25	.75	.28	9.21	1/8 NPT	1.13	55	150 - 350	350	1
TC-8021	D	2.19	2.25	.38	1.56	1.50	.79	.21	9.31	1/8 NPT	1.12	105	100 - 175	390	1
TC-8071	D	2.59	2.50	.31	1.66	1.58	1.97	.28	10.93	1/8 NPT	1.50	105	250 - 450	450	1
TC-810-S	E	3.79	3.48	.38	1.80	1.78	1.25	.33	12.13	1/8 NPT	1.50	80	400 - 700	750	1
TC-810-U	E	3.79	3.58	—	1.80	1.78	1.25	.33	12.28	1/8 NPT	1.50	70	400 - 600	600	1
TC-846	F	3.63	2.13	—	1.63	1.50	1.00	.28	10.50	1/8 NPT	1.50	125	500 - 750	750	1
TC-847-S	G	4.34	4.88	.50	2.25	1.78	1.25	.34	16.00	1/8 NPT	2.00	80	450 - 1,000	1,000	1
TC-847-U	G	4.34	4.88	—	2.25	1.78	1.25	.34	16.00	1/8 NPT	2.00	60	450 - 750	800	1
TC-858	H	7.12	4.88	—	3.84	2.75	4.25	.41	18.09	1/8 NPT	2.50	200	900 - 1,600	4,000	1



Pneumatic cylinders provide the activating force for these over-center toggle clamps. Built to perform repetitive production operations. Portable and economical for use on short run jobs with temporary fixturing. By adding a sensing switch, the position of the cylinder can be sensed. All these models come with magnetic ring for sensing capability.

Pneumatic Hold-Down Clamps
Series TC-817, 827, 868 - Right Angle



Used where space dictates such as rotary indexing tables and injection molding operations. Can also be used with the cylinder horizontal in which case the hold-down bar pulls back toward itself. All models can be mounted on the side of the fixture. TC-817-U and TC-817-S can also be top mounted.

See page 350 for sensor options.

Item No.	Type	A	B	C	D	E	Port Size	Cyl. Bore	Max. Inlet Press. at Max. A psig	Exerting Force 80 psi Lbs.	Max. Holding Cap. Lbs.	Pack Qty.
TC-817-U	A	7.42	.63	2.44	6.18	2.41	1/8 NPT	1.125	80	200/320	350	1
TC-817-S	A	7.42	.63	3.06	6.75	2.41	1/8 NPT	1.125	100	200/400	450	1
TC-827-U	A	9.66	.75	3.26	8.75	2.94	1/8 NPT	1.500	95	300/500	600	1
TC-827-S	A	9.66	.75	3.19	8.64	2.94	1/8 NPT	1.500	110	300/500	700	1
TC-868	B	14.32	1.25	4.69	10.11	4.00	1/8 NPT	2.500	200	900/1,600	4,000	1

Pneumatic Straight-Line Action Clamps



Type A

This compact plunger action clamp is less than 10" long but provides a holding capacity of up to 600 lbs. The 7/16" diameter plunger extends 3/4" to a locked position. The end of the plunger is drilled and tapped for a 5/16"-18 spindle. Also available as a fully enclosed clamp (TC-8031).



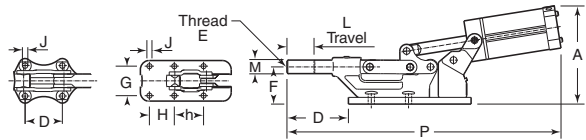
Type B

The 5/8" dia. plunger travels forward 1 1/4" from an open to a closed and locked position. Plunger is drilled and tapped to accept a 3/8"-16 spindle or to receive your custom fixture.



Type C

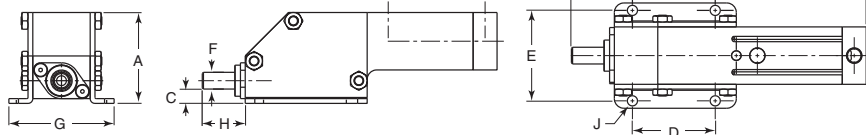
The largest of the straight-line actions, this model has a full 1" dia. plunger that extends 2" and goes into a mechanical lock. A 3/8" thick steel base provides rigidity and can be welded or bolted into position. Removable pivot pins permit easy removal of the plunger without demounting the entire unit.



See page 350 for sensor options.

Item No.	Type	A	D	E	F	G	H	h	J	L	M	P	Port Size	Cyl. Bore	Cyl. Area (Sq. In.)	Max. Cyl. Air Pressure psi	Max. Mechanical Advantage	Exert. Force at 80 psi Lbs.	Max. Holding Cap. Lbs.	Pack Qty.
TC-803	A	2.88	2.19	5/16-18	1.09	1.31	1.44	—	.27	.75	.44	9.82	1/8 NPT	1.13	.99	80	7.5:1	600	600	1
TC-830	B	3 3/4	2.00	5/8-16	1.06	1.63	—	1.63	.34	1.25	.63	14.08	1/8 NPT	1.50	1.77	145	5.7:1	800	2,500	1
TC-850	C	7.50	4.50	5/8-11	2.63	2.25	2.75	—	.41	2.00	1.00	21.17	1/8 NPT	2.50	4.90	125	5.2:1	2050	16,000	1

Pneumatic Straight-Line Action Clamps
TC-8031 - Fully Enclosed



TC-8031 is the fully enclosed version of TC-803. It can be used in the harshest environments. Cylinder is sensor ready and the clamp can be hard piped.

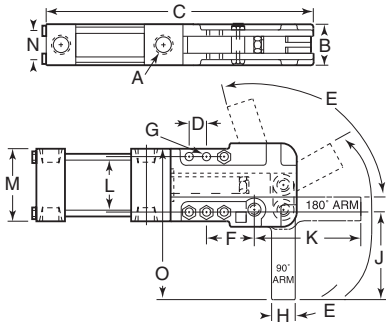
Item No.	A	B	C	D	E	F	G	H	J	Plunger Travel	Plunger Thread	Port Size	Holding Cap. Lbs.	Pack Qty.
TC-8031	2.37	7.83	.037	2.17	2.36	.44	2.75	1.25	.27	.75	M8	1/8 NPT	2,000	1



PNEUMATIC HEAVY DUTY HOLD-DOWN CLAMPS

Buy One or Buy Bulk & SAVE

TC-840, 841 DE-STA-CO® Toggle Lock Plus



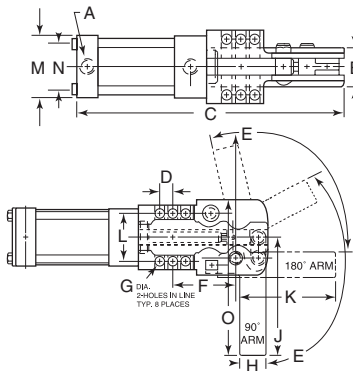
Designed for high production applications, these pneumatic clamps offer exceptional clamping forces and holding capabilities. Does not require greater pressure to open than to close. The TC-840 and TC-841 have oval cylinders which allows them to be used in close quarters or they can be ganged together in multiple installations. The even numbered models feature a 180 degrees clamping arm which travels to an over-center locked position parallel (180 degrees) to the clamps center line. The corresponding odd numbered models have a 90 degrees arm. The angular locked position of both versions is precisely controlled by the hardened steel insert. The magnetic ring cylinders are used when there is a need to sense the open or closed position of the cylinder. Then by adding a tie rod mounted reed switch, the position of the cylinder can be sensed.

See page 350 for sensor options.

Item No.	A	B	C	D	E (degrees)	F	G	H	J	K	L	M	N	O	Bore	Range of Arm (degrees)	Hold Cap. @ 3" from Pivot to Load Point	Max. Exert. Force @ 80 psig 2" from Pivot Point	Mechanical Advantage 2" from Pivot Point	Pack Qty.
TC-840	.375	1.375	10	.625	100	1.812	.28	.875	—	3.69	1.875	2.563	1.000	—	1.5 Equiv.	180	1,500	475	3:1	1
TC-841	.375	1.375	10	.625	100	1.812	.28	.875	3.25	—	1.875	2.563	1.000	5.47	1.5 Equiv.	90	1,500	475	3:1	1

Note: Maximum inlet pressure: 150 psig.

TC-860, 861, 890, 891, 1001A

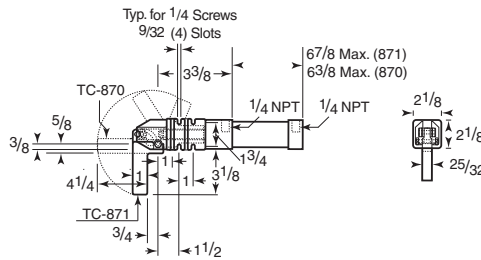


Designed for high production applications, these pneumatic clamps offer exceptional clamping forces and holding capabilities. Does not require greater pressure to open than to close. The even numbered models feature a 180 degrees clamping arm which travels to an over-center locked position parallel (180 degrees) to the clamps center line. The corresponding odd numbered models have a 90 degrees arm. The angular locked position of both versions is precisely controlled by the hardened steel insert. The magnetic ring cylinders are used when there is a need to sense the open or closed position of the cylinder. Then by adding a tie rod mounted reed switch, the position of the cylinder can be sensed.

See page 350 for sensor options.

Item No.	A	B	C	D	E (degrees)	F	G	H	J	K	L	M	N	O	Bore	Range of Arm (degrees)	Hold Cap. @ 3" from Pivot to Load Point	Max. Exert. Force @ 80 psig 2" from Pivot Point	Mechanical Advantage 2" from Pivot Point	Pack Qty.
TC-860	.375	1.75	11.63	.625	96	2.50	.34	1.130	—	4.50	2.188	2.500	2.313	—	2.00	180	3,000	1,250	5:1	1
TC-861	.375	1.75	12.25	.625	110	2.50	.34	1.130	4.00	—	2.188	2.500	2.313	6.47	2.00	90	3,000	1,250	5:1	1
TC-890	.375	2.00	13.00	.690	96	3.06	.41	1.250	—	5.50	2.500	3.560	2.760	—	2.50	180	5,000	2,600	6.5:1	1
TC-891	.375	2.00	13.63	.690	119	3.06	.41	1.250	5.00	—	2.500	3.560	2.760	8.06	2.50	90	5,000	2,600	6.5:1	1
TC-1001A	.500	2.63	17.88	1.000	122	3.75	.53	1.750	7.00	—	3.500	3.750	3.500	11.31	3.25	90	10,000	6,000	9:1	1

TC-870, 871 Power Roller



These models use a roller and cam principle to enable clamping work of inconsistent thickness while still maintaining a locked condition. Modular units 2 1/8" square can stack together for minimum distance between clamping points. Four-way mounting surface for full mounting flexibility. Built-in pre-stop eliminates need to bottom out cylinder. Gives extra travel to automatically compensate for wear. Also

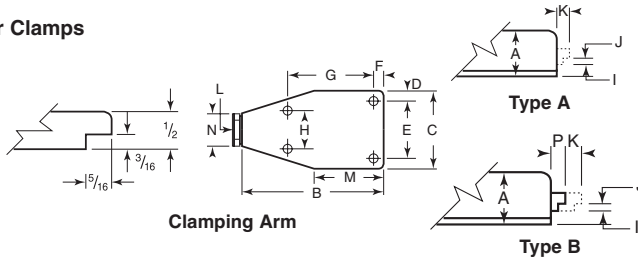
permits arm to be machined accurately relative to mounting surface. TC-870-2 maximum opening is 112 degrees, cylinder stroke is 2 3/8". TC-871-2 maximum opening is 126 degrees, cylinder stroke is 2 7/8". The magnetic ring cylinders are used when there is a need to sense the open or closed position of the cylinder. By adding a tie rod mounted reed switch, the position of the cylinder can be sensed. All these models come with magnetic ring for sensing capability.

See page 350 for sensor options.

Item No.	Type	Cyl. Bore	Cyl. Area Sq. In.	Max. Cylinder Air Pressure psig	Max. Hold Capacity Lbs.	Mechanical Advantage	Exerting Force 80 psig Lbs.	Pack Qty.
TC-870-2	A	1.5	1.767	250 psig	2,000	1.2 to 2.5:1	170/350	1
TC-871-2	B	1.5	1.767	250 psig	2,000	1.2 to 2.5	170/350	1



**Pneumatic Retractor Clamps
Series TC-800**



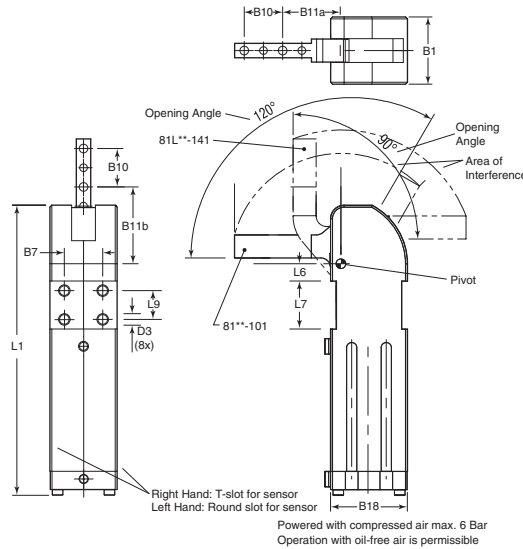
Operates on an ordinary shop line air (properly filtered and lubricated). Clamp arm completely retracts from the work area for ease in part loading/unloading. Model 800-E has an extended arm. Min. operating pressure is 70 psig.



Item No.	Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Mtg. Holes	Input Pressure	Exerting Force	Pack Qty.
TC-800	A	1.63	4.81	2.72	.25	2.21	.25	3.13	1.19	.59	.19	.50	1/4 NPT	2.31	1.50	—	.26	70-150	850 - 1,500	1
TC-800-E	B	1.63	4.81	2.72	.25	2.21	.25	3.13	1.19	.59	.16	.50	1/4 NPT	2.31	1.50	.50	.26	70-150	650 - 1,200	1

Note: Use with pneumatic power only. 3-Way air valve required to power unit (single-acting, spring return).

**Automation Power Clamps
Series TC-81L
Miniature Design**



Clamping, holding, gripping and positioning of metal sheets and other parts in jigs and handling systems. Features compact design, long life cycle, high holding torques, two mounting areas (front and rear), and toggle action mechanism. These models can be quickly fitted with magnetic position sensors. Horizontal clamping arms have 120 degrees standard opening angle and the vertical clamping arms have 90 degrees standard opening angle.

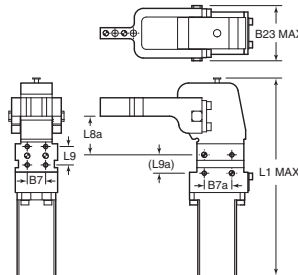


See page 350 for sensors.

Item No.	Holding Torque Max. (in.-Lbs.)	Clamping Torque Max. (in.-Lbs.)	D3	B1	B7	B10	B11a	B11b	B18	L1	L6	L7	L9	Pack Qty.
Horizontal														
TC-81L12-10100	221	39	M4 x 6	24	15	9	27	31.5	28	104	4.5	15	9	1
TC-81L16-10100	531	53	M5 x 5	30	20	15	30	39.5	30	119	5.75	20	12	1
TC-81L20-10100	885	57	M6 x 8	35	20	20	30.5	40	40	151	9	25	15	1
TC-81L25-10100	885	159	M6 x 8	35	20	20	40.5	50	40	151	9	25	15	1
Vertical														
TC-81L12-14100	177	39	M4 x 6	24	15	9	27	31.5	28	104	4.5	15	9	1
TC-81L16-14100	354	57	M5 x 5	30	20	15	30	39.5	30	119	5.75	20	12	1
TC-81L25-14100	708	150	M6 x 8	35	20	20	40.5	50	40	151	9	25	15	1

**Automation Power Clamps
Series TC-82L
Without Hand Lever**

- Lightweight aluminum design
- Enclosed model
- Contaminant resistant
- Compact design
- High holding torques
- Long life cycle

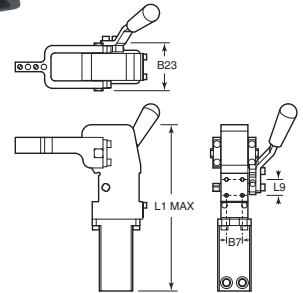
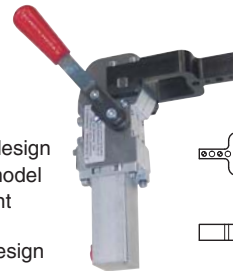


See page 350 for sensors.

Item No.	Max. Holding Torque Lbs.	B7	B7a	B23	L1	L8a	L9	Pack Qty.
Without Sensor								
TC-82L2G2030000	55	25	—	53	179.5	—	18	1
TC-82L3G2030000	132	20	3	60	211	42	20	1
TC-82L4G2030000	280	25	35	74	242	50	20	1
With Sensor								
TC-82L2G203B800	55	25	—	53	179.5	—	18	1
TC-82L3G203B800	132	20	3	60	211	42	20	1
TC-82L4G203B800	280	25	35	74	242	50	20	1

**Automation Power Clamps
Series TC-82L
With Hand Lever**

- Lightweight aluminum design
- Enclosed model
- Contaminant resistant
- Compact design
- High holding torques
- Long life cycle



See page 350 for sensors.

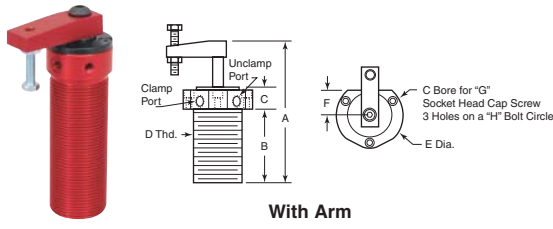
Item No.	Max. Holding Torque Lbs.	Opening Angle (degrees)	Air Connection	B7	B23	L1	L9	Pack Qty.
Without Sensor								
TC-82L2G20300H0	55	105	1/8	25	53	179.5	18	1
TC-82L3G20300H0	132	105	1/8	20	60	211	20	1
TC-82L4G20300H0	280	105	1/4	25	74	242	20	1
With Sensor								
TC-82L2G203B8H0	55	105	1/8	25	53	179.5	18	1
TC-82L3G203B8H0	132	105	1/8	20	60	211	20	1
TC-82L4G203B8H0	280	105	1/4	25	74	242	20	1



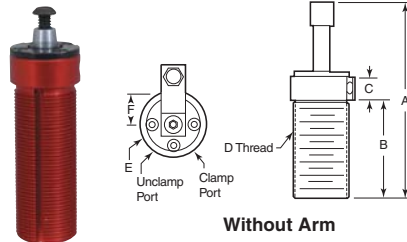


90 degrees swing of clamping arm minimizes obstruction in the work space and makes loading and unloading of parts easy. Ideal for installations where hydraulic power is not suitable. These double acting clamps are intended for quick clamping. Made of aluminum, red anodized, with either a threaded body that permits three mounting options, or a block style mounting body. Available with or without arm. Separate arm options available below. TC-8015, 8016, 8115 and 8116 are supplied with a 10-32 hex head steel spindle (TC-305203). TC-8415 and 8416 are supplied with a 3/8-16 hex head spindle assembly (TC-485203-AL) and neoprene cap (TC-235110). TC-8215, 8216, 8315 and 8316 are supplied with a 3/8-16 hex head aluminum spindle (TC-485203-AL). **Swing Cylinder Rotation:** Frame of reference for specifying rotation is the clamp arm viewed from above during the clamping stroke. A right-hand unit rotates clockwise and then clamps down; a left-hand unit rotates counter-clockwise, and then clamps down.

Series TC-8000, 8200, 8400
Threaded Body with or without Arm



With Arm

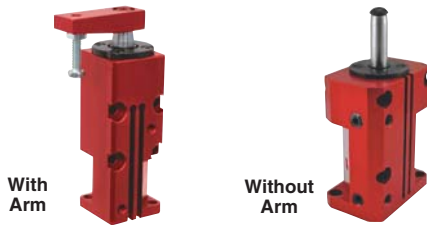


Without Arm

Mounting blocks available for threaded body style. See below.

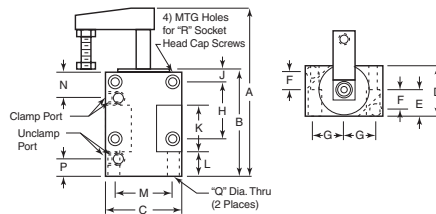
w/ Arm	w/o Arm															
Item No.	Item No.	Swing	Rot. Trvl.	Vertical Clamp Stroke	Exerting Force @ 80 psi w/ Standard Arm	A	B	C	D	E	F	G	H	Port Size	Pack Qty.	
TC-8015	TC-8015-LA	RH	.466	.38	22	4.88	2.87	.62	1 1/8-16	1.25	—	—	—	10-32	1	
TC-8016	TC-8016-LA	LH	.466	.38	22	4.88	2.87	.62	1 1/8-16	1.25	—	—	—	10-32	1	
TC-8215	TC-8215-LA	RH	.75	.50	80	6.36	3.36	.87	2 1/4-12	3.00	1.16	.25	2.66	1/2 NPT	1	
TC-8216	TC-8216-LA	LH	.75	.50	80	6.36	3.36	.87	2 1/4-12	3.00	1.16	.25	2.66	1/2 NPT	1	
TC-8415	TC-8415-LA	RH	.75	.50	62	6.14	3.17	.88	1 1/4-12	2.13	.98	—	—	1/2 NPT	1	
TC-8416	TC-8416-LA	LH	.75	.50	62	6.14	3.17	.88	1 1/4-12	2.13	.98	—	—	1/2 NPT	1	

Series TC-8100, 8300
Block Style - Standard Sensing Feature - with or without Arm



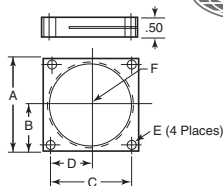
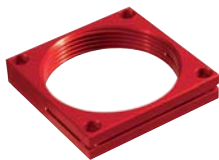
With Arm

Without Arm



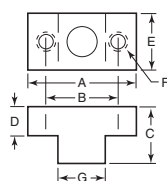
w/ Arm	w/o Arm																						
Item No.	Item No.	Swing	Rot. Trvl.	Vertical Clamp Stroke	Exerting Force @ 80 psi w/ Standard Arm	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	Port Size	Pack Qty.
TC-8115	TC-8115-LA	RH Hand	.466	.38	22	4.88	3.50	1.25	1.25	.62	.47	.47	1.00	1.12	1.00	.25	1.00	1.57	.35	.20	#10	10-32	1
TC-8116	TC-8116-LA	LH Hand	.466	.38	22	4.88	3.50	1.25	1.25	.62	.47	.47	1.00	1.12	1.00	.25	1.00	1.57	.35	.20	#10	10-32	1
TC-8315	TC-8315-LA	RH Hand	.75	.50	80	6.36	4.27	3.00	2.00	1.00	.72	1.22	2.25	.53	2.37	.44	2.25	1.016	.65	.40	.313	1/2 NPT	1
TC-8316	TC-8316-LA	LH Hand	.75	.50	80	6.36	4.27	3.00	2.00	1.00	.72	1.22	2.25	.53	2.37	.44	2.25	1.016	.65	.40	.313	1/2 NPT	1

TC-801553, 821553, 841550
Mounting Blocks



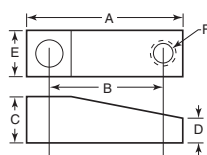
Item No.	A	B	C	D	E	F	Pack Qty.
TC-801553	1.38	.69	1.08	.54	.20	1 1/8-16	1
TC-841550	2.00	1.00	1.60	.80	.28	1 1/4-12	1
TC-821553	2.50	1.25	2.12	1.06	.27	2 1/4-12	1

TC-801532, 821556
Blank Arms



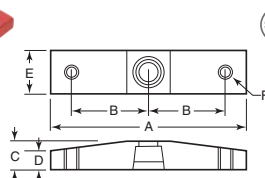
Item No.	A	B	C	D	E	F	G	Use w/ Series No.	Pack Qty.
TC-801532	1.37	1.00	.39	.25	.62	10-32 (2)	.62	8000, 8100	1
TC-821556	1.50	1.06	.75	.37	.75	1/2-20 (2)	.75	8200, 8300, 8400	1

TC-80152, 82151, 841512
L-Arms Series



Item No.	A	B	C	D	E	F	Use w/ Series No.	Pack Qty.
TC-801528	1.75	1.12	.39	.27	.62	10-32	8000, 8100	1
TC-801529	2.87	2.25	.39	.27	.62	10-32	8000, 8100	1
TC-821512	2.75	2.00	.75	.37	.75	3/8-16	8200, 8300	1
TC-821513	3.75	3.00	.75	.37	.75	3/8-16	8200, 8300	1
TC-841512	2.31	1.58	.75	.37	.75	3/8-16	8400	1

TC-80153, 80155
T-Arms Series

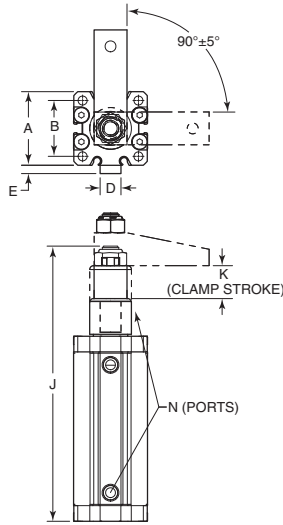


Item No.	A	B	C	D	E	F	Use w/ Series No.	Pack Qty.
TC-801530	2.87	1.12 (2)	.39	.27 (2)	.62	10-32 (2)	8000, 8100	1
TC-801531	5.12	2.25 (2)	.39	.27 (2)	.62	10-32 (2)	8000, 8100	1
TC-821554	4.75	2.00 (2)	.75	.37 (2)	.75	3/8-16 (2)	8200, 8300, 8400	1
TC-821555	6.75	3.00 (2)	.75	.37 (2)	.75	3/8-16 (2)	8200, 8300, 8400	1



PNEUMATIC SWING CLAMPS & ACCESSORIES

Pneumatic Swing Cylinders Series TC-9500

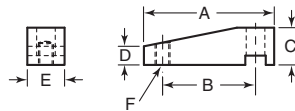


Innovative design allows clamp arm to swing 90 degrees in a horizontal plane at the top of the stroke before traveling down through the clamping stroke. There is no linear travel during rotation. Piston rod is fully shielded throughout the stroke. Clamps are sensor ready with built-in sensor tracks. Clamp arms are ordered separately. Clamp forces shown are at 80psi with shortest standard arm.

See page 350 for sensors.

Item No.	Clamp Force	A	B	D	E	J	K	N	Pack Qty.
TC-9522R	45	36	25	—	—	150.7	13	M5	1
TC-9522L	45	36	25	—	—	150.7	13	M5	1
TC-9530R	61	44.7	34	12.7	5.1	167.3	20	1/8 NPT	1
TC-9530L	61	44.7	34	12.7	5.1	167.3	20	1/8 NPT	1
TC-9540R	105	52	40	16	9	176.2	20	1/8 NPT	1
TC-9540L	105	52	40	16	9	176.2	20	1/8 NPT	1

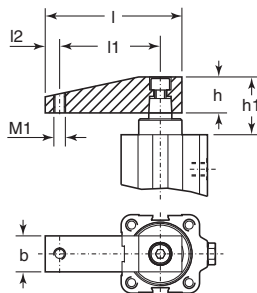
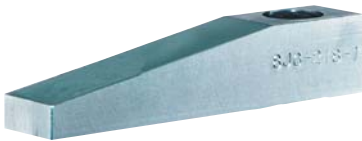
Pneumatic Swing Cylinder Clamp Accessories Series TC-9500



Standard arms for the TC-9500 series pneumatic swing clamps are made from aluminum and are mounted in 90 degree increments to the piston rod.

Item No.	A	B	C	D	E	F	Use with Series	Pack Qty.
TC-952250	58	45	15	7.5	15	M6 x 1.0	9522	1
TC-952253	78	65	15	7.5	15	M6 x 1.0	9522	1
TC-954050	70	50	20	10	20	M8 x 1.25	9540, 9530	1
TC-954053	100	80	20	10	20	M8 x 1.25	9540, 9530	1

Pneumatic Swing Cylinder Clamp Accessories Series TC-89R



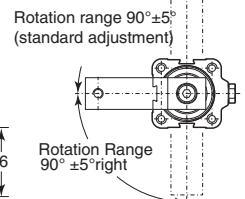
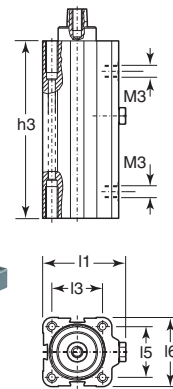
Features:

- TC-8JG-215-1 used with TC-89R20-010-2
- TC-8JG-217-1 used with TC-89R32-010-2
- TC-8JG-218-1 used with TC-89R40-010-2 and TC-89R40-025-2
- TC-8JG-219-1 used with TC-89R50-025-2
- TC-8JG-220-1 used with TC-89R63-025-2

Swing clamp arms are made from aluminum and may be positioned radially 360 degrees.

Item No.	I	I1	I2	h	h1	M1	b	Pack Qty.
TC-8JG-215-1	67	52	7	15	27.8	M6	15	1
TC-8JG-217-1	80	60	10	20	35.7	M8	20	1
TC-8JG-218-1	95	70	10	25	40	M8	25	1
TC-8JG-219-1	106	80	10	30	48.4	M8	30	1
TC-8JG-220-1	120	90	12	35	53	M10	35	1

Pneumatic Swing Cylinders Series TC-89R



Easily adjustable swing directions, left hand, right hand, straight pull (TC-89R20-010-2 not adjustable). Simple, double acting cylinder will produce several million cycles. Clamps are sensor ready built-in sensor tracks for 4mm round diameter or 6.5mm x 5mm T-slot style sensors. Clamp arms are ordered separately.

See page 350 for sensors.

Item No.	Total Stroke	Travel During Rotation	Vertical Stroke	Exerting Force @ 80 psi	h3	I1	I3	I5	I6	M3	Pack Qty.
TC-89R20-010-2	21	11	10	20	105.5	39.5	22	22	32	M5	1
TC-89R32-010-2	28	18	10	62	125	60	36	32	45	G1/2	1
TC-89R40-010-2	31.5	21.5	10	94	140	66	40	40	54.5	G1/2	1
TC-89R40-025-2	46.5	21.5	25	94	170	66	40	40	54.5	G1/2	1
TC-89R50-025-2	52	27	25	154	194.5	78.5	50	50	65	G1/2	1
TC-89R63-025-2	58.5	33.5	25	242	211.5	95	62	62	80	G3/4	1



Sensing Switches New Style



- Cable: Robotic Grade, abrasion resistant polyurethane (PUR) jacket, PVC insulation
- Temperature Range: 14 to 158 degree Fahrenheit (-10 to +70 degree Celsius)
- Switching Logic: Normally Open

Item No.	Operation	Operating Voltage	Switching Current	Voltage Drop	Cord Type	Pack Qty.
TC-810173	PNP	4.5-28V DC	100mA Max.	.5V @ 50mA Max.	6" Male M8 Connector	1
TC-810174	NPN	4.5-28V DC	100mA Max.	.5V @ 50mA Max.	6" Male M8 Connector	1
TC-810169	SPST	5-120V DC/AC 50/60 Hz	50mA Max.	3.0V Max.	6" Male M8 Connector	1

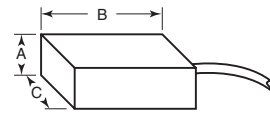
Pneumatic Clamp Sensors Series TC-81015



Switch Mounted on Power Clamp (Power Clamp Not Included)



Switch with Mounting Clamp



Switch Dimensions without Mounting Clamp

Switches are activated by a magnetic ring installed on cylinder piston. As the magnetic ring moves under the switch, it closes the contacts and sends a signal to a programmable controller or other electronic device. All switches have a 9 foot lead. Switches come with tie-rod mounting clamp as standard. Minimum gauge rating required for proper operation, as measured on sensor surfaces, is 85 GA.

Item No.	A	B	C	Type	Function	Switching Voltage	Switching Current	Switching Power	Max. Voltage Drop	Pack Qty.
TC-810151	.37	.93	.53	Reed, LED, MOV w/Tie Rod Clip	Normally Open - SPST	5-120V AC/DC 50/60 HZ	0.5 Amp. max. - 0.0005 Amp. min.	10	3.5 Volts	1
TC-810154	.37	.93	.53	Reed, LED, MOV w/Tie Rod Clip	Normally Open - SPST	0-120V AC/DC 50/60 HZ	0.5 Amp. max.	10	0 Volts	1
TC-810155	.37	.93	.53	Hall Effect, LED Sourcing w/Tie Rod Clip	Normally Open - PNP	6-24V DC	0.5 Amp. max.	12	1 Volt	1
TC-810156	.37	.93	.53	Reed, LED, MOV	Normally Open - SPST	5-120V AC/DC 50/60 HZ	0.5 Amp. max. - 0.0005 Amp. min.	10	3.5 Volts	1
TC-810157	.37	.93	.53	Hall Effect w/Tie Rod Clip	Normally Open - NPN	6-24V DC	0.5 Amp. max.	12	1 Volt	1
TC-810158	.37	.93	.53	Hall Effect	Normally Open - PNP	6-24V DC	0.5 Amp. max.	12	1 Volt	1

Note: TC-810156 and TC-810158 use a band to mount the switch to the wall of the cylinder. All other models use tie rod clamp clip.

Pneumatic Clamp Sensors Heavy Duty Switch



Item No.	A	B	C	Switch Type	Function	Switching Voltage	Switching Current	Switching Power Watts Max.	Voltage Drop	Pack Qty.
TC-810153	.87	1.30	.67	Reed, LED, MOV	Normally Open	24-240V AC 50/60 HZ	4 Amp. Max. - 50 Amp. Inrush - .005 Amp.	100	1 Volt	1



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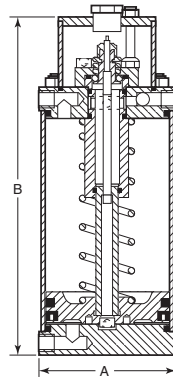


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HYDRAULIC POWER WORK HOLDING



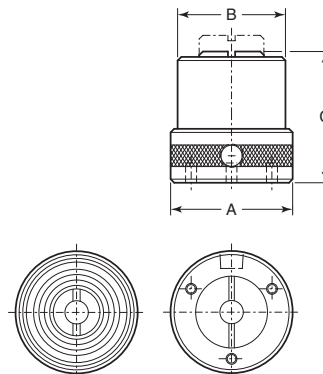
Hydraulic Power Workholding Semi Automatic - Air / Hydraulic Boosters



Converts normal shop line air pressure to high pressure hydraulic power. With the system filled, the volume of oil required to actuate a cylinder or pressure point is only equal to the cubic content of the piston displacement. Boosters have built in manifold and are made of corrosion and wear-resistant materials. Hydraulic piston tube has wear rings and the air piston is self centering for long life. Boosters offer automatic relief of system overcharge as well as complete automatic bleeding with each return, eliminating prefilling. Large volume visible oil reservoir automatically replenishes the system with available reserves. 100 psig max. input air pressure.

Item No.	Pressure Ratio	Nom. Displac. Per Stroke Cu. In.	Reservoir Capacity Cu. In.	NPT Ports	A	B	Pack Qty.
TC-70101	33.87	1	10.4	1/8	4 1/2	10 7/8	1
TC-70104	32.41	4	42	1/4	6 1/2	16 3/8	1

Hydraulic Power Workholding Hollow Cylinders

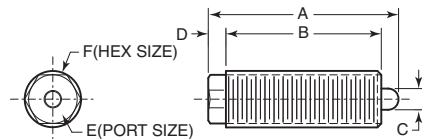


These hollow cylinders can be used to push or pull depending on the position of the ram. They will actuate a rod of any length or shape and are extremely effective in translating power to a remote location. Larger piston diameter provides greater clamping force. Hardened steel piston and rod. Supplied with through hole insert threaded into the top. Maximum input pressure is 3,500 psig.

Item No.	ID	Port	A	B	C	Stroke	Oil Displacement Cu. In.	Lbs. Force @ 3000 psig	Pack Qty.
TC-020-011-011	.38	#2 SAE	2.13	1.88	2.25	.375	.547	4,380	1
TC-020-012-021	.50	#4 SAE	3.00	2.63	2.88	.500	1.35	8,100	1
TC-020-013-031	.63	#4 SAE	3.25	3.00	3.63	.625	2.51	12,066	1

Note: Inside Diameter is clearance for rod or bolt

Hydraulic Power Workholding Threaded Cylinders



Single-acting with spring return action, these cylinders can be used singly or combined by using a common manifold. Easily mounted. Can be used in any attitude and requires only a single inlet port. Threaded cylinders can be directly inserted into a fixture or used with mounting blocks.. The 1 5/16" through 2 1/2" diameters are furnished with a radial port as well as axial.

Item No.	Thread	Stroke	Lbs. Force @ 3,000 psig	A	B	C	D	SAE E	F	Oil Displace Cu. In.	Pack Qty.
TC-010-210-400	1/2-20	.219	279	1.66	1.41	.15	.16	#2	.44	.024	1
TC-010-210-501	3/4-16	.313	588	2.25	1.97	.22	.28	#4	.62	.061	1
TC-010-210-702	1-12	.500	1,326	2.56	2.31	.24	.31	#4	.75	.221	1
TC-010-211-002	1 1/8-16	.500	2,355	2.63	2.25	.64	1.25	#4	1.00	.393	1
TC-010-211-004	1 1/8-16	1.000	2,355	3.63	3.25	.64	1.25	#4	1.00	.785	1
TC-010-211-502	1 1/8-16	.500	5,301	2.94	2.57	1.00	1.75	#4	1.50	.884	1
TC-010-212-004	2 1/2-16	1.000	9,423	4.13	3.76	1.50	2.38	#4	2.00	3.142	1

Note: Force shown is rated at 3,000 psi



Hydraulic Power Workholding Threaded Body Swing / Pull Clamps

Features:

- Advanced seals and wipers utilize a special, highly wear-resistant construction for long cycle life and operation
- Triple track piston rod design for field adjustable swing direction
- Hardened and hard chrome plated piston rod for increased strength and wear resistance
- Advanced metal treated body for superior wear and corrosion resistance
- MRO interchange design
- Straight pull capacity 600 lbs. at max (TBSC-SA-475, TBSC-DA-475)
- Straight pull capacity 1,400 lbs. at max (TBSC-SA-1100, TBSC-SA-1100-R, TBSC-DA-1100, TBSC-DA-1100-R)
- Straight pull capacity 3,150 lbs. at max (TBSC-SA-2400, TBSC-SA-2400-R, TBSC-DA-2400, TBSC-DA-2400-R)

The premium threaded body swing/pull clamps are available in both single-acting and double-acting versions. They incorporate the latest hydraulic swing clamp technology. The top port design allows easy access for plumbing connections. They are available with 90 degree left- or right-hand rotation, or with guided straight pull. The breather port on single-acting models may be replaced with tubing for remote venting. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or custom arms may be substituted.



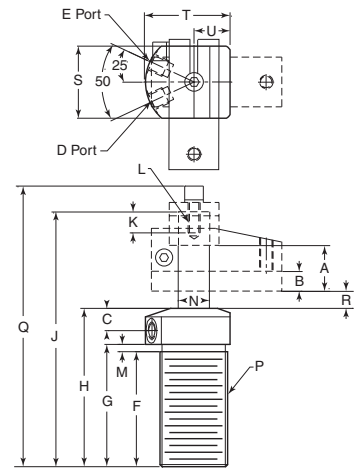
Type A



Type B



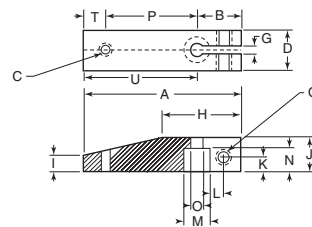
Type C



Item No.	Total Clamping Stroke		Clamp C	Unclamp E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
	A	B																
TBSC-SA-475	.65	.21	.59 #2 SAE	#2 SAE	1.929	2.086	3.07	4.429	.8	M6x1	.157	.393	1 1/8-16	4.96	.495	1.3	1.55	.61
TBSC-SA-475-R	.65	.21	.59 #2 SAE	#2 SAE	1.929	2.086	3.07	4.429	.8	M6x1	.157	.393	1 1/8-16	4.96	.495	1.3	1.55	.61
TBSC-DA-475	.65	.32	.59 #2 SAE	#2 SAE	1.929	2.086	3.07	4.429	.8	M6x1	.157	.393	1 1/8-16	4.96	.495	1.3	1.55	.61
TBSC-SA-1100	.89	.39	.6 #4 SAE	#4 SAE	2.4	2.6	3.58	5.31	.94	M8x1.25	.196	.629	1 1/8-18	5.965	.40	1.5	1.87	.75
TBSC-SA-1100-R	.89	.39	.6 #4 SAE	#4 SAE	2.4	2.6	3.58	5.31	.94	M8x1.25	.196	.629	1 1/8-18	5.965	.40	1.5	1.87	.75
TBSC-DA-1100	.89	.39	.6 #4 SAE	#4 SAE	2.4	2.6	3.58	5.31	.94	M8x1.25	.196	.629	1 1/8-18	5.965	.40	1.5	1.87	.75
TBSC-DA-1100-R	.89	.39	.6 #4 SAE	#4 SAE	2.4	2.6	3.58	5.31	.94	M8x1.25	.196	.629	1 1/8-18	5.965	.40	1.5	1.87	.75
TBSC-SA-2400	1.12	.5	.62 #4 SAE	#4 SAE	3.18	3.38	4.38	6.8	1.28	M10x1.5	.196	.87	1 1/8-16	7.543	.517	2	2.38	1
TBSC-SA-2400-R	1.12	.5	.62 #4 SAE	#4 SAE	3.18	3.38	4.38	6.8	1.28	M10x1.5	.196	.87	1 1/8-16	7.543	.517	2	2.38	1
TBSC-DA-2400	1.12	.5	.62 #4 SAE	#4 SAE	3.18	3.38	4.38	6.8	1.28	M10x1.5	.196	.87	1 1/8-16	7.543	.517	2	2.38	1
TBSC-DA-2400-R	1.12	.5	.62 #4 SAE	#4 SAE	3.18	3.38	4.38	6.8	1.28	M10x1.5	.196	.87	1 1/8-16	7.543	.517	2	2.38	1

Item No.	Type	Swing	Operation	Clamping Force		Effective Area Clamp	Sq. Inch Unclamp	Oil Capacity Clamp	Cu. Inch Unclamp	Max. Oil Flow In 3/m in	Pack Qty.
				Straight Line	With Arm						
TBSC-SA-475	A	LH	Single-Acting	600	475	.12	—	.08	—	12	1
TBSC-SA-475-R	A	RH	Single-Acting	600	475	.12	.24	.08	.15	12	1
TBSC-DA-475	A	LH	Double-Acting	600	475	.12	—	.08	—	12	1
TBSC-SA-1100	B	LH	Single-Acting	1,400	1,100	.28	—	.25	—	25	1
TBSC-SA-1100-R	B	RH	Single-Acting	1,400	1,100	.28	.59	.25	.52	25	1
TBSC-DA-1100	B	LH	Double-Acting	1,400	1,100	.28	—	.25	—	25	1
TBSC-DA-1100-R	B	RH	Double-Acting	1,400	1,100	.28	.59	.25	.52	25	1
TBSC-SA-2400	C	LH	Single-Acting	3,150	2,400	.63	—	.70	—	100	1
TBSC-SA-2400-R	C	RH	Single-Acting	3,150	2,400	.63	1.23	.70	1.4	100	1
TBSC-DA-2400	C	LH	Double-Acting	3,150	2,400	.63	—	.70	—	100	1
TBSC-DA-2400-R	C	RH	Double-Acting	3,150	2,400	.63	1.23	.70	1.4	100	1

Hydraulic Power Workholding Swing / Pull Clamp Arms



- Do not exceed the maximum speed and pressure ratings for standard arms
- Do not use meter-out circuitry for controlling double-acting clamp speeds

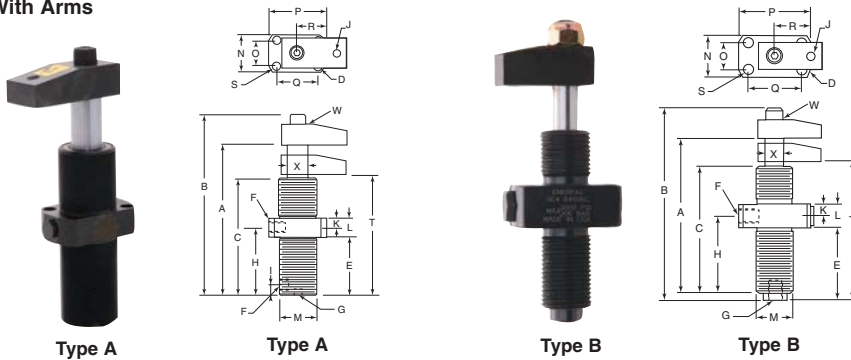
Custom built arms of any length must clamp to the swing/pull clamp's piston rod in a manner similar to the arms or some derating of the clamp will be necessary. **IMPORTANT:** Any clamp using a modified or custom arm that is longer or heavier than standard arms must be derated to prevent internal damage.

Item No.	A	B	C	D	G	H	I	J	K	L	M	N	O	P	Q	T	U	Pack Qty.
HSCA-S-475	1.929	.709	M6	.63	.126	1.139	.394	.63	.236	.217	.394	.394	.256	.984	M6	.236	1.22	1
HSCA-L-475	3.959	.709	—	.63	.126	1.166	.394	.63	.236	.217	.394	.394	.256	—	M6	—	3.25	1
HSCA-S-1100	2.598	.709	M8	.748	.126	1.294	.433	.748	.236	.217	.63	.472	.335	1.575	M6	.315	1.889	1
HSCA-L-1100	6.019	.709	—	.748	.126	1.412	.433	.748	.236	.217	.63	.472	.335	—	M6	—	5.31	1
HSCA-S-2400	3.268	.866	M10	1	.126	1.459	.63	1	.236	.217	.866	.709	.413	1.969	M8	.433	2.402	1
HSCA-L-2400	7.226	.866	—	1	.126	1.696	.63	1	.236	.217	.866	.709	.413	—	M8	—	6.36	1



HYDRAULIC POWER WORK HOLDING

Hydraulic Power Workholding Swing Cylinders With Arms



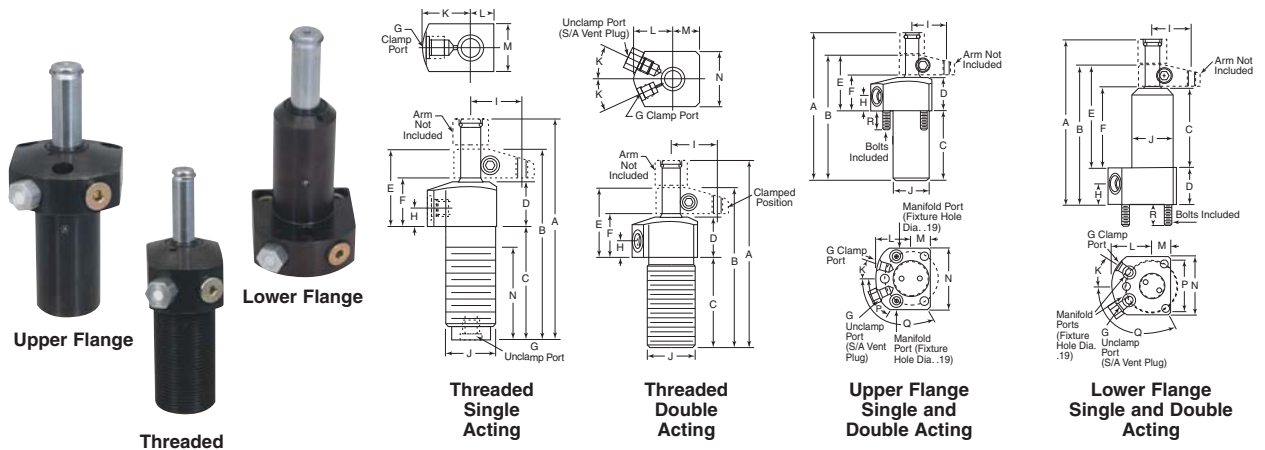
Item No.	Enerpac	Arm Swing	Cylinder Type	Cylinder Capacity @		Hydraulic Stroke		Retracted Height	Cylinder Effective Area (Sq. In.)		Oil Max. Capacity (Cu. In.)		Arm Lgth.	Max. Pressure PSI
				Max. psi	(Lbs.)	Total	Clamping		Pull	Push	Pull	Push		
VE-354	SC-1	Straight, Left or Right	Single or Double-acting, Pull	2,640	1.50	.50	7.37	.980	1.767	1.470	2.650	None	3,000	
				2,164	1.50	.50	7.37	.980	1.767	1.470	2.650	2.00	3,000	
				1,960	1.50	.50	7.37	.980	1.767	1.470	2.650	3.00	3,000	
				1,740	1.50	.50	7.37	.980	1.767	1.470	2.650	4.00	3,000	
				1,200	1.50	.50	7.37	.980	1.767	1.470	2.650	5.00	2,400	
840	1.50	.50	7.37	.980	1.767	1.470	2.650	6.00	2,000					
VE-352	SC-3	Straight, Left or Right	Single or Double-acting, Pull	700	.75	.25	4.52	.245	.442	.184	.331	None	3,000	
				500	.75	.25	4.52	.245	.442	.184	.331	1.00	3,000	
				250	.75	.25	4.52	.245	.442	.184	.331	2.00	2,000	

These swing cylinders rotate 90 degrees as they begin their stroke, continuing without rotation for the final clamping stroke. Cylinders can be changed to left swing, right swing, or pull applications by loosening the side plug and then rotating the plunger to a desired position. The VE-354 and VE-352 have a retract spring for single-acting operations. Clamp arm provided. Can be mounted with the built-in flange by securing the swinger to the top or bottom of a tooling plate or by screwing the threaded body into a mounting bracket.

Item No.	Enerpac Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	W	X	Pack Qty.	
VE-354	SC-1	A	7.37	8.88	5.74	3.00	2.87	1/4-18	1/8-27	3.31	.50	.38-16	.44	.88	1 1/8-16	1.88	1.28	2.90	2.06	2.00	.40	5.87	1/2-13	1.000	1
VE-352	SC-3	B	4.26	5.27	3.48	2.13	2.03	1/8-27	1/8-27	2.15	—	.250-20	.32	.63	1-12	1.13	.75	2.00	1.50	1.00	.20	3.71	3/8-24	.500	1

Note: Standard clamping arm supplied. Longer arms indicated in chart can be fabricated by the user.

Hydraulic Power Workholding Swing Cylinders w/o Arms Light Duty



These swing cylinders rotate 90 degrees as they begin their stroke, continuing without rotation for the final clamping stroke. Cylinders can be changed to left swing, right swing or pull applications by loosening the bottom plug. All single acting cylinders come with a retract spring for single-acting operations. Max. psi 5,000. Body styles available are threaded with upper flange or non-threaded with lower or upper flange.

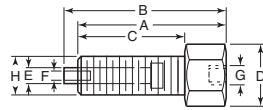
Clamp arms not included but sold separately on page 356.

Item No.	Enerpac	Body Style	Cylinder Capacity w/ Std. Arm	Hydraulic Stroke		Effective Area (Sq. In.)	Oil Capacity (Cu. In.)	Dimensions											Pack Qty.			
				Total	Clamping			A	B	C	D	E	F	G	H	I	J	K (degrees)		L	M	N
Double Acting																						
VE-70	SURD-51	Upper Flange	1,250	.89	.39	.28	.28	5.31	4.42	2.60	.98	1.82	1.08	SAE #4	.39	1.57	1 1/8-18	25	1.12	.75	1.50	1
VE-71	SLRD-51	Lower Flange	1,250	.89	.39	.28	.28	5.31	4.42	2.60	.98	1.08	1.50	SAE #4	.39	1.57	1 1/8-18	25	1.12	.75	1.50	1
VE-72*	STRD-121	Threaded	2,600	1.12	.50	.63	.70	6.75	5.63	3.38	1.00	2.25	1.06	SAE #4	.38	2.00	1 1/8-16	.81	1.38	1.00	2.00	1
VE-73	SURD-121	Upper Flange	2,600	1.12	.50	.63	.70	6.75	5.63	3.38	1.00	2.25	1.06	SAE #4	.38	2.00	1 1/8-16	.25	1.38	1.00	2.00	1
VE-74	SLRD-121	Lower Flange	2,600	1.12	.50	.63	.70	6.75	5.63	3.38	1.00	2.25	1.06	SAE #4	.38	2.00	1 1/8-16	.25	1.38	1.00	2.00	1
Single Acting																						
VE-600-1*	STRS-21	Threaded	475	.65	.32	.12	.08	4.41	3.76	2.09	.98	1.67	1.04	SAE #2	.39	.97	1 1/8-16	25	.94	.61	1.30	1
VE-75	SURS-51	Upper Flange	1,100	.89	.39	.28	.28	5.31	4.42	2.60	.98	1.82	1.08	SAE #4	.39	1.57	1 1/8-18	25	1.12	.75	1.50	1
VE-76	SLRS-51	Lower Flange	1,100	.89	.39	.28	.28	5.31	4.42	2.60	.98	1.82	1.08	SAE #4	.39	1.57	1 1/8-18	25	1.12	.75	1.50	1
VE-610-1*	STRS-121	Threaded	2,400	1.12	.50	.63	.70	6.75	5.63	3.38	1.00	2.25	1.06	SAE #4	.38	2.00	1 1/8-16	25	1.38	1.00	2.00	1

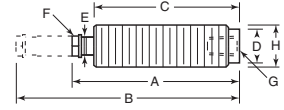
*All threaded bodies have upper flange



Hydraulic Power Workholding Single-Acting Manifold Cylinder



Type A



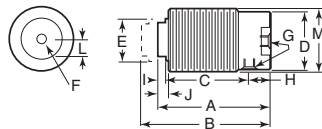
Type B

These threaded miniature cylinders were designed specifically for tooling. All cylinders are single-acting with spring return action for rapid work release. They have threaded bodies for all types of mountings. Cylinders may be inserted directly in a fixture or used with standard brackets. Stainless steel construction. Maximum operating pressure 5,000 psi.

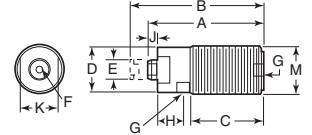
Item No.	Enerpac	Type	Max. Clamp Force	Stroke	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)	A	B	C	D	E	F	G	H	Pack Qty.
VE-412	CST-2131	A	380	.51	.08	.04	1.99	2.50	.97	.69	.19	6-32	7/16-20	1/2-20	1
VE-413*	CST-471	B	980	.28	.20	.05	1.87	2.15	1.71	.65	.27	8-32	7/16-20	3/4-16	1
VE-83	CST-9131	B	1,950	.51	.39	.20	2.50	3.01	2.28	.81	.39	1/4-28	7/16-20	1-12	1
VE-86	CST-9381	B	1,950	1.50	.39	.59	4.11	5.61	3.89	.81	.39	1/4-28	7/16-20	1-12	1
VE-424	CST-18131	B	3,860	.51	.77	.40	2.76	3.27	2.50	1.22	.63	3/16-24	7/16-20	1 1/16-16	1
VE-425	CST-18251	B	3,860	.98	.77	.77	3.52	4.51	3.27	1.22	.63	3/16-24	7/16-20	1 1/16-16	1

*Nitro carburized

Hydraulic Power Workholding Threaded Cylinders



Single Acting



Double Acting

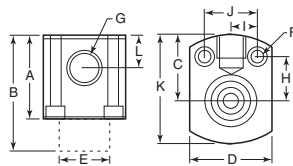
Cylinders can be fixtured into manual strap or bridge clamp assemblies. Fully threaded bodies allow cylinders to be threaded directly into tapped holes of the fixture for easy installation. Available as single-acting spring return or double acting hydraulic return. The VE-90 can use carbide grippers.

Item No.	Enerpac	Cylinder Capacity @ Max. psi (Lbs.)		Hydraulic Stroke	Retr. Hgt.	Bore Dia.	Cylinder Effective Area (Sq. In.)		Oil Capacity (Cu. In.)		A	B	C	D	E	F	G	H	I	J	K	L	M	Pack Qty.
		Push	Pull				Push	Pull	Push	Pull														
Single Acting																								
VE-88	WRT-21	3,900	—	.50	3.25	1.00	.79	—	.39	—	3.25	3.75	2.00	1.23	.75	1/4-28 x .32	3/16-24	.62	.24	.30	1.06	.25	1 1/8-18	1
Double Acting																								
VE-90	WMT-39	3,900	2,700	.50	3.26	1.00	.79	.54	.39	.27	3.26	3.76	.73	1.30	.56	1/4-28 x .39	1/2-27 NPT	.73	—	.27	—	—	1 1/8-18	1

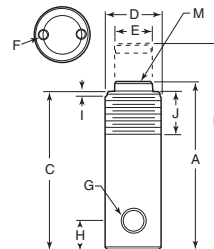
Hydraulic Power Workholding Clamping Cylinders Single-Acting



Type A



Type B



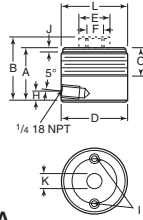
Used for a wide range of production tooling applications, heavy duty force requirements and high cycle applications. Block shaped clamps provide a high amount of force in a tight area. Designed to be surface mounted on the machine tool bed or on a fixture surface. Provide force in horizontal or vertical direction. Cylindrical clamps have collar threads and base holes for mounting. All have spring return operation for easy unloading of workpiece and faster cycling. Spring is designed to return plunger only.

Item No.	Enerpac	Type	Cyl. Cap. @ Max. psi	Hyd. Stroke	Retrac. Height	Bore Dia.	Cyl. Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)	A	B	C	E	F	G	H	I	J	K	L	M	Pack Qty.
VE-372	RW-50	A	9,940	.62	1.62	1.12	.994	.620	1.62	2.25	1.50	1.12	.22	3/8-18	1.00	.56	1.12	2.31	.75	—	1
VE-373	RW-51	B	9,940	1.00	4.12	1.12	.994	.994	4.37	5.37	4.12	1.00	1/4-20	3/8-18	.75	.12	1.12	—	—	3/4-16	1
VE-377	RW-53	B	9,940	3.00	6.25	1.12	.994	3.20	6.50	9.50	6.25	1.00	1/4-20	3/8-18	.75	.12	1.12	—	—	3/4-16	1
VE-378	RW-55	B	9,940	5.00	8.25	1.12	.994	5.20	8.50	13.50	8.25	1.00	1/4-20	3/8-18	.75	.12	1.12	—	—	3/4-16	1
VE-375	RW-102	B	22,300	2.00	4.53	1.69	2,236	4.75	4.78	6.78	4.53	1.38	3/16-18	3/8-18	.75	.19	1.06	—	—	1-8	1

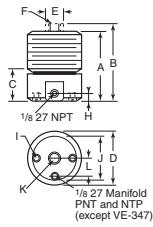
Note: Cylinder capacity shown is rated at 10,000 psi



Hydraulic Power Workholding
Hollow Cylinders



Type A



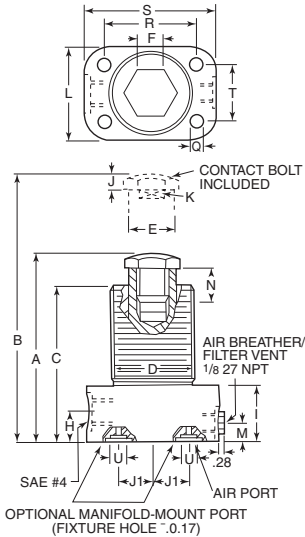
Type B

These hollow cylinders combine compactness with power and versatility. Any application requiring either a pushing or pulling action is easily handled with this type of cylinder. The cylinders are threaded and can be placed over a bolt or a stud to upgrade most existing manual clamping fixtures.

Item No.	Enerpac	Type	A	B	C	D	E	F	H	I	J	K	L	Eff. Area (Sq. In.)	Clamp Pres.	Oil Cap. (Cu. In.)	Pack Qty.
VE-326	RWH-120	A	2.19	2.50	1.19	2.75	1.38	3/4-16	.39	5/16-18	.19	.770	2 3/4-16	2.76	27,600	.86	1
VE-327	RWH-121	A	3.19	4.19	1.19	2.75	1.38	3/4-16	.53	5/16-18	.19	.770	2 3/4-16	2.76	27,600	2.76	1
VE-355	RWH-20	A	2.06	2.38	1.50	1.79	1.00	.53	.28	1/4-20	.12	1/2-20	1 7/8-16	1.32	4,000	.41	1
VE-347	CY1254-25	B	2.00	2.25	.91	1.75	.56	3/8-16	.29	1/4-20	1.75	.390	.86	.87	2,610	.22	1
VE-350	CY2129-25	B	2.00	2.31	.75	2.50	1.13	3/4-10	.86	3/8-16	2.50	.765	.86	2.47	7,410	.77	1
VE-349	CY2129-5	B	2.73	3.36	1.48	2.50	1.13	3/4-10	.31	3/8-16	2.50	.765	1.06	2.47	7,410	1.56	1
VE-351	CY2754-5	B	3.00	3.63	1.55	3.13	1.25	7/8-9	.31	3/8-16	3.13	.890	1.50	4.44	13,320	2.80	1

Note: Clamping pressure at 10,000 psi, except for VE-355 which is 3,000 psi

Hydraulic Power Workholding
Work Supports



Work supports provide additional support to avoid excessive movement or deflection of the workpiece during machining. When hydraulic pressure is applied to the work support, a piston pushes against an internal adjustable spring that advances the work support plunger against a workpiece at the force set by the adjustable spring. As more hydraulic pressure is applied, an internal sleeve will grip and lock the plunger in that position. Available as a spring or fluid advance unit. The spring advanced unit can be converted to air by simply removing the internal adjustment spring and attaching a low pressure air line to the air breather vent tube. Operating pressure is 700 psi minimum, 5,000 psi maximum.

Item No.	Enerpac	Cap. @ Max. psi	Hyd. Stroke	Support Plunger Spring Force Lbs.		Oil Cap. (Cu. In.)	A	B	C	D	E	F	H	I	J	J1	K	L	M	N	Q	R	S	T	U	Pack Qty.	
				Extended	Retracted																						
Fluid Advanced																											
VE-19	WFL-111	2,500	.38	3.4	5.2	.06	3.53	3.91	3.10	1 1/8-18	.63	.49	.56	1.08	.18	.57	M10 x 1.5	1.50	.70	.73	.28	1.62	2.38	.94	.17	1	
Spring Advanced																											
VE-21	WSL-111	2,500	.38	3.4	5.2	.02	2.97	3.35	2.54	1 1/8-18	.63	.49	.44	.94	.18	.57	M10 x 1.5	1.50	.30	.73	.28	1.62	2.38	.94	.17	1	

Hydraulic Power Workholding
Turbo Air / Hydraulic Pumps



A turbo air pump is recommended where input air pressure is limited. Engineered to recycle exhaust air to help power the pump. Maintains a tight pressure range for reliable clamping performance. Pump will automatically restart in the event of a pressure drop in the hydraulic system. Mounting plate allows for horizontal or vertical machine-side mounting. Buna-N polyurethane and PTFE seals.

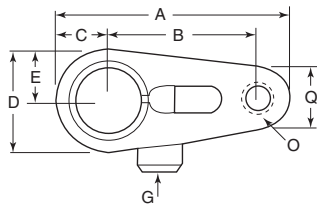
Item No.	Enerpac	Hydraulic Pressure Range psi		Hydraulic Air Ratio	Hydraulic Output Ports	Air Consump. SCFM	Air Pressure Range psi	Usable Oil Capacity (Cu. In.)		Pack Qty.
		Min.	Max.					Vertical	Horizontal	
VE-391	PACG5002SB	2,500	5,000	72:1	SAE #4	15	40-120	70	127	1
VE-392	PACG-3002SB	1,400	5,000	50:1	SAE #4	15	40-120	70	127	1



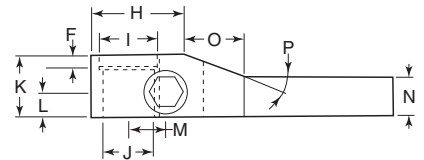
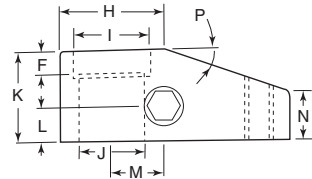
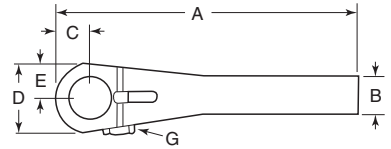
Hydraulic Power Workholding Accessories
Clamping Arms



Short Arm



Long Arm

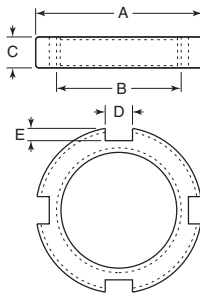


Clamp arms can be positioned and tightened without removing the swing cylinder from the fixture. Clamp arm design eliminates the use of a vise when securing to a plunger. Short arms have a tapped hole for buttons and toggle pads. Long arms can be shortened to desired length.

These clamp arms are designed for use with the swing cylinders shown on page 353.

Item No.	Enerpac	For Use With Cylinder Cap.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P (degrees)	Q	Pack Qty.
Short Arm																				
VE-600-2	CAS-21	500	1.60	.97	.38	.76	.38	.13	.25-28	.68	.466	.394	.63	.28	.37	.40	.25-20	14	.50	1
VE-605-2	CAS-51	1,250	2.39	1.57	.50	1.00	.50	.17	.312-24	1.02	.728	.630	.75	.31	.51	.45	.312-18	12	.63	1
VE-610-2	CAS-121	2,600	3.13	2.00	.70	1.39	.69	.28	.375-24	1.40	1.000	.875	1.19	.44	.66	.63	.375-16	18	.82	1
Long Arm																				
VE-14	CAL-22	500	3.63	.44	.38	.76	.38	.13	M6 x 1	.68	.466	.394	.63	.28	.37	.40	.92	14	—	1
VE-15	CAL-52	1,250	5.81	.55	.50	1.00	.50	.17	M8 x 1	1.02	.728	.630	.75	.31	.51	.45	1.37	12	—	1
VE-16	CAL-122	2,600	7.06	.72	.70	1.39	.69	.28	M10 x 1.5	1.40	1.000	.875	1.19	.44	.66	.63	1.73	18	—	1
VE-17	CAL-202	3,900	7.95	1.00	.95	1.90	.95	.20	M12 x 1.25	2.59	1.400	1.259	1.18	.47	.94	.82	1.11	18	—	1

Hydraulic Power Workholding Accessories **ENERPAC**
Jam Nuts



Item No.	Enerpac	A	B	C	D	E	Pack Qty.
VE-387	FN-331	1.88	1 1/16-16	.25	.25	.12	1
VE-307	FN-481	2.50	1 1/8-16	.50	.38	.19	1

Hydraulic Power Workholding Accessories **ENERPAC**
Hydraulic Oil



Item No.	Enerpac	Description	Pack Qty.
VE-255	HF-101	Hydraulic Oil (gallon)	1

Hydraulic Power Workholding Accessories **ENERPAC**
Sequence Valves For Time Interval Control



Type A



Type B

These valves can be plumbed to provide a sequence of clamping functions from just one hydraulic power source. Sequenced locating, clamping, and/or supporting functions can be controlled in a logical order by plumbing one sequence valve to each clamping group requiring a different time interval. The valve can be preset to different pressure values, allowing fluid flow in sequence as the hydraulic pressure increases in the entire system to whatever the power source provides, after all valves are open. These valves are basically timers, not pressure controllers. The VE-211 features a lock nut which secures the hydraulic pressure setting for the secondary circuit and a tamper proof cover can be placed over the set screw. Maximum operating pressure is 5,000 psi.

Item No.	Enerpac	Type	Pressure Setting Range (psi)	Pack Qty.
VE-210	V-2000	A	200 to 2,000	1
VE-211	WVP-5	B	500 to 5,000	1



Quick Adjusting Push Button Stop Nuts



Steel, Standard Housing



Aluminum, Tapered Housing

Allows quick and accurate adjustments of stop settings. Used with existing stop screws and fits all imported or domestic milling machines. To operate, simply depress the button and slide the nut to the desired position. Releasing the nut locks it into position and then turning the nut gives you .001" micrometer adjustments. Saves hours of time and is easy to use. Available in steel or aluminum construction. Steel (pictured) has standard housing and aluminum has tapered housing.

Item No.	Thread	OD	OAH	Pack Qty.	Item No.	Thread	OD	OAH	Pack Qty.
Steel					Aluminum				
QAN-1	½-20	1½	1	1	QAN-4	½-20	1½	1	1
QAN-3	½-13	1½	1	1	QAN-5	½-13	1½	1	1

Jack Screws

Handy for leveling work on planer beds, upright drills, machinery set up and general shop use. They are ¼" diameter at base and have a range from 2¼" to 3⅝" and can raise over 1,000 pounds. The set contains the jack, two extension bases (allows up to 6⅝" height), auxiliary pointed screw, and two extension bases for irregular surfaces.

Item No.	Starrett	Description	Pack Qty.
STR-S190	S190	Complete Set	1
STR-190A	190A	Jack Only	1
STR-190D	190D	Auxiliary Pointed Screw Only	1



Vise Work Stop



Quick and easy to use. Attaches to any vise jaw (½" through 1" wide) with one screw adjustment. Made from hardened steel, black oxide finish. Stop is 1" wide x 1⅞" long.

Item No.	Description	Pack Qty.
EVS-5	Easy Vise Work Stop	1

Quill Stop Clip-On



Each stop is assembled, faced off, and then drilled and tapped. Made in U.S. Quick action clipping for fast installation and removal. Easily positioned with positive locking action. Sturdy aluminum knobs.

Item No.	Description	Pack Qty.
CQS-5	½-20 Threads For Mills	1

Precision Adjustable Mill Stop

Designed for use on milling machines, jig borers, and horizontal and vertical milling set ups. Used with angle plates, vises, jigs, etc. to serve as a rigid stop. ½" hole for T-slot mounting, ⅜" diameter rod, 2" x 4½" base with 7" overall height. Steel with black oxide finish.

Item No.	Description	Pack Qty.
AMS-5	Adjustable Mill Stop	1





VISES

Buy One or
Buy Bulk & SAVE

Tradesman Industrial Vise

For general purpose service or maintenance shops not requiring the strength of a combination vise. 60,000 psi ductile iron body parts hardened steel top and pipe jaws. Base swivels. Enclosed construction keeps lubricants in and contaminants out.



Item No.	Jaw Width	Max. Opening	Pipe Capacity	Throat Depth	Shipping Weight	Pack Qty.
WLT-150	4½	4	¼-2½	3¼	33	1
WLT-155	5½	5	¼-3	3¾	49	1
WLT-160	6½	6½	¼-3½	4	70	1
WLT-165	8	7	¼-3½	4¾	105	1

Utility Workshop Industrial Vise

A versatile all-around vise. Features a formed steel channel beam and a hefty 30,000 psi body casting. Replaceable, serrated steel top jaws and built in pipe jaws. 180 degrees locking swivel base.



Item No.	Jaw Width	Max. Opening	Throat Depth	Pipe Capacity	Shipping Weight	Pack Qty.
WLT-180	4½	4	3½	¼-2½	17½	1
WLT-185	5½	5	4	¼-3⅞	30	1
WLT-190	6½	5½	5	¼-3⅞	40	1
WLT-195	6	6	6	¼-3⅞	66	1
WLT-200	8	7½	8	¼-4½	80	1

Machinists' Industrial Vise

Built for performance and endurance. Stress parts are 60,000 psi ductile iron. Hardened steel jaw. Replaceable inserts are serrated for safe, sure grip. Straight line design - horizontal spindle and nut eliminate thread wear. Swivel base allows for 360 degrees rotation and has double lockdowns for non-slip holding and four mounting points.



Item No.	Jaw Width	Max. Opening	Throat Depth	Description	Shipping Weight	Pack Qty.
WLT-25	4	6½	3½	Swivel Base	62	1

High Visibility Industrial Safety Vise

Coated in high visibility yellow which conforms to OSHA safety color standard. Heavy duty casting, 30,000 psi. Replaceable hardened steel jaw inserts and replaceable pipe jaws to provide sure grip for a variety of work holding applications. 360 degree swivel base.



Item No.	Jaw Width	Max. Opening	Pipe Capacity	Shipping Weight	Pack Qty.
WLT-110	5	5¼	¼-2½	50	1
WLT-115	6	5¾	¼-3½	64	1

Mechanics' Industrial Vise

This vise has a swivel base that rotates 365 degrees with double lockdowns ensuring maximum stability. The powder coat paint resists scratches and provides a tough, durable finish. It also features replaceable hardened steel top and pipe jaws and a large anvil work surface.

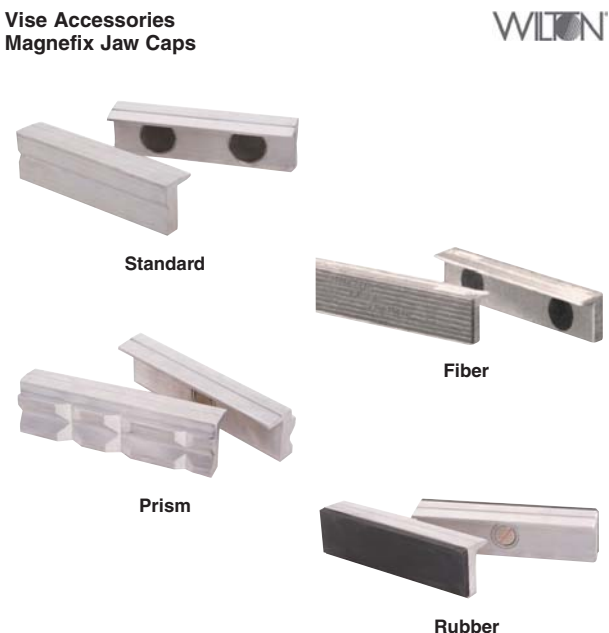


Item No.	Jaw Width	Jaw Opening	Throat Depth	Pipe Capacity	Pack Qty.
WLT-746	6	5¾	4¾	¼-3½	1

Vise Accessories
Copper Jaw Caps

Designed to fit any size vise to avoid marring the surface of softer metals and to protect jaw faces. They have polished faces and pliable copper extensions to fit on any make of vise. Sold in pairs.

Item No.	Jaw Width	Pack Qty.
WLT-385	3½	1
WLT-390	4	1
WLT-395	4½	1
WLT-400	5	1
WLT-405	6	1

Vise Accessories
Magnefix Jaw Caps

Designed to protect both the vise jaws and the work piece from marring and distortion. Constructed from hardened aluminum alloy with two built-in circular magnets on the back side which hold the caps securely on the vise. They are right-angled and surface-parallel to fit any vise type including machine and bench type. Sold in pairs.

Standard Item No.	Fiber Item No.	Prism Item No.	Rubber Item No.	Jaw Width	Pack Qty.
WLT-435	WLT-465	WLT-495	WLT-525	4	1
WLT-440	—	WLT-500	—	4½	1
WLT-445	—	WLT-505	WLT-535	5	1
WLT-450	—	WLT-510	WLT-540	6	1

Vise Accessories
Soft Jaws Magnetic Jaw Caps

Soft polyurethane protects work from damage. Impervious to solvents and chemicals. Strong magnets hold caps in place. Grooved for round or tube applications. Sold in pairs.

Item No.	Style	Width	Color	Pack Qty.
WLT-60	Grooved	5⅞	Yellow	1



Grip-Master Screwless Vises



V-Block Attachment Holds Round Stock

The Grip-Master screwless vise offers many advantages. Instantaneous, effortless setting by simply pushing on the knob controlling the movable jaw. Guaranteed positive locking by light press on locking lever. Built-in, recessed parallels level work. Large loading and unloading capacity. Hardened and ground bars and locking mechanism insure long life. Straight through drilling permitted by extra-wide clearance in base. Hardened and ground V-block attachment available for holding round or oval work securely.

Vises					V-Blocks
Item No.	Jaw Width	Max. Open	Jaw Depth	Parallel Depth	Item No.
GM-1	3	3	1 1/4	5/8	VB-1
GM-2	4	4 11/16	1 1/4	5/8	VB-2
GM-3	6	6 5/16	1 3/16	5/8	VB-3
GM-4	8	8 5/8	2	5/8	VB-4

Grip-Master Fixture Locks



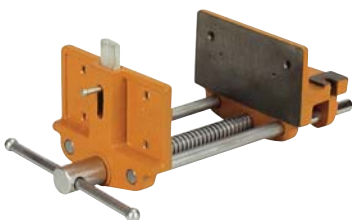
Adaptable to a wide range of applications and simplifies jig and fixture designing and eliminates special locking details. A simple push or pull on the bar knob sets the bar instantaneously at any position between fully open or fully closed. A light press on the locking lever gives an extra forceful forward motion to the bar, exerting a holding pressure, adjustable from 400 to 1,100 pounds. Actually compensates for variations in size of work. Its long stroke assures wide work clearance and permits quick removal of chips and burrs. No screw threads to wear or strip. Hardened and ground bar and locking mechanism. Bar left soft for 1" on work end for easy machining when adapting it to fixture.

Drill Press Vises

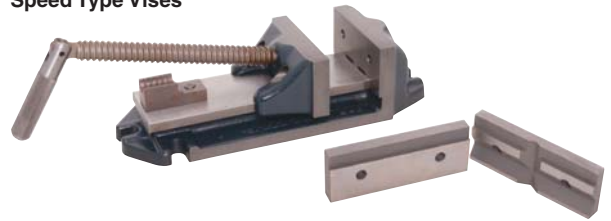


Item No.	Jaw Width	Jaw Opening	Jaw Depth	Weight Lbs.	Pack Qty.
DPV-20	6	10	2	21	1
DPV-30	8	10	2 1/2	36	1

Woodworker's Vise

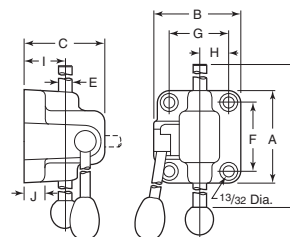


Speed Type Vises



Designed for speed. Screw and nut hardened for long life. Heavy semi-steel castings, for strength. Heavy steel base plate, for rigidity. Standardized holes in jaws, for attaching interchangeable jaw plates and fixtures. The screw is held positively in the nut when the vise is clamped. It cannot slip; yet it is released instantly with a half-turn. Lift the screw and the jaw is free to slide to its full opening. Slide the jaw to the closed position, drop the screw into the nut and lock with a half turn. Combination of jaw plates are grooved for holding round parts, notched for holding parts above base of vise, smooth on back side. They are accurately machined, hardened and ground. Socket cap screws supplied for attaching them to vise. Vises are supplied without jaw plates.

Vises Without Jaw Plates						Jaw Plates
Item No.	Jaw Width	Jaw Depth	Jaw Opening	Weight Lbs.	Pack Qty.	Item No.
CV-4	4	1 1/2	4	12 1/2	1	JP-4
CV-6	6	2	6	31	1	JP-6
CV-7	6	2	8	40	1	—



Item No.	A	B	C	D	E	F	G	H	I	J	Pack Qty.
GMF-1	3 3/16	3 3/16	2 7/8	9	.493	2 1/2	2 3/16	1 3/32	1 1/2	3/4	1
GMF-1-10	3 3/16	3 3/16	2 7/8	10	.493	2 1/2	2 3/16	1 3/32	1 1/2	3/4	1
GMF-1-12	3 3/16	3 3/16	2 7/8	12	.493	2 1/2	2 3/16	1 3/32	1 1/2	3/4	1
GMF-1-14	3 3/16	3 3/16	2 7/8	14	.493	2 1/2	2 3/16	1 3/32	1 1/2	3/4	1
GMF-1-16	3 3/16	3 3/16	2 7/8	16	.493	2 1/2	2 3/16	1 3/32	1 1/2	3/4	1
GMF-1-18	3 3/16	3 3/16	2 7/8	18	.493	2 1/2	2 3/16	1 3/32	1 1/2	3/4	1
GMF-1-24	3 3/16	3 3/16	2 7/8	24	.493	2 1/2	2 3/16	1 3/32	1 1/2	3/4	1
GMF-2	4 3/16	3 1/16	3 1/16	10	.742	3 1/2	2 7/8	1 1/16	2 1/8	1 1/4	1
GMF-2-12	4 3/16	3 1/16	3 1/16	12	.742	3 1/2	2 7/8	1 1/16	2 1/8	1 1/4	1
GMF-2-14	4 3/16	3 1/16	3 1/16	14	.742	3 1/2	2 7/8	1 1/16	2 1/8	1 1/4	1
GMF-2-16	4 3/16	3 1/16	3 1/16	16	.742	3 1/2	2 7/8	1 1/16	2 1/8	1 1/4	1
GMF-2-20	4 3/16	3 1/16	3 1/16	20	.742	3 1/2	2 7/8	1 1/16	2 1/8	1 1/4	1
GMF-2-24	4 3/16	3 1/16	3 1/16	24	.742	3 1/2	2 7/8	1 1/16	2 1/8	1 1/4	1



These handy drill press vises can be used from three sides. Work can be leveled quickly because jaws have built-in parallels. Widely spaced jaw guide bars, permit drilling clear through work. Jaw sides are precision ground at right angle to parallels to permit accurate drilling from the sides without resetting the work. Horizontal V-groove, holds round stock firmly for side and end drilling.

Features:

- Castings - gray iron with orange baked-enamel finish
- Jaws - drilled and tapped or countersunk holes for attachment of wood facings
- Dog - solid steel

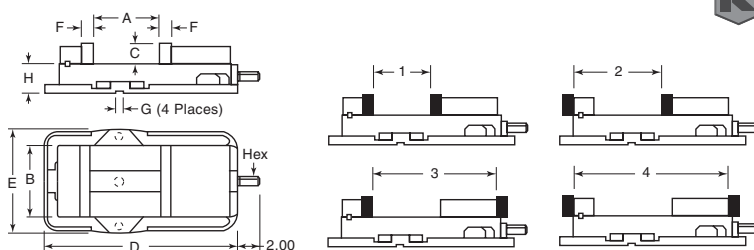
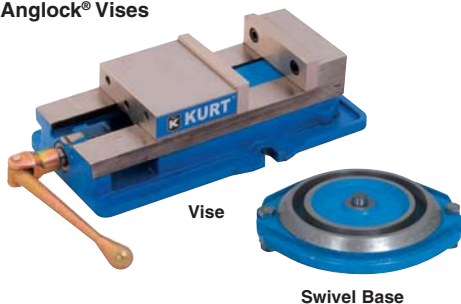


This light and medium-duty vise features double guide-bars, continuous screw action and solid steel dog.

Item No.	Jaw Width	Maximum Opening	Pack Qty.
AC-27090	7	9	1



Anglock® Vises



The Kurt Anglock D-series vises are designed for precision part clamping on basic machine tools such as knee-type mills, grinders, and machining centers. Vises are ideal for extremely high accuracy tool and mold applications and for use in running production parts where datums, flatness and parallelism is important. Anglock design assures the movable jaw does not lift. Semi-hard steel screw, 80,000 psi ductile iron construction. Both are machined, which allows you to indicate alignment during set up. Swivel base (sold separately) allows positioning increments of 1 degrees.

Item No.	Max. Capacities				Hex Size	Jaw Opening Max. A	B	D	E	F	G	+/-001 H	Wt. Lbs.	Pack Qty.
	1	2	3	4										
KV-D688	8.80	11.50	14.32	17.03	.750	8.80	6	16.81	8.75	.725	.688	4.61	78	1
KV-D810	10.00	13.50	17.25	20.75	.875	10.00	8	21.81	11.50	1.075	.813	3.31	158	1
KV-D60-4-SA														1

Note: KV-D810 shipped via truck.

Vise Accessories

Speed Handles



Aluminum center hub with all steel handles and knobs. Black oxide finish.

Item No.	Description	Pack Qty.
VSH-5	Fits 4" Vise (5/16" Hex)	1
VSH-15	Fits 6" Vise (3/4" Hex)	1
VSH-20	Fits 8" Vise (7/8" Hex)	1

Vise Accessories

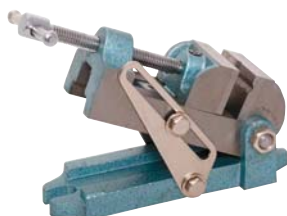
Work Stops



Item No.	Fits Vise Width	Pack Qty.
KV-D30-45	3 - 4" Wide	1
KV-360PWS	5 - 6" Wide	1



Angled Drill Press Vises



Mounted on an angle base allowing the vise to be adjusted quickly to any angle from 0 degrees to 90 degrees vertical. Precision locking bolts, linked by side plates of high quality steel, lock the vise securely. It is calibrated for vertical angle readings.

Item No.	Jaw Width	Max. Opening	Jaw Depth	Overall Height	Shipping Wgt. Lbs.	Pack Qty.
WLT-250	2 1/2	2 1/2	1 1/2	3 3/4	12	1
WLT-255	3	3 1/2	1 3/4	4 1/4	17	1

Vise Accessories

Parallel Keeper



Item No.	Max. Opening Capacity	Pack Qty.
KV-KPS6000	6"	1

Vise Accessories

Keys - Stepped



Vise keys are used to align your vise to your milling machine table. All keys are hardened. Step keys are used when keyway in the vise is different than that of the machine T-slot. Sold in pairs.

Item No.	Key Size	Vise Size	Pack Qty.
KV-D30-33A	1/2 x 3/8	3" and 4"	1
KV-D50-33A	1 1/16 x 3/8	5" and 6"	1
KV-D50-33B	1 1/16 x 1 1/16	5" and 6"	1

Clamp-On Vise

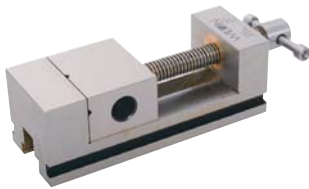


This portable clamp-on vise allows for use in many different applications. Features a fully enclosed spindle, double lock downs, grooved replaceable jaws and a swivel base.

Item No.	Jaw Width	Jaw Depth	Max. Opening	Shipping Wgt. Lbs.	Pack Qty.
WLT-1130	2 1/2	2	2 1/2	13	1



Toolmaker's Precision Vice



Features:

- Made from specially selected alloy steel
- Precision ground square and parallel to .0002 in.
- Heat treated for hardness
- Completely stress relieved

Item No.	Jaw Width	Jaw Opening	Jaw Depth	Wgt. Lbs.	Pack Qty.
WLT-1210	2 $\frac{3}{4}$	3	1 $\frac{1}{16}$	11	1

Toolmaker's Screwless Precision Vises



Features:

- All steel body uses rapid positioning notches to obtain positive downward clamping force
- Horizontal and vertical vees in sliding jaws hold workpieces securely and accurately
- Squareness and parallelism to within .0003 in.

Item No.	Jaw Width	Jaw Opening	Jaw Depth	Wgt. Lbs.	Pack Qty.
WLT-1215	2	3 $\frac{1}{8}$	1	8	1
WLT-1220	3	3 $\frac{3}{4}$	1 $\frac{1}{2}$	11	1

Self Centering Precision Vice



Features:

- Used on milling and drilling machines where quick centering is required
- Automatically adjusts workpiece to its center
- Made of close-grained cast iron
- Swivel base provides positive locking mechanism that adjusts through 360 degrees
- Opposite threads for quick, accurate centering

Item No.	Jaw Width	Jaw Opening	Jaw Depth	Wgt. Lbs.	Pack Qty.
WLT-1235	4	4	1 $\frac{1}{2}$	32	1

These work positioners put the workpiece where you want it and hold it tight for hands free production. Repositions workpieces easily and accurately, eliminating time consuming clamping and unclamping.

**Pow-R-Arm Ergonomic Work Positioner
Midget 345**



Fast on-off action with horizontal handle. All parts are steel. For intricate small work. 6 lbs. capacity.

Item No.	Base Dia.	Overall Hgt.	Mounting Stud	Pack Qty.
WLT-300	2 $\frac{1}{2}$	4 $\frac{1}{4}$	$\frac{5}{16}$ -24	1

**Pow-R-Arm Ergonomic Work Positioner
Veep 344**



The horizontal handle is easily accessible. Steel body. $\frac{1}{2}$ " receptacle with set screw for vise, printed circuit board holder or special fixture. 20 lbs. capacity.

Item No.	Base Dia.	Overall Hgt.	Pack Qty.
WLT-305	3 $\frac{3}{4}$	4 $\frac{1}{4}$	1

**Pow-R-Arm Ergonomic Work Positioner
Mechanical 301**



Extra strong, heavy duty positioner with exceptionally fast on-off action. Body is machined steel, all steel parts. Mounting holes are $\frac{5}{16}$ -18 on center. Designed for high production assembly lines. 70 lbs. capacity.

Item No.	Base Dia.	Overall Hgt.	Pack Qty.
WLT-315	6	8	1

**Pow-R-Arm Ergonomic Work Positioner
Junior 343**



Fast on-off action with horizontal moving lock handles. Body is cast aluminum with steel parts. Mounting holes are $\frac{1}{4}$ -20 on 2 $\frac{1}{4}$ " centers. T-bracket. 30 lbs. capacity.

Item No.	Base Dia.	Overall Hgt.	Pack Qty.
WLT-310	4 $\frac{1}{4}$	5 $\frac{1}{4}$	1

Universal Work Positioner



This all purpose, all position workholding fixture allows you to move your workpiece to any position, eliminating the need for elaborate setups with clamps, vises, angle plates, etc. It is machined from 6061-T6 aluminum (no castings) and has been hardcoated, adding wear resistance to the work surface and threaded mounting holes. Allows spherical movement of 180 degrees and a table rotation of a full 360 degrees. Only one torque setting is required per setup. Excellent for soldering, welding, brazing, assembly, model making, electronic device mounting, etc.

Item No.	Table Size	Mounting Hole	Base Size	Work Load Lbs.	Height	Pack Qty.
WP-4	4 x 4 x $\frac{3}{8}$	48 (1/4-20)	1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x $\frac{1}{4}$	10	3 $\frac{3}{8}$	1



Clippix Plastic Spring Clamps



Features:

- Made from durable, lightweight polyamide
- Ergonomic 2-component handle designed for comfort and a firm grip

Item No.	Throat Depth	Clamping Capacity	Pack Qty.
BLC-300	3/4	3/4	1
BLC-301	1 1/8	1	1
BLC-302	1 1/2	1 3/4	1
BLC-303	1 5/8	2	1
BLC-304	1 7/8	2	1
BLC-305	2 3/4	3	1

Pressure Adjusting Spring Clamps



Allows pressure adjustment from 1 to 50 pounds of clamping force. The jaws and handles are made of glass filled nylon. Springs are heavy duty tempered steel. Soft, pivoting, plastic jaw pads to hold irregular shaped objects.

Item No.	Jaw Opening	Jaw Length	Jaw Reach	Pack Qty.
AC-3251	1	4 1/2	1 1/4	1
AC-3252	2	6 1/2	2 1/8	1

Spring Clamp



No Coating



Coated Handles



Coated Tips and Handles

Spring clamps are extra hands. Use on wood, metal, fabrics, plastic or anywhere spring pressure is adequate and fast application/removal is important. Jaws on the 2" and larger jaw opening sizes are shaped for holding round stock. Poly-vinyl coated tips prevent marring and coated handles provide cushioned grip. Made of cold-finished steel, plated.

Item No.	Description	Jaw Opening	Jaw Length	Jaw Reach	Pack Qty.
PSC-5	No Coating	1	4	1 1/4	1
PSC-10	Coated Handles	1	4	1 1/4	1
PSC-20	Coated Tips and Handles	1	4	1 1/4	1
PSC-25	No Coating	2	6	2	1
PSC-30	Coated Handles	2	6	2	1
PSC-40	Coated Tips and Handles	2	6	2	1
PSC-45	No Coating	3	9	3	1

Band Clamp

Used for clamping large round, rectangular and irregular shapes. 2" wide canvas band. Positive hold is afforded by the dual self-locking cast iron cams which allow the band to be pulled tight from either or both sides. Malleable iron coating with orange-baked enamel finish. Crank handle.

Item No.	Length of Band Ft.	Pack Qty.
AC-6210	10	1
AC-6215	15	1



Quick-Action BandClamps™

Ideal for temporary hose and tube connections, maintenance and repeated use such as testing, filter bags, dust gaiters, molds, etc. Made from 304 stainless steel. Slotted screw adjustment and draw latch for quick clamping. Band is .63" wide.



Item No.	Dia. Range	Ultimate Strength Lbs.	Pack Qty.
PX-115	2.76 - 4.53	300	1
PX-135	3.54 - 5.31	300	1
PX-175	5.12 - 6.89	300	1
PX-215	6.69 - 8.46	300	1
PX-255	8.27 - 10.04	300	1
PX-295	9.84 - 11.61	300	1
PX-335	11.42 - 13.19	300	1
PX-375	12.99 - 14.76	300	1
PX-415	14.57 - 16.34	990	1
PX-615	22.44 - 24.21	990	1

Bar Clamp
Pipe Clamp Fixture

One set of fixtures may be used to make any number of bar clamps simply by mounting on different lengths of 3/4" black pipe. Made of malleable iron with baked enamel finish. Pipe is not included.

Item No.	Description	Pack Qty.
PCF-50	3/4" Pipe Clamp Fixture	1

Bar Clamps
DuoKlamps
One-Handed Clamping and Spreading

Features:

- Change from clamping to spreading by simply twisting the dial - no disassembly
- Handle with pump lever parallel to the rail
- Convenient one-handed operation
- All around clamping - in front of, behind and at the side of the rail

Item No.	Throat Depth	Clamping Capacity	Clamping Force	Pack Qty.
BLC-100	2 1/2	6	180	1
BLC-101	2 1/2	12	180	1
BLC-102	3 1/4	6	260	1
BLC-103	3 1/4	12	260	1
BLC-104	3 1/4	18	260	1
BLC-105	3 1/4	24	260	1



**C-Clamps
Regular Duty**



Features:

- Drop forged steel frame
- Tough durable finish
- Extra deep throat

Item No.	Opening Capacity	Throat Depth	Spindle Dia.	Pack Qty.
WLT-402	0-2½	2¼	⅝	1
WLT-403	0-3	2½	⅝	1
WLT-404	0-4	3¼	¾	1
WLT-406	0-6⅞	4⅞	¾	1
WLT-408	0-8¼	5	¾	1
WLT-410	2-10⅞	6	¾	1
WLT-412	2-12¼	6⅞	⅞	1



**C-Clamps
Regular Duty - High Visibility**

Features:

- Drop forged steel frame
- High visibility yellow - meets OSHA standards
- Tough durable finish
- V-grooved anvil prevents slippage

Item No.	Opening Capacity	Throat Depth	Spindle Dia.	Min. Proof Test Lbs.	Pack Qty.
WLT-655	0-3	2½	⅝	3,500	1
WLT-660	0-4½	3¼	¾	6,200	1
WLT-665	0-6⅞	4⅞	¾	6,900	1
WLT-670	0-8¼	5	¾	6,600	1



**C-Clamp
Heavy Duty**

Features:

- For heavy industrial applications
- Forged from superior quality steel
- Spindle turned from single piece of square bar stock
- Grey lacquer finish



Item No.	Opening Capacity	Throat Depth	Spindle Dia.	Min. Proof Test Lbs.	Pack Qty.
WLT-710	0-4	2⅞	¾	10,000	1



**C-Clamps
Regular Duty - Slip-Not**

Features:

- Drop forged steel frame
- Grooved anvil- to grip and hold tight
- Serrated pad for sure bite and secure clamping
- Plated to resist weld spatter



Item No.	Opening Capacity	Throat Depth	Spindle Dia.	Min. Proof Test Lbs.	Pack Qty.
WLT-755	0-3	2½	⅝	3,500	1
WLT-760	0-4½	3¼	¾	6,200	1
WLT-765	0-6⅞	4⅞	¾	6,900	1



C-Clamp Pads

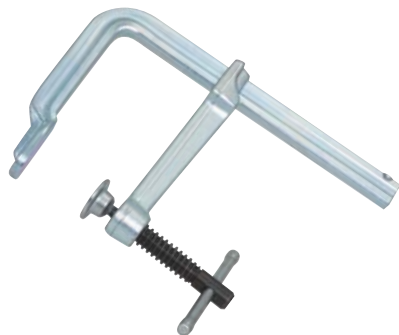
Update your Wilton clamps (and other American manufactured C-clamps) with these adapter swivels. Includes pad and C-clip. Installs with a screwdriver.

Item No.	For Spindle	Pack Qty.
WLT-1105	⅝ and ⅝	1
WLT-1110	¾ and ⅞	1





**Bessey® F-Style
All Steel Bar Clamps**



Easy to use. Slide moveable arm into position and tighten screw spindle. Provides instant clamping at any opening. Saves time over ordinary C-clamps. Deep throat allows for greater reach.

Item No.	Jaw Opening	Throat Depth	Spindle Dia.	Clamp Pressure	Pack Qty.
Regular Duty					
BLC-15	0-4	4 3/4	.563	1,330	1
Heavy Duty					
BLC-25	0-8	5 1/2	.775	2,600	1
BLC-50	0-12	5 1/2	.775	2,600	1
BLC-60	0-20	5 1/2	.775	2,600	1
Extra Heavy Duty					
BLC-70	0-12	7	.850	4,880	1
BLC-80	0-18	7	.850	4,880	1
BLC-90	0-36	7	.850	4,880	1

C-Clamps



This line of Pony® "C" clamps is an imported product manufactured in Pony's exclusive factory under strict guidelines that provides quality at an affordable price. Smoothly cut acme threads are protected with a bright plated finish. Ductile cast iron frames are powder-coated bright Pony® orange for high visibility and lasting protection.

Item No.	Opening Capacity	Throat Depth	Pack Qty.
AC-2610	0-1	1	1
AC-2615	0-1 1/2	1 1/2	1
AC-2620	0-2	1	1
AC-2622	0-2 1/2	1 3/4	1
AC-2630	0-3	2	1
AC-2640	0-4	3	1

C-Clamp



Features:

- Heat treated ductile iron frame
- Square thread screws
- Steel internal tooth washers on swivel for holding

Item No.	Opening Capacity	Throat Depth	Screw Dia.	Normal Load Limit Lbs.	Pack Qty.
AC-103	0-3	1 1/8	3/8	1,800	1
AC-104	0-4	2 1/8	3/8	2,400	1
AC-105	0-5	2 1/2	3/8	2,400	1
AC-106	0-6	2 3/4	3/8	2,400	1
AC-108	0-8	3 1/4	3/8	2,400	1

**C-Clamp
Deep Throat Pattern**



Item No.	Capacity		Throat Depth from Center of Screw	Pack Qty.
	Max.	Min.		
ABT-78-404	4	0	3 1/4	1
ABT-78-406	6	0	4 1/2	1
ABT-78-408	8	0	5	1
ABT-78-410	10	3	6	1

**Pony® C-Clamps
Malleable Frames**



Knurled



Sliding Pin

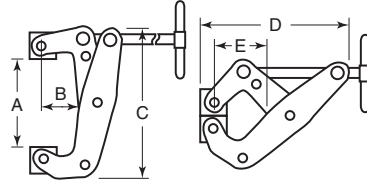


Thumb Screw

Item No.	Opening Size	Throat Depth	Screw Dia.	Type of Handle	Pack Qty.
PC-1	3/8	7/8	#12	Knurled	1
PC-2	1	1 1/8	1/4	Sliding Pin	1
PC-4	1 1/4	1 3/8	5/16	Thumbscrew	1
PC-5	1 1/2	1 1/2	5/16	Sliding Pin	1
PC-6	1 1/2	3 1/2	5/16	Sliding Pin	1
PC-7	2	1	5/16	Sliding Pin	1
PC-8	2 1/2	1 3/8	3/8	Sliding Pin	1
PC-9	2 1/2	2 1/2	3/8	Sliding Pin	1
PC-10	2 1/2	4 1/4	3/8	Sliding Pin	1
PC-12	3	1 3/8	3/8	Sliding Pin	1



The Kant-Twist® multi-purpose clamps combine the best features of ordinary C-clamps and parallel clamps. Lightweight, yet 40% stronger than C-clamps. Designed to eliminate distorting or twisting action and the floating jaws always stay parallel. Built-in V-blocks for round stock. Copper plated jaws and screws are ideal for welding clamps.



Clamps
Round Handle - Copper Plated Jaws



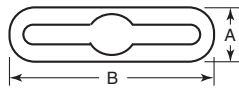
Item No.	Max. A	Max. B	C	D	E	Rated Load	Pack Qty.
KT-396	3/4	9/8	1 1/8	1 1/2	3/8	200	1
KT-401-1	1 1/16	1/2	1 3/4	2 1/8	1/2	350	1
KT-405-1	2	1 1/8	3 1/4	3 1/2	1 1/4	800	1

Clamps
T-Handle - Polyurethane Jaws



Item No.	Max. A	Max. B	C	D	E	Rated Load	Pack Qty.
KT-410-8	3	1 1/4	5	5 1/4	1 3/4	1,500	1
KT-415-8	4 1/2	2 1/4	6 3/4	7	2 1/2	1,700	1

Clamp Accessories
Handle Grips



For use with T-handle clamps. Made of high quality ABS plastic. Taps easily on and off.

Item No.	A	B	For Use With Models	Pack Qty.
KT-1	1/2	1 1/2	401	1
KT-2	1 1/16	2 1/2	405, 407	1
KT-3	3/8	4	410, 415, 510, 515	1
KT-6	1 1/8	5	420, 421	1

Quick Acting Hold Down Clamps



For holding where thickness and surface are not exact from part to part. Offers quick-set and release with adjustable pressure after clamping. High tensile strength. Can be bolted or welded down or T-Slot can be used for milling tables. KT-411 and KT-423 do not come with a base plate. KT-411-2 and KT-423-1 come with a T-Slot base and bolt.

Item No.	A	B	C	D	E	Rated Load Lbs.	Pack Qty.
KT-411	1 9/10	1 1/2	2 1 1/16	2 1/4	4	1,500	1
KT-411-2	T-Slot	—	2 1 1/16	2 1/4	4 3/8	1,500	1
KT-423	2 9/10	2 3/8	3 3/4	3 3/4	6 3/8	3,200	1
KT-423-1	T-Slot	—	3 3/4	4	7 1/4	3,200	1

Clamps
T-Handle and L-Handle - Copper Plated Jaws



T-Handle



L-Handle

T-Handle		L-Handle		Max. A	Max. B	C	D	E	Rated Load	Pack Qty.
KT-401	—	—	—	1 1/16	1/2	1 3/4	2 1/8	1/2	350	1
KT-405	KT-405-L	2	1 1/8	3/4	3 1/2	4 1/8	5 1/4	1 1/4	800	1
KT-407	KT-407-L	2 1/16	2	4 1/16	4 1/8	5 1/8	6 1/8	1 13/16	700	1
KT-410	KT-410-L	3	1 1/4	5	5 1/4	6 1/4	7 1/4	1 1/2	1,500	1
KT-415	KT-415-L	4 1/2	2 1/4	6 3/4	7	8 1/4	9 1/4	2 1/2	1,700	1
KT-420	—	6	2 1/4	8 1/4	8 1/4	9 1/4	10 1/4	3 3/8	2,000	1
KT-421	—	6	4 1/2	10	11	12 1/4	13 1/4	5 1/2	2,000	1
KT-430	—	9	3 3/8	13	12	14 1/4	15 1/4	5 1/4	2,500	1
KT-435	—	10	6	15	16	17 1/4	18 1/4	7	3,500	1

Clamps
T-Handle - 303 Stainless Steel

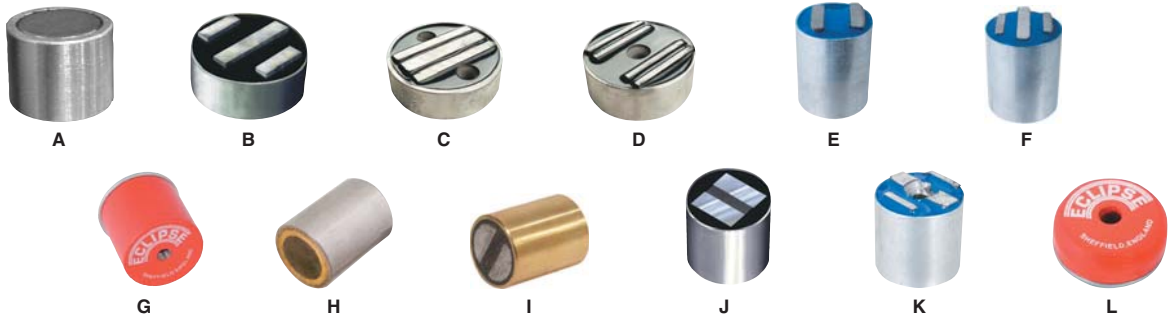


Item No.	Max. A	Max. B	C	D	E	Rated Load	Pack Qty.
KT-510	3	1 1/4	5	5 1/4	1 3/4	1,200	1
KT-515	4 1/2	2 1/2	6 3/4	7	2 1/2	1,500	1



CYLINDRICAL FIXTURE MAGNET ASSEMBLY

Buy One or Buy Bulk & SAVE



Cylindrical fixture magnets provide high holding values in a compact design. They can be used in fixtures, jigs, panel mounts, end of retrieving tools, hold work on machines, catches/latches, insert molding, etc. Use non-ferrous bolts for mounting.

- A: Powerful compact magnet that is insulated for press fit or use tapped hole for mounting.
- B: Extended poles can be lightly machined. Insulated for press fit or use tapped hole for mounting.
- C: Extended poles can be lightly machined. Insulated for press fit or use thru-hole for mounting.
- D: Maximum strength in a compact design. Insulated for press fit or use thru-holes for mounting.
- E: Extended poles can be lightly machined. Press fit for all, some have tapped hole for mounting.
- F: Extended poles can be lightly machined. Press fit for all, some have tapped hole for mounting.
- G: Alcomax magnet pressed into a steel cup. Painted red. Supplied with keepers on the face.
- H: Extremely powerful and compact. Ideal for shallow fixtures. Encased in durable steel cup.
- I: Extremely powerful magnet designed for press fit applications using metric sizes.
- J: Extremely powerful flush face magnet. Insulated for press fit or use tapped hole for mounting.
- K: Extended poles can be lightly machined. Press fit for all, use tapped hole or thru-hole for mounting.
- L: Alcomax magnet pressed into a steel cup. Painted red. Supplied with keepers on the face.

Magnet Material Specifications:

- Ceramic magnets are heat resistant up to 300°F (148°C)
- Rare earth magnets are heat resistant up to 200°F (94°C)
- Alcomax magnets are heat resistant up to 800°F (427°C)

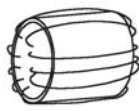
Item No.	Style	Holding Value (Lbs.)	Diameter	Length	Hole Size	Hole Depth	Pack Qty.	Item No.	Style	Holding Value (Lbs.)	Diameter	Length	Hole Size	Hole Depth	Pack Qty.
1 Pole - Rare Earth Magnet - Insulated Aluminum Cup - Press Fit or Tapped Blind Hole								3 Pole - Ceramic Magnet - Insulated Aluminum Cup - Tapped Blind Hole							
IM-125	A	0.5	¼	½	6-32	¼	1	MAG-110	F	23	¾	1	10-32	¾	1
IM-126	A	2.6	⅝	½	8-32	¼	1	MAG-112	F	24	¾	1¼	10-32	¾	1
IM-127	A	5.3	½	½	10-24	¼	1	MAG-114	F	10	1	½	¼-20	¾	1
IM-128	A	8.7	⅝	½	10-24	¼	1	MAG-116	F	32	1	¾	¼-20	¾	1
IM-129	A	12	¾	½	10-24	¼	1	MAG-118	F	42	1	1	¼-20	¾	1
IM-130	A	15	1	½	¼-20	¼	1	MAG-120	F	43	1	1¼	¼-20	¾	1
3 Pole - Rare Earth Magnet - Insulated Aluminum Cup - Press Fit or Tapped Thru Hole								MAG-122							
IM-131	B	15.5	1	¾	¼-20	—	1	IM-61	H	6	¾	½	8-32	.085	1
IM-132	B	26	1¼	¾	¼-18	—	1	IM-63	H	16	½	½	10-32	.15	1
4 Pole - Rare Earth Magnet - Insulated Aluminum Cup - Press Fit or Thru Hole								2 Pole - Alcomax III Magnet - Mild Steel Cup - Press Fit or Tapped Thru Hole							
IM-133	C	45	2	½	¼	—	1	829NF	G	2	¾	1½	M3	—	1
IM-134	C	50	2	¾	¼	—	1	830NF	G	4	½	¾	M4	—	1
IM-135	C	60	2	1	¼	—	1	831NF	G	6	1½	¾	10-32	—	1
IM-136	C	90	2½	1	¼	—	1	832NF	G	9	¾	¾	10-32	—	1
3 Pole - Rare Earth Magnet - Insulated Aluminum Cup - Press Fit or Thru Hole								833NF							
IM-137	D	145	3	1	¼	—	1	834NF	G	14	1½	1	10-32	—	1
2 Pole - Ceramic Magnet - Insulated Aluminum Cup - Press Fit								834NF							
MAG-2	E	0.4	¼	½	—	—	1	2 Pole - Rare Earth Magnet - Steel Cup - Press Fit or Tapped Blind Hole							
MAG-4	E	0.5	¼	¾	—	—	1	IM-65	H	44	¾	½	10-32	.15	1
MAG-6	E	1	¾	½	—	—	1	IM-67	H	92	1	½	¼-20	.15	1
MAG-8	E	2	¾	¾	—	—	1	IM-69	H	102	1¼	½	¼-18	.15	1
MAG-10	E	2.5	¾	1	—	—	1	2 Pole - Rare Earth Magnet - Insulated Brass Cup - Press Fit							
MAG-12	E	3	½	½	—	—	1	IM-316	I	0.9	6	20	—	—	1
MAG-14	E	4	½	¾	—	—	1	IM-317	I	4.4	10	20	—	—	1
MAG-16	E	5	½	1	—	—	1	IM-318	I	6.6	13	20	—	—	1
2 Pole - Ceramic Magnet - Insulated Aluminum Cup - Tapped Blind Hole								IM-319							
MAG-62	E	3	⅝	½	8-32	¾	1	IM-321	I	44.1	25	30	—	—	1
MAG-64	E	7	⅝	¾	8-32	¾	1	IM-71	J	12	½	½	—	—	1
MAG-66	E	8	⅝	1	8-32	¾	1	IM-75	J	36	¾	1¾	¼-20	¼	1
MAG-68	E	4	¾	½	10-32	¾	1	IM-77	J	86	1	1¾	¼-20	¾	1
MAG-70	E	12	¾	¾	10-32	¾	1	IM-81	J	204	1½	2½	¾-18	¾	1
MAG-72	E	17	¾	1	10-32	¾	1	IM-83	J	344	2	2¾	¾-16	¾	1
MAG-74	E	20	¾	1¼	10-32	¾	1	3 Pole - Ceramic Magnet - Insulated Aluminum Cup - Tapped Thru Hole							
MAG-76	E	3.3	1	½	¼-20	¼	1	MAG-208	K	10	1	½	8-32	—	1
MAG-78	E	15	1	¾	¼-20	¼	1	MAG-210	K	27	1	¾	8-32	—	1
MAG-80	E	23	1	1	¼-20	¼	1	MAG-212	K	30	1	1	8-32	—	1
MAG-84	E	32	1	1½	¼-20	¼	1	MAG-214	K	33	1	1¼	8-32	—	1
MAG-86	E	10	1¼	½	¼-20	¾	1	MAG-218	K	10	1¼	½	10-32	—	1
MAG-88	E	24	1¼	¾	¼-20	¾	1	MAG-220	K	33	1¼	¾	10-32	—	1
MAG-90	E	32	1¼	1	¼-20	¾	1	MAG-222	K	50	1¼	1	10-32	—	1
MAG-92	E	40	1¼	1¼	¼-20	¾	1	MAG-224	K	61	1¼	1¼	10-32	—	1
MAG-94	E	48	1¼	1½	¼-20	¾	1	MAG-226	K	66	1¼	1½	10-32	—	1
3 Pole - Ceramic Magnet - Insulated Aluminum Cup - Tapped Blind Hole								2 Pole - Alcomax III Magnet - Mild Steel Cup - Thru Hole with Keeper							
MAG-100	F	8	⅝	½	8-32	¾	1	826	L	6.61	¾	¾	¾-32	—	1
MAG-102	F	13	⅝	¾	8-32	¾	1	827	L	11	1½	1½	1½-64	—	1
MAG-104	F	14	⅝	1	8-32	¾	1	828	L	28.7	1½	1½	1½-64	—	1
MAG-106	F	10	¾	½	10-32	¾	1	2 Pole - Magnet							
MAG-108	F	18	¾	¾	10-32	¾	1	IM-79	J	120	1¼	—	¼-20	¾	1

* Diameter and Length are measured in millimeters (mm)



Rare earth magnets are used because of their high strength-to-weight properties.

Rare Earth Magnets Shielded

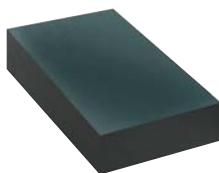


Magnetic Field Pattern

- The insulator prevents loss of magnetic flux when inserted into steel components or fixtures
- Shielded magnets supply holding force in limited areas of steel tools, dies and fixtures

Item No.	Dia. -0.005	Lgth. -0.015	Insulator Thickness	Max. Pull Lbs.	Pack Qty.
IM-27	1/8	1/4	0.018	.20	1
IM-28	3/16	1/4	0.032	.54	1
IM-29	1/4	1/4	0.032	1.3	1
IM-30	1/4	1/2	0.032	1.50	1
IM-31	5/16	1/4	0.032	2.00	1
IM-32	3/8	3/8	0.032	5.00	1
IM-33	7/16	1/4	0.032	4.30	1
IM-35	1/2	1/4	0.062	4.30	1
IM-36	1/2	1/2	0.062	7.00	1
IM-37	3/4	3/8	0.062	10.00	1

Rare Earth Magnets Ceramic Block Material



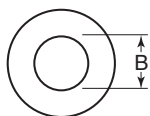
Ceramic magnet is a non-metallic compound of iron oxide, Strontium Ferrite and small quantities of other metal oxides.

Ceramic Features

- Low cost, lightweight, high energy material
- Non-conductive, hard, brittle material
- Performs best at temperatures below 480 degree Fahrenheit (249 degree Celsius)
- Can only be cut with a diamond wheel
- Difficult to grind and can't be E.D.M.'d, machined or drilled by normal methods
- Tolerance 0.005 on all dimensions

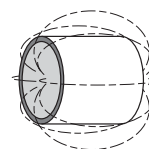
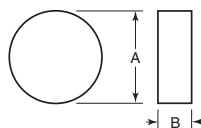
Item No.	Pull (Lbs.)	Thickness (In.)	Width (In.)	Length (In.)	Pack Qty.
IM-467	6.0	.375	7/8	1 1/8	1
IM-468	5.0	.250	1	2	1
IM-469	7.0	.500	1	2	1
IM-470	9.0	.750	1	2	1
IM-471	11.0	1.000	1	2	1
IM-472	15.0	1.000	2	2	1
IM-473	6.5	.187	4	4	1
IM-474	8.5	.250	4	6	1
IM-475	8.0	.312	4	4	1
IM-476	10.5	.375	4	4	1
IM-477	14.0	.500	4	6	1
IM-478	18.5	.750	4	6	1
IM-479	23.5	1.000	4	6	1

Rare Earth Magnets Ceramic Ring



Item No.	A	B	C	Pack Qty.
IM-14	.750	.271	.250	1
IM-16	1.230	.885	.431	1
IM-17	1.623	.705	.187	1
IM-18	1.723	.705	.250	1
IM-20	2.800	1.203	.590	1
IM-21	2.875	.875	.250	1
IM-23	5.250	2.312	.750	1

Plug Style Neodymium 35, 40, 50



Magnetic Field Pattern

All Neodymium-Iron-Boron plugs are nickel plated to protect the brittle magnet material and avoid corrosion. They are commonly used in miniature applications such as linear actuators, sensing applications, gyroscopes, flow meters, recording devices, pacemakers, and alternators. Temperature range is -100 to +180 degree Fahrenheit (-73 to 93 degree Celsius) unless noted. All measurements are in inches and tolerances are ±.005. Different shapes (rectangles, rings), sizes, high-temperature, non-coated, and higher strengths are available as special order. Please call for price and delivery.

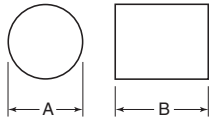
Item No.	A	B	Approximate Holding Value Lbs.	Pack Qty.
Neodymium 35				
MAG-400	.12	.06	.04	1
MAG-402	3/16	.06	.07	1
MAG-404	.22	.10	1.4	1
MAG-406	.22	1/4	2.1	1
MAG-408	.22	1/2	2.4	1
MAG-410	1/4	.10	1.6	1
MAG-412	1/4	1/8	1.8	1
MAG-414	1/4	.20	2.3	1
MAG-504	1/4	1/4	2.3	1
MAG-506	1/4	1/2	3	1
MAG-415	.32	1/4	3.8	1
MAG-416	3/8	.06	3.8	1
MAG-418	3/8	.10	2.5	1
MAG-420	3/8	1/8	3	1
MAG-508	3/8	1/4	5.2	1
MAG-422	3/8	3/8	5.8	1
MAG-510	3/8	1/2	6.9	1
MAG-424	1/2	.06	1.6	1
MAG-426	1/2	1/8	4.1	1
MAG-428	1/2	3/16	5.9	1
MAG-430	1/2	.20	6.2	1
MAG-512	1/2	1/4	8.2	1
MAG-432	1/2	3/8	9.1	1
MAG-514	1/2	1/2	10.5	1
MAG-516	3/4	3/8	21	1
MAG-438	3/4	1/2	19.4	1
MAG-440	1	3/16	11.7	1
MAG-522	1	1/4	18.1	1
MAG-524	1	1/2	34.4	1
Neodymium 42				
MAG-442	.12	.06	0.5	1
MAG-444	3/16	.06	0.9	1
MAG-446	.22	.10	1.7	1
MAG-450	.22	1/2	3	1
MAG-452	1/4	.10	2	1
MAG-454	1/4	1/8	2.3	1
MAG-456	1/4	.20	3	1
MAG-458	1/4	1/4	3.2	1
MAG-460	1/4	1/2	3.8	1
MAG-462	.32	1/4	4.9	1
MAG-464	3/8	.06	1.7	1
MAG-466	3/8	.10	3.1	1
MAG-468	3/8	1/8	3.8	1
MAG-470	3/8	1/4	6.1	1
MAG-472	3/8	1/2	7.9	1
MAG-474	1/2	.06	2.1	1
MAG-476	1/2	.20	7.9	1
MAG-478	1/2	1/4	9.3	1
MAG-480	1/2	3/8	11.6	1
Neodymium 50				
MAG-550	3/16	.06	1.3	1
MAG-552	.22	.10	2.3	1
MAG-554	1/4	.10	2.7	1
MAG-556	1/4	1/4	4.4	1
MAG-558	3/8	.10	4.2	1
MAG-560	1/2	1/4	12.7	1

WARNING: Maximum pull pounds are approximate and were attained using laboratory conditions. Size, shape, temperature, condition and finish will affect the actual pull force. Machining and grinding of any pressure formed magnet is not recommended. Never use for lifting over people.



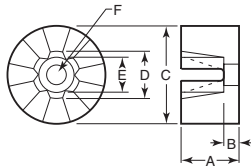
Alnico permanent magnets are made from an alloy of aluminum (Al), nickel (Ni) and cobalt (Co) with iron, and may contain trace amounts of copper (Cu) and/or titanium (Ti). Alcomax is a trade name for magnets made from Alnico materials. Alnico magnets provide good magnetic performance at a reasonable cost compared to rare-earth magnets, which feature a higher strength-to-weight performance at a higher price. Alnico magnets are hard, but brittle and require special machining techniques. Magnetic performance is superior to steel magnets, at a sacrifice of some mechanical strength.

Rod Sintered Alnico 8H



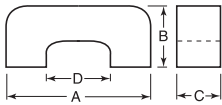
Item No.	A	B	Pack Qty.
MAG-8105	.120	.375	1
MAG-8106	.124	.250	1
MAG-8108	.250	.375	1

Side Pole Rotor Cast Alnico 5 and 6



Item No.	Alnico Grade	No. Poles	A	B	C	D	E	F	Holding Force Lbs.	Pack Qty.
MAG-940	Alnico 5	4	.75	.250	1.000	.500	.500	.250	18	1
MAG-947	Alnico 5	6	.75	.219	1.250	.625	—	.250	30	1
MAG-941	Alnico 6	6	1.25	.375	1.813	.750	.625	.313	50	1

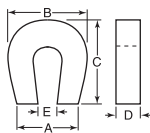
Minor Magnet Alnico



Supplied with keepers.

Item No.	A	B	C	D	Pull Lbs.	Pack Qty.
E801	7/8	7/16	3/16	1/4	3	1

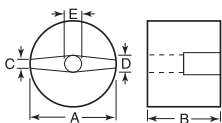
Pocket Magnet Alnico



Supplied with keeper.

Item No.	A	B	C	D	E	Pull Lbs.	Pack Qty.
E802	7/8	1 1/8	1	5/16	1/4	5	1

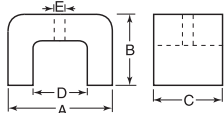
Button Magnets Alnico



Supplied with keepers.

Item No.	A	B	C	D	E	Pull Lbs.	Pack Qty.
E821	1/2	3/8	5/32	9/32	1 1/4	1.5	1
E822	—	1/2	7/32	1 1/32	3/16	4	1
E825	7/8	3/4	1/4	1/4	3/16	8	1
E823	1	5/8	7/32	1 1/32	3/16	8	1
E824	1 1/4	1	5/16	1/2	9/32	11	1

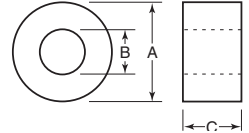
Power Magnets Alcomax



Supplied with keepers.

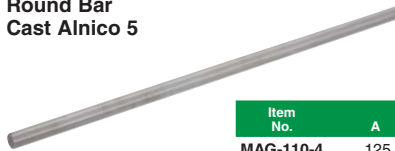
Item No.	A	B	C	D	E	Pull Lbs.	Pack Qty.
811	1 3/16	3/4	3/4	9/16	5/32	10	1
812	1 3/16	1	1	3/4	3/16	17	1
813	1 3/4	1 3/16	1 3/16	7/8	3/16	23	1

Ring Cast Alnico 5 Magnet Material



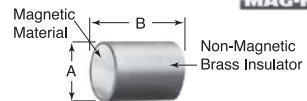
Item No.	A	B	C	Holding Force Lbs. 2 Poles 1 Face	Pack Qty.
MAG-1429	1.00	.750	.500	3.5	1
MAG-1430	1.50	1.125	.750	8.0	1

Round Bar Cast Alnico 5



Item No.	A	B	Pack Qty.
MAG-110-4	.125	4	1
MAG-120-6	.250	6	1
MAG-130-6	.375	6	1
MAG-140-6	.500	6	1

Shielded Alnico



MAG-MATE

Used to supply holding force in limited areas of steel tools, dies and fixtures. The shield prevents undue loss of magnetic strength when inserted directly into steel components.

Item No.	A	B	Insulator Thickness	Max. Pull Lbs.	Pack Qty.
IM-38	3/16	1/4	.018	.050	1
IM-39	3/16	1/2	.018	.080	1
IM-41	1/4	1/4	.032	.110	1
IM-45	1/4	1/2	.032	.280	1
IM-47	5/16	1/4	.032	.120	1
IM-49	5/16	1/2	.032	.350	1
IM-51	3/8	3/8	.032	.200	1
IM-53	3/8	3/4	.032	.400	1
IM-57	1/2	1/2	.032	.450	1
IM-59	3/4	3/4	.062	.136	1

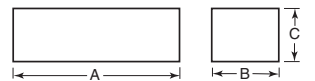
Cylindrical Bar Magnets Alcomax



No keepers.

Item No.	A	B	Pack Qty.
E805	5 1/64	1/4	1
E806	6 3/64	5/16	1
E807	1 3/16	2 3/64	1

Rectangular Bar Magnets Alcomax



No keeper.

Item No.	A	B	C	Pack Qty.
E844	5 1/64	2 5/64	1 3/64	1
E845	1 37/64	1/2	1 3/64	1
E846	2 23/64	3 9/64	1 3/64	1

Pocket Horseshoe Magnet Alnico

GENERAL

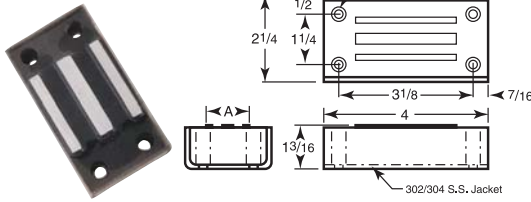


For retrieving small steel parts and screws from hard to reach places.

Item No.	Size Oz.	Pull	Pack Qty.
GEN-370-1	1	2.25	1

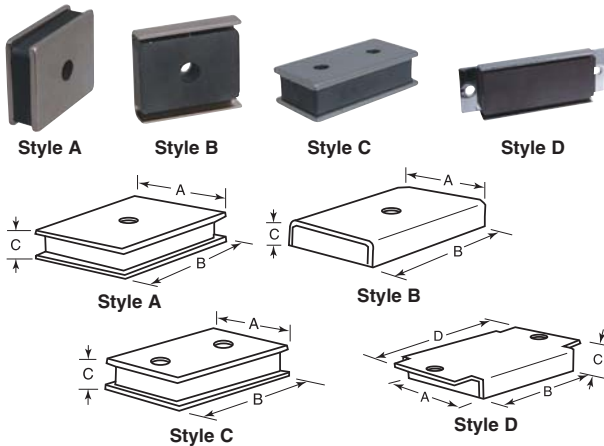


**Rectangular Fixturing Magnet
Three Pole**



Item No.	A	Holding Value Lbs.	Pack Qty.
MAG-364	1 7/8	250	1

Rectangular Fixturing Magnets



Constructed of steel plates or channels with magnets. Mounting holes provide for easy attachment.

Item No.	Style	A	B	C	D	Hole Dia.	Pull Lbs.	Pack Qty.
CMA-74	A	.812	1	.312	—	.187	8	1
CMA-76	B	1	1	.625	—	.187	45	1
CMA-72	C	.875	1	.250	—	.125	7	1
CMA-78	D	.937	2	.312	2.625	.160	6	1

Magnetic Welding Squares



Holds two pieces at 90 degrees



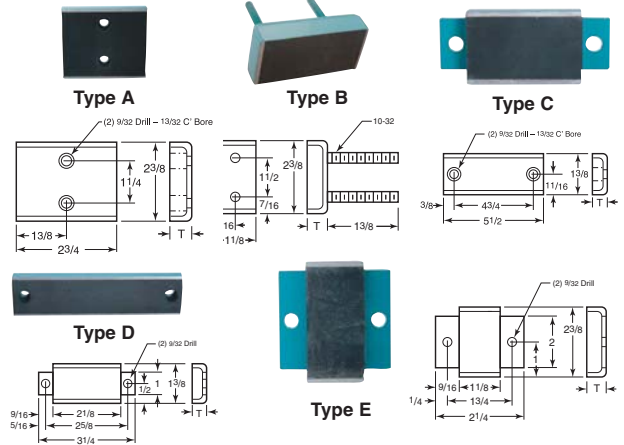
Features:

- Used for a wide variety of jobs including workholding, welding and assembly
- Ideal for welders that need fast set-up and accurate holding of steel sheet stock, plate and tubing
- IM-343 and IM-344 models feature "Breakaway Handle"
- IM-342 and IM-344 models feature weld spatter resistant covers

Item No.	Description	Length	Height	Width	Pull Lbs.	Pack Qty.
IM-338	10 Angle	3 3/8	2 9/16	1 1/2	23	1
IM-339	Standard	3 3/8	3 3/8	5/8	55	1
IM-340	Adjustable	6 1/8	3 3/8	5/8	110	1
IM-341	Standard Heavy Duty	3 3/8	4 3/8	3/4	75	1
IM-342	Covered Heavy Duty	3 3/8	4 3/8	3/4	75	1
IM-343*	Extra Heavy Duty	3 3/8	4 3/8	1 1/2	150	1
IM-344*	Super Heavy Duty	8	8	1 3/8	325	1

*Includes "Breakaway Handle" for easier parts release

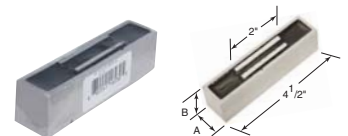
**Rectangular Fixturing Magnets
Ceramic and Neodymium Two Pole**



Item No.	T	Holding Value Lbs.	Type	Pack Qty.
MAG-302	9/16	80	A	1
MAG-306	9/16	42	B	1
MAG-310	9/16	34	E	1
MAG-316	9/16	57	C	1
MAG-320	9/16	108	D	1

**Rectangular Fixturing Magnets
Ceramic and Neodymium Two Pole**

Ideal for holding heavy parts. Effective holding against shear force. High impact epoxy encapsulated.



Aluminum insulated. These magnets can be drilled, tapped, milled, sawed or ground at either end for mounting. Do not machine or drill between magnetic poles.

Item No.	A	B	Holding Value Lbs.	Pack Qty.
Ceramic				
IM-76	1 1/4	1 1/4	75	1
Neodymium				
IM-74	1	1 1/4	185	1

Magnetic Welding Grounds

- Powerful magnet attaches securely to steel surfaces
- Spring loaded 1/2" dia. stud assures constant electrical ground contact
- Release handle
- Holds 35 lbs.



Item No.	Amperage	Stud Type	Magnet Dia.	Overall Height	Pack Qty.
IM-345	250	Brass	3 1/2	2 1/4	1
IM-346	800	Copper	3 1/2	2 1/4	1

ON/OFF Magnetic Welding Grounds

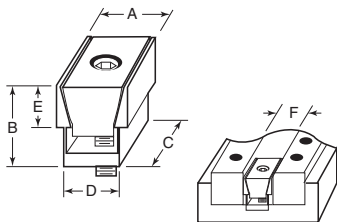
The switchable ON/OFF rare earth magnetic grounds let welders set up, weld and move on to the next job in a flash, thanks to this new magnetic technology. Simply place it on a work surface, turn it on and start welding. Makes welding quicker and easier than ever before. Will work on flat or pipe. Featuring magswitch technology.



Item No.	Hold (Lbs.)	Ht. (In.)	Width (In.)	Length (In.)	Amp	Pack Qty.
IM-503	30	2 1/2	1 1/2	2 1/4	200	1
IM-504	56	2 1/2	1 1/2	2 3/4	300	1
IM-505	104	2 3/4	2 3/4	4	600	1



Uniforce® Clamps

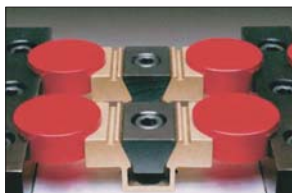
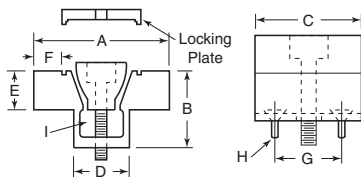
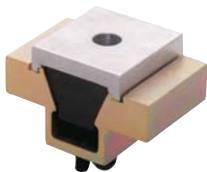


Compact and economical, uniforce® clamps enable you to fixture more parts on the machine table. The specially designed steel wedge spreads the clamping force uniformly on both sides of the aluminum channel. Minimizes tool changes. Ideal for clamping flat or round work pieces. Please note that these are sold in packages.

Item No.	A	B	C	D	E	F	Thread Size	Max. Spread	Holding Force Lbs.	Pack Qty.
MB-6025	.240	.250	.320	.210	.140	.250	2-56	.260	200	6
MB-6037	.360	.375	.470	.310	.375	.375	4-40	.390	310	6
MB-6050	.485	.500	.625	.410	.220	.500	8-32	.530	500	8
MB-6075	.735	.750	.940	.635	.375	.750	1/4-20	.785	1,500	6
MB-6100	.980	1.000	1.250	.820	.500	1.000	3/8-16	1.050	2,000	4
MB-6150	1.470	1.500	1.875	1.215	.750	1.500	1/2-13	1.560	3,500	2

Note: A shallow slot a little wider than D dimension will insure clamp remains in line with workpiece. F is the distance needed between workpieces for clamp clearance. Drill and tap mounting hole on the center of F dimension.

Machinable Uniforce® Clamps

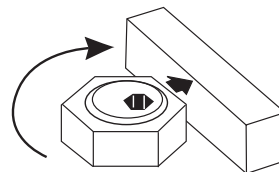


The compact clamp is available with extra material on the clamping jaws so it can be machined to conform to the shape of your work piece, enabling you to fixture unusual applications easily. The specially designed steel wedge spreads the clamping force uniformly on both sides of the aluminum channel. A unique locking plate is provided to make the clamp rigid while machining the jaws to your specifications. Order one piece and you will receive one complete assembly with mounting screws and locking plate.

Item No.	A	B	C	D	E	F	G	H	I	Pack Qty.
MB-250	1.125	.50	.62	.42	.25	.18	.400	2-56	8-32	1
MB-750	1.50	.750	.94	.64	.38	.28	.625	6-32	1/4-20	1
MB-1000	2.00	1.000	1.25	.82	.50	.38	.810	6-32	5/16-18	1
MB-1500	3.00	1.500	1.87	1.87	.75	.62	1.20	10-32	1/2-13	1

Note: A is the distance needed between work pieces for clamp clearance, drill and tap mounting holes on the center of the A dimension. F dimension is the amount of machinable stock.

Fixture Clamps

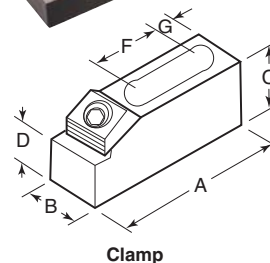


The Mitee-Bite® clamping system combines strength, versatility and performance with economy and ease of use. Consisting of a cam action socket cap screw with a brass hex washer, set ups are simplified even for hard to hold parts. Its small size allows more parts per load on multiple series jobs. The low profile makes programming easier because there are no clamps to jump over. Fast to use (just 1/4 turn of screw loosens clamp) and no loose parts to set up each time. Economical- all six sides of the hex nut can be used. Available in six sizes for use on multiple part fixtures. Metric sizes are in millimeters. MB-10203 and MB-50207 are stainless steel.

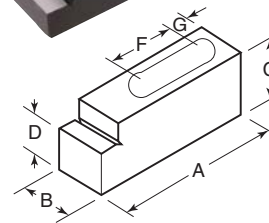
Item No.	Screw Size	Thread Lgth.	Hex Size	Hex Ht.	Max. Holding Force Lbs.	Total Throw	Pack Qty.
Inch							
MB-2	8-32	.350	.312	.110	205	.030	10
MB-3	10-32	.340	.500	.160	350	.040	10
MB-4	1/4-20	.470	.625	.190	800	.040	10
MB-10203*	1/4-20	.470	.625	.190	—	.040	4
MB-5	5/16-24	.460	.812	.190	750	.040	12
MB-5C	5/16-18	.460	.812	.190	750	.040	12
MB-6	3/8-16	.710	.812	.250	2,000	.050	10
MB-8	1/2-13	.900	1.000	.375	4,000	.100	8
Metric							
MB-50204	M4	9.6	7.93	2.80	93	.76	10
MB-50206	M6	11.2	15.86	4.75	364	1.01	10
MB-50208	M8	15.0	20.61	4.75	340	1.01	12
MB-50210	M10	19.0	20.61	6.35	910	1.52	10
MB-50212	M12	22.8	25.38	9.52	1,818	2.03	8
MB-50216*	M16	28.5	30.13	12.69	2,720	2.54	4

*Stainless steel

Multi-Fixture Clamps and Stops



Clamp



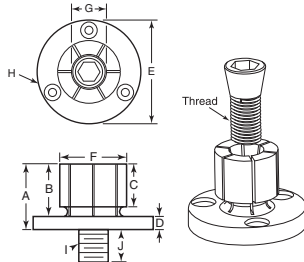
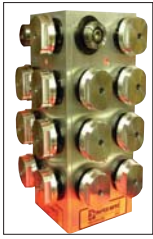
Stop

Works in plates with tapped hole layouts or T-slot configurations providing flexible set ups for hard to hold parts. Can be mounted vertically or horizontally. Stops locate workpiece for repeat positioning. Tapered mounting slots prevents movement when clamping pressure is applied. Closed slot.

Item No.	Description	A	B	C	D	F	G	Mounting Screws	Pack Qty.
MB-150	Clamp	3.75	1.12	.62	.480	.37	.50	1/2	1
MB-200	Stop	3.75	1.12	.87	.480	.37	.50	1/2	1



ID Xpansion™ Clamps



Applications:

- Ideal for secondary operations on lathe parts
- Excellent for palletized setups

Features:

- Easily machined to size on lathe or mill
- Allows more parts per work cube or fixture plates
- Clamp body made of mild steel for machinability
- Tighten with hex key or hydraulic pull cylinders (drill clearance hole for longer bolt into cylinder)
- Three mounting screws included



These clamps are ideal to hold multiple parts on an inside diameter for machining on a machining center. These clamps are produced in ten sizes and can hold internal diameters from .16" to 4.06". Expand clamp approximately .005" over relaxed diameter and machine to fit work piece bore.

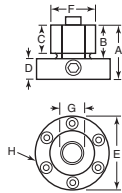
Item No.	A	B	C	D	+0.000/-0.002 E	F	G	H Mounting Screws	I Thread	J	Pack Qty.
MB-31000	.42	.30	.24	.12	.787	.29	.16	2-56 on .540 BHC	2-56	.16	1
MB-31050	.86	.63	.59	.23	1.170	.49	.28	6-32 on .825 BHC	8-32	.30	1
MB-31100	.98	.75	.59	.23	1.240	.56	.48	6-32 on .910 BHC	1/4-20	.50	1
MB-31150	.98	.75	.59	.23	1.476	.79	.53	6-32 on 1.140 BHC	5/16-18	.56	1
MB-31200	1.13	.88	.69	.25	1.968	1.06	.71	8-32 on 1.550 BHC	3/8-16	.71	1
MB-31250	1.25	1.00	.81	.25	2.205	1.39	.90	8-32 on 1.790 BHC	1/2-13	.71	1
MB-31300	1.56	1.25	1.06	.31	2.736	1.65	1.15	10-32 on 2.200 BHC	5/8-11	.79	1
MB-31350	1.56	1.25	1.06	.31	2.972	2.03	1.15	10-32 on 2.515 BHC	5/8-11	.79	1
MB-31400	1.79	1.48	1.27	.31	4.232	3.06	1.15	1/4-20 on 3.646 BHC	5/8-11	.79	1
MB-31450	1.79	1.48	1.27	.31	5.232	4.06	1.15	1/4-20 on 4.648 BHC	5/8-11	.79	1
MB-31500	1.79	1.48	1.27	.31	5.232	6.89	1.15	1/4-20 on 4.648 BHC	5/8-11	.79	1

Note: The G dimension is the minimum diameter that the F dimension can be machined or turned (down) to.

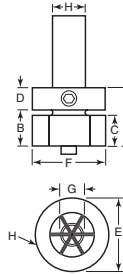
Side-Loc Xpansion Clamps



Used for Milling



Used for Lathe



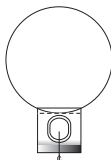
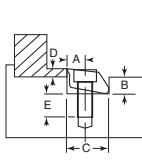
The side-loc xpansion clamp is an ideal way to clamp on the I.D. when the part has a blind bore. It is actuated by turning a socket head cam on the side, which moves a tapered plunger to expand the clamp. The side-loc xpansion clamp is designed in two styles, one for milling operations and one for lathe applications. Presently one size is available for each model. The mill side-loc xpansion clamp can be machined from 1.120 to .710 and the lathe version from 2.09 to .710. The lathe version has a straight mounting shank of 1".



Item No.	Used For	A	B	C	D	E	F	G	H	Hex Key Size	Holding Force Lbs.	Pack Qty.
MB-31210	Milling	1.625	.875	.69	.75	1.968	1.13	.71	8-32 on 1.550 BHC	M6	4,000	1
MB-31370	Lathe	1.750	1.00	.84	.75	2.10	2.10	.71	1.0	M6	4,000	1

Note: Six mounting screws included.

Machinable Pitbull® Clamps



This new Pitbull fixture clamp is a machinable version of the popular Pitbull clamp. The clamp has positive down force and a very low gripping profile. The machinable Pitbull clamp is made of tool steel and heat treated to about 43 Rc for long life, yet still machinable. There is additional material on the clamping face to allow for machining a radius. A dowel pin is included in each package to locate the clamp during the machining process.



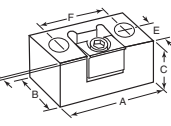
Item No.	Description	A	B	C	D	E	Clamp Width	Screw Size	Max. Holding Force Lbs.	Torque In-Lbs.	Total Throw	Dowel Pin Size	Pack Qty.
MB-26077	Tool Steel, Machinable	.400	.450	1.00	.250	.710	1.00	5/16-16	6,000	360	.050	1/8	4
MB-26088	Tool Steel, Machinable	.600	.640	1.50	.375	.770	1.50	1/2-13	12,000	1,300	.075	1/4	2

Note: D is clamp height.

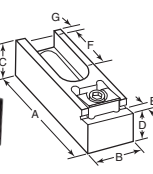
Modular Pitbull® Clamps



Compact



Slotted



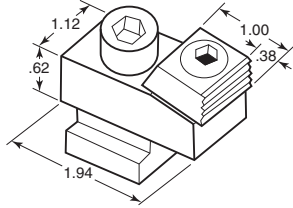
The slotted modular Pitbull® clamp with a step offers increased versatility through its unique riser design. This clamp supports the work piece off the machine table for through milling and drilling. The hardened and ground clamps are designed for use on work cubes, as well as machined tables with tapped holes or T-slot configurations. The compact modular Pitbull® clamp is ideal for clamping work pieces in a series by using the back surface of a clamp to locate the next work piece. The back of the clamp is ground square to the bottom 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.



Item No.	Description	A	B	C	D	E	F	G	H Max. Movement	Holding Force Lbs.	Pack Qty.
MB-26220	Medium/Compact	2.25	1.23	.98	NA	.62	1.50	—	.024	3,600	1
MB-26230	Large/Compact	2.70	1.48	1.24	NA	.74	1.85	—	.050	6,000	1
MB-26240	Medium/Slotted	4.08	1.25	.99	.730	.36	1.70	.50	.024	3,600	1
MB-26250	Large/Slotted	4.20	1.50	1.61	1.378	.36	1.52	.43	.050	6,000	1



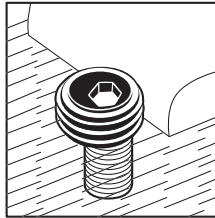
T-Slot Toe Clamps



A low profile cam action clamp with positive down force. This clamp is mounted in the T-slots of machine tables by sliding the clamp to the work piece and tightening the locking screw. Total distance of movement .100". Two clamping edges, smooth for machined surface, and serrated for rough cut material.

Item No.	T-Slot Size	Pack Qty.	Item No.	T-Slot Size	Pack Qty.
MB-24128	9/16	1	MB-24168	1 1/16	1
MB-24148	3/8	1			

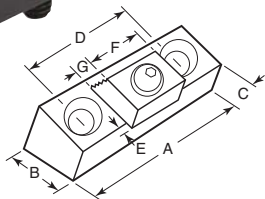
Knife Edge Clamps



Low profile, fast cam action. Hardened steel bites into workpiece for secure clamping for castings and rough cut stock. Follows contour of part for maximum contact.

Item No.	Thread Size	Sets	Pack Qty.	Replacement Washer	
				Item No.	Item No.
MB-22584	3/8-16		8	MB-12584	
MB-22588	1/2-13		8	MB-12588	
MB-22592	5/8-11		4	MB-12592	

Compact Toe Clamps



Cam action, positive down force clamps can be used in series. Clamp base should be installed in a slot to retain location. Clamp base provides for higher clamping; height is determined by depth of slot. Mounting screws included.

Item No.	Total Distance of Movement							Key Size	Mounting Screw	Pack Qty.	
	A	B	C	D	E	F	G				
MB-24106	1.70	.75	.50	1.00	.090	.75	.25	.050	3/16	5/16-18 x 3/4	1
MB-24108	2.12	1.00	.45	1.32	.110	1.00	.38	.100	1/8	3/16-18 x 3/4	1

Pitbull® Clamps



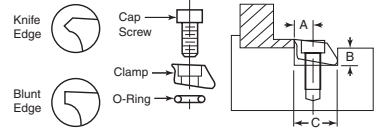
Steel, Knife



Steel, Blunt



Brass, Blunt

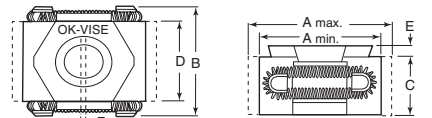


The Pitbull clamp is a revolutionary new fixture clamp with positive down force and a low gripping profile. High vertical and horizontal clamping forces are generated, considering the size of the Pitbull Clamps. It uses a standard cap screw and an oil resistant O-ring. The Pitbull Clamp is available in 5 sizes and several styles, a tool steel knife edge for aggressive stock removal, a tool steel blunt edge for general purpose and a brass version to help prevent marring in the work piece.

Item No.	Material/Edge	A	B	C	Screw Size	Max. Holding Force Lbs.	Total Throw	Pack Qty.
PBCL-2	Steel/Blunt	.150	.140	.375	4-40	650	.0075	8
PBCL-3	Brass/Blunt	.150	.140	.375	4-40	650	.0075	8
PBCL-4	Steel/Knife	.200	.187	.500	8-32	1,500	.0160	8
PBCL-5	Steel/Blunt	.200	.187	.500	8-32	1,500	.0160	8
PBCL-6	Brass/Blunt	.200	.187	.500	8-32	1,500	.0160	8
PBCL-7	Steel/Knife	.300	.280	.750	1/4-20	3,600	.0240	6
PBCL-8	Steel/Blunt	.300	.280	.750	1/4-20	3,600	.0240	6
PBCL-9	Brass/Blunt	.300	.280	.750	1/4-20	3,600	.0240	6

These hardened and ground clamps can produce holding forces of over 19,000 lbs. The OK-Visc clamp achieves this by its cross-wedge construction, which allows the clamp to lock firmly in every direction as it is tightened down. Jaws with 30-34 HRC can be machined to suit the geometry of the workpiece. Includes mounting screws.

OK-Visc Low Profile Clamps Single Wedge

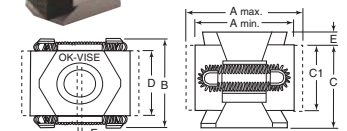


Completely free of play.

Item No.	A						Mounting Screw	Pressing Force of Jaws Lbs.	Jaw Hardness (HRC)	Pack Qty.		
	Min.	Optimum	Max.	B	C	D					E	F
MB-471	1.06	1.14	1.22	1.14	.59	.83	.10	.040	5/16-18 x 3/4	3,300	48-52	1
MB-479	1.06	1.14	1.22	1.14	.59	.83	.10	.040	5/16-18 x 3/4	3,300	48-52	1
MB-472	1.65	1.77	1.93	1.61	.87	1.18	.16	.080	1/2-13 x 1 1/4	6,600	48-52	1
MB-475	2.05	2.17	2.32	1.61	.87	1.18	.16	.080	1/2-13 x 1 1/4	6,600	30-34	1

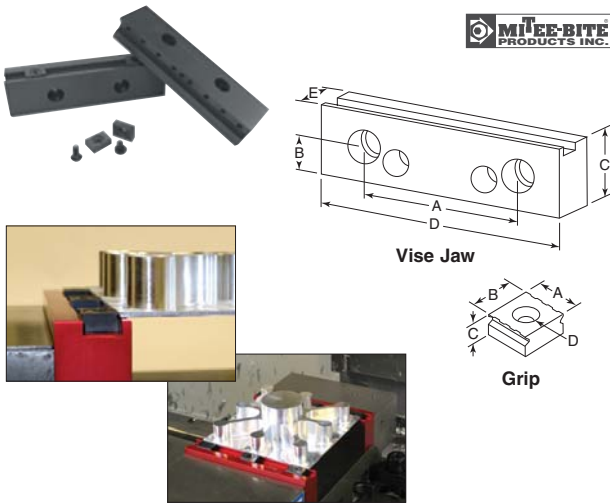
*Ends of jaws are smooth

OK-Visc Low Profile Clamps Double Wedge



Pull down action towards the work piece.

Item No.	A						Mounting Screw	Pressing Force of Jaws Lbs.	Jaw Hardness (HRC)	Pack Qty.			
	Min.	Optimum	Max.	B	C	C1					D	E	F
MB-477	1.65	1.77	1.93	1.61	1.42	1.18	1.18	.20	.080	1/2-13 x 1 1/2	11,000	48-52	1
MB-478	2.24	2.40	2.64	2.20	1.97	1.65	1.65	.20	.120	3/8-11 x 2 1/4	19,800	48-52	1



TalonGrip vise jaws systems is a new and innovative product that will increase the versatility of your standard 4" and 6" vises. It is a simple bolt on system that will allow you to perform aggressive machining operations while clamping on as little as .060 of an inch. Ideal for small lot sizes, difficult application or prototype work when building a fixture would not be beneficial. TalonGrips are also available with the Pitbull clamp or soft jaw applications.

TalonGrip™ Vise Jaws Systems

Steel Vise Jaw Set

Set includes 4 TalonGrips™, 1 stop with M5 screws.

Item No.	Vise Size	A	B	C	D	E	Pack Qty.
MB-32044	4	2.5	.688	1.49	4.0	1.0	1
MB-32066	4 / 6	2.5/3.88	.688/.94	1.74	6.0	1.0	1
MB-32068	6	3.88	.94	1.74	8.0	1.0	1

TalonGrip™ Vise Jaw Systems

Vise Jaw Grips and Stops

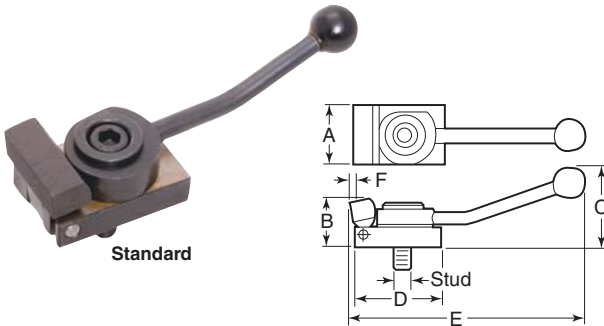
Item No.	Description	A	B	C	D	Recommended Gripping Height	Pack Qty.
MB-32050	Grips	.75	.500	.250	10-32	.06 - .075	2
MB-33050	Grips	.75	.500	.250	M5	.06 - .075	2
MB-32025	Stop	—	—	—	10-32	—	1
MB-33025	Stop	—	—	—	M5	—	1

TalonGrip™ Vise Jaws Systems

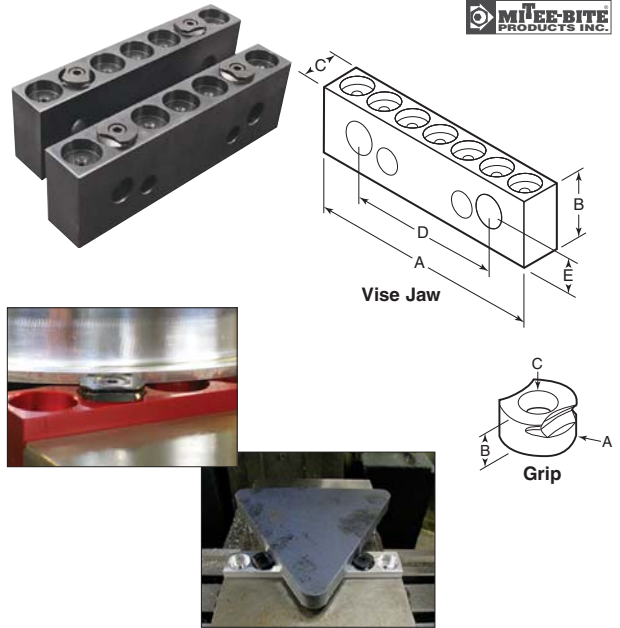
Fixture Grips

Item No.	A	B	C	D	Recommended Gripping Height	Pack Qty.
MB-32075	.75	.75	.312	10-32	.06 - .120	2
MB-33075	.75	.75	.312	M5	.06 - .120	2
MB-32100	.75	1.00	.312	10-32	.06 - .120	1
MB-33100	.75	1.00	.312	M5	.06 - .120	1

Cam Action Clamps



Low profile quick action clamp. Jaw pivots forward and downward at the same time when the handle is turned. Locks positively at any position within its 180 degrees turn, so that it will hold parts that vary slightly in dimension. Clamps with extended base allow position adjustment on machine tables.



VersaGrip allows you the versatility of clamping standard vise work as well as providing a solution for difficult applications that would normally require fixturing or machining soft-jaws. By simply replacing your current jaws with the VersaGrip system you can securely hold odd shaped parts while machining at speeds and feeds you never thought possible. This system can accommodate a wide range of part sizes as well as holding multiple parts in a single cycle. The hardened (52-54 RC) VersaGrip has penetrating teeth designed to bite into your workpiece preventing lateral and horizontal movements. These grips will hold flame cut parts, castings, even parts with a negative draft.

VersaGrip™ Vise Jaws Systems

Steel Vise Jaw Sets

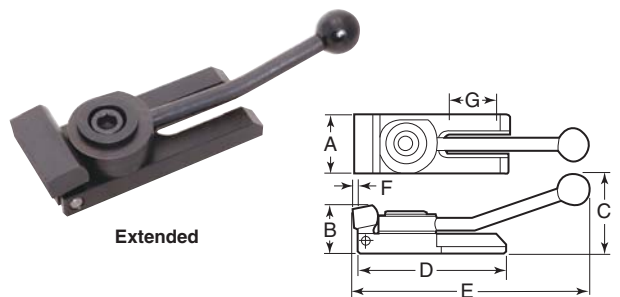
Set includes 4 VersaGrips™

Item No.	Vise Size	A	B	C	D	E	Pack Qty.
MB-32166	4 / 6	6.00	1.88	1.0	2.5/3.88	.688/.94	1
MB-32168	6	8.00	1.88	1.0	3.88	.94	1

VersaGrip™ Vise Jaws Systems

VersaGrips™

Item No.	A	B	C	Recommended Gripping Height	Pack Qty.
MB-32175	.750	.375	M5	.060 - .140	2

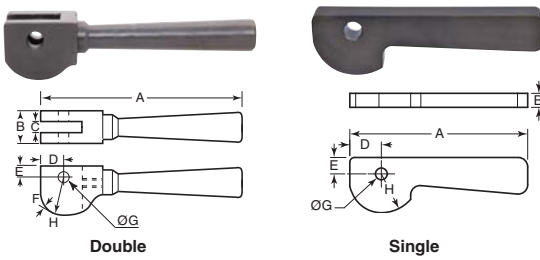


Item No.	Base	Stud	A	B	C	D	E	F	G	Pack Qty.
CAC-5	Standard	5/16-18	1 1/4	1	1 5/8	1 3/4	5	1/2	—	1
CAC-10*	Extended	5/16-18	1 1/4	1	1 5/8	3 1/8	5	1/2	1	1
CAC-15	Standard	1/2-13	1 1/2	1 1/2	2 1/2	2 3/4	7 1/2	5/32	—	1
CAC-20*	Extended	1/2-13	1 1/2	1 1/2	2 1/2	4 3/4	7 1/2	5/32	1 1/2	1

*Stud not included in extended base clamps



Steel Cam Action Clamps



These cams provide quick action locking with high holding pressure. Can be used for many types of operations. Heat treated for long life. Black oxide finish. The slot on the double cam is milled. Can be used with our eye bolts or forged rod ends.

See pages 438-439 for eye bolts and forged rod ends.

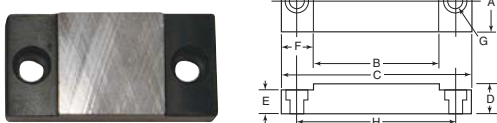
Item No.	A	B	C	D	F	G	H	Pack Qty.
Double								
DC-1	—	3/16	1/4	3/16	3/8	3/16	3/16	1
DC-2	3 1/2	3/8	5/16	5/32	1/2	1/4	1 1/16	1
DC-3	5	1 1/8	1/2	1 3/32	5/8	3/8	1 1/16	1
DC-4	5 3/8	1 1/4	5/8	3/16	7/8	5/8	1 3/16	1
Single								
SC-0	2 3/8	3/16	—	27/64	—	5/32	3 3/64	1
SC-15	3 1/4	1/4	—	1/2	—	1/4	3 3/64	1
SC-1A	4 1/2	3/8	—	4 1/64	—	5/16	2 5/32	1
SC-2A	5	1/2	—	2 3/32	—	3/8	1 3/32	1

Clamp Rests



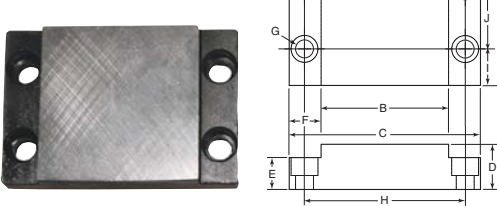
Item No.	A	B	C	D	E	F	G	Thread Size	Pack Qty.
ACA-200	1 1/4	7/16	5/32	5/64	1 1/64	1	2 3/32	1/4-20	1
ACA-205	1 1/2	1/2	7/32	3/16	7/32	1 15/32	1 5/16	5/16-18	1
ACA-220	2 1/2	3/8	1 1/32	5/32	1 1/32	2	1 13/16	3/8-16	1
ACA-225	2 3/8	7/8	1 1/2	3/16	1 1/2	1 11/16	1 1/2	1/2-13	1
ACA-230	3 3/8	3/8	1 1/2	5/32	1 1/32	3 3/8	3 3/8	3/8-16	1
ACA-235	3 3/8	7/8	1 1/2	3/16	1 1/2	3 3/8	3	1/2-13	1
ACA-240	2 3/8	7/8	1 1/2	3/16	1 1/2	1 15/16	1 11/16	5/8-11	1
ACA-245	3 3/8	7/8	1 1/2	3/16	1 1/2	3 3/32	2 15/16	5/8-11	1
ACA-250	2 3/4	7/8	1 1/2	3/16	1 1/2	2 1/16	1 1/8	3/4-10	1
ACA-255	3 1/2	7/8	1 1/2	3/16	1 1/2	2 13/16	2 3/8	3/4-10	1

Clamp Rest Plates 2-Hole



Item No.	A	B	C	D	E	F	G	H	Pack Qty.
Inch									
JCA-35901	1	1	2	.475	3/8	1/2	#10	1 1/2	1
JCA-35902	1 1/2	1 1/2	2 1/2	.60	1/2	1/2	1/4	2	1
JCA-35904	1	2	3 1/2	.720	5/8	3/4	5/16	2 3/4	1
JCA-35905	1	3	4 1/2	.720	5/8	3/4	5/16	3 3/4	1
JCA-35906	1	4	5 1/2	.720	5/8	3/4	5/16	4 3/4	1
Metric									
JCA-35951	25	25	50	12	10	13	M5	38	1
JCA-35952	25	38	64	15	13	13	M6	50	1
JCA-35954	25	50	89	18	16	19	M8	70	1

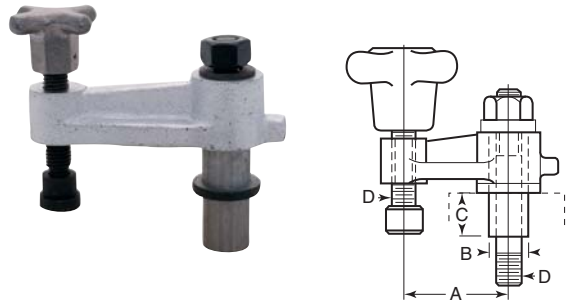
Clamp Rest Plates 4-Hole



Item No.	A	B	C	D	E	F	G	H	I	J	Pack Qty.
Inch											
JCA-35903	2	2	3	.725	1/2	1/2	1/4	2 1/2	1/2	1	1
Metric											
JCA-35953	50	50	75	18	12	13	M6	64	13	25	1

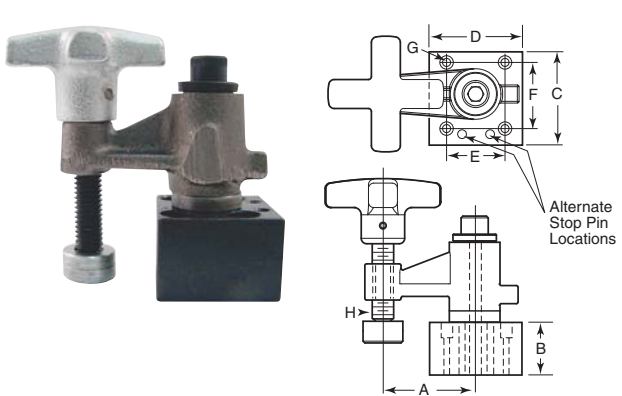
Very useful in limited space applications. Knob swivel screw assembly allows for quick clamping and release and for protection against marring the work piece. The shoe of the swivel screw stops rotation upon contact with the work piece. To compensate for irregular work surfaces, the shoe swivels approximately three degrees in all directions. Arm may be used for right or left hand swing. Knob and arm are cadmium plated cast iron. All other parts are heat treated steel with black oxide finish.

Swing Clamp Assemblies Reamed Hole Mounting



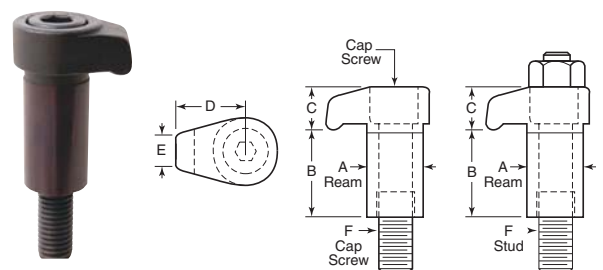
Item No.	A	+0.00/-0.01 B	C	D	Thread Travel	Pack Qty.
SCA-21205	2	.874	1 1/8	1/2-13	1.00	1
SCA-21219	3	1.123	1 3/8	5/8-11	1.50	1

Swing Clamp Assemblies Flange Base



Item No.	A	B	C	D	E	F	G	H	Thread	Pack Qty.
SCA-21202	1 1/2	1	1 1/16	1 1/2	3/4	1	#10	5/16-18	.40	1
SCA-21211	3	1.25	2 1/4	2 1/4	1 1/8	1 3/8	1/4	1/2-13	1.00	1
SCA-21223	4	1.25	2 1/4	2 1/4	1 1/4	1 1/2	3/8	5/8-11	1.25	1

Hook Clamp Assemblies

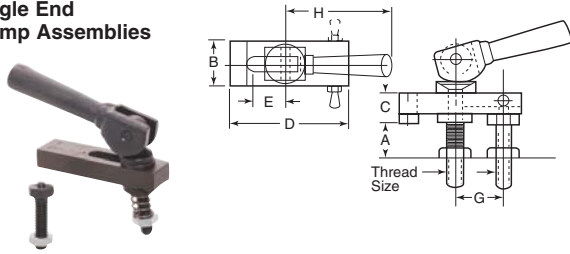


Alloy steel, black oxide finish. Ideal for jig and fixture quick build systems. Hook rotates 360 degrees. Screws and springs provided.

Item No.	A	B	C	D	E	F	Pack Qty.
HCA-C1	.625	15/16	1/2	1 1/16	3/8	5/16-18 x 1 1/4	1
HCA-S1	.625	15/16	1/2	1 1/16	3/8	5/16-18 x 2 1/2	1
HCA-C2	.875	1 3/8	5/8	1	1/2	1/2-13 x 3	1
HCA-S2	.875	1 3/8	5/8	1	1/2	1/2-13 x 4	1
HCA-C3	1.125	1 13/16	7/8	1 1/16	3/4	5/8-11 x 3 1/2	1
HCA-S3	1.125	1 13/16	7/8	1 1/16	3/4	5/8-11 x 5	1



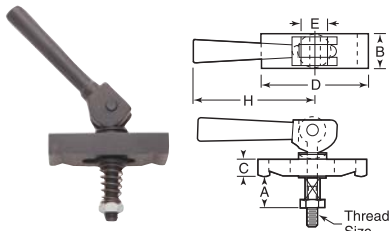
**Center Cam
Single End
Clamp Assemblies**



See page 374 for additional steel cam handles.

Item No.	A	B	C	D	E	G	H	Thread	Pack Qty.
ACA-305	3/4	5/8	3/8	2	5/8	7/8	2 1/2	1/4-20	1
ACA-307	3/4	5/8	3/8	2 1/2	1	7/8	2 1/2	1/4-20	1
JCA-12513	1 1/8	7/8	1/2	2 1/2	3/4	1 1/4	3 3/16	5/16-18	1
JCA-12514	1 1/8	7/8	1/2	3 1/2	1 1/4	1 1/4	3 3/16	5/16-18	1
JCA-12515	1 1/2	1 1/4	5/8	3 1/2	1 1/8	1 7/16	3 3/16	5/16-18	1
JCA-12516	1 1/2	1 1/4	5/8	4 1/2	1 1/8	1 7/16	3 3/16	5/16-18	1
ACA-332	1 3/8	1 1/2	3/4	4 1/2	1 1/4	1 7/8	5	7/2-13	1
JCA-12518	1 3/8	1 1/2	3/4	6	2	1 7/8	5	7/2-13	1
JCA-12519	1 3/8	1 1/4	7/8	5	1 1/2	1 7/16	5 1/16	7/8-11	1

**Center Cam
Double End
Clamp Assemblies**

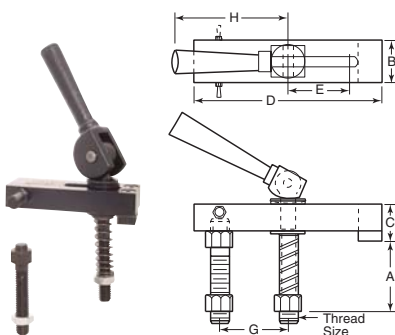


See page 374 for additional steel cam handles.

Item No.	Jergens	A	B	C	D	E	H	Thread	Pack Qty.
ACA-350	12523	1 1/8	1 1/2	3/4	4	1 1/4	5	7/2-13	1
ACA-354	12524	1 1/8	1 1/2	3/4	5	1 1/4	5	7/2-13	1
ACA-368	12526	1 1/8	1 1/8	7/8	6	1 1/2	5 1/16	7/8-11	1

**Double Cam
Clamp Assemblies**

Features fast-action, light duty holding of plain surface work where quick movements are required in a restricted space. Long end slot for lateral adjustment. Spring loaded stud member under sturdy double cam lever.



Spring loaded stud member under sturdy double cam lever.

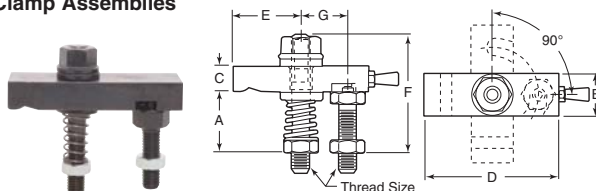
See page 374 for additional steel cam handles.

Item No.	A	B	C	D	E	G	H	Thread	Pack Qty.
JCA-12501*	5/8	5/8	1/2	2	5/8	7/8	2 1/2	1/4-20	1
JCA-12502	1 5/16	1 1/4	7/8	3 1/2	1 1/8	1 7/16	3 3/16	5/16-16	1

*Finger handle not included. See page 103 for finger handle.

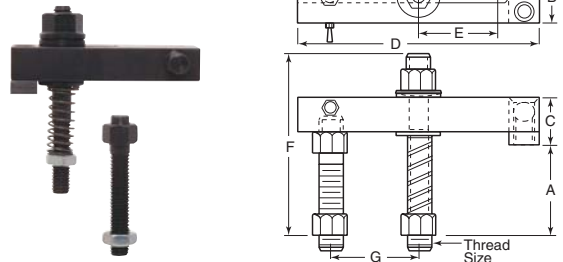
Note: G dimension represents an optimum dimension.

**Radius Swing
Clamp Assemblies**



Item No.	A	B	C	D	E	F	G	Thread	Pack Qty.
JCA-14123	7/8	5/8	3/8	2	1	1 1/8	1 1/16	1/4-20	1
JCA-14125	1 1/4	1 1/4	5/8	3 1/2	1 1/2	2 15/16	1 1/4	5/8-16	1
JCA-14128	1 1/2	1 1/2	3/4	4 1/2	1 13/16	3	1 15/16	1/2-13	1
JCA-14134	2 1/4	1 3/4	1	5	2 1/16	4 3/8	2 3/16	3/4-10	1

**Flange Nut
Clamp Assemblies**



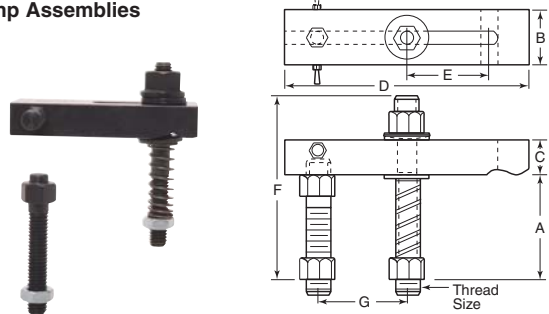
Used where high clamping pressures are needed and vibration could cause loosening. They have a spherical flange nut and washer for greater flexibility. Extra long, true milled slot allows more clearance for placing and removing work.

Item No.	A	B	C	D	E	F	G	Thread	Pack Qty.
JCA-12701*	3/4	5/8	1/2	2	5/8	1 5/8	7/8	1/4-20	1
JCA-12703	1 1/2	1 1/4	7/8	3 1/2	1 1/8	2 15/16	1 1/16	5/8-16	1
JCA-12705	1 1/2	1 1/4	7/8	4 1/2	1 1/8	2 15/16	1 15/16	5/8-16	1
JCA-12707	1 1/8	1 1/2	1 1/8	4 1/2	1 1/4	3	2 1/8	1/2-13	1
JCA-12710	1 1/8	1 1/2	1 1/8	6	2	3	2 7/8	1/2-13	1
JCA-12711	2 1/8	1 3/4	1 1/8	5	1 1/2	5 1/16	2 1/8	5/8-11	1
JCA-12713	2 1/8	1 3/4	1 1/8	7	2 1/2	5 1/16	3 1/8	5/8-11	1
JCA-12714	1 3/4	1 3/4	1 1/2	5	1 1/2	4 3/8	2 1/8	3/4-10	1
JCA-12716	1 3/4	1 3/4	1 1/2	7	2 1/2	4 3/8	3 1/8	3/4-10	1

*Finger handle not included. See page 103 for finger handle.

Note: G dimension represents an optimum dimension.

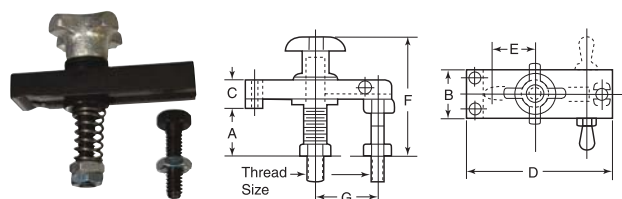
**Radius End Flange Nut
Clamp Assemblies**



For heavy duty clamping of plain surfaces with spherical flange nut and washer for angular flexibility. Radius end strap and spring loaded stud for quick release.

Item No.	A	B	C	D	E	F	G	Thread	Pack Qty.
JCA-14103	7/8	5/8	3/8	2	5/8	1 5/8	7/8	1/4-20	1
JCA-14105	1 1/4	1 1/4	5/8	3 1/2	1 1/8	2 15/16	1 1/16	5/8-16	1
JCA-14108	1 1/2	1 1/2	3/4	4 1/2	1 1/4	3	1 1/2	1/2-13	1
JCA-14111	3 1/8	1 3/4	7/8	5	1 1/2	5 1/16	2	5/8-11	1
JCA-14114	2 1/4	1 3/4	1	5	1 1/2	4 3/8	2 1/8	3/4-10	1

**Strap
Clamp Assemblies**



Spherical washers compensate for irregularities between clamp strap and part being clamped allowing for more rigid clamping. Double end clamp straps can be used for clamping flat work pieces or they can be inverted for holding round work pieces in V-blocks or other nesting arrangements. All parts (except jam nuts) are heat treated steel with black oxide finish.

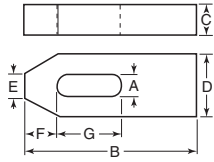
Item No.	A	B	C	D	E	F	G	Thread Size	Pack Qty.
ACA-107	7/8	5/8	3/8	2 1/2	1	2 1/4	7/8	1/4-20	1
JCA-13515	1 1/4	1 1/4	5/8	3 1/2	1 1/8	3 1/2	1 1/16	5/8-16	1
JCA-13516	1 1/4	1 1/4	5/8	4 1/2	1 1/8	3 1/2	1 1/16	5/8-16	1



STRAP CLAMPS

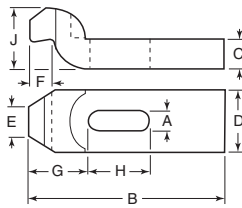
Buy One or Buy Bulk & SAVE

Strap Clamps Tempered Steel - Varnished Finish Plain



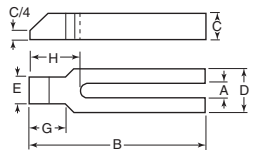
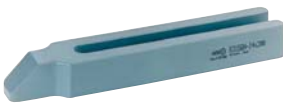
Item No.	A	Bolt Size	B	C	D	E	F	G	Pack Qty.
AMF-9	.43	3/8, M10	3.15	.59	1.18	.47	.59	1.18	1
AMF-10	.55	1/2, M12, M14	3.94	.79	1.57	.55	.83	1.57	1
AMF-12	.71	5/8, M16, M18	4.92	.98	1.97	.71	1.02	1.77	1
AMF-13	.71	5/8, M16, M18	6.30	.98	1.97	.71	1.02	2.56	1
AMF-14	.87	3/4, M20, M22	6.30	1.18	2.36	.87	1.18	2.36	1
AMF-15	.71	3/4, M20, M22	7.87	1.18	2.36	.87	1.18	3.15	1

Strap Clamps Tempered Steel - Varnished Finish Single Goose-Neck



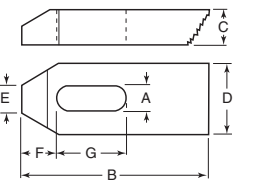
Item No.	A	Bolt Size	B	C	D	E	F	G	H	J	Pack Qty.
AMF-35	.55	1/2, M12, M14	4.92	.79	1.57	.79	.63	1.57	1.57	1.10	1
AMF-38	.87	3/4, M20, M22	6.30	1.18	2.36	1.18	.94	2.17	2.17	1.74	1

Strap Clamps Tempered Steel - Varnished Finish Forked Clamp with Shoe



Item No.	A	Bolt Size	B	C	D	E	G	H	Pack Qty.
AMF-34	.87	3/4, M20, M22	9.84	1.58	2.36	1.38	1.77	2.68	1

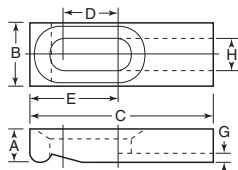
Strap Clamps Tempered Steel - Varnished Finish Step Clamps



Compatible with universal step blocks AMF-40, 41, and 42.

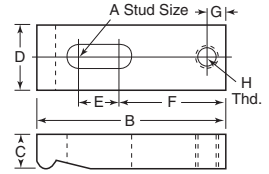
Item No.	A	Bolt Size	B	C	D	E	F	G	Pack Qty.
AMF-17	.43	3/8, M10	3.15	.59	1.18	.47	.59	1.18	1
AMF-18	.55	1/2, M12, M14	3.94	.79	1.57	.55	.83	1.57	1

Strap Clamps Radius 304 Stainless Steel



Item No.	A	B	C	D	E	G	H	Pack Qty.
CSS-1501	1/4	1/2	1 1/4	7/16	3/4	3/32	7/32	1
CSS-1876	1/2	7/8	3 1/2	1	1 1/2	1/8	13/32	1

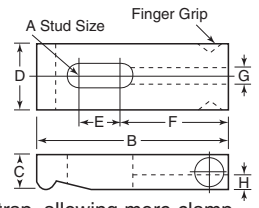
Strap Clamps Tapped End Radius Heat Treated Steel



The specially designed end provides maximum pressure for edge clamping. Long slot allows for lateral adjustment.

Item No.	A	B	C	D	E	F	G	H	Pack Qty.
CTE-2	1/4	2	3/8	5/8	1/2	1	7/32	1/4-20	1
CTE-4	1/4	2 1/2	3/8	5/8	1/2	1 1/8	7/32	1/4-20	1
CTE-6	5/16	2 3/4	1/2	1	7/16	1 1/2	9/32	5/16-18	1
CTE-8	5/16	3 1/4	1/2	1	13/16	1 1/2	9/32	5/16-18	1
CTE-12	3/8	3	5/8	1 1/4	3/4	1 11/16	5/16	3/8-16	1
CTE-14	3/8	4	5/8	1 1/4	3/4	2 3/16	5/16	3/8-16	1
CTE-16	3/8	5	5/8	1 1/4	1 1/2	2 11/16	5/16	3/8-16	1
CTE-18	1/2	4	5/8	1 1/4	1	2 1/4	7/16	1/2-13	1
CTE-20	1/2	4 1/2	5/8	1 1/4	1 1/2	2 1/4	7/16	1/2-13	1
CTE-22	1/2	5	5/8	1 1/4	1 1/2	2 1/4	7/16	1/2-13	1
CTE-24	1/2	6	5/8	1 1/4	1 1/2	2 1/4	7/16	1/2-13	1
CTE-26	5/8	4 1/2	7/8	1 1/2	1	2 1/2	1/2	5/8-11	1
CTE-28	5/8	5	7/8	1 1/2	1 1/2	2 1/2	1/2	5/8-11	1
CTE-30	5/8	6	7/8	1 1/2	1 1/2	2 1/2	1/2	5/8-11	1

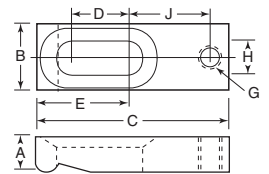
Strap Clamps Single End Radius Heat Treated Steel



The long slot increases the length of strap, allowing more clamping pressure to be applied to the part. Finger grip on both sides of the clamp allows for easier lateral travel adjustments.

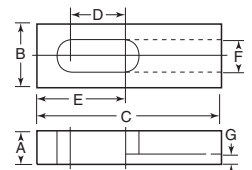
Item No.	A	B	C	D	E	F	G	H	Pack Qty.
CSE-2	1/4	2	3/8	5/8	1/2	1	3/16	1/8	1
CSE-4	1/4	2 1/2	3/8	5/8	1/2	1 1/8	3/16	1/8	1
CSE-6	5/16	2 3/4	1/2	1	7/16	1 1/2	7/4	3/16	1
CSE-8	5/16	3 1/4	1/2	1	13/16	1 1/2	7/4	3/16	1
CSE-12	3/8	3	5/8	1 1/4	3/4	1 11/16	3/8	9/32	1
CSE-14	3/8	4	5/8	1 1/4	1	2 3/16	3/8	9/32	1
CSE-18	1/2	4	5/8	1 1/4	1	2 1/4	3/8	9/32	1
CSE-20	1/2	4 1/2	5/8	1 1/4	1 1/2	2 1/4	3/8	9/32	1
CSE-22	1/2	5	5/8	1 1/4	1 1/2	2 1/4	3/8	9/32	1
CSE-24	1/2	6	5/8	1 1/4	1 1/2	2 1/4	3/8	9/32	1
CSE-26	5/8	4 1/2	7/8	1 1/2	1	2 1/2	1/2	9/32	1
CSE-30	5/8	6	7/8	1 1/2	1 1/2	2 1/2	1/2	9/32	1
CSE-32	3/4	6	1	1 3/4	1 3/4	3 1/4	1/2	3/16	1

Strap Clamps Tapped End Radius 304 Stainless Steel



Item No.	A	B	C	D	E	G	H	J	Pack Qty.
CSS-1503	1/4	1/2	1 1/2	5/16	5/8	10-32	7/32	1 1/16	1
CSS-1504	1/4	1/2	1 3/4	7/16	3/4	10-32	7/32	1 3/16	1
CSS-1629	5/16	5/8	2	1/2	7/8	1/4-20	9/32	7/8	1
CSS-1755	3/8	3/4	3	7/8	1 3/8	5/16-18	1 1/32	1 3/8	1
CSS-1878	1/2	7/8	3	3/4	1 5/16	3/8-16	1 3/32	1 5/16	1

Strap Clamps Flat 304 Stainless Steel



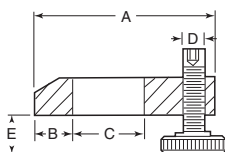
Item No.	A	B	C	D	E	F	G	Pack Qty.
CSS-1632	1/4	5/8	1 1/4	1/2	3/4	9/32	1/8	1
CSS-1881	1/2	7/8	3	1	1 1/8	19/32	1/8	1



STRAP CLAMPS



**Strap Clamps
Plain with Adjusting Screw**



Best suited for low work pieces. Clamping height is easily adjusted with adjusting screw. Adjusting screw (included) has knurled screw or socket head. Made from tempered steel, varnished finish.

See pages 433 and 435 for T-bolts and nuts.

Item No.	A	B	C	D	E	Slot Width	Pack Qty.
AMF-1	3.94	.83	1.58	M12	.39 - 1.81	.55	1
AMF-2	4.92	1.02	1.77	M16	.51 - 2.05	.71	1
AMF-3	6.30	1.18	2.36	M20	.63 - 2.56	.87	1

Note: Clamping Range depends on depth of slot and position of fixture nut

Forged from 1030 steel for toughness. Because of draft or taper on forgings minimum dimensions of slot are given.

**Drop Forged Steel
Strap Clamps
Plain Slot Pattern**



Item No.	Lgth.	Width	Thickness	Slot		Pack Qty.
				Lgth.	Width	
PS-4	4	1 1/2	3/4	1 3/8	1 1/16	1
PS-6	6	1 3/4	7/8	2 1/16	1 1/16	1
PS-8	8	2 1/4	1 1/8	2 13/16	1 3/16	1
PS-10	10	2 1/2	1 3/8	3 1/16	1 5/16	1

**Drop Forged Steel
Strap Clamps
Screw Heel**

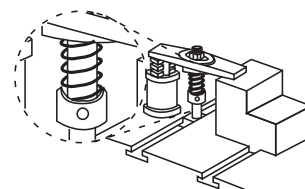


Item No.	Lgth.	Width	Thickness	Slot		Screw	Pack Qty.
				Lgth.	Width		
PS-12	4	1 1/2	3/4	1 5/16	1 1/16	1/2-13 x 1 1/4	1
PS-14	6	1 3/4	7/8	1 11/16	1 1/16	5/8-11 x 1 1/2	1
PS-16	8	2 1/2	1 1/8	2 7/16	1 3/16	3/4-10 x 1 3/4	1

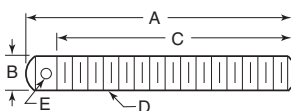
Strap Clamp Spring Lifters

Designed to speed set-ups wherever strap clamps are used. Spring lifter slides over T-slot bolt or stud and is held by tightening the set screw on locking collar. The strap clamp rests on the support collar and the spring holds the clamp just above the final tightened height, permitting the work to be quickly and easily slid underneath.

Item No.	Fits Dia.	Pack Qty.	Item No.	Fits Dia.	Pack Qty.
SCL-801	1/4	1	SCL-805	5/8	1
SCL-803	3/8	1	SCL-806	3/4	1
SCL-804	1/2	1			



Adjustable Clamp Rests



Item No.	A	B	C	D	E	Pack Qty.
CSS-6205	1	.190	3/4	10-32	1/16	1
CSS-6256	1	1/4	1 1/16	1/4-20	5/64	1
CSS-6258	1 1/2	1/4	1 3/16	1/4-20	5/64	1
CSS-6320	1 1/2	5/16	1 3/8	5/16-18	3/32	1
CSS-6321	1 7/8	5/16	1 5/8	5/16-18	3/32	1
CSS-6382	1 1/2	3/8	1 3/8	3/8-16	1/8	1
CSS-6384	2	3/8	2	3/8-16	1/8	1

**Strap Clamp
Set Up Wedges**



Item No.	Lgth.	Width	Max. Thickness	Pack Qty.
SUW-950	3	1	1/4	1
SUW-951	5	1	1/2	1
SUW-952	6	1 1/4	3/4	1



Rite Hite Self Positioning Hold Down Clamps



These clamps have instant adjustment up to 5". The main body of the clamp will move from 0" to whatever the max. height of the particular clamp is, instantly. Two models are available; longer reach for normal requirements and shorter reach where table space is at a premium. Up to 65,000 lbs. load limits. Clamps have a rocker design which allows for "instant set-ups" when held in place by a T-nut in a T-slot.

Use with T-nuts on page 434 and set-up studs on page 440.

Item No.	Max. Stud Size	Clamping Range	Dimensions	Load Limit Lbs.	Pack Qty.
Longer Reach					
JMC-375	3/8"	0 - 5"	1 1/2" x 3 1/2"	7,000	1
JMC-500	1/2"	0 - 2 1/2"	1 7/8" x 5 3/4"	8,800	1
JMC-625	5/8"	0 - 3 1/2"	1 7/8" x 6 3/4"	14,500	1
JMC-750	3/4"	0 - 5"	2 1/8" x 9"	24,000	1
JMC-1000	1"	0 - 5"	2 7/8" x 11 1/2"	65,000	1
Shorter Reach					
JMC-376	3/8"	0 - 1"	1 1/2" x 3"	8,800	1
JMC-501	1/2"	0 - 1 3/4"	1 3/8" x 4 1/4"	13,200	1
JMC-626	5/8"	0 - 2 3/4"	1 7/8" x 5 1/2"	19,000	1

Universal Adjustable Strap Clamps

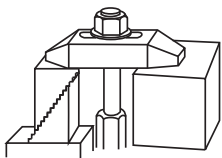
Drop forged from selected hardened carbon steel. Holds work on planers, boring mills, face plates of lathes, milling machines and many other applications.



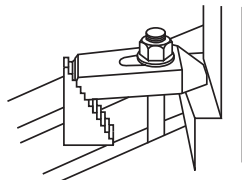
Item No.	OAL	Clamp Width	Adjustment	Maximum T-Bolt Dia.	Pack Qty.
USC-1	5 1/16"	1 1/8"	2 1/4"	5/8"	1
USC-2	8"	1 3/4"	4"	3/4"	1

Note: Bolt Size value is max. t-bolt diameter

Plain and Positive Grip Step Clamps



Plain Grip



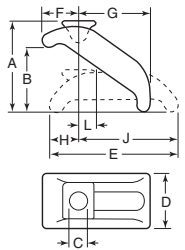
Positive Grip

Machined from solid bar stock, case hardened and black oxide finish. When used in conjunction with step setup blocks, positive grip step clamps simplify and quicken setting up operations considerably. Eliminates shimming to obtain the right height.

Plain		Positive		OAL	Width	Thickness	Slot Length	Pack Qty.
Item No.	Item No.	Bolt Size						
CP-1	CS-1	5/16" or 3/8"	2 1/2"	1	1/2"	1 1/4"	1 1/4"	1
CP-2	CS-2	5/16" or 3/8"	4"	1	5/8"	1 7/8"	1 1/4"	1
CP-3	CS-3	5/16" or 3/8"	6"	1 1/8"	3/4"	2 1/2"	1 1/4"	1
CP-4	CS-4	1/2"	2 1/2"	1 1/8"	1/2"	1 1/4"	1 1/4"	1
CP-5	CS-5	1/2"	4"	1 1/4"	3/4"	1 7/8"	1 1/4"	1
CP-6	CS-6	1/2"	6"	1 1/4"	7/8"	2 1/2"	1 1/4"	1
CP-7	CS-7	5/8"	2 1/2"	1 1/4"	5/8"	1 1/4"	1 1/4"	1
CP-8	CS-8	5/8"	4"	1 1/2"	3/4"	1 7/8"	1 1/4"	1
CP-9	CS-9	5/8"	6"	1 1/2"	7/8"	2 1/2"	1 1/4"	1
CP-10	CS-10	3/4"	4"	1 1/2"	3/4"	1 7/8"	1 1/4"	1
CP-11	CS-11	3/4"	6"	1 5/8"	1"	2 3/4"	1 1/4"	1
CP-12	CS-12	3/4"	8"	1 3/4"	1 1/8"	3"	1 1/4"	1

Note: Clamps for 5/16", 3/8", 1/2" and 5/8" bolts work with metric bolts M8, M10, M12 and M16 respectively.

Stepless Universal Height Clamps

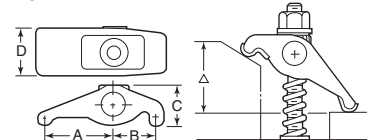


Quickly adapts to various clamping heights without supports or blocks. Allows for quick set-ups. Holds work on planers, boring mills, milling machines and other applications. Made from hardened steel, yellow passivated.

See pages 433 and 435 for T-bolts and nuts.

Item No.	A	B	C	D	E	F	G	H	J	L	Pack Qty.
AMF-6	2.24	0 - 1.38	.51	1.50	3.47	1.10	1.89	.91	2.68	.55	1
AMF-7	3.54	0 - 2.17	.71	2.21	5.12	1.50	2.91	1.14	3.98	.71	1
AMF-8	4.06	0 - 2.56	.87	2.60	5.51	1.81	3.15	1.26	4.41	.79	1

One Piece Adjustable Clamps

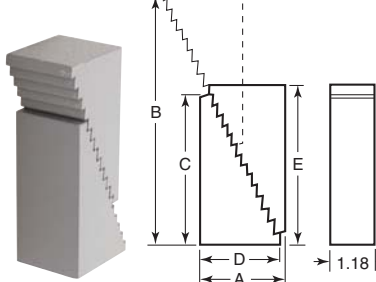


Forged steel clamp offers instant height adjustment without blocks or shims. One piece assembly allows quick setups. Removable brass shims protect machine table and work piece. Clamp swings 90 degrees in either direction for loading clearance.

See pages 433 and 435 for T-slot bolts and flange nuts for use with these clamps.

Item No.	A	B	C	D	Stud Size	Clamping Range	Pack Qty.
USC-40	1 1/8"	1 1/8"	1"	1 1/4"	3/8"	0 - 1 1/4"	1
USC-50	2 1/16"	1 7/16"	1 1/16"	1 1/8"	1/2"	0 - 2 1/16"	1
USC-60	3 3/4"	2"	1 1/8"	1 1/8"	5/8"	0 - 3"	1
USC-70	3 1/2"	2 1/8"	2 1/4"	2 1/2"	3/4"	0 - 4 1/4"	1

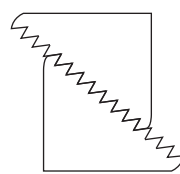
Universal Step Blocks



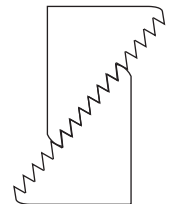
Tempered steel, varnished finish. Step increments are vertically .183" and horizontally .091". Step blocks sold individually. For use with AMF step clamps AMF-17 and 18.

Item No.	A	B	C	D	E	Pack Qty.
AMF-40	.87	2.01	1.30	.75	1.50	1
AMF-41	1.54	4.21	2.60	1.40	2.76	1
AMF-42	2.80	8.19	5.16	2.68	5.32	1

Positive Grip Step Setup Blocks Steel or Aluminum



Horizontal



Vertical

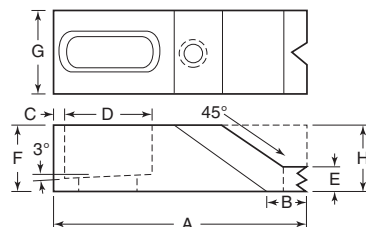
Two triangular pieces make up one block.

Steel		Aluminum		Pack Qty.
Item No.	Item No.	Range	Width	
1-S	1-A	3/4 to 1 1/2"	1"	1
2-S	2-A	1 1/8 to 2 1/2"	1"	1
3-S	3-A	2 1/2 to 6"	1"	1
4-S	—	1 3/4 to 3 3/4"	1 1/2"	1
5-S	—	2 1/2 to 6"	1 1/2"	1

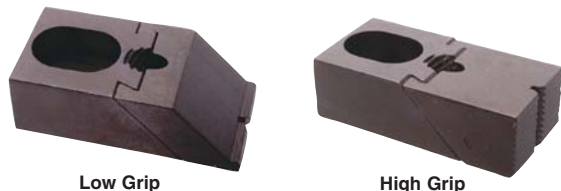
Steel		Aluminum		Pack Qty.
Item No.	Item No.	Range	Width	
6-S	—	3 1/2 to 9"	1 1/2"	1
7-S	—	1 3/4 to 3 3/4"	2"	1
8-S	—	2 1/2 to 6"	2"	1
9-S	—	3 1/2 to 9"	2"	1



Powerful, low profile clamp that grips on the side of the work leaving the top surface open. No interference with cutting tools or reading and measuring instruments. Ideal for use on mills, planers, jig bores, drill presses or faceplates. Heat treated steel, black oxide finish. Toe is moved by an actuating screw. T-wrenches are sold separately. Toe moves on a 45 degree angle, forcing the workpiece down. 3 degree taper prevents back-off. To help prevent possible damage by the anchor screw, a special washer is provided with each clamp.



Toe Clamps
Slotted for 3/16 or M8 Socket Head Cap Screw

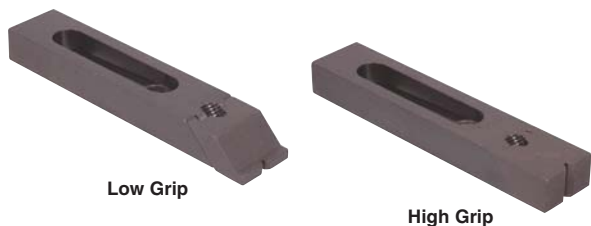


Low Grip

High Grip

Steel Toe		Brass Toe								Pack Qty.
Item No.	Item No.	A	B	C	D	E	F	G	H	
Low Grip										
NTC-41101	NTC-41131	2	1/2	1/16	3/4	1/8	5/8	1	1/8	1
NTC-41102	—	2 1/2	1/2	1/16	1 1/4	1/8	5/8	1	1/8	1
NTC-41103	—	3	1/2	1/16	1 3/4	1/8	5/8	1	1/8	1
High Grip										
NTC-41110	NTC-41121	2	1/2	1/16	3/4	5/8	5/8	1	5/8	1
NTC-41111	—	2 1/2	1/2	1/16	1 1/4	5/8	5/8	1	5/8	1
NTC-41112	—	3	1/2	1/16	1 3/4	5/8	5/8	1	5/8	1

Toe Clamps
Slotted for 1/2 or M12 Socket Head Cap Screw

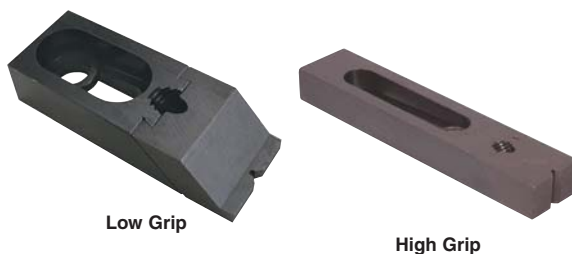


Low Grip

High Grip

Item No.	A	B	C	D	E	F	G	H	Pack Qty.
Low Grip									
NTC-41001	4 1/16	19/16	1/8	2	1/4	7/8	1 1/2	1/4	1
NTC-41002	5 1/2	19/16	1/2	2 3/4	1/4	7/8	1 1/2	1/4	1
NTC-41003	7 1/16	19/16	1	3 3/4	1/4	7/8	1 1/2	1/4	1
High Grip									
NTC-41010	4 1/16	19/16	1/8	2	7/8	7/8	1 1/2	7/8	1
NTC-41011	5 1/2	19/16	1/2	2 3/4	7/8	7/8	1 1/2	7/8	1
NTC-41012	7 1/16	19/16	1	3 3/4	7/8	7/8	1 1/2	7/8	1

Toe Clamps
Slotted for 5/8 or M16 Socket Head Cap Screw

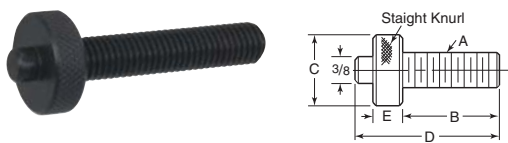


Low Grip

High Grip

Item No.	A	B	C	D	E	F	G	H	Pack Qty.
Low Grip									
NTC-41051	4 1/16	13/16	1/8	2	1/4	7/8	1 1/2	1/4	1
NTC-41052	5 1/2	13/16	1/2	2 3/4	1/4	7/8	1 1/2	1/4	1
High Grip									
NTC-41061	4 1/16	13/16	1/8	2	7/8	7/8	1 1/2	7/8	1
NTC-41062	5 1/2	13/16	1/2	2 3/4	7/8	7/8	1 1/2	7/8	1

Jack Screws



Jack screws are used in fixtures to support irregularly shaped work pieces, such as castings and to eliminate bowing or warping of thinner materials during machining. Heat treated steel, black oxide finish.

Item No.	A	B	C	D	E	Pack Qty.
SJS-500	3/8-16	1 1/4	1 1/8	1 7/8	3/8	1
SJS-510	3/8-16	1 5/8	1 1/8	2 1/4	3/8	1
SJS-515	3/8-16	2	1 1/8	2 5/8	3/8	1
SJS-520	1/2-13	1 1/4	1 1/8	1 7/8	3/8	1
SJS-525	1/2-13	1 5/8	1 1/8	2 1/4	3/8	1
SJS-530	1/2-13	2	1 1/8	2 5/8	3/8	1
SJS-535	1/2-13	2 1/2	1 1/8	3 1/8	3/8	1
SJS-540	5/8-11	1 5/8	1 3/8	2 1/4	3/8	1
SJS-545	5/8-11	2	1 3/8	2 5/8	3/8	1
SJS-550	5/8-11	2 1/2	1 3/8	3 1/8	3/8	1

Fixture Jacks

Designed as a positive locking jack for irregular clamping to achieve various heights requiring a positive pressure stop on milling fixtures, drill jigs, etc. Adjustable to fit irregularities of milling operations. Available in either smooth round head or hardened serrated gripping surface. Pin construction elevates vertically, no rotation Outer diameter of bushing ground for press fit. Made of ledloy, heat treated. Black oxide finish.

Item No.	A	B	C	D		E	F	G	J	Thread	Pack Qty.
				Min.	Max.						
Radius Head											
JFJ-24901	5/8	1 3/16	3/16	9/16	1 1/2	1	1/4	5/32	3/8	3/8-16	1
JFJ-24902	1	1 5/8	3/16	7/8	2 1/16	1 5/16	15/32	7/16	7/16	5/8-11	1
JFJ-24903	1 1/2	2 3/4	3/16	7/8	3 1/2	1 3/4	13/16	1/2	9/16	1-8	1
Serrated Head											
JFJ-25101	5/8	1 1/16	3/16	9/16	1 1/2	1	1/4	5/32	3/8	3/8-16	1
JFJ-25102	1	1 5/8	3/16	7/8	2 1/16	1 5/16	15/32	7/16	7/16	5/8-11	1
JFJ-25103	1 1/2	2 3/4	3/16	7/8	3 1/2	1 3/4	13/16	1/2	9/16	1-8	1



Radius Head

Serrated Head

