

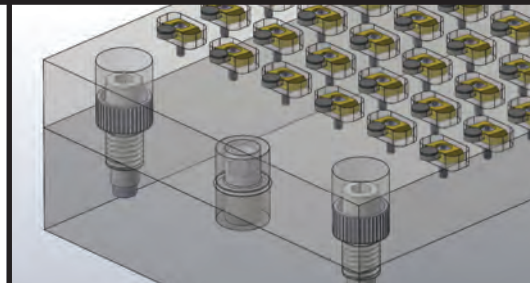
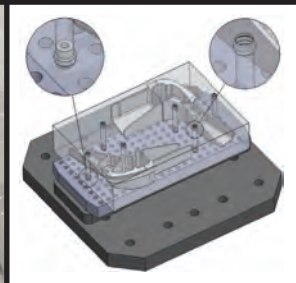
WORKHOLDING SPECIALISTS



LOC-DOWN SYSTEM

AEROSPACE

QUICK CHANGE PALLET



Mission Statement

Our goal is to serve our customers by providing a complete range of the best low profile clamps, of the highest quality at competitive prices and delivered on time. This promise is backed and supported by our knowledgeable technical and sales staff who are available to assist our distributors and customers.

Company Profile

Mitee-Bite Products, LLC began in 1986 in an oversized 2 car garage with the original MB hex clamp created to save time on a reoccurring production job and grew to become the innovator of compact, low-profile edge clamps for CNC machining.

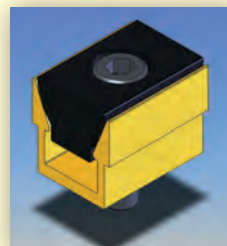
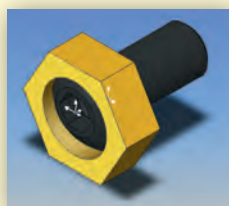
Fast forward almost 30 years later and we continue to develop new products providing customers with a wide assortment of high-density low profile clamping solutions and assistance with clamping recommendations. We have expanded to also provide top level CAD designs and complete turn-key projects. We place our focus on what matters most on

your shop floor... making chips! Keeping the spindle running, cutter engagement, reducing idle spindle time, saving on material cost, reducing set-up times and standardization, all contribute to our belief "let the machines work harder while you lower your labor cost and increase capacity."

Our goal is to help you reach your goals.

Mitee-Bite Products are available through many qualified distributors around the world. For contact and product information visit our website at MiteeBite.

Our **CAD FILES** can now be downloaded in all formats from our website: **MiteeBite.com**



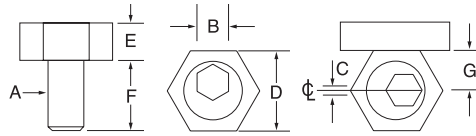
Description	Clamp Type	Category	Page
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Original Fixture Clamps



The cam action MITEE-BITE Fixture Clamp is made up of two simple components: a hardened steel socket cap screw with an offset head and a brass hexagonal washer.

- Low-profile for quick and easy installation of linear motion guide rails
- Cam action provides fast, strong clamping
- Small size allows more parts per load
- Simple design keeps cost low
- 50218 our most popular LMGR size available in bulk



NOTE: Clockwise rotation is recommended. Locating pin should be on the right of workpiece.

G* - Location to drill and tap from edge of workpiece.

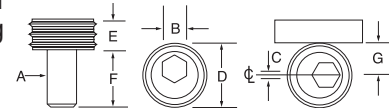
Part Number	A	B	C	D	E	F	G*	Torque (Ft/Lbs)	Holding Force	Clamps Per Pack*	—Replacement—	
											Cam Screw	Hex Washer
INCH												
10202	8 - 32	5/64	.030	.312	.110	.350	.150	1.5	205 lbs	10	10363	10580
10207	10 - 32	3/32	.040	.500	.160	.340	.250	2.5	350 lbs	10	10366	10587
10204	1/4 - 20	1/8	.040	.625	.190	.470	.308	6.2	800 lbs	10	10365	10582
10205	5/16 - 24	3/16	.040	.812	.180	.460	.400	8.3	800 lbs	12	10369	10584
10201	5/16 - 18	3/16	.040	.812	.180	.460	.400	8.3	800 lbs	12	10367	10584
10206	3/8 - 16	3/16	.050	.812	.250	.710	.400	20.8	2,000 lbs	10	10371	10586
10208	1/2 - 13	5/16	.100	1.000	.375	.900	.500	65.0	4,000 lbs	8	10373	10588
10210	5/8 - 11	3/8	.100	1.187	.500	1.125	.590	100.0	6,000 lbs	4	10375	10592
Torque (N.m.)												
METRIC												
50204	M4	3	.76	7.93	2.80	9.6	3.80	2.0	910 N	10	50363	10580
50206	M6	4	1.01	15.86	4.75	11.2	7.80	8.5	3,558 N	10	50365	10582
50208	M8	5	1.01	20.61	4.55	15.0	10.15	11.3	3,558 N	12	50367	10584
50210	M10	7	1.27	20.61	6.35	19.0	10.15	28.0	8,895 N	10	50369	10586
50212	M12	8	2.03	25.38	9.52	22.8	12.70	88.0	17,790 N	8	50371	10590
50216	M16	12	2.54	30.13	12.70	28.5	15.00	125.0	26,680 N	4	50373	10592
50218	M8	5	1.01	20.61	4.55	15.0	10.15	11.3	3,558 N	bulk	502181	10584
STAINLESS STEEL (300 Series)												
10214	8 - 32	5/64	.030	.312	.110	.350	.150	1.5 Ft. Lbs	205 lbs	10	10362	10581
10203	1/4 - 20	1/8	.040	.625	.190	.470	.308	6.2 Ft. Lbs	800 lbs	4	10364	10583
10213	5/16 - 18	3/16	.040	.812	.250	.460	.400	8.3 Ft. Lbs	800 lbs	4	10368	10585
50214	M4	3mm	.76mm	7.93mm	2.80mm	9.6mm	3.80mm	2.0(N.m.)	910 N	10	50361	10581
50205	M6	4mm	1.01mm	15.86mm	4.75mm	11.2mm	7.80mm	8.50(N.m.)	3,558 N	4	50364	10583
50207	M8	5mm	1.01mm	20.60mm	6.35mm	15.0mm	10.15mm	11.30(N.m.)	3,558 N	4	50366	10585

* - All clamps may be purchased in bulk packages of 50 pcs. or more.

Knife Edge Clamps



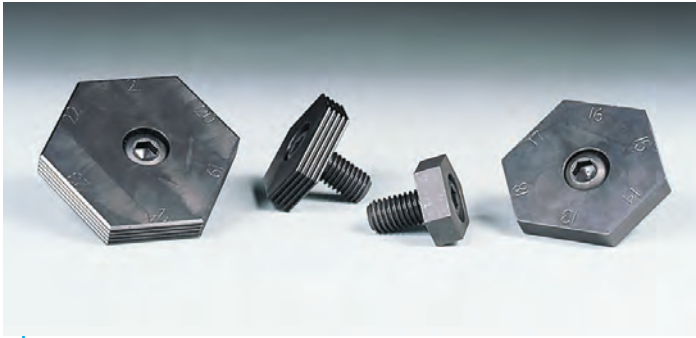
Our Knife Edge Clamps can be used instead of the original brass hex clamps for clamping rough cut stock, castings and any material that requires a hardened clamping element. Same "G" dimension as Original Fixture Clamps above. Clamps produced in 12L14 steel with a nickel coating.



Part Number	A	B	C	D	E	F	G	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	Number of Clamps Per Pack	— Replacement —	
											Cam Screw	Washer
INCH												
22584	3/8 - 16	3/16	.050	.812	.250	.710	.400	16.6	2,000	8	10371	12584
22588B	1/2 - 13	5/16	.080	1.000	.375	.900	.500	52.0	4,000	8	10374	12588B
22592	5/8 - 11	3/8	.100	1.187	.500	1.125	.590	80.0	6,000	4	10375	12592
(N.m.) (N.)												
METRIC												
82584	M10	7M	1.27	20.60	6.35	19.0	10.15	28.00	8900	8	50369	12584
82588	M12	8M	2.03	25.40	9.52	22.8	12.70	88.00	17800	8	50371	12588B
82592	M16	12M	2.54	30.15	12.70	28.5	15.00	135.00	26700	4	50373	12592

Not designed for clamping hardened material at maximum torque.

Series-9 Clamps



This adjustable low profile, cam action clamp provides clamping of different size workpieces merely by rotating the clamp to one of its other edges. The clamps are .394 (10mm) high and use a 1/2-13 (M12) cam screw. Each of the six clamping surfaces is a different distance from the centerline by .0394 (1mm) as shown in the chart. Therefore, one Series-9 Clamp can hold parts that vary up to .240 (9.4mm) simply by rotating the clamp to a different clamping surface.

- Serrated or smooth edges
- Heat treated and plated
- 4,000 lbs. (17800 N.m.) holding force



TORQUE VALUES AND HOLDING FORCE

	Part Number	Screw Size	Max. Torque/ Holding Force	Replacement Cam Screw
INCH	90110 - 90145	1/2 - 13	65 Ft Lbs / 4000 Lbs	10374
METRIC	95110 - 95145	M12	88 N.m. / 17,800 N.	50371

—Part Number—		Description	Face Number	Distance from ϕ (metric)
Inch	Metric			
90110	95110	1-6 Smooth	1	.4724 (12mm)
90115	95115	1-6 Serrated	2	.5118 (13mm)
			3	.5512 (14mm)
			4	.5906 (15mm)
			5	.6299 (16mm)
			6	.6693 (17mm)
90120	95120	7-12 Smooth	7	.7086 (18mm)
90125	95125	7-12 Serrated	8	.7480 (19mm)
			9	.7874 (20mm)
			10	.8268 (21mm)
			11	.8661 (22mm)
			12	.9055 (23mm)

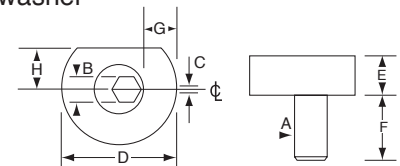
—Part Number—		Description	Face Number	Distance from ϕ (metric)
Inch	Metric			
90130	95130	13-18 Smooth	13	.9449 (24mm)
90135	95135	13-18 Serrated	14	.9842 (25mm)
			15	1.0236 (26mm)
			16	1.0630 (27mm)
			17	1.1024 (28mm)
			18	1.1417 (29mm)
90140	95140	19-24 Smooth	19	1.1811 (30mm)
90145	95145	19-24 Serrated	20	1.2205 (31mm)
			21	1.2598 (32mm)
			22	1.2992 (33mm)
			23	1.3386 (34mm)
			24	1.3780 (35mm)

Machinable Fixture Clamps



These clamps, with the machinable steel washers, provide more flexibility for holding round or unusual shaped parts. Parts can be held directly to the fixture plate surface or elevated for through drilling. A special screw is provided with each package to hold the washer in the proper place during machining.

The flat edge is the same location as our original fixture clamps. It can be used where a stronger clamping surface is required.

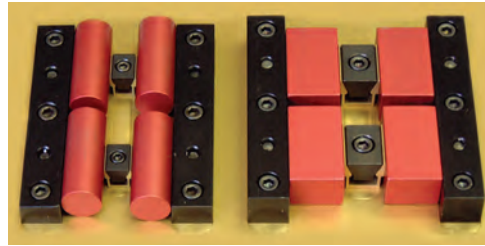
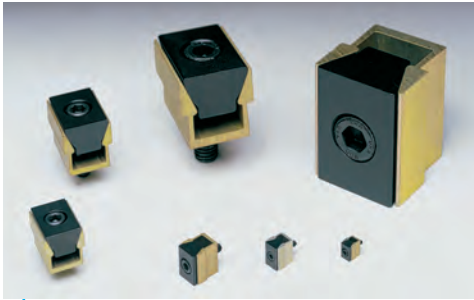


- Low profile
- Made of mild steel for machinability

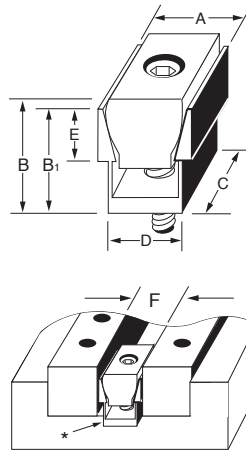


Part Number	A	B	C	D	E	F	G*	H†	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	Number of Clamps Per Pack	—Replacement— Cam Screw	Washer
(N.m.) (N.)													
INCH													
10504	1/4 - 20	1/8	.040	.980	.250	.470	.250	.308	6.2	800	4	10365	10604
10506	3/8 - 16	3/16	.050	1.230	.350	.710	.275	.400	20.8	2,000	4	10371	10606
10508	1/2 - 13	5/16	.100	1.480	.450	.900	.300	.500	65.0	4,000	4	10373	10608
10510	5/8 - 11	3/8	.100	1.730	.550	1.125	.350	.590	100.0	6,000	4	10375	10610
METRIC													
50506	M6	4M	1.01	24.9	6.4	11.9	6.4	7.8	8.5	3358	4	50365	10604
50510	M10	7M	1.52	31.2	8.9	18.0	7.0	10.2	28.0	8900	4	50369	10606
50512	M12	8M	2.03	37.6	11.4	22.9	7.6	12.7	88.0	17800	4	50371	10612
50516	M16	12M	2.54	43.9	14.0	28.6	8.9	15.0	135.0	26700	4	50373	10610

G* - Amount of machinable stock H† - The distance to drill & tap hole from edge of workpiece to use flat face.
Every package includes one machining screw



The compact, economical MITEE-BITE Uniforce® Clamp enables you to fixture more parts on the machine table. The specially designed steel wedge spreads the clamping force uniformly on both sides of the 7075-T6 aluminum channel.

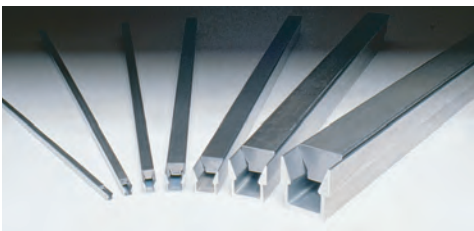


- Increases production
- Minimizes tool changes
- Holds two parts with equilateral clamping action
- Ideal for clamping flat or round workpieces
- Reduces wasted space
- See Locating Rails on page 31
- Easily mated to hydraulic pull cylinders
- Ideal for pallet changers

Part Number	Model	A	B	B1	C	D*	E	F†	Thread Size	Max. Maximum Spread	Holding Torque (Ft/Lbs)	Number Force (Lbs)	of Clamps Per Pack	Key Size	-Replacement- Channel	Slug	
INCH																	
60250	250	.240	.27	.250	.320	.210	.140	.250	2 - 56	.260	.5	200	6	5/64	60205	60305	
60375	375	.360	.38	.375	.470	.310	.185	.375	4 - 40	.390	1.1	310	6	3/32	60207	60307	
60500	500	.485	.58	.500	.625	.410	.220	.500	8 - 32	.530	2.5	500	8	9/64	60210	60310	
60750	750	.735	.77	.750	.940	.635	.375	.750	1/4 - 20	.785	10.8	1,500	6	3/16	60220	60320	
61000	1000	.980	1.02	1.000	1.250	.820	.500	1.000	5/16-18	1.050	10.4	2,000	4	1/4	60230	60330	
61500	1500	1.470	1.52	1.500	1.875	1.215	.750	1.500	1/2 - 13	1.560	28.3	3,500	2	3/8	60240	60340	
62000	2000	1.960	2.03	2.000	2.500	1.625	1.000	2.000	5/8 - 11	2.080	55.0	6,000	2	1/2	60245	60350	
											(N.m.)	(N.)					
METRIC																	
80250	250	6.1	6.9	6.40	8.1	5.3	3.6	6.4	M2	6.7	0.70	880	6	1.5	60205	60305	
80375	375	9.1	9.7	9.50	11.9	7.9	4.7	9.5	M2.5	10.0	1.50	1350	6	2	60207	60307	
80500	500	12.3	14.5	12.70	15.9	10.4	5.6	12.7	M4	13.2	3.40	2225	8	3	60210	60310	
80750	750	18.6	19.0	19.05	23.8	16.1	9.5	19.0	M6	20.3	14.30	6675	6	5	60220	60320	
81000	1000	24.8	25.9	25.40	31.7	20.8	12.7	25.4	M8	26.9	14.50	8900	4	6	60230	60330	
81500	1500	37.3	38.6	38.10	47.6	30.8	19.0	38.1	M12	39.9	38.40	15575	2	10	60240	60340	
82000	2000	49.7	51.5	50.80	63.5	41.2	25.4	50.8	M16	53.0	74.60	26700	2	14	60245	60350	

D* - A milled slot wider than D dimension will insure clamp remains in line with workpiece. Clamp sides should not come in contact with slot walls during expansion.
 F† - The distance needed between workpieces for clamp clearance. Drill and tap mounting hole on the center of F dimension.

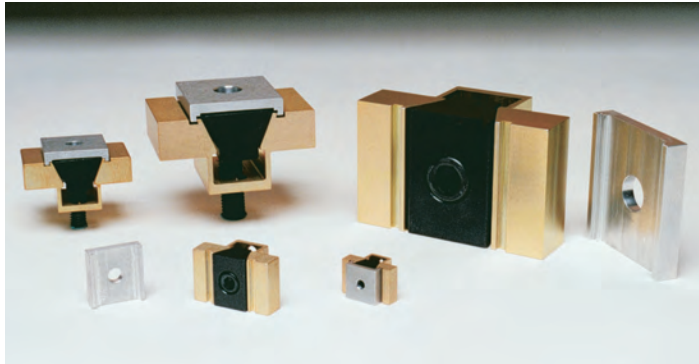
Long Length Uniforce® Channel & Steel



This material is available in 20" (508mm) lengths so clamps can be fabricated in different lengths to suit any requirement. Does not include plating or drilled holes.

Part Number	Model	Part Number	Model
62010	250 Channel	62320	1000 Channel
63010	250 Steel	63320	1000 Steel
62020	375 Channel	62420	1500 Channel
63020	375 Steel	63420	1500 Steel
62120	500 Channel	62520	2000 Channel
63120	500 Steel	63520	2000 Steel
62220	750 Channel		
63220	750 Steel		

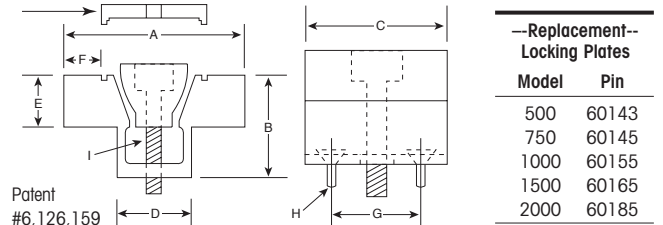
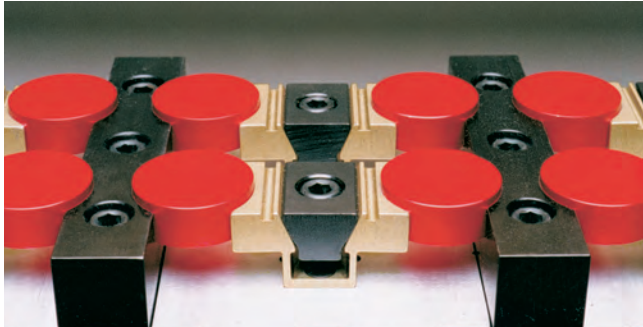
Machinable Uniforce® Clamps



The compact Mitee-Bite Uniforce® clamp is available with extra material on the clamping jaws so it can be machined to conform to the shape of your workpiece - enabling you to fixture unusual applications easily. The specially designed steel wedge spreads the clamping force uniformly on both sides of the 7075-T6 aluminum channel.

The locking plate properly expands the clamp, while making it rigid for machining. Machine to a slip fit of workpiece. Remove locking plate before clamping workpiece.

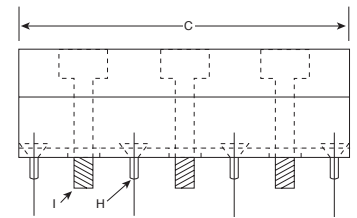
NOTE: When clamp is used to hold flat stock, use locking plate to machine faces parallel.



--Replacement-- Locking Plates	
Model	Pin
500	60143
750	60145
1000	60155
1500	60165
2000	60185

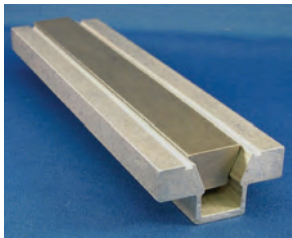
Model	Part No. with Locking Plate	Part No. Without Locking Plate	A*	B	C	D	E	F†	G	H**	I	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	--Replacement-- Steel	Channel
INCH															
500	60050	60055	1.125	.50	.62	.420	.25	.18	.400	2-56	8-32	2.5	500	60310	60140
750	60075	60080	1.500	.75	.94	.632	.37	.26	.625	6-32	1/4-20	10.8	1,500	60320	60125
1000	60100	60105	2.000	1.00	1.25	.820	.50	.39	.812	6-32	5/16-18	10.4	2,000	60330	60135
1500	60150	60153	3.000	1.50	1.87	1.215	.75	.62	1.200	10-32	1/2-13	28.3	3,500	60340	60160
2000	60200	60203	4.000	2.00	2.50	1.625	1.00	.80	1.625	1/4-20	5/8-11	55.0	6,000	60350	60180
METRIC															
500	80050	80055	28.6	12.7	15.7	10.67	6.3	4.6	10.16	M2	M4	3.40	2225	60310	60140
750	80075	80080	38.1	19.1	23.9	16.05	9.4	6.6	15.87	M4	M6	14.30	6675	60320	60125
1000	80100	80105	50.8	25.4	31.8	20.83	12.7	9.9	20.62	M4	M8	14.50	8900	60330	60135
1500	80150	80155	76.2	38.1	47.5	30.86	19.1	15.7	30.48	M5	M12	38.40	15575	60340	60160
2000	80200	80205	101.6	50.8	63.5	41.28	25.4	20.3	41.28	M6	M16	74.60	26700	60350	60180

A* - The distance needed between workpieces for clamp clearance, drill and tap mounting holes on the center of "A" dimension.
 F† - The amount of machinable stock on jaws. H** - Mounting screws included.



LONG LENGTH MACHINABLE UNIFORCE® CLAMPS

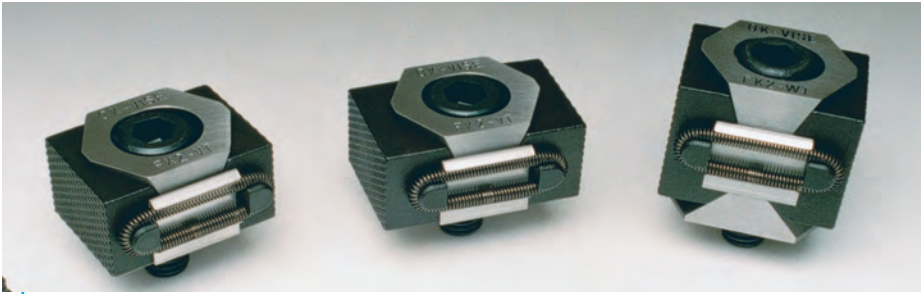
Locking plate is required to machine channel without vibration. (See chart above)



This material is available in 7 1/2" (190mm) lengths so clamps can be fabricated in different lengths to fit specific requirements. Does not include plating or drilled holes.

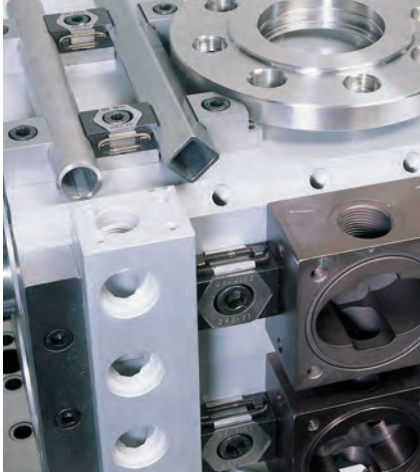
Part Number	Model	A*	B	C	D	E	F†	H	I	Max. Torque (Ft/Lbs)	Holding Force (Lbs)
INCH											
60051	500 Channel	1.125	.50	7.50	.420	.25	.18	2-56	8-32	2.5	500
60052	500 Steel Slug			7.50							
60071	750 Channel	1.500	.75	7.50	.632	.37	.26	6-32	1/4-20	10.8	1,500
60072	750 Steel Slug			7.50							
60101	1000 Channel	2.000	1.00	7.50	.820	.50	.39	6-32	5/16-18	10.4	2,000
60102	1000 Steel Slug			7.50							
60151	1500 Channel	3.000	1.50	7.50	1.215	.75	.62	10-32	1/2-13	28.3	3,500
60152	1500 Steel Slug			7.50							
METRIC											
80051	500 Channel	28.6	12.7	190mm	10.67	6.3	4.6	M2	M4	3.40	2225
80071	750 Channel	38.1	19.1	190mm	16.05	9.4	6.6	M4	M6	14.30	6675
80101	1000 Channel	50.8	25.4	190mm	20.83	12.7	9.9	M4	M8	14.50	8900
80151	1500 Channel	76.2	38.1	190mm	30.86	19.1	15.7	M5	M12	38.40	15575

A* - The distance needed between workpieces for clamp clearance, drill and tap mounting holes on the center of "A" dimension.
 F† - The amount of machinable stock on jaws. (3) Drive Screws and (4) Mounting Screws included.



THREE-DIMENSIONAL MACHINING

Due to a low-profile design of OK-VISE® Clamps, it is possible to execute flexible three-directional machining of workpieces with one fastening. This ability to machine a workpiece in three planes means improved accuracy.



PULL DOWN ACTION

The single wedge clamps keep the workpieces steadily in place, not allowing upward or downward movement. The double-wedge clamps generate a pull-down action pressing the workpieces towards the fixture base.

MACHINABLE JAWS

Single-wedge clamps are also available with extended jaws that can be machined to suit the geometry of the workpiece.



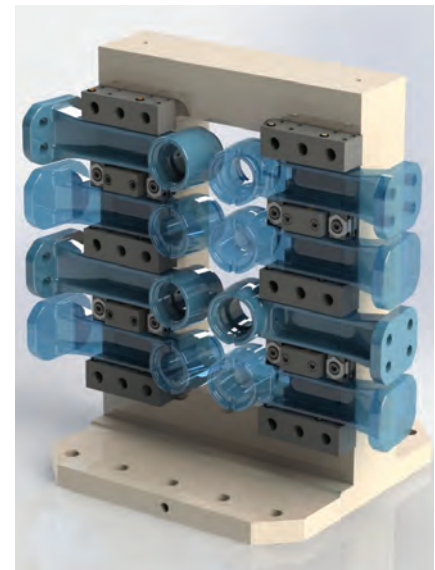
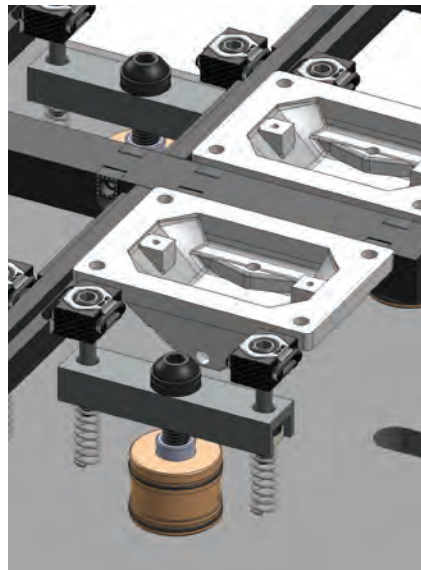
SPECIAL MODELS

A self adjusting steel ball is helpful when clamping castings and workpieces of irregular shape.

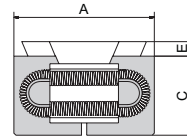
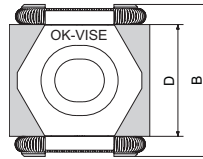
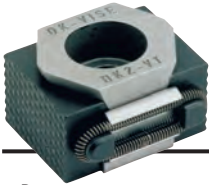
Jaws tapped with M5 threads for socket head screws allowing for quick and easy use of various different additional pieces.

BK2 is available in high quality stainless steel to meet the demands Wof EDM applications.

Up to 33,000 lbs. of clamping force allowing full capabilities of machine and tooling components



SINGLE-WEDGE OK-VISE® CLAMPS

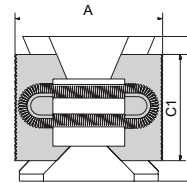
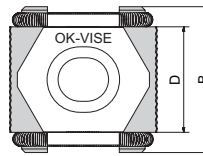


Strong lateral clamping with a single wedge design.

Part Number	Model	A			B	C	D	E	F	Mounting Screw (included)	Max. Torque (Ft/Lbs)	Pressing Force of Jaws (Lbs)	Hardness of Jaws HRC	---Replacement---	
		Min.	Optimum	Max.										Spring	Side Plate
47100*	AK2-VT-SO	.79	.90	.98	.86	.43	.59	.16	.060	10-32 x 3/4	7	2,000	48-52	N/A	47123
47110*	BK2-VT-S	1.06	1.14	1.22	1.14	.59	.83	.10	.060	5/16-18 x 3/4	30	5,500	48-52	47125	47127
47105	BK2-VT-O	1.06	1.14	1.22	1.14	.59	.83	.10	.060	5/16-18 x 3/4	30	5,500	48-52	47125	47127
47103*	BK2-VT-SO	1.06	1.14	1.22	1.14	.59	.83	.10	.060	5/16-18 x 3/4	30	5,500	48-52	47125	47127
47115	BK2-VT	1.06	1.14	1.22	1.14	.59	.83	.10	.060	5/16-18 x 3/4	30	5,500	48-52	47125	47127
47113	BK2-VT-SS	1.06	1.14	1.22	1.14	.59	.83	.10	.060	5/16-18 x 3/4	30	5,500	48-52	47125	47127
47130	DK2-VTI	1.65	1.77	1.93	1.61	.87	1.18	.16	.080	1/2-13 x 1 1/4	110	14,500	48-52	47135	47137
47160	FK2-VT	2.24	2.40	2.60	2.20	1.14	1.65	.20	.145	5/8-11 x 1 1/2	250	24,900	48-52	47161	47162

*47100, 47110, 47103 have smooth jaws. 47100 uses O-ring, Part Number 47095

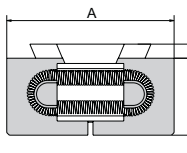
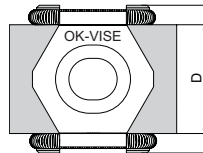
DOUBLE-WEDGE OK-VISE® CLAMPS



Increased clamping force and the double wedge design pulls the workpiece down.

Part Number	Model	A			B	C	C1	D	E	F	Mounting Screw (included)	Max. Torque (Ft/Lbs)	Pressing Force of Jaws (Lbs)	Hardness of Jaws HRC	--Replacement--	
		Min.	Optimum	Max.											Spring	Side Plate
47150	DK2-WTI	1.65	1.77	1.93	1.61	1.42	1.18	1.18	.20	.080	1/2-13 x 1 1/2	110	20,000	48-52	47135	47137
47180	FK2-WT	2.24	2.40	2.64	2.20	1.97	1.65	1.65	.20	.145	5/8-11 x 2 1/4	250	33,000	48-52	47161	47162

MACHINABLE SINGLE-WEDGE OK-VISE® CLAMPS

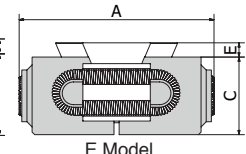
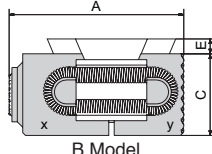
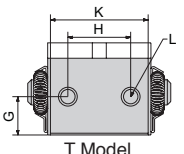
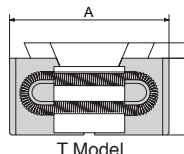
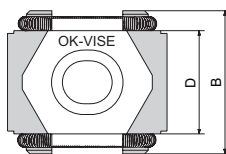
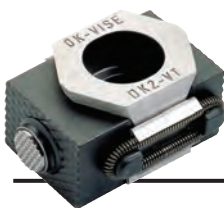


Additional material is added to these machinable jaws.

Part Number	Model	A			B	C	D	E	F	Mounting Screw (included)	Max. Torque (Ft/Lbs)	Pressing Force of Jaws (Lbs)	Hardness of Jaws HRC	-- Replacement --	
		Min.	Optimum	Max.										Spring	Side Plate
47120*	BK2-VT-S+3	1.30	1.38	1.46	1.14	.59	.83	.10	.060	5/16-18 x 3/4	30	5,000	30-34	47125	47127
47140	DK2-VTI+5	2.05	2.17	2.32	1.61	.87	1.18	.16	.080	1/2-13 x 1 1/4	110	12,000	30-34	47135	47137
47170	FK2-VT+5	2.64	2.80	2.99	2.20	1.14	1.65	.20	.145	5/8-11 x 1 1/2	250	22,000	30-34	47161	47162

*47120 has a smooth jaw.

SPECIAL MODEL OK-VISE® CLAMPS



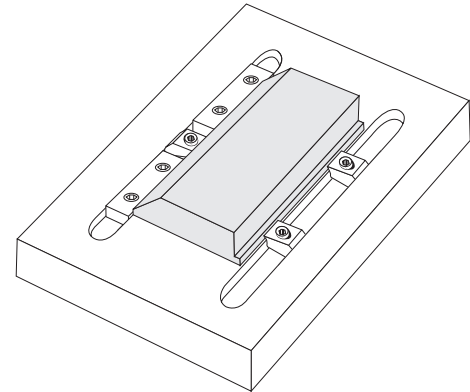
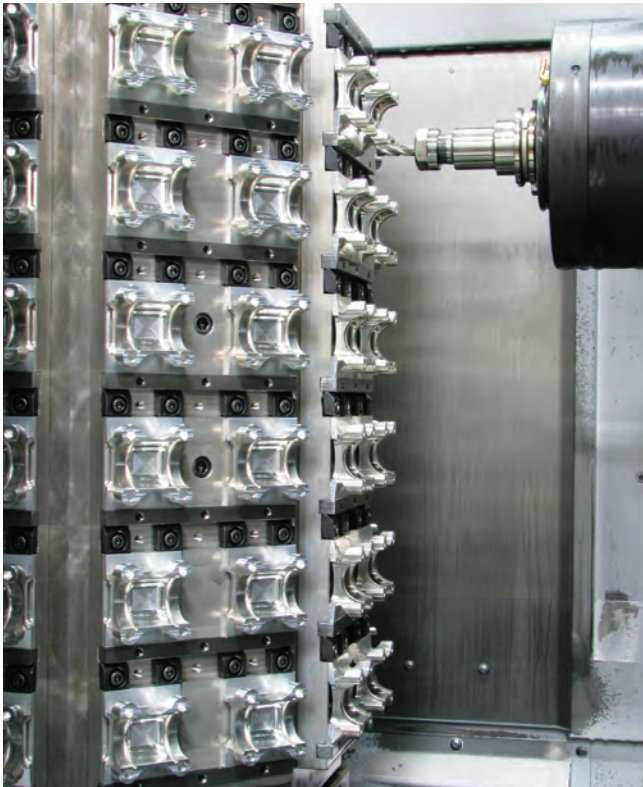
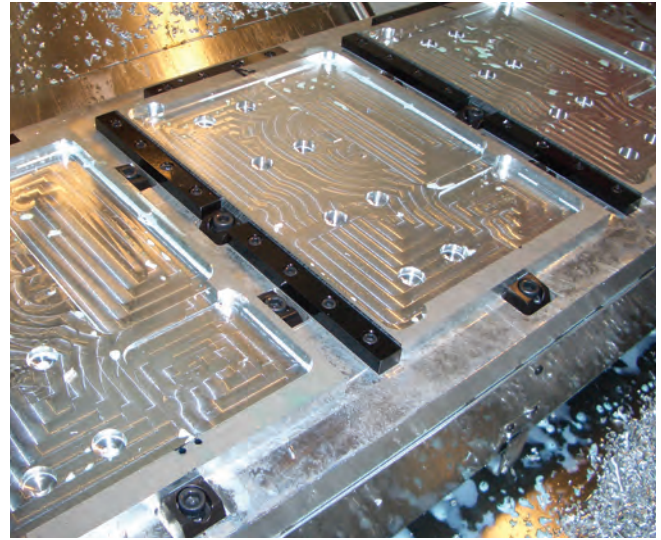
Part Number	Model	Description	A			B	C	D	E	G	H	K	L	Mounting Screw (Included)	Max Torque	Force	Hardness of Jaws
			Min.	Opt.	Max.												
47112	BK2-VT-T	Tapped Jaws	1.18	1.26	1.34	1.14	0.59	0.83	0.10	0.30	0.47	.83	M5	5/16-18 X 3/4 SHCS	30	5000	30-34
47145	DK2-VTI-T	Tapped Jaws	1.81	1.93	2.09	1.61	0.87	1.18	0.16	0.43	0.71	1.10	M5	1/2-13 X 1 1/4 SHCS	110	12000	30-34
47175	FK2-VT-T	Tapped Jaws	2.40	2.56	2.76	2.20	1.14	1.65	0.19	0.57	1.02	1.57	M5	5/8-11 X 1 1/2 SHCS	250	22000	30-34
47185	BK2-VT-B	Serrated Ball on Jaw	1.18	1.26	1.34	1.14	.59	.83	.10	-	-	-	-	5/16-18 x 3/4	30	5,500	30-34
47190	DK2-VTI-B	Serrated Ball on Jaw	1.85	1.97	2.12	1.61	.87	1.18	.16	-	-	-	-	1/2-13 x 1 1/4	110	12,000	30-34
47187	BK2-VT-E	Serrated Ball on each Jaw	1.54	1.61	1.69	1.14	0.59	0.83	0.10	-	-	-	-	5/16-18 X 3/4 SHCS	30	5000	N/A
47186	DK2-VTI-E	Serrated Ball on each Jaw	2.44	2.56	2.72	1.61	0.86	1.18	0.15	-	-	-	-	1/2-13 X 1 1/4 SHCS	110	12000	N/A

All clamps available with smooth jaws. Lead time may apply.



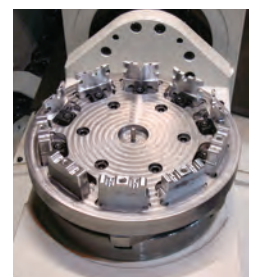
The revolutionary Pitbull® Clamp remains the lowest profile, highest holding force clamp in the industry today. High vertical and horizontal clamping forces are generated, considering the size of the Pitbull® Clamps. It uses a standard cap screw and an oil resistant O-ring. The Pitbull® Clamp is available in 5 sizes and several styles, a tool steel knife edge for aggressive stock removal, a tool steel blunt edge for general purpose, a brass version to help prevent marring the workpiece and a machinable version on page 12.

See Locating Rails, page 31 and TalonGrip™, page 25.



UNIQUE FEATURES OF PITBULL® CLAMPS:

- Extremely low bite
- Positive down force
- High resistance to rip-out
- Simple, sturdy, high quality design and components
- Gain maximum tool access to your work
- Virtually eliminate lost work
- Great option with hydraulic cylinders

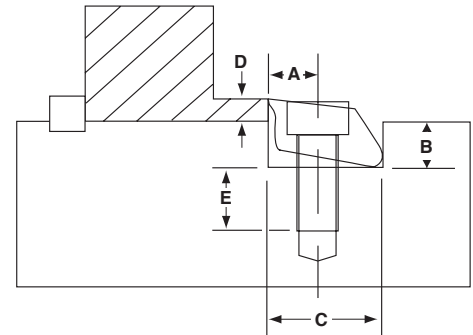


PATENT NO. 6435496

PHOTO COURTESY OF STRAITLINECOMPONENTS.COM

Creating Fixtures is Easy... Simply:

1. Machine a slot for the Pitbull® Clamp
2. Drill and tap a hole for the cap screw
3. Assemble the clamp as shown in diagram below
4. Position clamp as shown in diagram and loosely screw to fixture
5. Insert workpiece and tighten cap screw

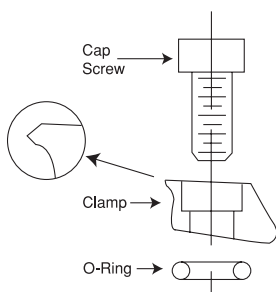


See Locating Rails, page 31 and TalonGrip™, page 25.

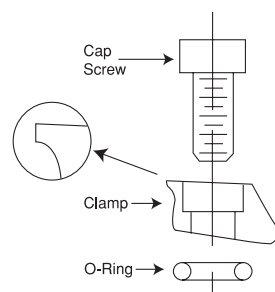
Part Number	Description	Clamp Width					SHCS Screw Size	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	Total Throw	No. Clamps Per Package
		A	B	C	D*	E					
INCH											
26000	Tool Steel, Knife Edge	.150	.140	.375	.075	.260	4-40	1.30	650	.0075	8
26010	Tool Steel, Blunt Edge	.150	.140	.375	.075	.260	4-40	1.30	650	.0075	8
26015	Brass, Blunt Edge	.150	.140	.375	.075	.220	4-40	.41	200	.0075	8
26020	Tool Steel, Knife Edge	.200	.187	.500	.100	.390	8-32	3.70	1,500	.0160	8
26030	Tool Steel, Blunt Edge	.200	.187	.500	.100	.390	8-32	3.70	1,500	.0160	8
26040	Brass, Blunt Edge	.200	.187	.500	.100	.340	8-32	2.00	400	.0160	8
26050	Tool Steel, Knife Edge	.300	.280	.750	.150	.570	1/4-20	14.50	3,600	.0240	6
26060	Tool Steel, Blunt Edge	.300	.280	.750	.150	.570	1/4-20	14.50	3,600	.0240	6
26065	Brass, Blunt Edge	.300	.280	.750	.150	.440	1/4-20	4.10	950	.0240	6
26070	Tool Steel, Knife Edge	.400	.450	1.000	.250	.710	3/8-16	30.00	6,000	.0500	4
26075	Tool Steel, Blunt Edge	.400	.450	1.000	.250	.710	3/8-16	30.00	6,000	.0500	4
26080	Tool Steel, Knife Edge	.600	.640	1.500	.375	.770	1/2-13	108.30	12,000	.0750	2
26085	Tool Steel, Blunt Edge	.600	.640	1.500	.375	.770	1/2-13	108.30	12,000	.0750	2
								(N.m.)	(N.)		
METRIC											
56000	Tool Steel, Knife Edge	3.81	3.55	9.52	1.90	6.60	M2.5	1.8	2800	.190	8
56010	Tool Steel, Blunt Edge	3.81	3.55	9.52	1.90	6.60	M2.5	1.8	2800	.190	8
56015	Brass, Blunt Edge	3.81	3.55	9.52	1.90	5.59	M2.5	.56	875	.190	8
56020	Tool Steel, Knife Edge	5.08	4.75	12.70	2.54	9.90	M4	5.6	6600	.406	8
56030	Tool Steel, Blunt Edge	5.08	4.75	12.70	2.54	9.90	M4	5.6	6600	.406	8
56040	Brass, Blunt Edge	5.08	4.75	12.70	2.54	8.64	M4	2.8	1750	.406	8
56050	Tool Steel, Knife Edge	7.62	7.11	19.05	3.81	14.48	M6	22.5	16000	.610	6
56060	Tool Steel, Blunt Edge	7.62	7.11	19.05	3.81	14.48	M6	22.5	16000	.610	6
56065	Brass, Blunt Edge	7.62	7.11	19.05	3.81	11.18	M6	5.6	4200	.610	6
56070	Tool Steel, Knife Edge	10.16	11.43	25.40	6.35	18.03	M10	40.6	26000	1.270	4
56075	Tool Steel, Blunt Edge	10.16	11.43	25.40	6.35	18.03	M10	40.6	26000	1.270	4
56080	Tool Steel, Knife Edge	15.24	16.26	38.10	9.52	19.56	M12	145.0	50000	1.900	2
56085	Tool Steel, Blunt Edge	15.24	16.26	38.10	9.52	19.56	M12	145.0	50000	1.900	2

D* - Minimum clamp height

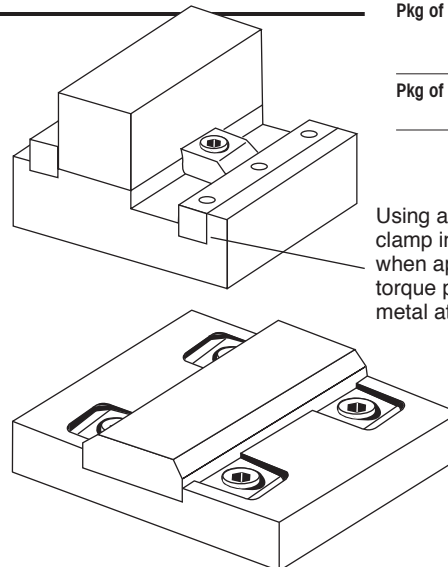
KNIFE EDGE



BLUNT EDGE



FIXTURE EXAMPLES

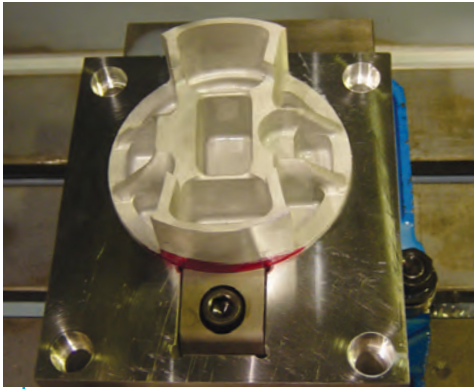


Using a steel rail behind clamp in aluminum fixtures when applying maximum torque prevents displacing metal at pivot point.

	Replacement O-ring	Screw Size
Pkg of 20	26008	4-40 or M2.5
	26028	8-32 or M4
	26058	1/4-20 or M6
Pkg of 10	26078	3/8-16 or M10
	26083	1/2-13 or M12

Both versions of the tool steel clamps generate the same clamping pressure. However, the Knife Edge clamps bite into the material for more aggressive machining, while the Blunt Edge is less likely to mark the workpiece.

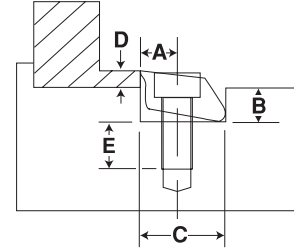
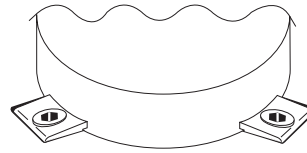
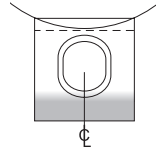
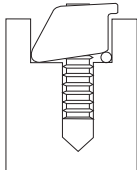
Machinable Pitbull® Clamps



The popular Pitbull® Fixture Clamp is now available in a machinable version. The clamp has positive down force and a very low gripping profile, making it well suited for machining pieces complete in one set up.

The Machinable Pitbull® Clamp is made of tool steel and heat treated to about 43RC for long life, yet still machinable. There is additional material on the clamping face to allow for machining a radius. It is available in two sizes with 6,000 and 12,000 lbs. (26000 and 50000 N) of holding force. A dowel pin is included in each package to locate clamp while machining radius.

Tighten clamp on dowel pin for proper location for machining clamp. Remove pin and install o-ring to clamp workpiece.

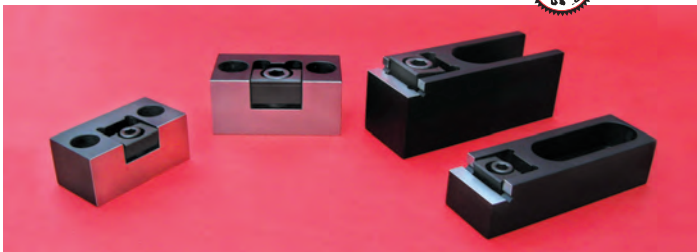


Maximum recommended stock removal from centerline of clamp:
 26077 = .060 26088 = .180
 (56077 = 1.5mm) (56088 = 4.5mm)

Part Number	Description	A	B	C	D*	E	Clamp Width	Screw Size	Max. Torque	Total Holding Force	Dowel Throw	No. Pin	Clamps Per Package
INCH 26077	Tool Steel, Machinable	.400	.450	1.00	.250	.710	1.00	3/8-16	30.0 (Ft/Lbs)	6,000 (Lbs)	.050	1/8	4
26088	Tool Steel, Machinable	.600	.640	1.50	.375	.770	1.50	1/2-13	108.3 (Ft/Lbs)	12,000 (Lbs)	.075	1/4	2
METRIC 56077	Tool Steel, Machinable	10.16	11.43	25.4	6.35	18.0	25.4	M10	40.6 (N.m.)	26000 (N.)	1.27	3.18	4
56088	Tool Steel, Machinable	15.24	16.26	38.1	9.52	19.6	38.1	M12	145.0 (N.m.)	50000 (N.)	1.90	6.35	2

D* - Minimum clamping height

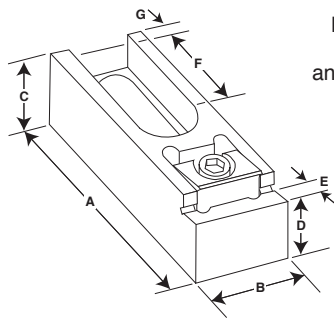
Modular Pitbull® Clamps



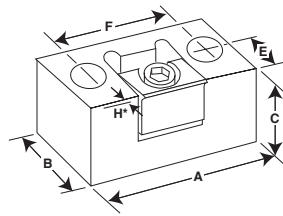
The Pitbull® Fixture Clamp is very well known for its low profile and positive down force. It is now available as a modular clamp in two styles.

The slotted Modular Pitbull® Clamp with a step offers increased versatility through its unique riser design. This clamp supports the workpiece 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 workpieces in series by using the back surface of a clamp to locate the next workpiece. 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.



Both versions are produced in two sizes with holding forces of 3,600 and 6,000 lbs (16000 and 26000 N).

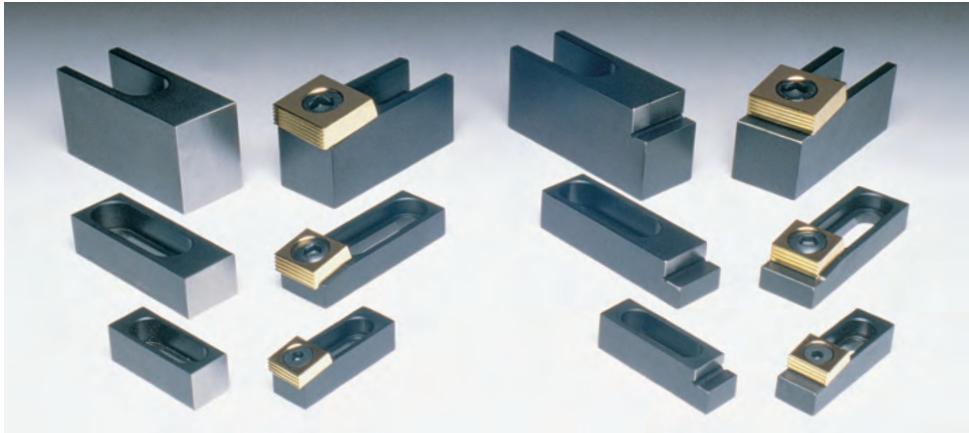


- Part Number -		Description	A	B	C	D +.0000		E	F	G	H*	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	Mounting	
Knife Edge	Blunt Edge					-.0005								Screw	Slot
INCH	26220	26225	Medium/Compact	2.25	1.23	.98	NA	.62	1.50	-	.024	14.5	3,600	5/16	-
	26230	26235	Large/Compact	2.70	1.48	1.24	NA	.74	1.86	-	.050	30.0	6,000	3/8	-
	26240	26245	Medium/Slotted	4.08	1.25	.99	.7300	.36	1.70	.50	.024	14.5	3,600	1/2	Closed
	26250	26255	Large/Slotted	4.20	1.50	1.61	1.3780	.36	1.52	.43	.050	30.0	6,000	5/8	Closed
							D +.0000					(N.m.)	(N.)		
METRIC	56220	56225	Medium/Compact	57.1	31.242	25.1	NA	15.7	38.1	-	.61	22.5	16000	M8	-
	56230	56235	Large/Compact	68.6	37.592	31.5	NA	18.8	47.0	-	1.27	40.6	26000	M10	-
	56240	56245	Medium/Slotted	103.6	31.700	25.1	18.542	9.1	43.2	12.7	.61	22.5	16000	M12	Closed
	56250	56255	Large/Slotted	107.0	38.100	40.9	35.000	9.1	38.6	10.9	1.27	40.6	26000	M16	Closed

H* - Clamp travel

PATENT NO. 6435496

Multi-Fixture Clamps and Stops



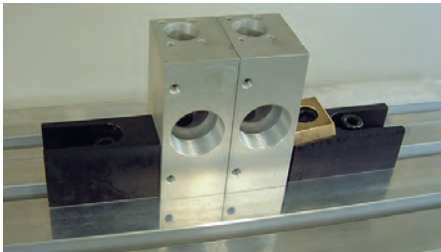
The Multi-Fixture Clamps, with a step, offer increased versatility through their unique riser clamp design. These clamps support the workpiece off the machine table for through milling and drilling.

The Multi-Fixture Clamps, without a step, grip the workpiece at a higher point for more clamping strength and better stability.

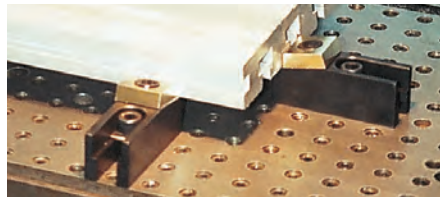
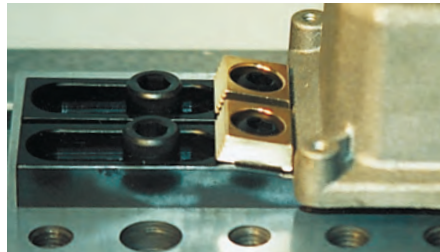
The hardened and ground clamps offer quick cam action clamping and are designed for use on work cubes and machine tables with tapped holes or T-slot configurations.

They adjust to unusually shaped parts because the cam action allows the clamping element to always make maximum contact with the workpiece for greater holding force. The tilted clamping element provides positive down force for more accurate machining.

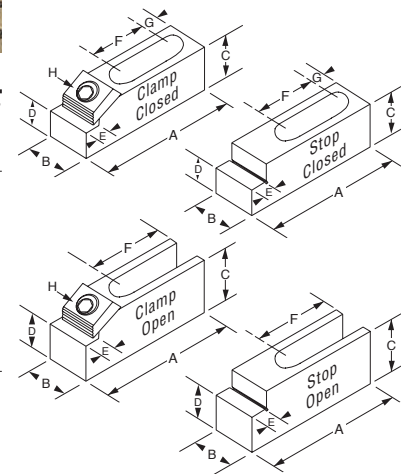
APPLICATIONS WITHOUT STEPS



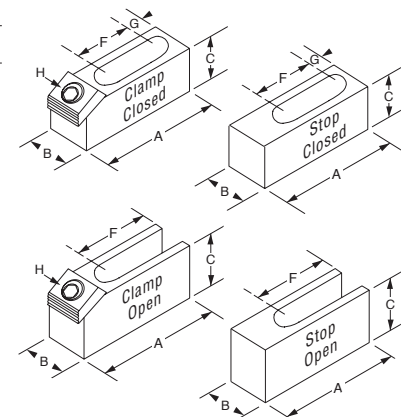
APPLICATIONS WITH STEPS



WITH STEPS

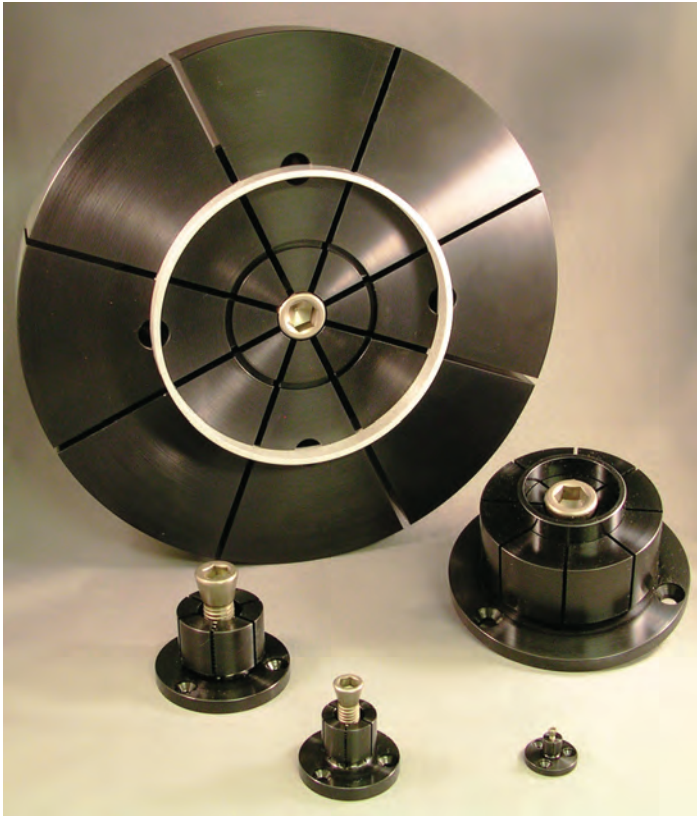


WITHOUT STEPS



Part Number	Item	A	B	C	D ^{+0.0000} _{-0.0005}	E	F	G	Cam Screw	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	Mtg. Screw	Replacement Square Slot	
INCH														
WITH STEPS														
23140	Clamp	2.50	.75	.62	.4600	.31	.83	.53	10370	8.3	2,000	5/16	Closed	21006
23180	Stop	2.50	.75	.75	.4600	.31	1.11	.53	NA	NA	NA	5/16	Closed	
23150	Clamp	3.75	1.12	.62	.4800	.37	1.68	.50	10372	65.0	4,000	1/2	Closed	21016
23200	Stop	3.75	1.12	.87	.4800	.37	1.68	.50	NA	NA	NA	1/2	Closed	
53170	Clamp	4.21	1.50	1.62	1.3780	.37	1.82	NA	50373	100.0	6,000	5/8	Open	21026
23240	Stop	4.21	1.50	2.00	1.3780	.37	1.82	NA	NA	NA	NA	5/8	Open	
WITHOUT STEPS														
23145	Clamp	2.16	.75	.62	NA	NA	.83	.53	10370	8.3	2,000	5/16	Closed	21006
23148	Stop	2.20	.75	.75	NA	NA	1.11	.53	NA	NA	NA	5/16	Closed	
23155	Clamp	3.37	1.12	.62	NA	NA	1.68	.50	10372	65.0	4,000	1/2	Closed	21016
23158	Stop	3.30	1.12	.87	NA	NA	1.68	.50	NA	NA	NA	1/2	Closed	
53172	Clamp	3.80	1.50	1.62	NA	NA	1.82	NA	50373	100.0	6,000	5/8	Open	21026
23178	Stop	3.30	1.50	2.00	NA	NA	1.82	NA	NA	NA	NA	5/8	Open	

METRIC														
WITH STEPS														
Part Number	Item	A	B	C	D ^{+0.0000} _{-0.0005}	E	F	G	Cam Screw	Max. Torque (N.m.)	Holding Force (N.)	Mtg. Screw	Replacement Square Slot	
53140	Clamp	63.5	19.1	15.8	11.68	8.0	21.1	13.5	50368	28.00	8900	M8	Closed	21006
23180	Stop	63.5	19.1	19.1	11.68	8.0	28.2	13.5	NA	28.00	8900	M8	Closed	
53150	Clamp	95.3	28.5	15.8	12.19	9.4	42.7	12.7	50372	88.00	17800	M12	Closed	51016
23200	Stop	95.3	28.5	22.1	12.19	9.4	42.7	12.7	NA	88.00	17800	M12	Closed	
53170	Clamp	107.0	38.1	41.2	35.00	9.4	46.2	NA	50373	135.00	26700	M16	Open	21026
23240	Stop	107.0	38.1	50.8	35.00	9.4	46.2	NA	NA	135.00	26700	M16	Open	
WITHOUT STEPS														
53145	Clamp	54.9	19.1	15.8	NA	NA	21.1	13.5	50368	28.00	8900	M8	Closed	21006
23148	Stop	55.9	19.1	19.1	NA	NA	28.2	13.5	NA	28.00	8900	M8	Closed	
53155	Clamp	85.6	28.5	15.8	NA	NA	42.7	12.7	50372	88.00	17800	M12	Closed	51016
23158	Stop	83.5	28.5	22.1	NA	NA	42.7	12.7	NA	88.00	17800	M12	Closed	
53172	Clamp	96.5	38.1	41.2	NA	NA	46.2	NA	50373	135.00	26700	M16	Open	21026
23178	Stop	83.8	38.1	50.8	NA	NA	46.2	NA	NA	135.00	26700	M16	Open	



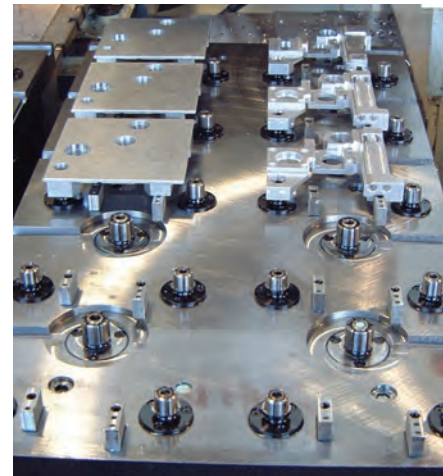
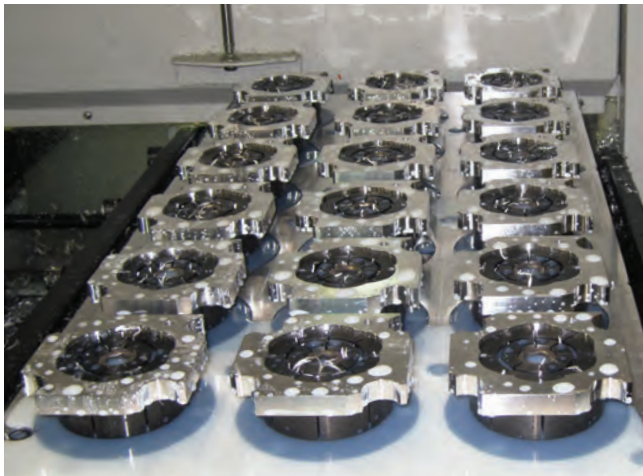
The ID Xpansion™ clamp is the ideal solution to hold parts on an inside diameter for high density machining on vertical or horizontal machining centers. It can also be used as an expanding mandrel on a lathe.

These machinable clamps are produced in 12L14 steel with black oxide coating in 12 sizes and can hold internal diameters from under 3/16 to almost 10 inches (4.1 to 254mm). #10 manufactured using 7075-T6 aluminum.

The flange diameter of the clamp is held to a close tolerance for precision locating in a machined pocket on work cubes and fixture plates.

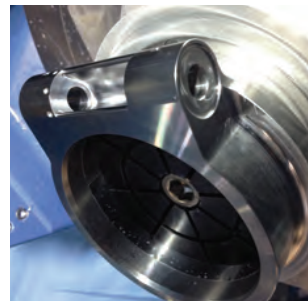
The customer machines the mild steel clamp to match the bore of the part ensuring a proper fit. Often times the clamps can be remachined for different size jobs.

The low profile ID Xpansion™ Clamp can hold several parts in one compact area for secondary operations without any clamping interference. They are quickly tightened with a hex key, torque driver or can be mated to hydraulic pull cylinders for automation.

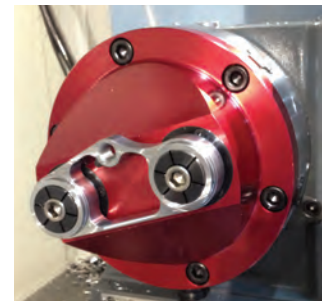


Clamping and locating mill parts on bores.

- Low profile
- Ideal for secondary operations on lathe parts
- Easily machined to size on lathe or mill
- Excellent for palletized setups
- Allows more parts per workcube or fixture plates
- Heat-treated and coated screw for long life
- Clamp body made of mild steel for machinability
- Tighten with hex key or hydraulic pull cylinders
- Longer screws available for hydraulic applications



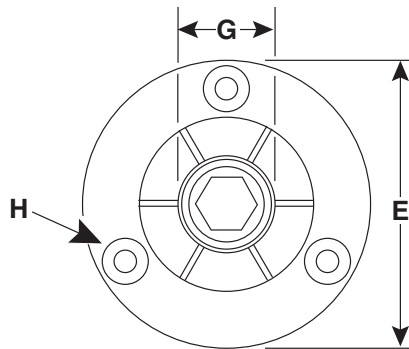
Hard milling



Innovative 4th axis solution

Model #00 - #6 ID Xpansion™ Clamps

- Expand clamp approximately .002 to .003 (.1mm) over relaxed diameter and machine to fit workpiece bore, either on lathe or mill.
- If machining the clamp on a lathe use the nut provided, on the back of the clamp, to tighten the tapered screw. This nut is used only while machining the clamp.
- Machine a pocket in the fixture, for the close tolerance “E” dimension and drill and tap mounting holes per “H” column. Drill and tap a hole from the “I” column in the center of the pocket for the tapered screw.
- A recessed dowel pin may be installed into the flange for additional rigidity if required.
- Range of expansion .005 to .025 (.13 to .64mm) depending upon size.

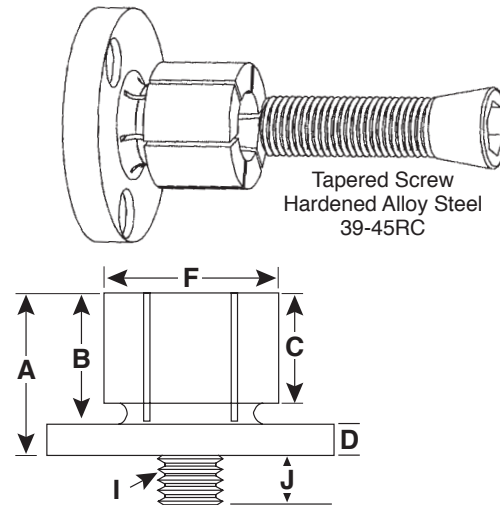


Longer tapered screws are available for each ID size.



Model #7 - #10 ID Xpansion™ Clamps

- Locking ring provided to ensure segments remain rigid while machining clamps to size. (#9 and #10 ID ship with 2 rings)
- Insert ring(s) and tighten drive screw, machine clamp to bore size. Remove ring(s) to clamp workpiece.
- Expand mandrel then machine to size.
- Aggressive material removal is not recommended when machining clamps to size.



Tapered Screw
Hardened Alloy Steel
39-45RC

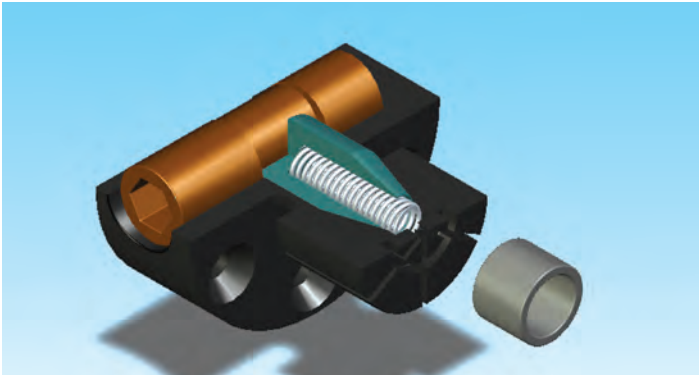
Part No.	Model Number	A	B	C	D	E ^{+0.000} _{-.002}	F	G†	H*	I	J	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	Replacement Tapered Screw
INCH														
31000	#00	.42	.30	.24	.12	.787	.29	.16	2-56 on .540 BHC	2-56 x 1/2	.16	0.5	250	31001
31050	#0	.86	.63	.59	.23	1.170	.49	.28	6-32 on .825 BHC	8-32 x 1	.30	3.6	950	31002
31100	#1	.98	.75	.59	.23	1.240	.56	.48	6-32 on .910 BHC	1/4-20 x 1 1/4	.50	13.3	1,900	31010
31150	#2	.98	.75	.59	.23	1.476	.79	.53	6-32 on 1.140 BHC	5/16-18 x 1 1/4	.56	27.6	2,500	31020
31200	#3	1.13	.88	.69	.25	1.968	1.06	.71	8-32 on 1.550 BHC	3/8-16 x 1 1/2	.71	49.3	4,500	31032
31250	#4	1.25	1.00	.81	.25	2.205	1.39	.90	8-32 on 1.790 BHC	1/2-13 x 1 1/2	.71	120.0	5,900	31042
31300	#5	1.56	1.25	1.06	.31	2.736	1.65	1.15	10-32 on 2.200 BHC	5/8-11 x 1 3/4	.79	224.0	10,000	31052
31350	#6	1.56	1.25	1.06	.31	2.972	2.03	1.15	10-32 on 2.515 BHC	5/8-11 x 1 3/4	.79	224.0	10,000	31052
31400	#7	1.79	1.48	1.27	.31	4.232	3.06	1.15	1/4-20 on 3.646 BHC	5/8-11 x 2	.79	224.0	10,000	31072
31450	#8	1.79	1.48	1.27	.31	5.232	4.06	1.15	1/4-20 on 4.648 BHC	5/8-11 x 2	.79	224.0	10,000	31072
31500	#9	1.79	1.48	1.27	.31	5.232	6.89	1.15	1/4-20 on 4.648 BHC	5/8-11 x 2	.79	224.0	10,000	31072
31550	#10**	1.79	1.48	1.27	.31	6.000	9.85	1.15	1/4-20 on 5.250 BHC	5/8-11 x 2	.79	125.0	6,000	31072
												(N.m.)	(N.)	
METRIC														
38000	#00	10.7	7.6	6.1	3.0	20.00	7.4	4.1	M2 on 13.7 BHC	M2x12	4.1	.70	1113	38001
38050	#0	21.8	16.0	15.0	5.9	29.72	12.4	7.1	M3 on 20.95 BHC	M4x25	7.2	5.00	4228	38002
38100	#1	24.9	19.0	15.0	5.9	31.50	14.2	12.2	M3 on 23.1 BHC	M6x30	11.2	17.00	8455	38010
38150	#2	24.9	19.0	15.0	5.9	37.50	20.0	13.5	M3 on 29.0 BHC	M8x30	13.2	34.00	11125	38020
38200	#3	28.6	22.2	17.5	6.4	50.00	27.0	18.0	M4 on 39.4 BHC	M10x35	16.3	60.00	20025	38032
38250	#4	31.8	25.4	20.6	6.4	56.00	35.3	23.0	M4 on 45.5 BHC	M12x40	20.3	150.00	26255	38042
38300	#5	39.6	31.8	27.0	7.9	69.50	42.0	29.3	M5 on 55.9 BHC	M16x45	21.4	280.00	44500	38052
38350	#6	39.6	31.8	27.0	7.9	75.50	51.5	29.3	M5 on 63.9 BHC	M16x45	21.4	280.00	44500	38052
38400	#7	45.5	37.6	32.3	7.9	107.50	77.7	29.3	M6 on 92.6 BHC	M16x50	19.3	280.00	44500	38072
38450	#8	45.5	37.6	32.3	7.9	132.90	103.0	29.3	M6 on 118.06 BHC	M16x50	19.3	280.00	44500	38072
38500	#9	45.5	37.6	32.3	7.9	132.90	175.0	29.3	M6 on 118.06 BHC	M16x50	19.3	280.00	44500	38072
38550	#10**	45.5	37.6	32.3	7.9	152.40	250.2	29.3	M6 on 133.35 BHC	M16x50	19.3	170.00	26000	38072

†G - Minimum diameter the "F" dimension can be machined or turned down to.

H* - (3) Mounting Screws included - (4) for model numbers #9 and #10.

**Model #10 Made from 7075-T6 aluminum.

Side-Loc Xpansion Clamp



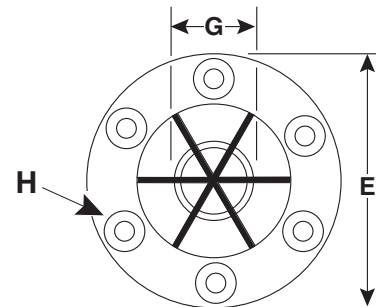
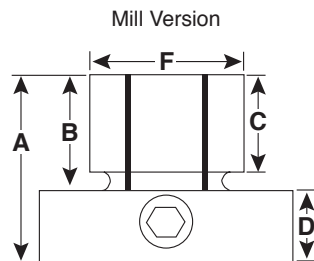
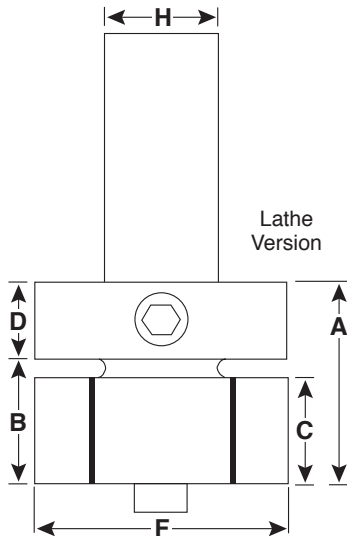
The Side-Loc Xpansion Clamp is actuated from the side, making it perfect for blind hole applications.

It's produced for both mill and lathe applications. The cam shaft and plunger expands the clamp from the side. Same mounting dimensions as our original ID clamp.



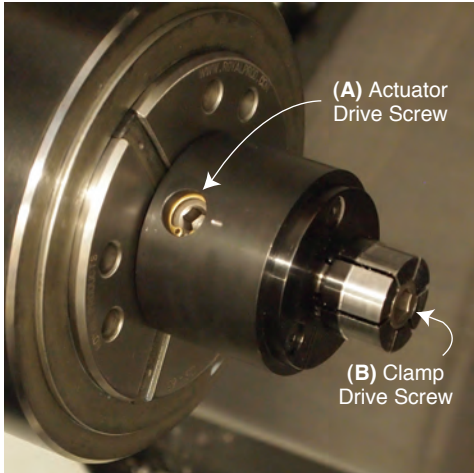
The Side-Loc Xpansion Clamp is actuated by turning a socket head cam shaft on the side, which moves a tapered plunger to expand the clamp. The locking ring provides an accurate preset diameter and rigidity for machining. Maximum torque on locking ring 10 ft. lbs. (13 N.m.). Like our original ID Xpansion® clamps, the Side-Loc Xpansion Clamp has the dead length feature which is critical for close tolerance dimensions.

The Side-Loc Xpansion Clamp is designed in two styles: one for milling operations and one for lathe applications. One size is available for each model. The mill Side-Loc Xpansion Clamp can be machined from 1.120 to .710 (28.4 to 18mm) and the lathe version from 2.09 to .710 (53 to 18mm). The lathe version has a 1" (25mm) straight shank.



Part Number	Model No.	A	B	C	D	E	F	G†	H*	Hex Key	Max, Torque (Ft/Lbs)	Holding Force (Lbs)	Replacement			
													Cam Shaft (M12x30MM)	Spring	Ring	
INCH	31210	Mill #3	1.625	.875	.69	.75	1.968	1.12	.71	8-32 on 1.550 BHC	M6	49	4,000	389001	31207	31202
	31370	Lathe #6	1.750	1.000	.84	.75	NA	2.09	.71	1.0	M6	49	4,000	389001	31207	31202
						E					(N.m.)	(N.)				
METRIC	38210	Mill #3	41.3	22.2	17.5	19.0	50.0	28.7	17.8	M4 on 39.4 BHC	M6	66	20000	389001	31207	31202
	38370	Lathe #6	44.4	25.4	21.3	19.0	N/A	53.3	17.8	25	M6	66	20000	389001	31207	31202

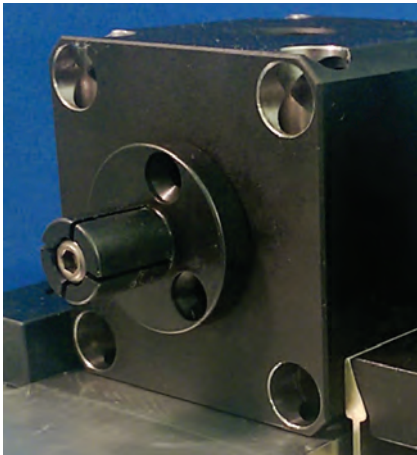
G† - Minimum diameter the "F" dimension can be machined down to. H* - (6) mounting screws included.



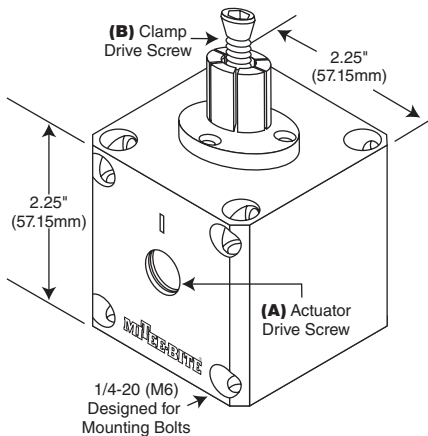
The Actuators are specifically designed for gripping the ID of blind holes but may also be incorporated in many applications that require a straight draw actuated 90 degrees from the drive screw. The Actuators are capable of gripping on bores ranging from .16" (4.1mm) to 1.39" (35.3mm) using our standard ID clamps, Models #00 through #4 (flange on #4 may require modification when mounting to Mill Actuator).

The Mill block can be mounted in several ways including on a fixture plate, for high density workholding applications, or gripped in a vise. The same bolt hole configuration can be used for both the vertical and horizontal planes.

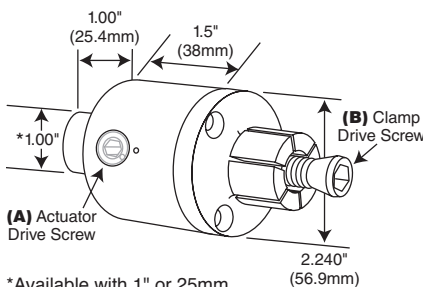
Both styles of Actuators come completely assembled with the heat-treated cylinders tapped for the following clamp drive screws: M2, M4, M6, M8, M10 and M12.



MILL VERSION



LATHE VERSION



*Available with 1" or 25mm shaft diameter - see chart to right

SPECIFICATIONS:

- Manual Actuators will produce over 4,000 lbs. of pull-force with 45 ft. lbs. of torque. Do not exceed 5 ft/lbs with the M2 or 20 ft/lbs with the M4.
- Customer will mount clamps onto the Actuator according to clamp instructions. Actuators may be used with clamps other than ID Xpansion™ Clamps.
- The Mill version has 8 mounting holes with 1.75" (44.45mm) spacing for 1/4-20 (or M6) mounting bolts.
- The "top" access hole for the clamp drive screw is approximately .315" (8mm) for the M2 through M8 and .484" (12.3mm) for the M10 and M12.
- Cylinder travel is .040" (1.016mm)
- Threaded cylinders may be interchanged with our other cylinder sizes by first removing the retaining ring and the actuator drive screw and then tapping out the cylinder. This may require the use of a rubber mallet and punch.
- Threaded cylinders are heat treated to 54 RC, and have a diameter of 5/8" (15.875mm).
- Both the Mill and Lathe versions are made of 12L14 with a black oxide finish.

OPERATION AND USE:

- Align Indicator mark on actuating screw (A) (apex of cam) with the alignment mark on actuator housing.
- Lightly tighten clamp drive screw (B).
- Tighten actuator drive screw (A) expanding ID clamp .002 - .005" (.050 - .13mm).
- Machine clamp to size of your bore.
- Loosen actuator drive screw (A) aligning marks once again.
- Loosen clamp drive screw (B) approximately 1/8 turn.

Ready for use, load parts and tighten actuator screw. Do not exceed 45 ft/lbs of torque. Care should be taken not to over-tighten with the smaller diameter screws (M2, M4).

ACTUATOR DRIVE SCREW WITH RETAINING SNAP RING



REPLACEMENT THREADED CYLINDER

Part Number			
Mill	Lathe 1" Shaft	Lathe w/25mm Shaft	Cylinder Thread
34502	34602	38602	M2
34504	34604	38604	M4
34506	34606	38606	M6
34508	34608	38608	M8
34510	34610	38610	M10
34512	34612	38612	M12

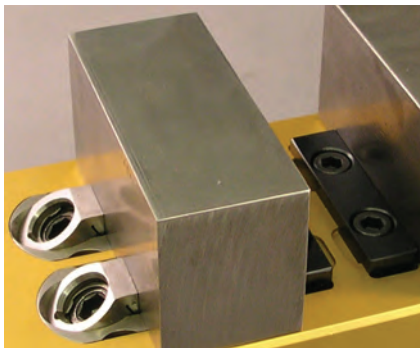
Mounting Screws not included.

Part Number	Thread Size
34002	M2
34004	M4
34006	M6
34008	M8
34010	M10
34012	M12



The majority of the Dyna-Force® clamp is below the surface of the fixture which provides excellent clamp support and makes for a very low profile. The clamp jaw slides on an angle for positive downforce.

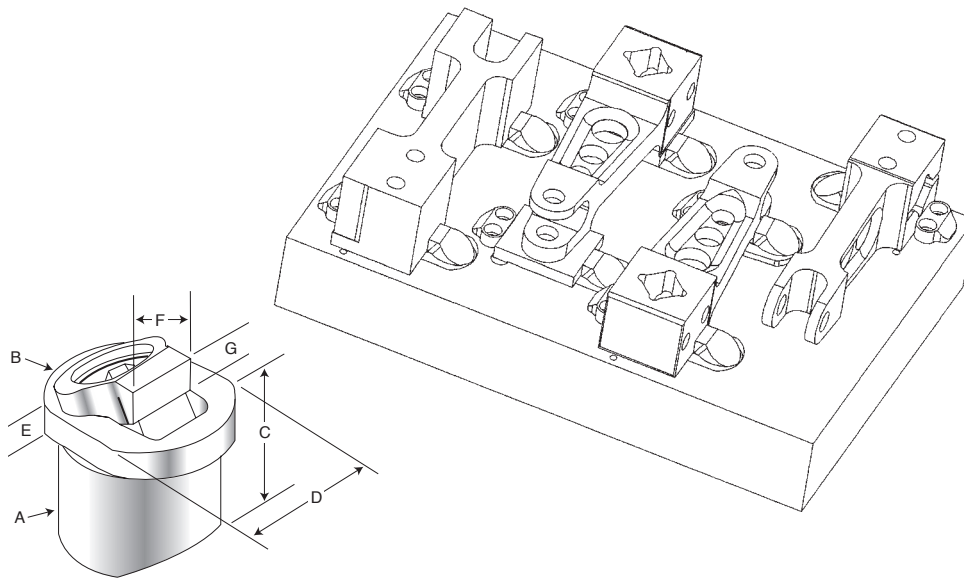
- Incredible clamping and hold down power
- Low profile, compact design
- 17-4 PH stainless steel
- Smooth or serrated jaws
- Clamp comes assembled with alloy steel screw.
- Stainless steel screws and retaining rings are available for EDM applications.



The support surface of the Dyna-Force® clamp can be installed flush with the fixture plate or raised to hold the workpiece off the fixture, enabling drill through.



Use our TalonGrip™ Grippers opposite the Dyna-Force® Clamps for extremely low profile applications when high holding forces are needed. See page 25 for Gripper information.



Part Number	—Replacement— Insert*
28314	28480 (20mm smooth)
28318	28482 (20mm serrated)
28320	28320 (25mm smooth)
28322	28486 (25mm serrated)
28324	28488 (30mm smooth)
28328	28490 (30mm serrated)

*Includes screw and retaining ring

Part Number	Clamp Jaw† & Hardness	A*	B	C	D	E	F	G			Clamp Travel	Drive Screw	Key Size	Max. Torque	Holding Force	
								Min	Optimum	Max						
28314	Smooth 34RC	20.00	24.90	19.00	19.90	4.50	13.50	3.25	5.00	6.75	2.0	6mm	5mm	7.3 (Ft/Lbs) - 9.9 (N.m)	2,000 (Lbs) - 8896 (N.)	
28318	Serrated 44RC															
28320	Smooth 34RC	25.00	29.90	24.00	24.90	5.00	15.00	4.50	6.50	8.25	2.2	8mm	6mm	17.6 (Ft/Lbs) - 23.9 (N.m)	2,600 (Lbs) - 11565 (N.)	
28322	Serrated 44RC															
28324	Smooth 34RC	30.00	37.90	29.00	29.90	7.00	20.00	4.50	7.50	10.75	3.8	10mm	8mm	35.3 (Ft/Lbs) - 41.9 (N.m)	3,200 (Lbs) - 14234 (N.)	
28328	Serrated 44RC															

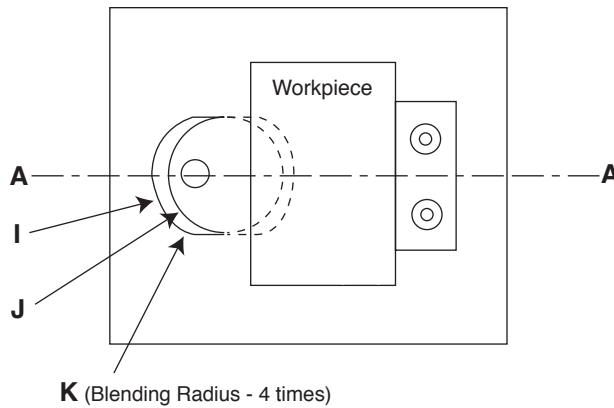
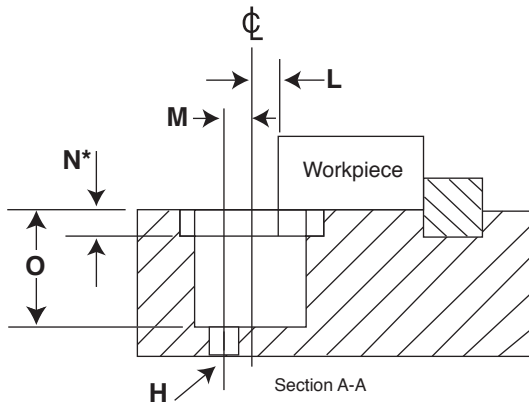
A* - Body diameter † - Smooth jaw only will have relief cut

1. Bore ϕ of the hole “L” distance from edge of workpiece.
2. Drill and tap “H” to mount clamp in pocket.
3. Machine counter bore if recessing clamp into fixture.
4. Provide a back stop to locate the part.

See Locating Rails on page 31.

NOTES:

1. "N*" - To have rest pad flush with fixture, use the dimension provided. To have the rest pad above the fixture surface, reduce the depth accordingly.
2. For dimensions I and J, use a tolerance of $\pm .1/-0$ mm. For dimension L and O, use $\pm .1/- .1$ mm.



HEIGHT OF JAW IN RELATION TO ϕ OF BORE FROM EDGE OF WORKPIECE.

Height of Jaw G	20mm L	25mm L	30mm L
3.25	5.91		
3.50	5.77		
3.75	5.62		
4.00	5.48		
4.25	5.33		
4.50	5.19	6.81	8.78
4.75	5.05	6.66	8.63
5.00	4.90	6.52	8.49
5.25	4.76	6.37	8.35
5.50	5.61	6.23	8.20
5.75	4.47	6.08	8.06
6.00	4.32	5.94	7.91
6.25	4.18	5.80	7.77
6.50	4.03	5.65	7.62
6.75	3.89	5.51	7.48
7.00		5.36	7.34
7.25		5.22	7.19
7.50		5.07	7.05
7.75		4.93	6.90
8.00		4.78	6.76
8.25		4.64	6.61
8.50			6.47
8.75			6.33
9.00			6.18
9.25			6.04
9.50			5.89
9.75			5.75
10.00			5.60
10.25			5.46
10.50			5.31
10.75			5.17

Example: 20mm clamp when ϕ of bore is 4.90mm from edge of workpiece (L - see drawing on left); jaw height is 5.00mm (G - see drawing on page 18).

Part Number	H	I	J	K	L	M	N	O
28314	M5 or 10-24	25.00	20.00	6.00	4.90	5.00	4.50	20.00
28318	M5 or 10-24	25.00	20.00	6.00	4.90	5.00	4.50	20.00
28320	M6 or 1/4-20	30.00	25.00	6.50	5.65	6.00	5.00	25.00
28322	M6 or 1/4-20	30.00	25.00	6.50	5.65	6.00	5.00	25.00
28324	M8 or 5/16-18	38.00	30.00	8.00	7.05	7.50	7.00	30.00
28328	M8 or 5/16-18	38.00	30.00	8.00	7.05	7.50	7.00	30.00

NEW!



The Mitee-Bite Loc-Down™ System was designed to be a programmer's and operator's dream for quickly and easily securing small to large aerospace parts. Its compact design allows for tighter pattern on grid plates compared to other options in the marketplace saving material cost on expensive aerospace alloys.

The Loc-Down™ generates high holding force and provides low profile “out of the way” clamping allowing programmers to be very creative. Permits aggressive machining without tooling interference or applying forces that would influence part, intended to streamline production for the Aerospace Industry.

“We would have had to repair Brand-X 3 times in the past year and a half...and to date never had a problem with our Loc-Downs, we use these on 70% of our application.”
Buffco Engineering

- Use with our new T-Slot/Grid plate pre-drilled and tapped specifically for the 1/2-13 and M12 Loc-Downs (see page 20).
- 100% Heat Treated Stainless Steel

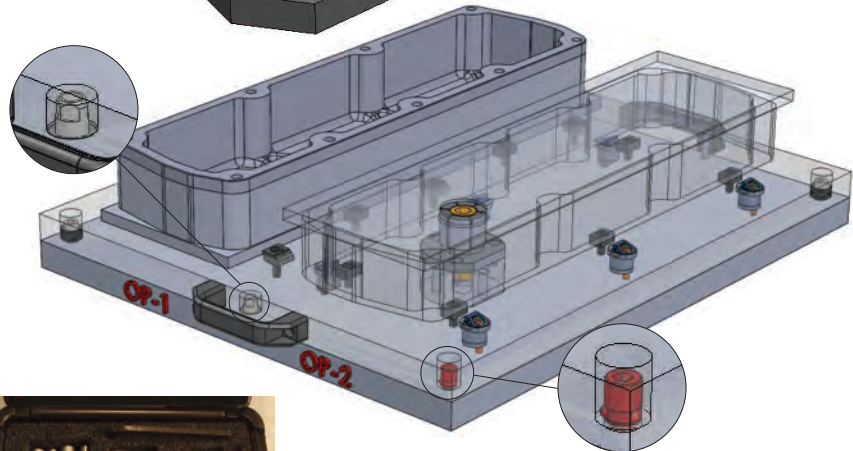
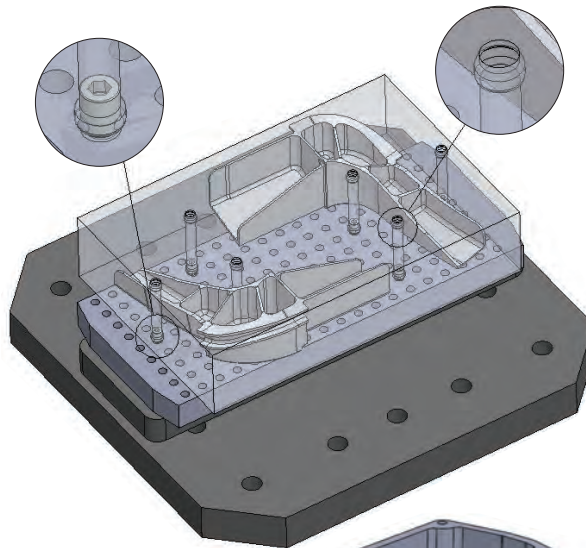
Loc-Down™
1/2-13 - Part No. 11500
M12-1.75 - Part No. 11612



Loc-Down™
Custom Carbide Cutter
Part No. 11530



Stainless Steel
Custom Bushing
Part No. 11525



Part Number	Description	Size†
11500	Loc-Down™	1/2-13
11550	Loc-Down™ Quick Change Kit*	1/2-13
11612	Loc-Down™	M12
11650	Loc-Down™ Quick Change Kit*	M12
11530	Carbide Cutter	
11535	Loc-Down™ Insertion Tool	
11525	Custom Bushings	

*Kit includes 4 Loc-Downs™, 4 custom bushings, insertion tool, 4 liners, 1 diamond and tapered pin with mounting screws.

† - NEW Loc-Down™ sizes available soon!

MAXIMUM TORQUE* CHART

Material	Ft-lbs	(Nm)
Loc-Down™ Bushing	15	(20.3)
Aluminum/Brass	15	(20.3)
Mild Steel/Stainless	20	(27)
Hard Metals >45 Rc	15	(20.3)

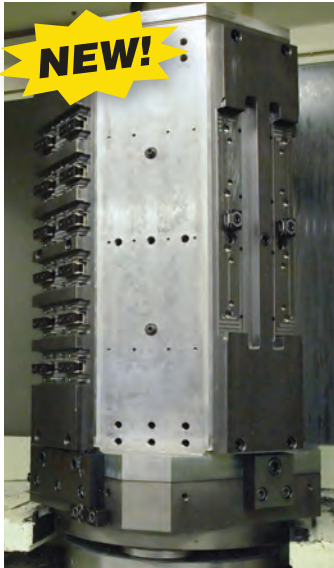
* Hand tightening for majority of applications is sufficient

Patent #61553569



We have combined our Loc-Down™, custom Bushings and Locating Pins and Liners in a convenient kit that delivers a low-cost high precision quick change pallet system with a repeatability of .0004"/0.01mm or better.

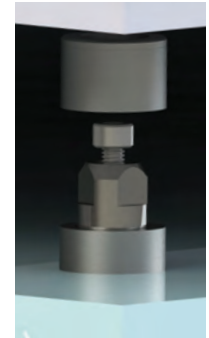
Locating Pins and Liners



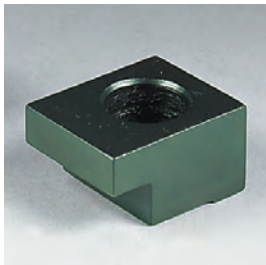
Use our Diamond and Tapered pins to standardize your shop with a universal pattern, allowing fixtures to be quickly mounted to any machining center.

- Designed with simplicity in mind - easy to install and remove
- Available with Inch or Metric hardware
- Use with Loc-Downs™ for low cost quick change system
- Cylindrically ground
- Heat treated 8620

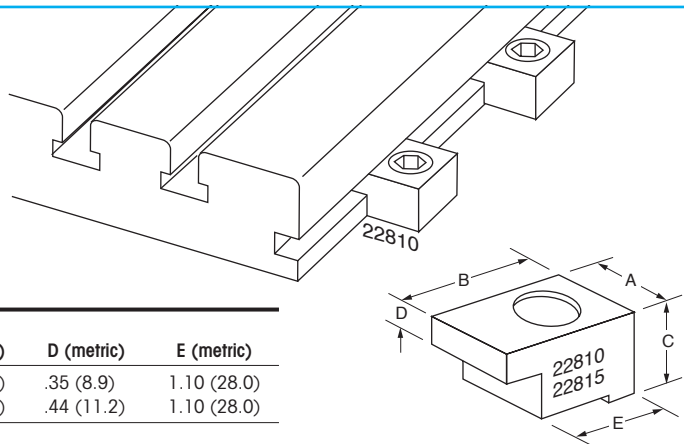
Part Number	Description
51000	Set of pins with M4 screws
52000	Set of pins with 8-32 screws
45070	Liners (2/pk)



Mounting Clamps



Mounting clamps are designed for securing MITEE-BITE Aluminum Sub Plates, Vacmagic® and many types of machine vises.



Part Number	Screw Size (metric)	A (metric)	B (metric)	C (metric)	D (metric)	E (metric)
22810*	1/2 (M12)	1.25 (31.8)	1.50 (38.1)	.87 (22.1)	.35 (8.9)	1.10 (28.0)
22815**	1/2 (M12)	1.25 (31.8)	1.50 (38.1)	1.25 (31.8)	.44 (11.2)	1.10 (28.0)

*For Vacmagic® VM100 **For Vacmagic® VM300

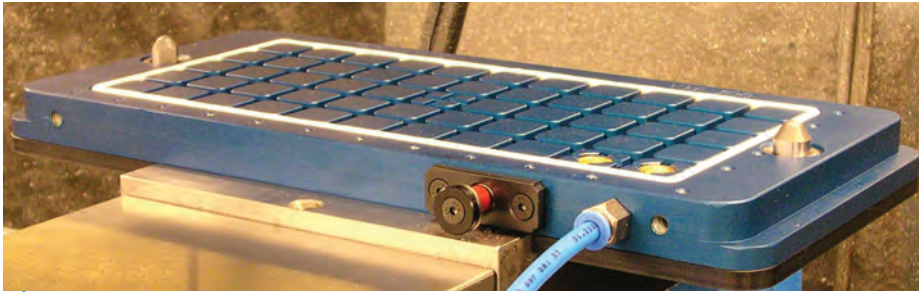
Spring Loc™ and Sliding Stop™



The Spring-Loc™ is an extremely low profile (.072") adjustable clamp capable of producing approximately 10 lbs. of clamping pressure depending on how much the flex arm is compressed in the locked position. The center slot allows 360° positioning. The back end of the Spring-Loc™ is "V" shaped allowing customers to run parts in series for engraving, laser etching and provides a simple and quick method for locating and holding parts for CMM and Vision Systems.

The Sliding Stop™ was primarily designed to assist in vacuum workholding applications allowing customers to run at higher feeds and speeds. We incorporated a scallop on the edge of the Stop which aids in better viewing with CMM & Vision Systems.

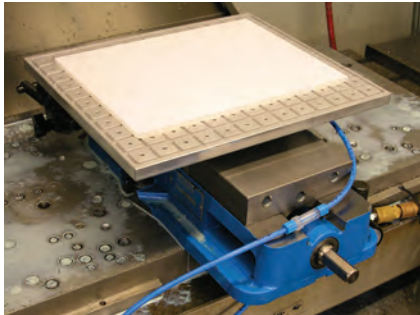
Part Number	Description	Screw	Sold
42000	Spring-Loc™ Kit (Includes 4 Clamps & 4 Stops)	1/4-20	Kit
42100	Spring-Loc™ Clamp	1/4-20	2/pk
42200	Sliding-Stop™	1/4-20	4/pk
44000	Spring-Loc™ Kit (Includes 4 Clamps & Stops)	M6	Kit
44100	Spring-Loc™ Clamp	M6	2/pk
44200	Sliding-Stop™	M6	4/pk



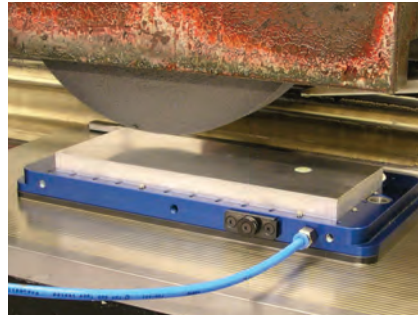
VM100 Base Unit (45375) in Vise

The Simplest and Most Versatile Vacuum System on the Market

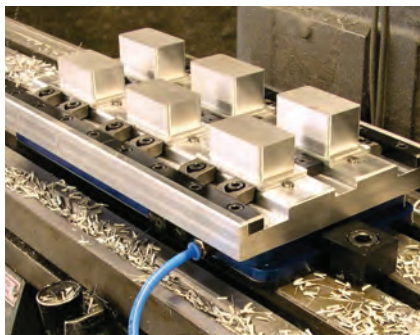
The VM100 was primarily designed for grinding non-ferrous material on a magnetic chuck. During the early stages of R & D it was discovered the VM100 could be much more. Clamp the VM100 in vise to reduce set-up time, use as a pallet changer or mount to a grid plate or T-slot table. The VM100 uses the same patented method as the VM300 to produce a vacuum strong enough for industrial applications but still operates on 70-100 PSI shop air! No need for vacuum pumps and coolant traps. We include everything necessary to get your VM100 running within minutes of opening the box.



VM100 Base Unit (45375) with VM300 Vacuum Pallet (45150)



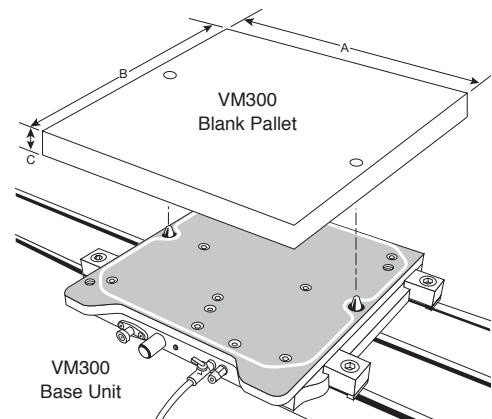
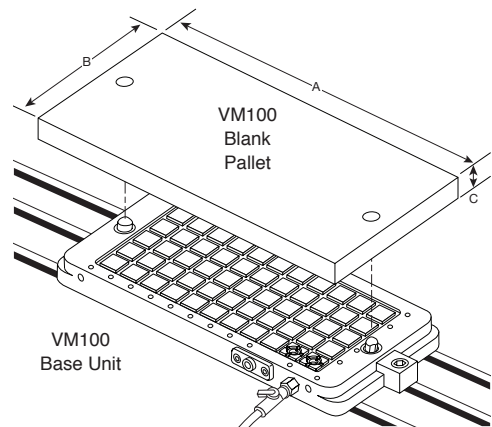
VM100 Base Unit (45375) on a Magnetic Chuck



VM100 Base Unit (45375) with a Production Pallet (VM100 Blank Pallet - 45325)

- Make your own vacuum fixtures - we can help with the design and produce the fixture for your custom application
- Will accept both blank pallets, the standard 45130 and the larger 45135, as well as the standard vacuum pallet, increasing your vacuum platform to over 14"x12" (360mmx315mm).
- Remove 12mm pins when grinding/machining thin material, use set screws to locate and aid in holding force

PATENT NO. 7665717

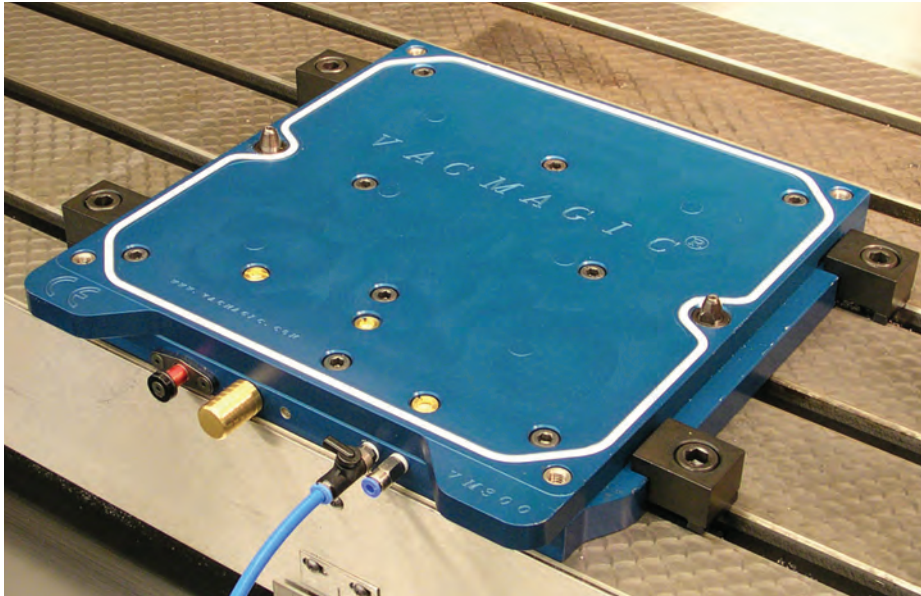


Part Number	Description	A - Length Inch (Metric)	B - Width Inch (Metric)	C - Height Inch (Metric)
VM100				
45325	Blank Pallet	12.5" (318mm)	5.875" (150mm)	1.0" (25mm)
45375	Base Unit with all hardware	12.375" (315mm)	5.5" (140mm)	1.0" (25mm)
45300	VM100 Kit Includes: base unit, 2 blank pallets			
VM300				
45130	Blank Pallet	14.3" (360mm)	12.4" (315mm)	.75" (19mm)
45135	1" thick Blank Pallet	14.93" (379mm)	14.93" (379mm)	1.0" (25mm)
45150	VM300 Vacuum Pallet	14.3" (360mm)	12.4" (315mm)	.625" (16mm)
45160	VM300 Large Vacuum Pallet	33.625" (859mm)	14.5" (368mm)	.625" (16mm)
45175	Base Unit (Receiver) Includes: all hardware	12.75" (323mm)	13.0" (330mm)	1.375" (35mm)
45101	VM300 Kit Includes: base unit, 2 blank pallets, 1 vacuum pallet			

GASKET MATERIAL (for VM300 & VM100)

	Part No.	Description	(Inch) Diameter
BLACK - Excellent for long cycles and aggressive coolants.	BLACK 45111	by the foot	.170*
	45115	by the foot	.070
	451181	by the foot	.125
	45119	by the foot	.188
WHITE - Excellent for small parts, water based coolants or running dry.	WHITE 45114	by the foot	.170*
	45116	by the foot	.070
	45117	by the foot	.125

*Replacement size for base units and vacuum pallets. Other sizes listed for custom made pallets.



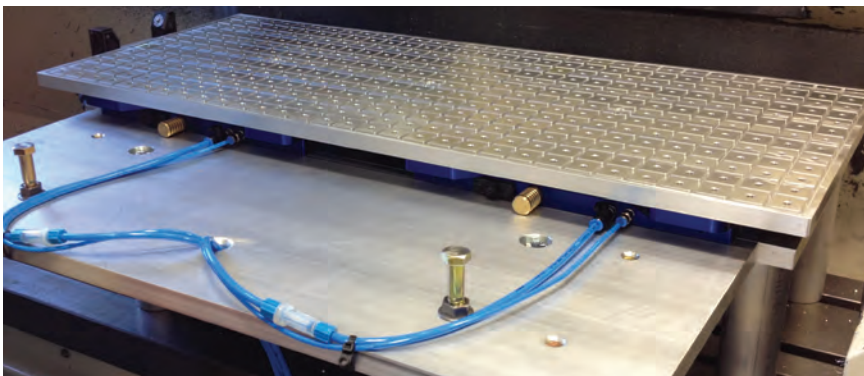
The All-in-One Pallet Changer and Vacuum Chuck System



Best Workholding Product at MACH Exhibition 2006

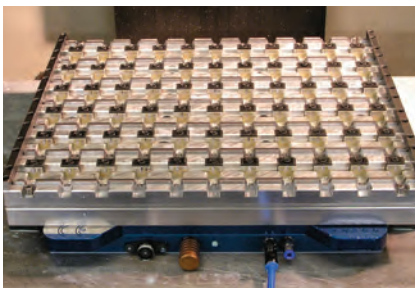
In a relatively short amount of time the VM300 has established itself as the vacuum system to which all others are measured. Capabilities include traditional vacuum applications using our standard grid plate and custom vacuum applications (ie: machining blank pallet to suit specific part geometry) and the ability to perform as a rock solid pallet changer. Contact us to schedule an in-house demonstration with one of our highly qualified Manufacturing Representatives.

- Simple design keeps cost low
- Productivity maximized - load pallets while machining
- Quick-change - swap pallets in 30 seconds or less with precise repeatability
- Easy to install and set-up
- Vacuum pallets with M6 threaded holes and textured finish to increase friction
- Reliable and easy to use - virtually maintenance free
- Flexible pallet design - limited only by your imagination!
- No pumps - uses standard shop air
- Purchase includes a pack of our original Fixture Clamps and Sliding Stops



Two VM300 Base Units (45175) and large Vacuum Pallet (45160), bolts supporting oversize workpiece.

One Small Investment = Huge Payoffs!



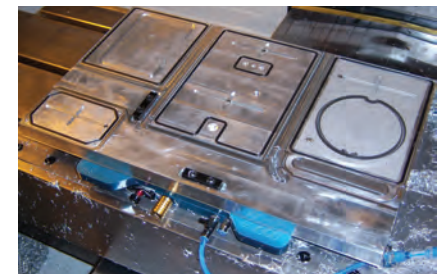
VM300 Base Unit (45175) with a Production Pallet (VM300 Blank Pallet - 45130)



Workpiece placed over gasket to create a vacuum. Sliding stops used for location. (VM300 Vacuum Pallet - 45150)

REPLACEMENT PARTS (for VM100 & VM300)

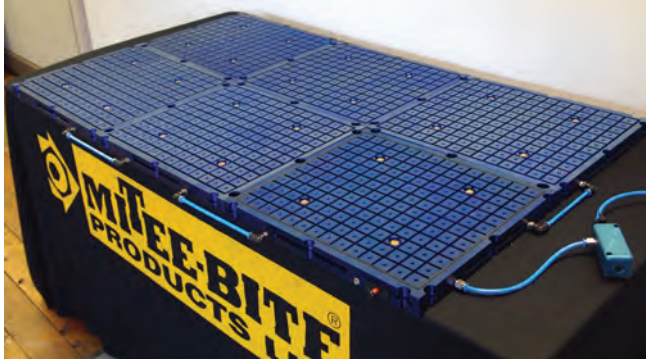
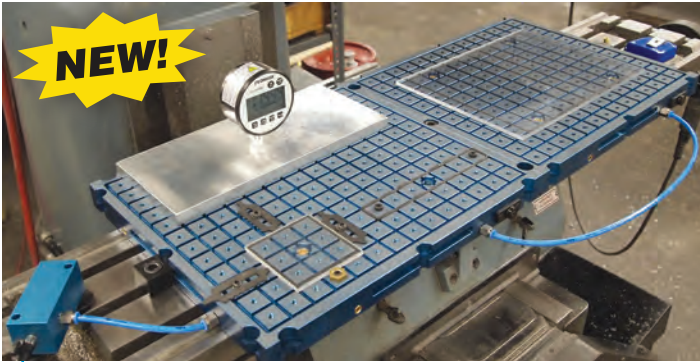
Part No.	Description
45010	each Brass filter
45015	each In-line filter
45020	each Mounting bracket for 4mm/6mm tubing
45025	pack Locating pins (1 taper & 1 diamond)
45030	each Low vacuum indicator with spring
45031	each Spring for low vacuum indicator
45035	each LPTS switch
45040	each Low pressure trip switch assembly (LPTS)
45045	pack Vacmagic O-rings (3/pk, 2 small & 1 large)
45050	each Supply valve
45055	each Special mounting washer
45060	each LPTS fitting (Base Unit) Closed
45065	each LPTS fitting (Block) Open
45070	pack Bushings for custom pallets (2/pk)
45075	pack Base alignment pins (2/pk)
45080	pack 4mm blue tubing (15 ft/pack)
45085	pack 6mm blue tubing (12 ft/pack)
45090	each 6mm tubing QD fitting for regulator
45095	pack Assorted mtg. hardware for location pins, alignment pins & LPTS block



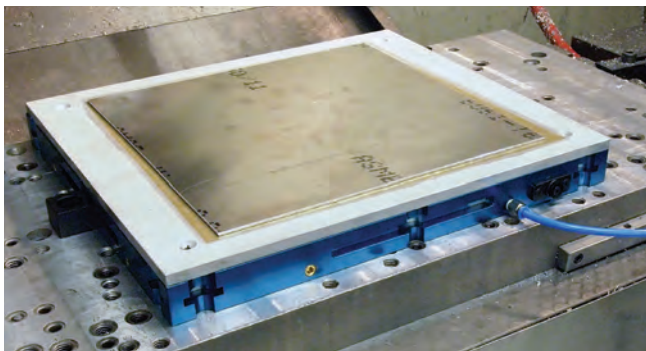
Custom vacuum pallet with 4 vacuum chambers on VM300

PATENT 7665717

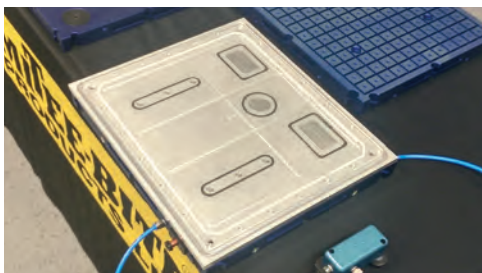
Multi-Power Vac



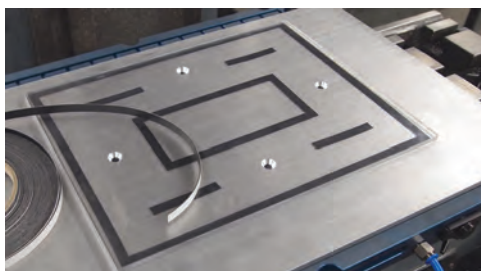
Designed to be easily linked together creating larger platforms



Application using Mitee-Grip™ with sacrificial top plate

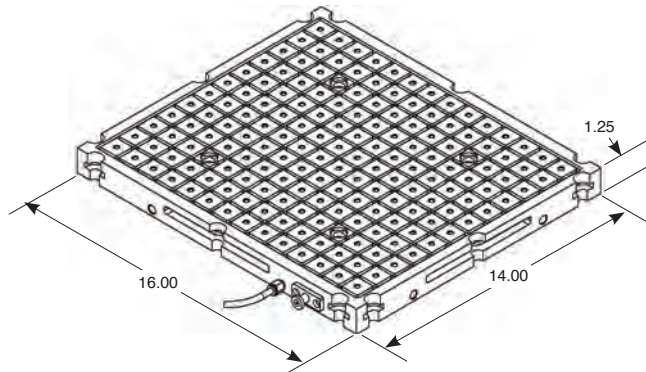


Examples of custom sacrificial top plates

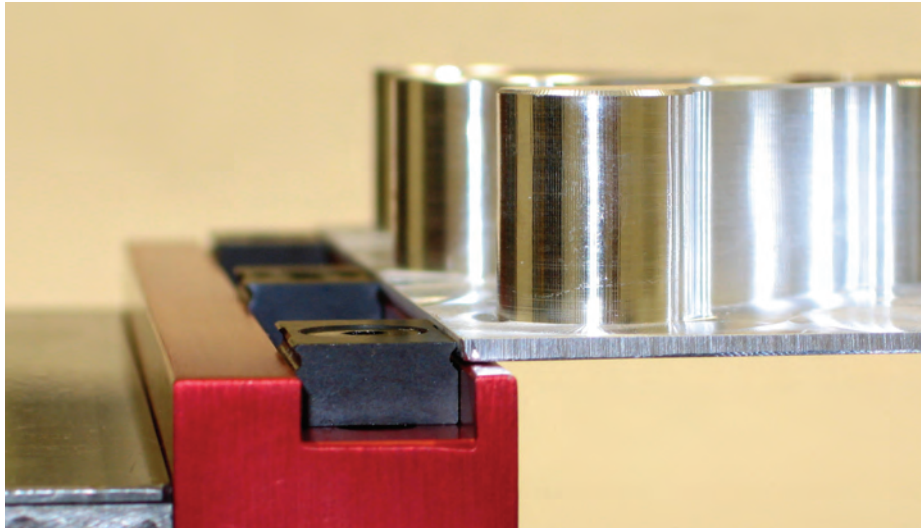


Mitee-Bite is proud to introduce possibly the most universal multi-functional vacuum system in today's market. This system has several unique features to meet your vacuum workholding needs.

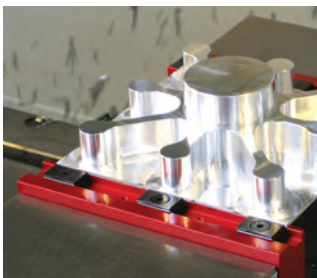
- Can be powered with our Vacuum Generator (Shop Air) or Vacuum Pumps (available shortly)
- 14"x 16" with textured surface creating additional holding force through friction
- 4 Vacuum ports allowing user to hold 1-4 small parts or 1 large part (ports can be plugged)
- Grid plate tapped with M6 threads allowing multiple workholding solutions
- 6 oversized steel washers machined below the bottom surface allows unit to be used for grinding operations on a magnetic chuck
- Multiple Vacuum Generators can be used on each pallet if additional CFM is desired
- Multiple pallets can operate from (1) vacuum generator
- Coolant Trap may be necessary when using external vacuum source (Trap sold separately)



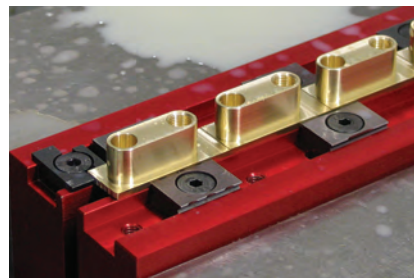
Part Number	Description
46000	1 Multi-Power Vac pallet with Vac Generator including all accessories
46100	Vac Generator with regulator/tubing/brass filter and push to connect fitting
46200	1 Multi-Power Vac pallet without Vac Generator including mtg. hardware and tubing
46250	Sacrificial Top Plate with mtg. screws
46050	Coolant trap with hose and fittings



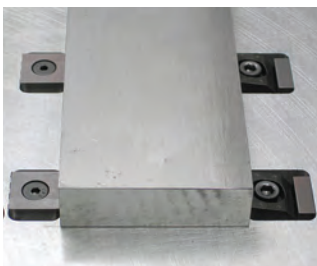
Mitee-Bite Products introduces a new and innovative product that will increase the functionality of your standard 4 and 6 inch (100mm and 150mm) vises. TalonGrip™ is a simple bolt on system that will allow you to perform aggressive machining operations while clamping on as little as .060 (1.5mm) of an inch. Ideal for small lot sizes, difficult applications or proto-type work when building a fixture would not be beneficial. TalonGrips™ are also available individually for fixturing with Pitbull® and Dyna-Force® Clamps or for soft jaw applications.



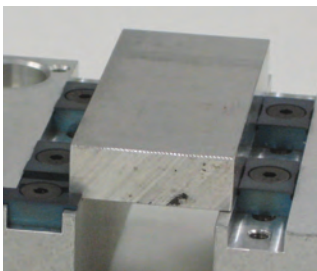
Aggressive stock removal



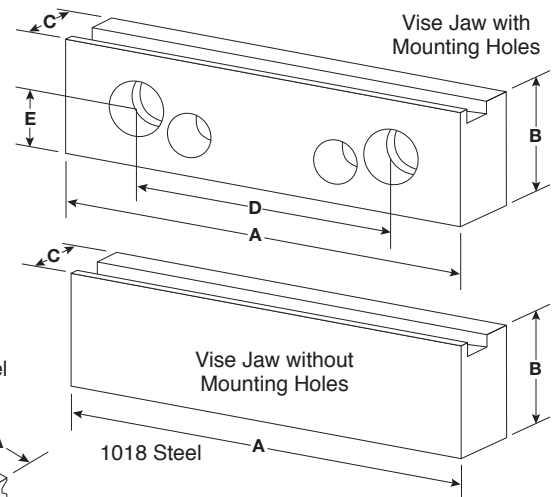
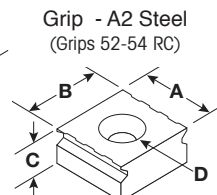
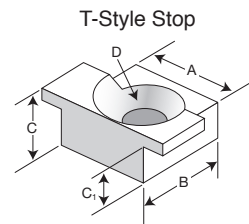
Multiple parts



Fixture application with Pitbull® Clamps



Soft jaws

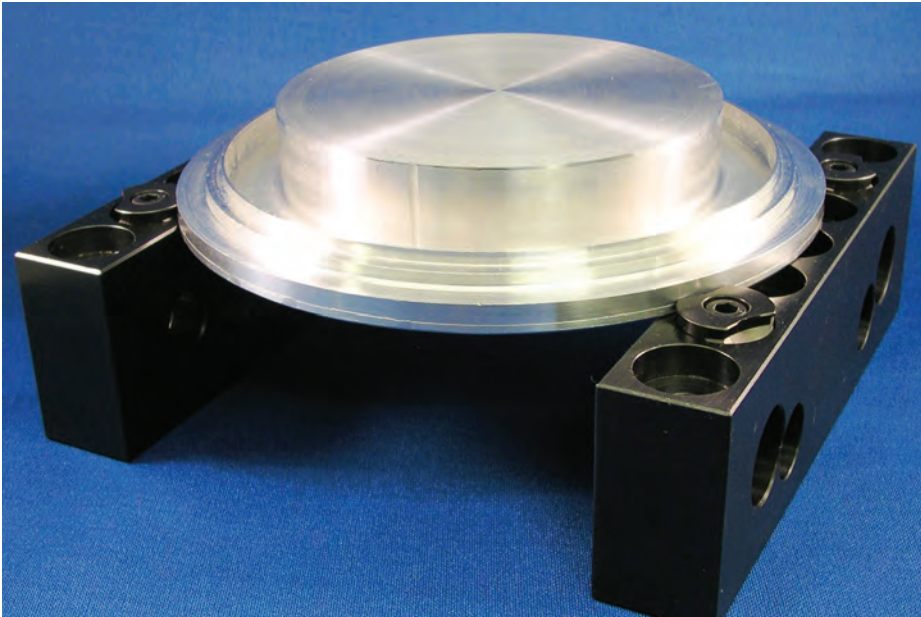


GRIPS & STOPS

	Part No.	Description	A	B	C	C ₁	D	Recommended Gripping Height	No. Per Pack
INCH	32050	Extra Grips	.75	.500	.250	-	10-32	.060-.075	2
	32020	Extra Stop	.75	.500	.250	.195	10-32	-	1
	32075	Fixture Grips	.75	.750	.312	-	10-32	.060-.120	2
	32100	Fixture Grips	.75	1.000	.312	-	10-32	.060-.120	2
	32150	Fixture Grip	1.00	1.000	.500	-	5/16-18	.060-.220	1
METRIC	33050	Extra Grips	19.05	12.7	6.35	-	M5	1.5mm-1.9mm	2
	33020	Extra Stop	19.05	12.7	6.35	4.95	M5	-	1
	33030	Extra Stop	19.05	19.05	7.92	5.72	M5	-	1
	33075	Fixture Grips	19.05	19.05	7.92	-	M5	1.5mm-3.0mm	2
	33100	Fixture Grips	19.05	25.4	7.92	-	M5	1.5mm-3.0mm	2
	33150	Fixture Grip	25.4	25.4	12.7	-	M8	1.5mm-5.6mm	1

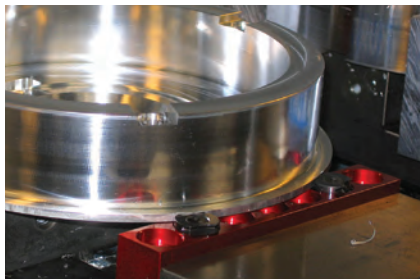
STEEL VISE JAW SET (Set includes 4 TalonGrips™, 1 stop with M5 screws)

Part Number	Vise (metric)	A (metric)	B (metric)	C (metric)	D (metric)	E (metric)	-----Replacement----- Grips Stops	
WITH MOUNTING HOLES								
32044	4" (100mm)	4.0 (100)	1.48 (37.59)	1.0 (25.4)	2.5 (63.5)	.688 (17.47)	33050 (2/pk)	33020 (1 ea.)
32066	4 1/8" (100mm/150mm)	6.0 (150)	1.73 (43.94)	1.0 (25.4)	2.5/3.88 (63.5/98.55)	.688/.94 (17.47/23.87)	33050 (2/pk)	33020 (1 ea.)
32068	6" (150mm)	8.0 (200)	1.73 (43.94)	1.0 (25.4)	3.88 (98.55)	.94 (23.87)	33050 (2/pk)	33020 (1 ea.)
32088	6 3/8" (150mm/200mm)	8.0 (200)	2.45 (62.23)	1.25 (31.75)	3.87/4.75 (98.3/120.65)	.94/1.218 (23.88/30.94)	33075 (2/pk)	33030 (1 ea.)
WITHOUT MOUNTING HOLES								
33044	-	4.0 (100)	1.48 (37.59)	1.0 (25.4)	-	-	33050 (2/pk)	33020 (1 ea.)
33066	-	6.0 (150)	1.73 (43.94)	1.0 (25.4)	-	-	33050 (2/pk)	33020 (1 ea.)
33068	-	8.0 (200)	1.73 (43.94)	1.0 (25.4)	-	-	33050 (2/pk)	33020 (1 ea.)

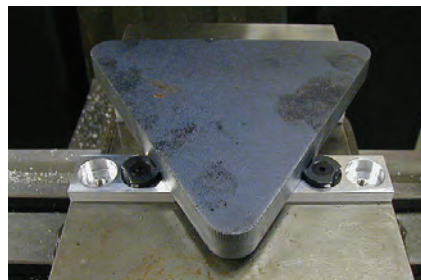


VersaGrip™, as the name implies, offers the versatility of clamping standard vise work as well as providing a solution for difficult applications that would normally require fixturing or machining soft-jaws. By simply replacing your current jaws with the VersaGrip™ system you can securely hold odd shaped parts while machining at speeds and feeds you never thought possible.

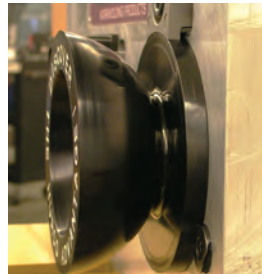
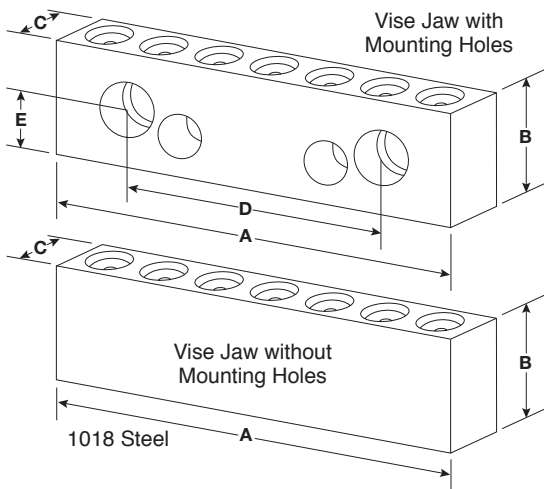
This system can accommodate a wide range of part sizes as well as holding multiple parts in a single cycle. The hardened (52-54 RC) VersaGrip™ has penetrating teeth designed to bite into your workpiece preventing lateral and horizontal movement. These grips will hold flame cut parts, castings, even parts with a negative draft!



Large dimensions



Odd shaped parts



Tombstone application

TALONGRIP & VERSAGRIP 6" COMBO KIT

33006 6" Combo Kit

Contents of Kit

32066 Talongrip Vise Jaw Set
32166 VersaGrip Vise Jaw Set

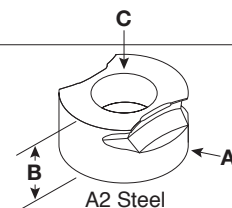
NOTE: All jaws designed to fit on a 4" or 6" vise.

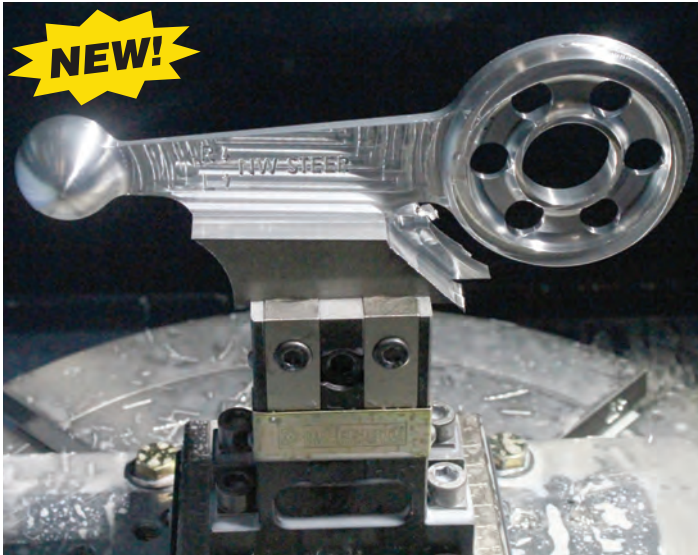
STEEL VISE JAW SET (Set includes 4 VersaGrips™ with M5 Screws)

Part Number	Vise (metric)	A (metric)	B (metric)	C (metric)	D (metric)	E (metric)
WITH MOUNTING HOLES						
32166	4"/6" (100mm/150mm)	6.00 (150)	1.88 (47.75)	1.0 (25.4)	2.5/3.88 (63.5/98.55)	.688/.94 (17.47/23.87)
32168	6" (150mm)	8.00 (200)	1.88 (47.75)	1.0 (25.4)	3.88 (98.55)	.94 (23.87)
WITHOUT MOUNTING HOLES						
33166	-	6.00 (150)	1.88 (47.75)	1.0 (25.4)		
33168	-	8.00 (200)	1.88 (47.75)	1.0 (25.4)		

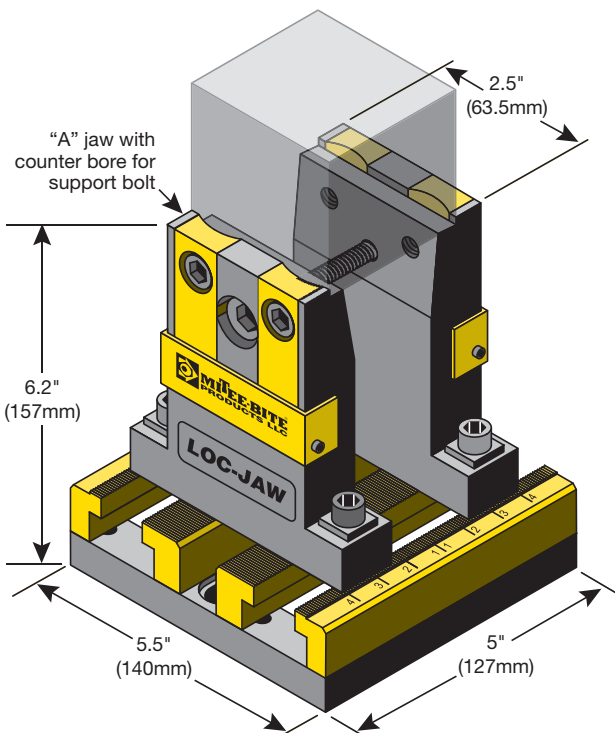
VERSAGRIP™

	Part No.	A	B	C	Recommended Gripping Height	No. of Grips Per Pack
INCH	33175	.750	.375	10-32	.060-.140	2
METRIC	32175	19.05	9.52	M5	1.55mm-3.5mm	2





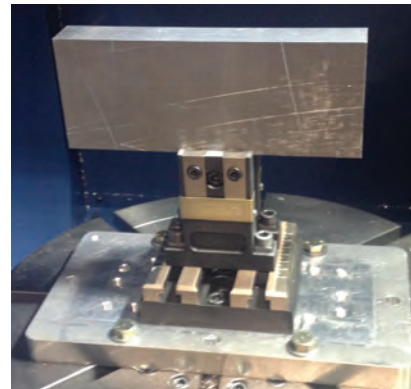
Using Extension Kit



Patent pending

The Loc-Jaw™ system was conceived to simplify, and allow greater tooling access and more versatility securing your parts when 4th and 5th axis machining. Designed to hold raw stock without a pre-op using the carrier method, penetrating material using the Knife-edge grippers or holding machined surfaces with the Blunt-edge grippers installed.

- Unique design allows access to bottom of workpiece
- Ability to hold parts from .500" to 4.00" or up to 1 Meter with optional extension kit
- 6,000+ lbs of holding force gripping on only .125" of material
- Knife Edge grippers designed to penetrate into material up to .060" deep. Blunt Edge Grippers are also included for non-marring applications. All grippers heat treated A2.
- Centering Disk included for Loc-Jaw™ base
- Set of locating pins included. (Liners installed in base - see page 21)
- Blunt-edge grippers with #2 or #3 grit carbonite coating are recommended for high speed machining on hard alloys



Torque (Ft/lbs)	Holding Force (lbs)
10	2,000
15	3,000
20	4,000
25	5,000
30	6,000

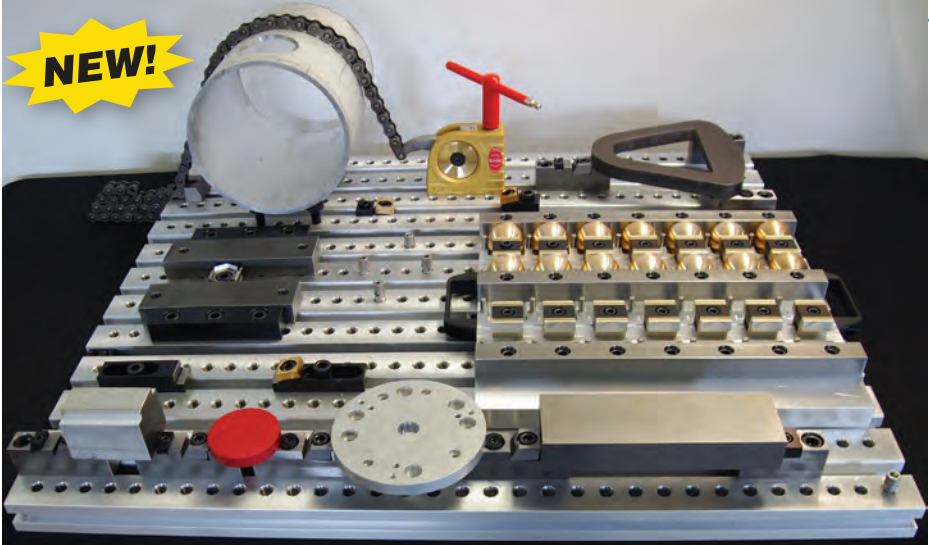
*Max torque of 25 ft. lbs. using Knife Edge grippers on material > 40Rc due to point contact.

Part Number	Description
14500	Loc-Jaw™ System Ships fully assembled with all tools required
14525	Loc-Jaw™ Extension Kit Includes base plate with rails, threaded rod 1 meter long and locking nut with spacer

REPLACEMENT PARTS

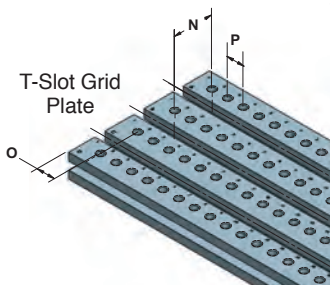
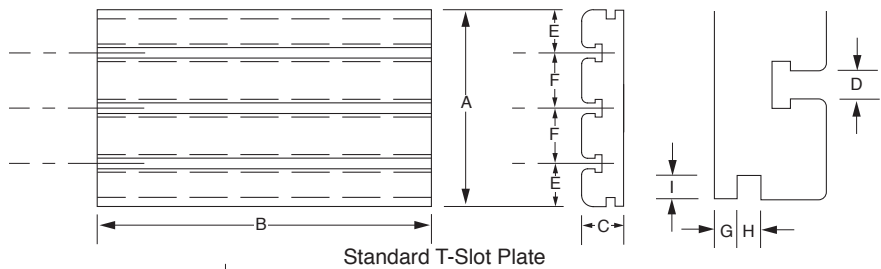
Part Number	Description
14501	Loc-Jaw™ Support Bolt #1 (M10 x 45mm)
14502	Loc-Jaw™ Support Bolt #2 (M10 x 65mm)
14503	Loc-Jaw™ Support Bolt #3 (M10 x 90mm)
14504	Loc-Jaw™ Support Bolt #4 (M10 x 110mm)
14505	Loc-Jaw™ Knife Edge Grippers (2 per pack)
14506	Loc-Jaw™ Blunt Edge Grippers (2 per pack)
14510	Loc-Jaw™ Knife Edge Jaw Set - includes 2 Jaws, 4 Grips, Screws
14515	Loc-Jaw™ Blunt Edge Jaw Set - includes 2 Jaws, 4 Grips, Screws
14520	Loc-Jaw™ Rail Set - includes 4 Rails, Screws, Dowel Pins

Aluminum T-Slot and T-Slot Grid Plates



Our new T-Slot Grid-Plate will allow use of all Mitee-Bite clamps on one stage. Designed for prototype work requiring modular clamping, quick change pallets for production and the versatility to change set-ups quickly as all holes are numbered to record clamp placement on your job sheets. We needed an off the shelf platform for the new Loc-Down™ System (see pg 20) and discovered these plates mounted on our VMC opened up our capacity and capabilities. These plates can be mounted end to end and side by side for larger machines and can even be used on larger CMMs.

➤ Standard T-slot plates can be ordered in custom lengths up to 66" (1676mm), not machined



T-SLOT GRID PLATE in 33.2" (843.3mm) Lengths

	Part Number	Hole Threaded	Hole Depth	Holes Per Row	N	O	P
INCH	22933	1/2-13	0.85	32	2.38	1.1	1
METRIC	22838	M12	21.6	34	60	9.1	25

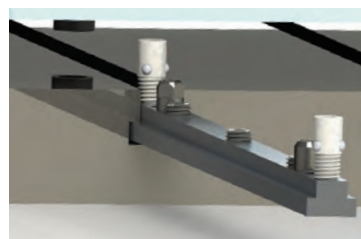
All other dimensions same as standard plate.



STANDARD T-SLOT PLATE without Mounting Holes

Part Number	A x B x C (metric)	T-slots	D (metric)	E (metric)	F (metric)	G (metric)	H (metric)	I (metric)	Lbs. (KG)
22913	9.0 x 13.0 x 1.48 (228 x 330 x 38)	3	5/8 (16)	2.00 (50.8)	2.50 (63.5)	.49 (12.7)	.50 (12.7)	.50 (12.7)	13.3 (6.1)
22918	9.0 x 18.0 x 1.48 (228 x 457 x 38)	3	5/8 (16)	2.00 (50.8)	2.50 (63.5)	.49 (12.7)	.50 (12.7)	.50 (12.7)	18.5 (8.5)
22924	9.0 x 24.0 x 1.48 (228 x 610 x 38)	3	5/8 (16)	2.00 (50.8)	2.50 (63.5)	.49 (12.7)	.50 (12.7)	.50 (12.7)	24.8 (11.3)

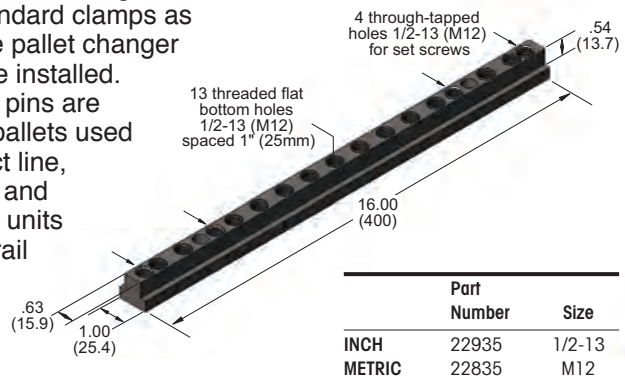
T-NUT RAIL



Using this T-Nut Rail with our Aluminum T-Slot Plates provides more mounting configurations with our standard clamps as well as serving as a simple pallet changer when the Locating Pins are installed. Center-line dimensions for pins are the same as all our blank pallets used with our Vacmagic® product line, will also locate our VM300 and

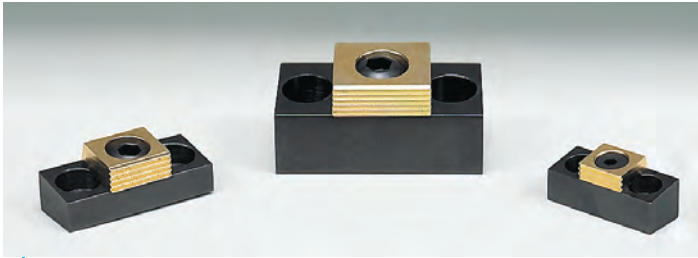
Multi-Power Vac which have liners installed in the bottom of units again with same center-line dimensions. 4 set-screws lock rail and place, depth of threaded holes set for Loc-Downs™.

➤ Available in 16" (406mm) lengths with 1/2-13 or M12 Threads

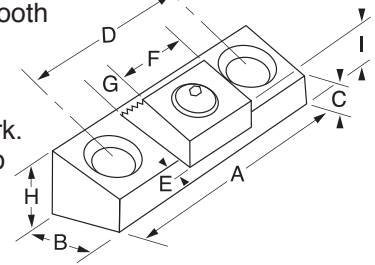


	Part Number	Size
INCH	22935	1/2-13
METRIC	22835	M12

Compact Toe Clamps



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



Part Number	A	B	C	D	E†	F	G	H	I*	Total Distance of Movement	Mounting Screws (Included)	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	—Replacement— Cam Screw	Square Washer
INCH															
24106	1.70	.75	.50	1.00	.090	.75	.25	.62	.845	.050	5/16-18x3/4 LHCS	20.8	2,000	10370	21006
24108	2.12	1.00	.45	1.32	.110	1.00	.38	.62	.960	.100	3/8-16x3/4 LHCS	65.0	4,000	10372	21016
24110	2.95	1.50	.99	2.00	.130	1.50	.50	1.25	1.70	.100	1/2-13x1 1/4 SHCS	100.0	6,000	10376	21026
													(N.m.)	(N.)	
METRIC															
54110	43.2	19.0	12.7	25.4	2.3	19.0	6.4	15.75	21.5	1.6	M8x16 LHCS	28.20	8900	50368	21006
54112	54.0	25.4	11.4	33.5	2.8	25.4	9.7	15.75	24.4	2.0	M10x20 LHCS	88.13	17800	50372	51016
54116	75.0	38.1	25.2	50.8	3.3	38.1	12.7	31.75	43.2	2.5	M12x30 SHCS	135.58	26700	50374	21026

E† - The distance needed between the front of the clamp base and the workpiece.
 I* - The distance from the top of the washer to the bottom of the clamp body.
 Drill and tap the centerline of "B" for mounting holes.

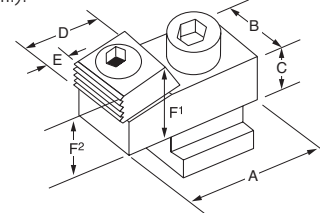
T-Slot Toe Clamps



This clamp is like the Compact Toe Clamp, only it is designed to be used in the T-slots of machine tables. It provides 4,000 lbs. (17800 N) positive down force while maintaining a low profile. The hardened steel clamping element has both a smooth surface for machined workpieces and a serrated clamping surface for rougher work.

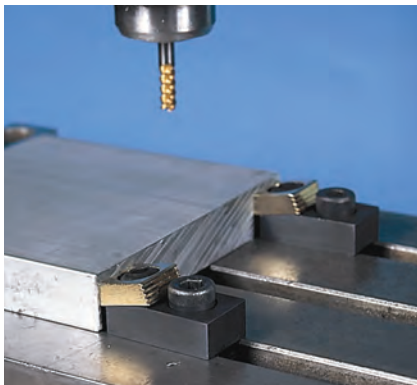
	A	B	C	D	E	F1	F2	Max. Torque/ Holding Force (Ft Lbs/Lbs)
INCH	1.94	1.12	.62	1.00	.38	1.00	.875	65/4,000
								(N.m./N.)
METRIC	50	28.5	15.7	25.4	9.6	25.4	22.2	88.00/17800

F1 - The distance from the top of the back of the washer to the bottom of the clamp body.
 F2 - The distance from the top of the front of the washer to the bottom of the clamp body.
 Torque mounting bolt to 110 Ft/Lbs (150N.m.).



Part Number	T-slot Size
INCH 24000	No T-nut or Mtg. Screw
24128	9/16
24148	5/8
24168	1 1/16
24188	3/4
METRIC 54000	No T-nut or Mtg. Screw
54014	14
54016	16
54018	18

	-----Replacement-----	
	Cam Screw	Square Washer
INCH	10372	21016
METRIC	50372	51016



T-Slot and Advant-Edge Clamps



The original MITEE-BITE T-Slot Clamp combines our unique cam action clamping element with a T-nut.

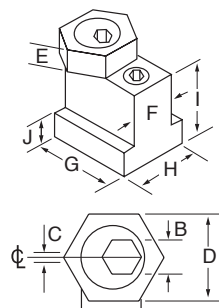
- Locks in machine T-slot for low profile clamping
- Makes fast set-ups possible right on the machine table
- Brass hex follows contour of unusual shaped parts
- Packaged in pairs or complete kits

The Mitee-Bite Kit Contains: 4 Mitee-Bite T-Nuts
6 Mitee-Bite Fixture Clamps
2 Hex Keys

MITEE-BITE T-SLOT KITS



Part Number	Cam Screw	T-Slot Size	B	C	D	E	F	G	H	I	J	Max. Torque (Ft/Lbs)	Holding Force (Lbs)	Replacement		
														Cam Screw	Hex Washer	T-Nut
INCH																
10640	1/4-20	3/8	1/8	.040	.625	.190	.365	.89	.500	.375	.150	6.2	800	10365	10582	10714
10641	5/16-18	7/16	3/16	.040	.812	.190	.425	1.10	.625	.220	.83	8.3	800	10367	10584	10715
10642	3/8-16	1/2	3/16	.050	.812	.250	.490	1.20	.750	.625	.235	20.8	2,000	10371	10586	10716
10643	3/8-16	9/16	3/16	.050	.812	.250	.550	1.20	.875	.750	.300	20.8	2,000	10371	10586	10717
10644	1/2-13	5/8	5/16	.100	1.000	.375	.620	1.27	1.000	.875	.425	45.0	3,000	10373	10588	10718
10646	1/2-13	11/16	5/16	.100	1.000	.375	.675	1.37	1.000	1.000	.350	45.0	3,000	10373	10588	10719



Part Number	Cam Screw	T-Slot Size	B	C	D	E	F	G	H	I	J	Max. Torque (N.m)	Holding Force (N)	Replacement		
														Cam Screw	Hex Washer	T-Nut
METRIC																
50642	M6 x 1.00	8mm	5mm	1.01	15.86	4.75	8	23.2	12.7	9.5	4.6	8.55	3,558	50365	10582	50708
50644	M6 x 1.00	10mm	5mm	1.01	15.86	4.75	10	23.2	14.2	14.2	4.3	8.55	3,558	50365	10582	50710
50646	M8 x 1.25	12mm	5mm	1.01	20.62	4.75	12	27.9	15.9	15.9	6.4	11.30	3,355	50367	10584	50712
50648	M10 x 1.50	14mm	7mm	1.52	20.62	6.35	14	30.5	22.4	22.2	8.5	28.00	8,895	50369	10586	50714
50650	M12 x 1.75	16mm	8mm	2.03	25.40	9.53	16	30.9	25.4	22.2	9.2	61.00	13,340	50371	10590	50716
50652	M12 x 1.75	18mm	8mm	2.03	25.40	9.53	18	34.7	28.6	28.6	10.5	61.00	13,340	50371	10590	50718
50654	M16 x 2.00	20mm	12mm	2.54	30.15	12.70	20	39.2	31.8	31.8	12.6	135.00	26,680	50373	10592	50720
50656	M16 x 2.00	22mm	12mm	2.54	30.15	12.70	22	44.3	34.9	41.3	12.5	135.00	26,680	50373	10592	50722

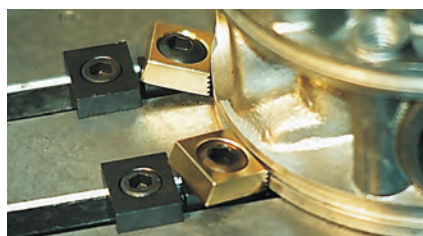
T-SLOT CLAMPS



Part Number	T-Slot Size	Number of Clamps Per Pack	Holding Force (Lbs)	Part Number	T-Slot Size	Number of Clamps Per Pack	Holding Force (N)
10420	3/8	2	800	METRIC			
10421	7/16	2	800	50422	8mm	2	3,558
10422	1/2	2	2,000	50424	10mm	2	3,558
10423	9/16	2	2,000	50426	12mm	2	3,355
10424	5/8	2	3,000	50428	14mm	2	8,895
10426	11/16	2	3,000	50430	16mm	2	13,340
				50432	18mm	2	13,340
				50434	20mm	2	26,680
				50436	22mm	2	26,680

Hex key not included.

ADVANT-EDGE CLAMPS

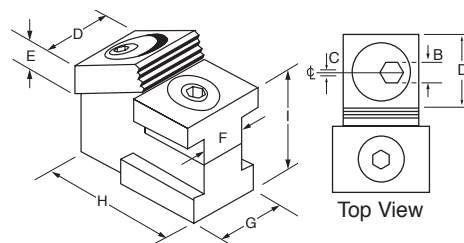


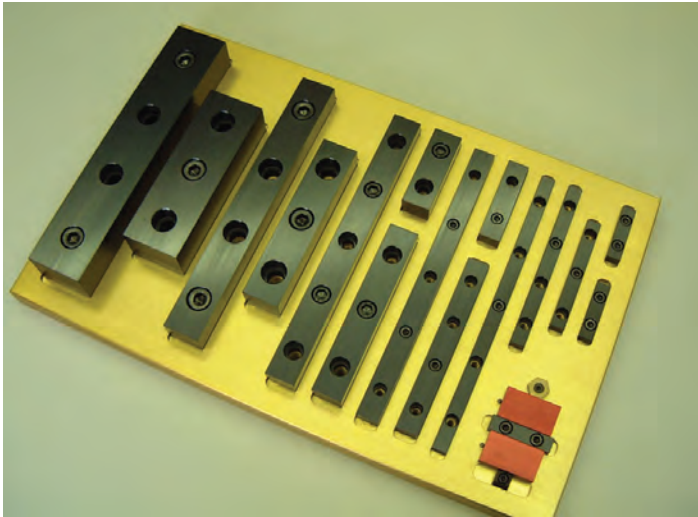
The MITEE-BITE Advant-Edge Clamp provides additional clamping force and improved table grip.

- Tilted clamping element creates a positive downward force and 4,000 lbs. holding force
- Hardened clamping element has both a smooth surface for machined workpieces and a serrated clamping surface for rougher work
- Improved locking mechanism secures clamp to machine table
- Packaged individually (52224) or as kit of two (52424)

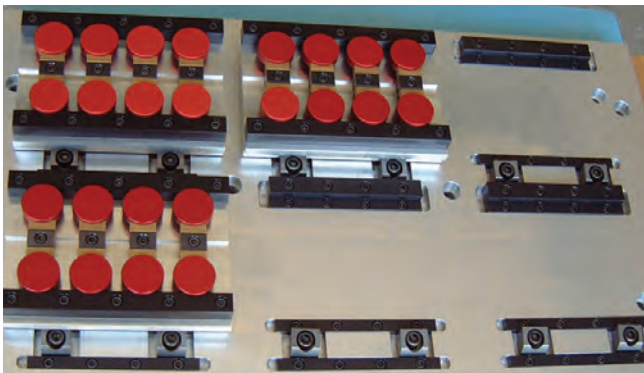
Part Number	Cam Screw	T-Slot Size	B	C	D	E	F	G	H	I	Max. Torque/ Holding Force (Ft Lb/Lbs)	Replacement Square Washer
52224	50372	5/8	5/16	.100	1.00	.375	.610	1.12	1.89	1.1	65/4,000	51016
52424 (kit)												
(N.m./N.)												
METRIC DIMENSIONS												
		16	8	2	25.4	9.5	16	28.5	48	28	88.00/17800	

Torque mounting bolt to 70 Ft/Lbs (150N.m.).

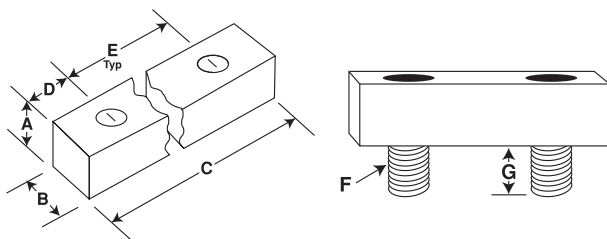




Locating rails are made of low carbon steel and are precision ground square. They are available in a number of sizes and lengths to suit most applications.



Locating rails used with Machinable Uniforce® and Pitbull® Clamps



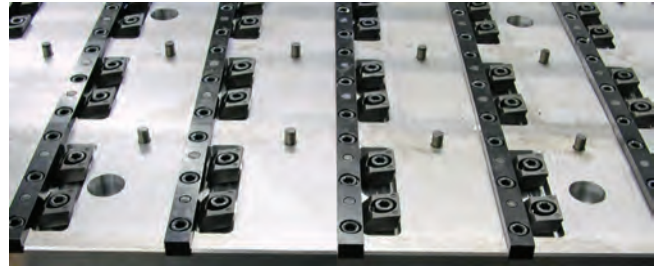
	Part Number	A	B +/- .0005	C	D	E	F	G	No. Holes
INCH	33110	.35	.480	.750	.NA	.NA	1/4-20	.38	1
	33120	.35	.480	2.00	.50	1.00	1/4-20	.38	2
	33140	.35	.480	4.00	1.00	1.00	1/4-20	.38	3
	33160	.35	.480	6.00	.75	1.50	1/4-20	.38	4
	33180	.35	.480	10.00	1.00	2.00	1/4-20	.38	5
	33200	.48	.730	3.00	.75	1.50	1/4-20	.38	2
	33220	.48	.730	6.00	.75	1.50	1/4-20	.38	4
	33240	.48	.730	10.00	1.00	2.00	1/4-20	.38	5
	33260	.73	.980	3.00	.75	1.50	3/8-16	.62	2
	33280	.73	.980	6.00	1.00	2.00	3/8-16	.62	3
	33300	.73	.980	10.00	1.00	2.00	3/8-16	.62	5
	33320	.98	1.230	6.00	1.00	2.00	1/2-13	.75	3
	33340	.98	1.230	10.00	1.25	2.50	1/2-13	.75	4
	33360	1.48	1.980	6.00	1.00	2.00	1/2-13	.75	3
	33380	1.48	1.980	10.00	1.25	2.50	1/2-13	.75	4

Mounting Screws included.

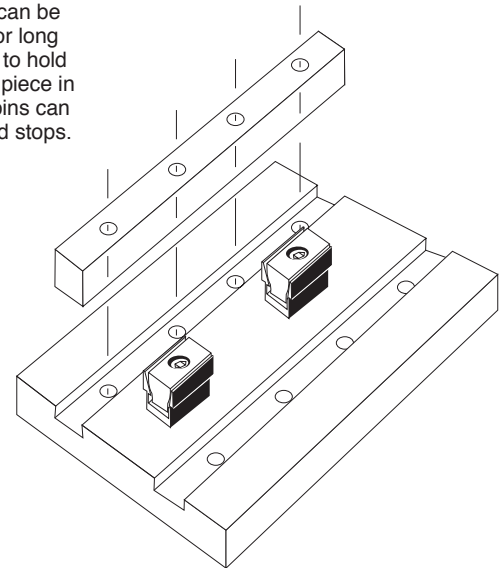
Is it taking too long to make a fixture to increase production?

Mitee-Bite Products makes fixture building easier and quicker with the addition of ready made locating rails.

Rails are made of low carbon steel, then ground square. They are easily machined when used with our machinable clamps. Carbinite coating can be added to increase holding force (See carbinite.com for more information).



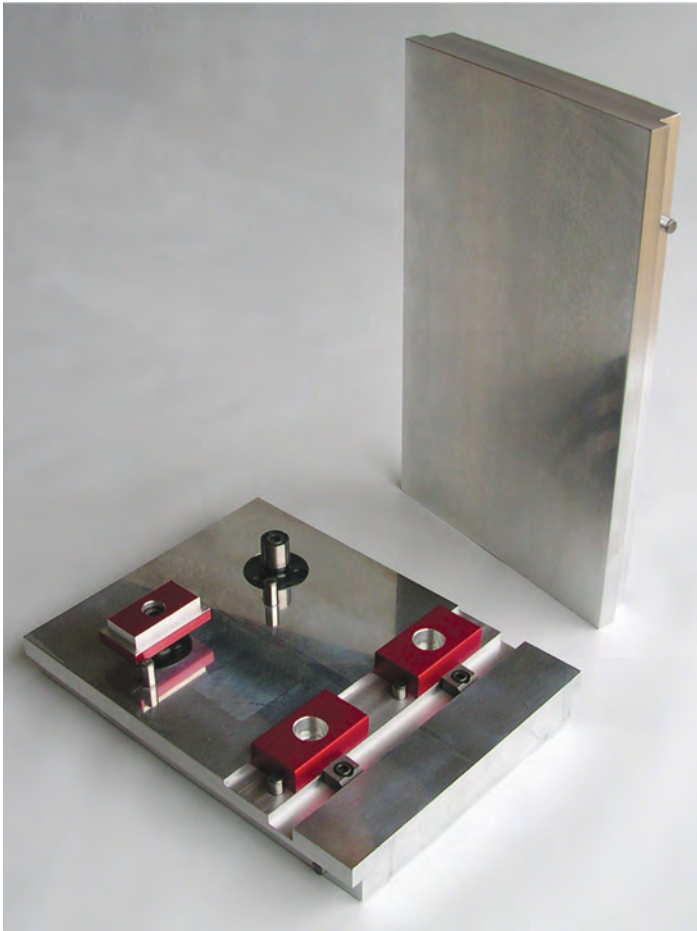
Multiple rails can be used in line for long workpieces or to hold more than one piece in a row. Dowel pins can be used for end stops.



Locating Rail Installation:

1. Mill a slot to locate the rail. Depth of the slot will determine rail height.
2. Drill and tap the required holes to mount the rail.
3. For better rigidity, the rail should be pinned to the fixture plate with dowel pins.
4. If rails are to be machined to hold round pieces, the clamps should be mounted and both rail and clamp machined at the same time.

	Part Number	A	B + .000 - .013	C	D	E	F	G	No. Holes
METRIC	83200	12	15	50	15	20	M6	11mm	2
	83210	12	15	100	20	30	M6	11mm	3
	83220	12	15	150	30	30	M6	11mm	4
	83240	12	15	250	25	50	M6	11mm	5
	83260	18	24	75	20	35	M10	18mm	2
	83280	18	24	150	30	30	M10	18mm	4
	83300	18	24	250	25	50	M10	18mm	5



- Now you can run fixture jobs without removing your vises.
- Vise Pallets are designed to fit in all 6 inch (150mm) vises and measure approximately 6x8 and 6x10 inches (150x203mm and 150x254mm).
- Ideal for multiple small parts using one of several Mitee-Bite low profile edge clamps.
- The Vise Pallets are qualified in 2 places so they can rest on parallels or on the top of the jaws.

HOW TO USE

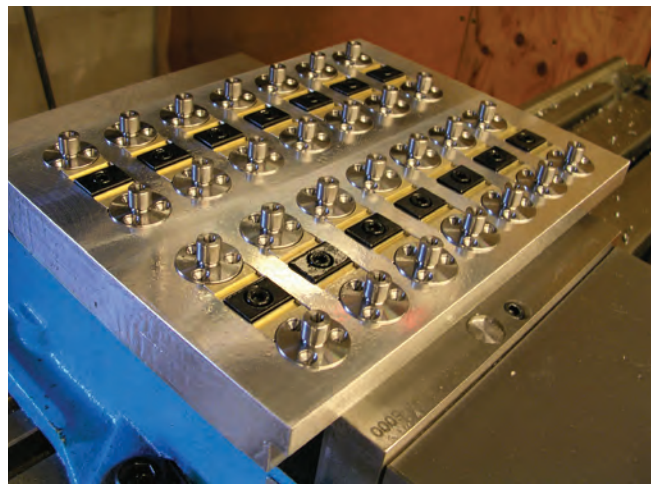
The Mitee-Bite Vise Pallet has a locating pin that makes contact with the left side of the solid jaw for repeat location of pallet. Simply slide pallet to the right of the vise and clamp in place. Pallets can be machined and tapped as required.



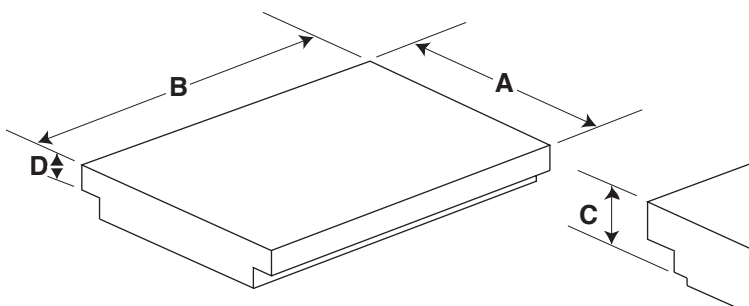
Vise Pallet with ID Xpansion™ Clamps



Fixtured with Mitee-Bite Uniforce® Clamps and locating rails



Fixtured with Mitee-Bite Machinable Uniforce® Clamps



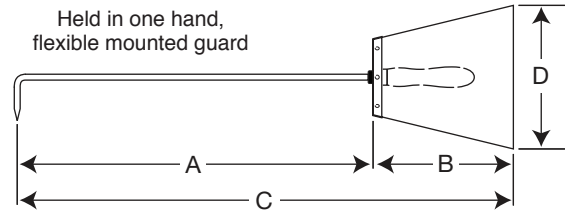
Part Number	A (metric)	B (metric)	C (metric)	D (metric)
24100	6.00 (150)	8.00 (203)	.95 (24.4)	.44 (11.2)
24120	6.00 (150)	10.00 (254)	.95 (24.4)	.44 (11.2)

Chip Hooks

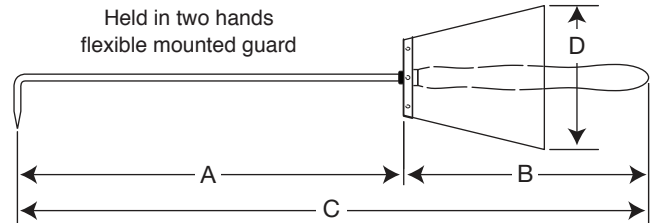


The chip hook is an essential safety tool for all shops. These galvanized steel hooks are fitted with a protective polyethylene hilt and wooden handles to ensure a firm grip. Available in several lengths and single or double handles.

SINGLE HANDLE HOOK WITH PROTECTING HILT



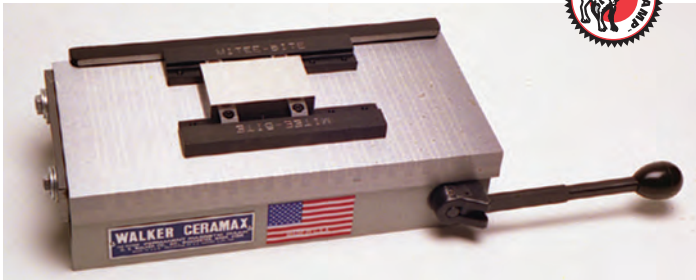
DOUBLE HANDLE HOOK WITH PROTECTING HILT



SAFETY! A work related accident can happen very easily. Always use a chip hook to clear away annoying chips and empty the chip trays on your machines.

Part Number	Description	A (metric)	B (metric)	C (metric)	D (metric)
SINGLE HANDLE					
12060	Chip hook, single handle	15.75 (400)	7.0 (180)	22.5 (570)	7.0 (180)
12070	Chip hook, single handle	20.0 (500)	7.0 (180)	26.0 (670)	7.0 (180)
DOUBLE HANDLE					
12080	Chip hook, double handle	20.0 (500)	13.0 (320)	32.0 (820)	7.0 (180)
12090	Chip hook, double handle	31.5 (800)	13.0 (320)	44.0 (1120)	7.0 (180)
12100	Chip hook, double handle	39.0 (1000)	13.0 (320)	52.0 (1320)	7.0 (180)

Pitbull® Gripping Rail



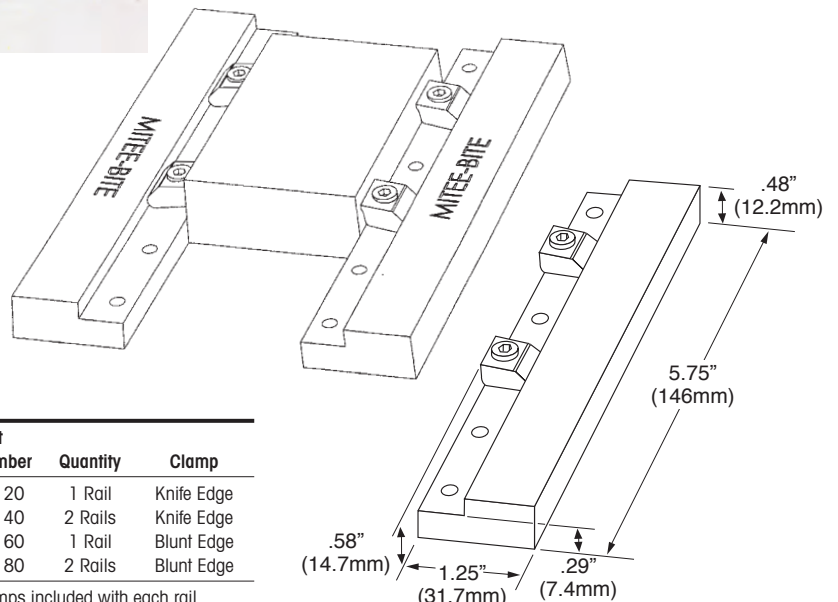
Grind stainless steel, brass, aluminum and still maintain parallelism? Now it's Easy! Our low-profile Gripping Rails, available with Knife Edge or Blunt Edge Pitbull® Clamps are excellent for holding non-ferrous material during grinding and milling on a magnetic chuck.



Longer size parts can be held by using multiple rails. Parts can be pushed against the solid rail with one or more of the gripping rails.



An increase in the clamping pressure can be achieved by placing additional steel behind the gripping rails.



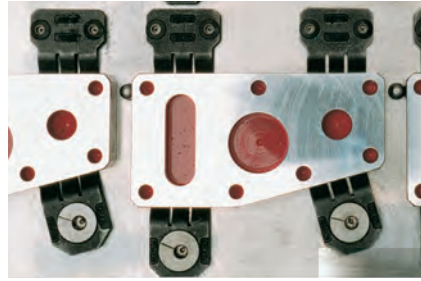
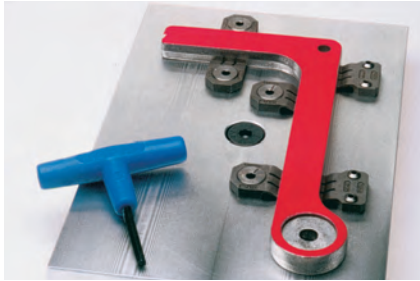
Part Number	Quantity	Clamp
26120	1 Rail	Knife Edge
26140	2 Rails	Knife Edge
26160	1 Rail	Blunt Edge
26180	2 Rails	Blunt Edge

2 Clamps included with each rail.



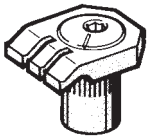
These low profile cam action clamps and stops have a holding force of 880 lbs. (3900N.) and have fingers that push the workpiece down before clamping, even on castings that have negative draft!

Ground stops are mounted with special screws to ensure high precision locating.

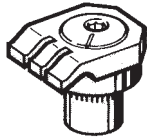


CAM ACTION CLAMPS

The clamping element rotates around the eccentric insert that provides for clamping in all directions. Clamping range: .047" (1.2mm). Made of spring steel.



Part Number	Clamping Height	Max. Torque
25210	.100 (2.5mm)	6.6 Ft. Lbs. (8.95N.m.)



Part Number	Clamping Height	Max. Torque
25215	.300 (7.5mm)	6.6 Ft. Lbs. (8.95N.m.)



CLAMPING KEY
25980 4mm

KOPAL® MINI CLAMPS AND STOPS

Part No.	Item
25105	Stop
25110	Stop
25115	Stop
25120	Stop
25125	Stop
25130	Stop
25210	Clamp
25215	Clamp

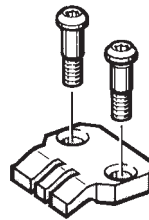
Special mounting screws included

Installation instructions and CAD files available online: MiteeBite.com

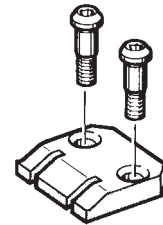
STOPS/LOCATORS

The single stop with only one rigid stop is used for pieces over 1.75" (44.5mm) long.

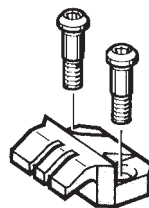
The double stop with 2 rigid stops is used for small size pieces. Both are made of spring steel.



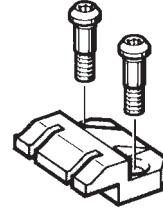
Part Number	Jaw Height
25105	.100 (2.5mm)



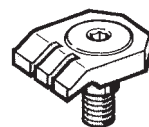
Part Number	Jaw Height
25110	.100 (2.5mm)



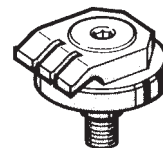
Part Number	Jaw Height
25115	.300 (7.5mm)



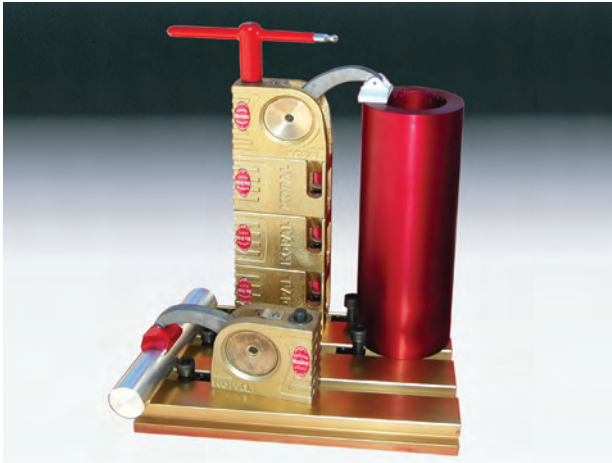
Part Number	Jaw Height
25120	.300 (7.5mm)



Part Number	Jaw Height
25125	.100 (7.5mm)



Part Number	Jaw Height
25130	.300 (7.5mm)



Need a quick and easy way to clamp parts with top pressure? Check out this versatile line-up of clamps! From the strong but compact Piccolo to the heavy-duty Big Block.

The worm and gear design ensures the clamps will not loosen with use yet the clamps are easy to set up and break down. This is ideal for short cycle times and odd shaped parts.

The modular design also allows adjusting clamping height by stacking the riser blocks, and the use of an extension arm increases reach!

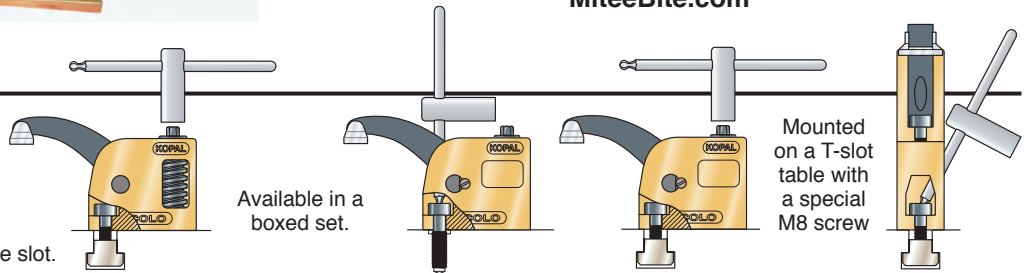
For the complete line of Mono-Bloc style clamps, see our website:

MiteeBite.com

PICCOLO

Up to 1460 lbs. (6500N) Holding Force

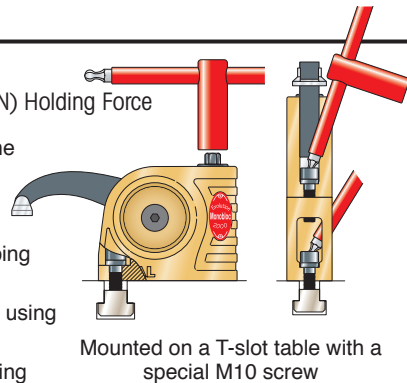
When the arm is released, the Piccolo remains in position in the slot.



MONO BLOC

Up to 3600 lbs. (16000N) Holding Force

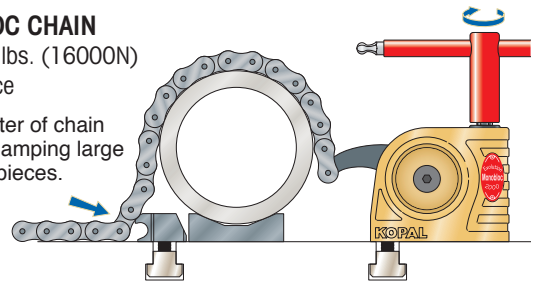
1. Slide the T-nut and the screw into the slot
2. Position and tighten the clamp onto the table using the clamping key provided
3. Clamp the workpiece using the same key
4. Proceed with machining



MONO BLOC CHAIN

Up to 3600 lbs. (16000N) Holding Force

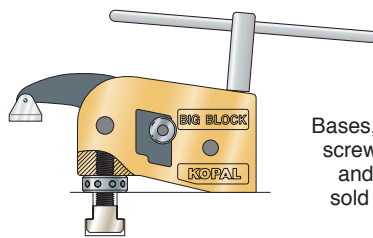
The 1 meter of chain allows for clamping large workpieces.



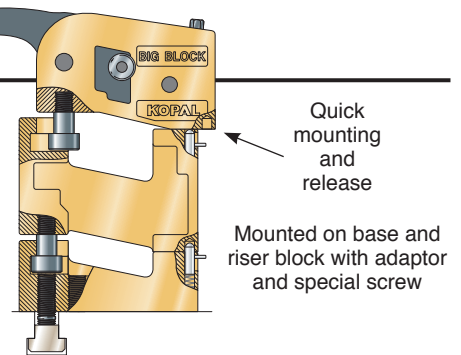
BIG BLOCK

Up to 9000 lbs. (40000N) Holding Force

When the workpiece is released, the Big Block can either remain fixed in the slot, or slide in the slot.



Bases, riser blocks, screws, cylinders and t-nuts are sold separately.

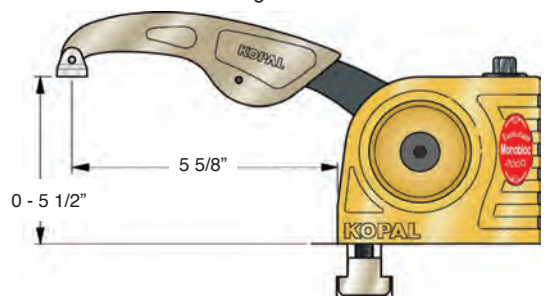
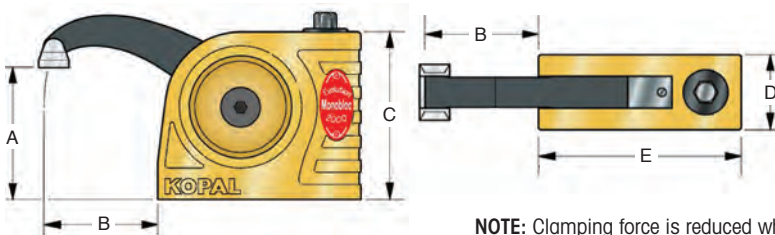


Quick mounting and release

Mounted on base and riser block with adaptor and special screw

Part Number	A	B	C	D	E
Piccolo	-.60" - 2.28"	2.125"	2.5"	1.250"	2.87"
Standard Duty	0" - 4"	2.375"	3.5"	1.563"	4.25"
Chain	0" - 4"	2.375"	3.5"	1.563"	4.25"
Big Block	-.70 - 5.32"	5.700"	4.1"	2.350"	6.38"

Mono-Bloc with extension arm increases range to 5 1/2".



NOTE: Clamping force is reduced when using the extension arm.

REPLACEMENT SWIVEL SHOES



Shoes #2 & #3 give you a larger clamping surface. Shoes #4 & #5 are for holding round workpieces.

Part Number	Model
25518	#2
25520	#3
25522	#4
25524	#5
25530	Set of all 4

For the complete line of Mono-Bloc style clamps, see our website: **MiteeBite.com**

DELUXE MONO-BLOC START-UP KIT



Kit includes: (2) standard-duty Mono-Bloc Clamps with 2 5/8" arm, (2) standard-duty Riser Blocks,

- (1) Extension Arm,
- (1) standard-duty T-Wrench,
- (2) M10x35mm screws,
- (2) M10x40mm screws,
- (2) T-nuts (choose from chart at right)

Part Number	T-Slot Size
25725	1/2
25727	9/16
25729	5/8
25731	3/4

High-impact plastic storage/ carrying case with room to store above tools, and space to store additional T-nuts for other size mills.

INDIVIDUAL MONO-BLOC ITEMS

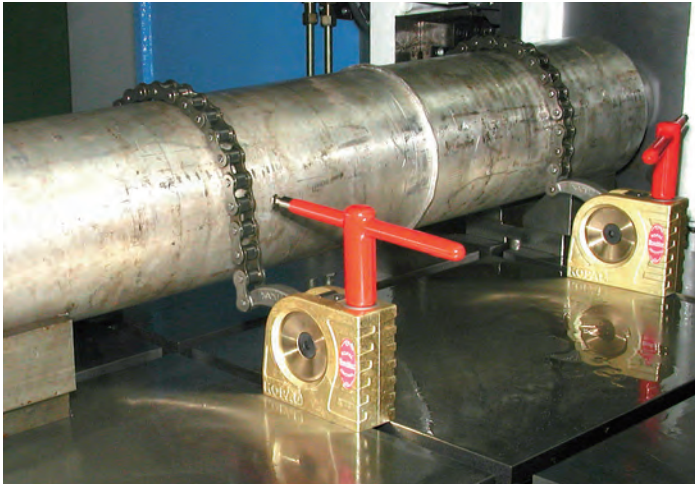
Part Number	Description
25705	Standard-Duty Mono-Bloc Clamp with 2 5/8" Arm (Includes T-wrench)
25710	Standard-Duty Riser Block
25515	Replacement Swivel Shoe
25720	T-Wrench for Standard-Duty Mono-Bloc
25540	Extension Arm
25310	Worm Gear

SPECIAL SCREWS AND T-NUTS FOR MONO-BLOC

(Order one screw and one nut per Mono-Bloc)

Part Number	Description
25730	M10x35mm Screw for 9/16 T-Nut
25733	M10x40mm Screw for 5/8 & 3/4 T-Nut
25736	M10x45mm Screw for 13/16 & 7/8 T-Nut
25747	1/2xM10 T-Nut (12mm)
25748	9/16xM10 T-Nut (14mm)
25751	5/8xM10 T-Nut (16mm)
25754	3/4xM10 T-Nut (18mm)
25757	13/16xM10 T-Nut (20mm)
25760	7/8xM10 T-Nut (22mm)

Mono-Bloc Chain Clamp

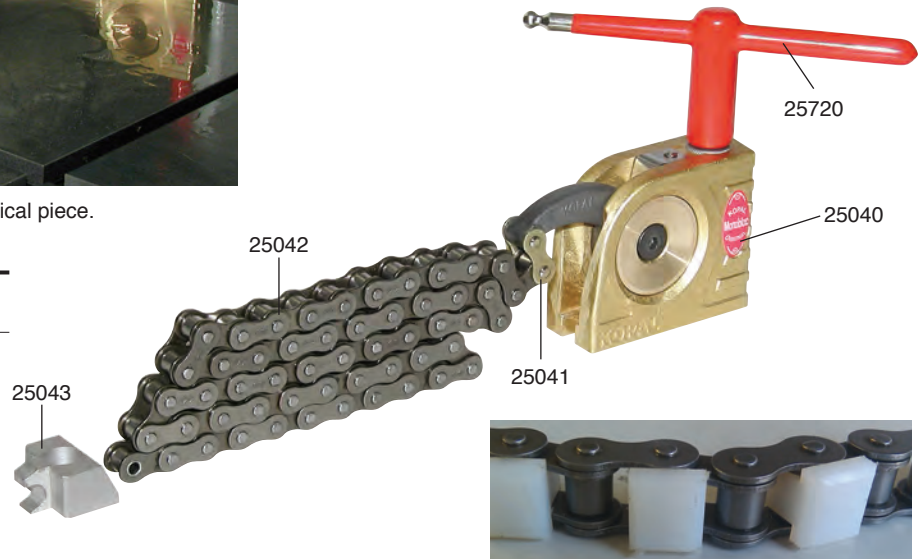


Application with large cylindrical piece.

The Mono-Bloc Chain Clamp is a simple and rapid workholding solution for a wide array of applications.

The Chain Clamp offers fast and powerful clamping with forces to 3,600 lbs. (16000N).

Additional lengths of chain can be added for large applications.



Part Number	Description
25040*	Mono-Bloc Chain Clamp with Master Link, 5 Protective Clips, Anchor, Key and 1 Meter of Chain
25041	Master Link
25042	Extra Chain (1 meter)
25043	Anchor
25045	Protective Clips (5/pk)
25720	Wrench

*Includes (2) M10 mounting screws for anchor and clamp.

T-nuts sold separately - see above.

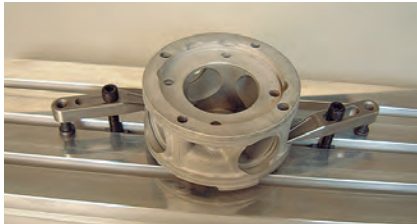
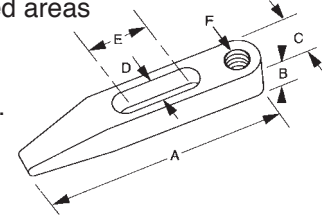
To prevent marring or scratching on delicate pieces use the protective chain clips. (25045) Minimum radius 6".

Strap Clamps



This low profile design promotes superior clamping in both normal and restricted areas with minimal tooling interference.

- Heat treated 17-4 P.H. stainless steel
- Guaranteed for life



	Part Number	A	B	C	D	E	F	Holding Force (Lbs)
INCH	35100	3.63	.43	.89	.400	.86	3/8 Dia. PIN	3,200
	35200	5.00	.75	1.00	.530	1.36	1/2-13	6,000
	35300	6.00	.86	1.20	.650	1.50	5/8-11	8,600
	35400	7.00	1.06	1.40	.780	1.50	3/4-10	15,700
(N.)								
METRIC	36100	92	11	22.6	10.4	22.0	9.5 Dia. Pin	14234
	36200	127	19	25.4	13.4	34.5	M12	26689
	36300	152	22	30.5	16.5	38.1	M16	38254
	36400	178	27	35.6	19.8	38.1	M20	69837

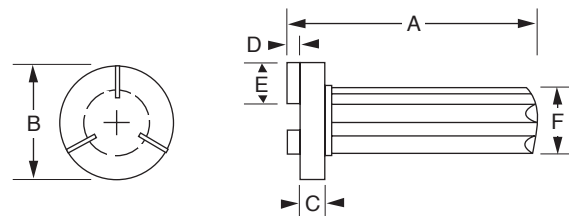
Collet Wrenches



The MITEE-BITE Collet Wrench simplifies insertion and removal of collets in the spindle nose on CNC lathes.

The MITEE-BITE Collet Wrench is manufactured with a steel head and fins for greater strength and durability. The bright red handle makes it easy to locate and is designed to be comfortable to the hand. The collet wrenches are available for 5C, 16C and 3J collets.

Part Number	Collet Sizes	Fins	A	B	C	D	E	F
1005C	5C	3	4.25	1.25	.50	.25	.28	1.13
1016C	16C	3	4.25	1.75	.50	.25	.50	1.13
1003J	3J	4	4.25	1.75	.50	.25	.50	1.13



Collet Stop



The MITEE-BITE "front" loading Collet Stop is the most convenient 5C Collet Stop on the market. Once seated, the collet need not be removed for adjustment.

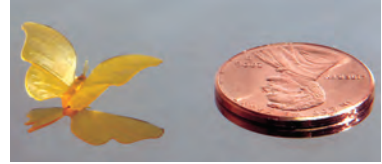
- Quick changing and easy to use
- Non clogging design
- Saves time and money
- Self centering
- Perfect for NC setups
- Reusable for different jobs

Part Number	Length (metric)
10105	24 (610)



How to Hold a Workpiece When You Can't Use a Clamp

Mitee-Grip™ is a heat activated wax based compound embedded in precision paper, coated on nylon mesh or in a stick form. This



holding media maintains parallelism on precision parts. It is very useful for thin parts, micro machining, optical and quartz components, and jewelry related items. Approximate holding force 40 PSI.



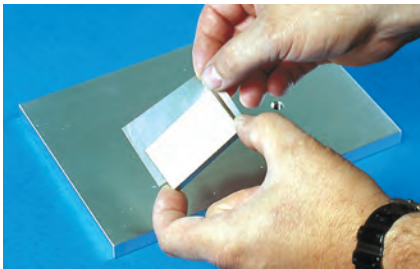
The stick form material can be used in shallow cavities for holding concave and convex pieces. It will also stabilize delicate parts during machining.



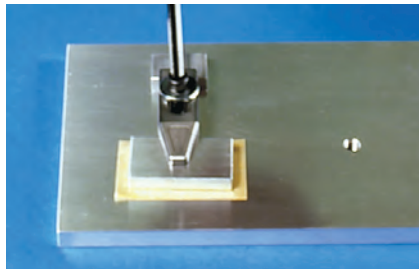
The mesh product captures additional wax material in the web and aides in holding irregular shape parts. Typically additional holding force can be attained with this material.



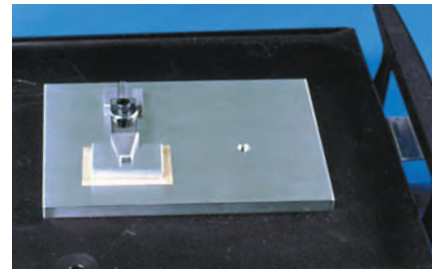
The original paper product is excellent for holding smooth flat parts and maintaining parallelism.



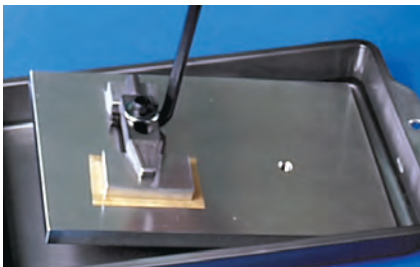
1 Place the Mitee-Grip™ sheet on the subplate leaving a 1/4" (6mm) border on all sides, or melt stick on warm subplate



2 In some cases the part should be lightly clamped to prevent movement. NOTE: Over thin workpieces use a top plate for even pressure.



3 225°F (107°C) is application temperature and fully liquid, 186°F (85°C) is solid and becoming liquid. Some customers use an oven and record time and temp once determined by experimentation. A hot plate may also be used at higher temps if monitored. Most parts will "float" when the Mitee-Grip™ has liquefied.



4 Use air or water to cool, being careful to prevent water from going between subplate and workpiece while hot.



5 Part is ready, use coolant while machining. Reheat to remove. We have found an ultrasonic cleaner is best to remove wax residue or simply wipe part while warm using alcohol based cleaner.

Part No.	Desc.	Size (Metric)
10240	Paper Roll	12"x5' (305x1524)
10245	Paper Roll	12"x25' (305x7620)
10250	Mesh Roll	10"x5' (254x1524)
10252	Mesh Roll	10"x25' (254x7620)
10230	Compound	1 Stick
10235	Compound	3 Sticks



Customer Satisfaction Our #1 Priority!

Technical and Design Assistance Includes
Top Level CAD Layouts Ready for Your Cam Software



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