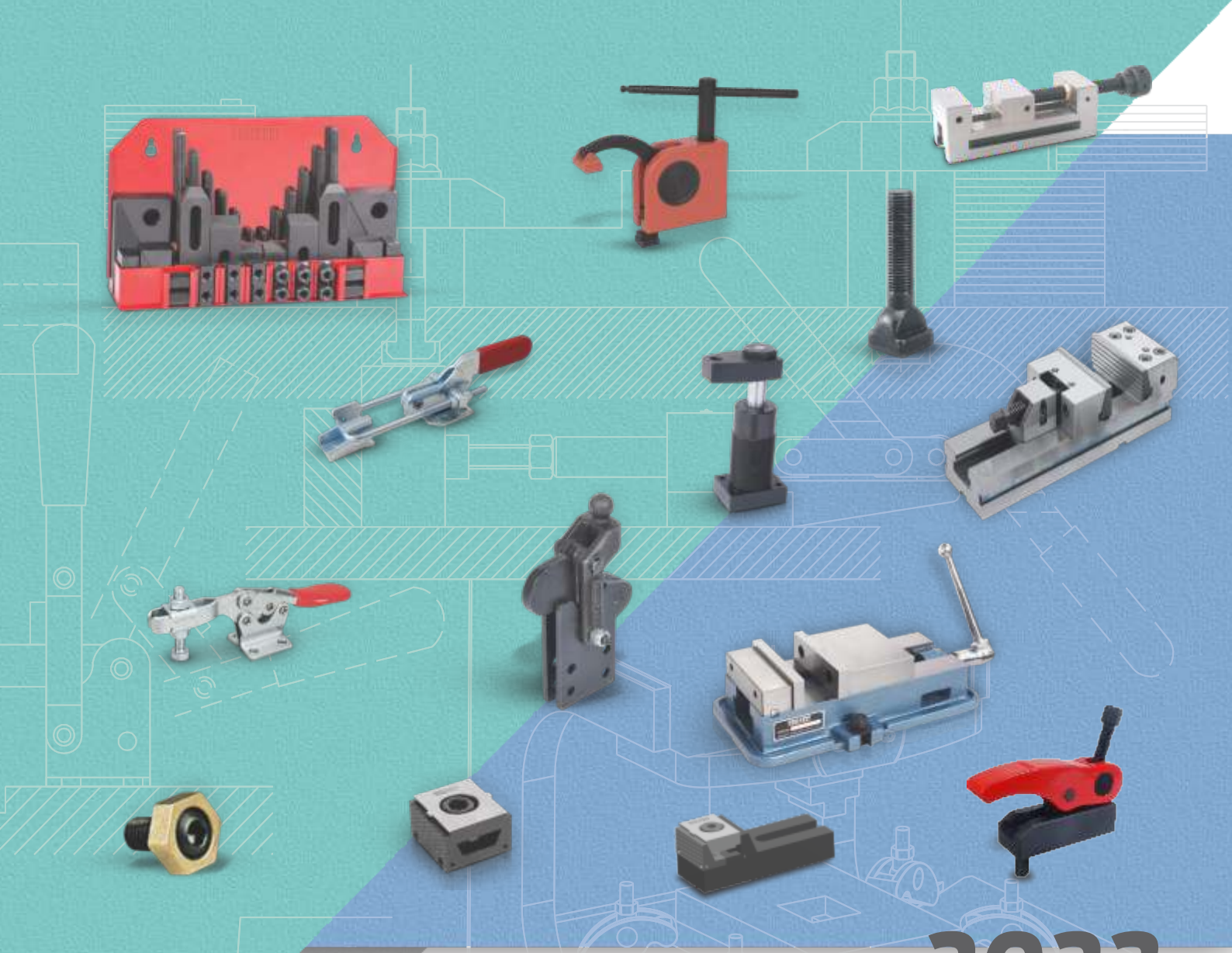


WORKHOLDING SPECIFICATION CATALOGUE 2023

TOOLFAST

more..... about clamping

Workholding Devices | Die & Mould Clamps | Clamping Elements | Clamping Kits
Fixture Clamps | Toggle Clamps | Milling & MC Vices | Pneumatic & Hydraulic Clamps
Milling & Grinding Accessories | Wire Cut EDM Workholders

CONTENTS

CONTENTS

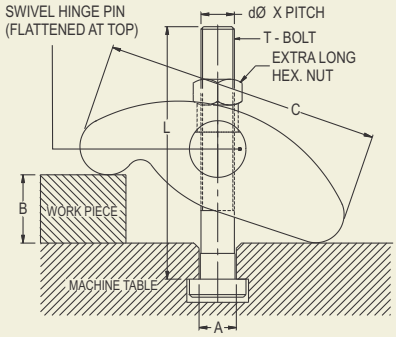
CONTENTS

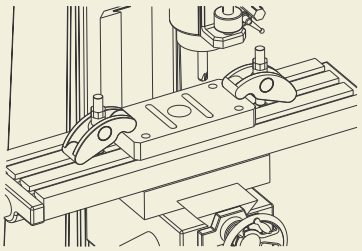
UNIVERSAL STRAP CLAMP

FOR POWER PRESSES, MILLING, DRILLING, SHAPING, BORING ETC.

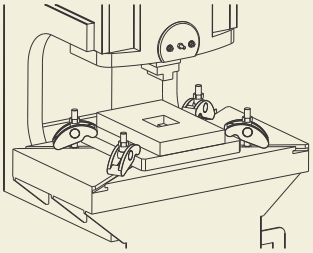
'TOOLFAST' Universal Strap Clamp is most suitable for die clamping on power presses and a very useful clamp for job clamping on 'T' slot table of Drilling, Milling, Shaping, Boring and other machine tools. No supports are required at the rear of the clamp since the body of the clamp is self-positioning as the rear part rests on the table and front holds the job. The body positions itself with the help of swival hinge pin according to the thickness of the workpiece, the T-Bolt remaining in vertical position and the nut is tightened on the flattened portion of swival hinge pin.

Clamp is supplied complete with hardened T-Bolt & special nut.





CLAMPING ON MILLING



PRESS TOOL CLAMPING

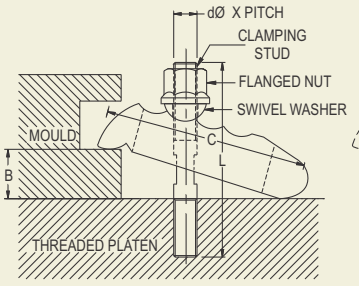
MODEL	T-SLOT SIZE A	dø x PITCH x L	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
USC-12A	12	M12 x 1.75 x 100	0-60	105	42	90	2000 Kgs.	0.84
USC-12B	14	M12 x 1.75 x 100	0-60	105	42	90	2000 Kgs.	0.86
USC-16A	16	M16 x 2.0 x 130	0-80	130	50	210	3200 Kgs.	1.73
USC-16B	18	M16 x 2.0 x 130	0-80	130	50	210	3200 Kgs.	1.74
USC-20A	20	M20 x 2.5 x 150	0-100	160	55	410	5000 Kgs.	2.45
USC-20B	22	M20 x 2.5 x 150	0-100	160	55	410	5000 Kgs.	2.48
USC-24A	24	M24 x 3.0 x 210	0-120	190	65	730	6000 Kgs.	4.39
USC-24B	28	M24 x 3.0 x 210	0-120	190	65	730	6000 Kgs.	4.68

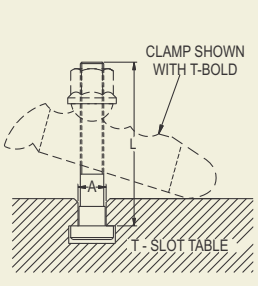
MOULD CLAMP

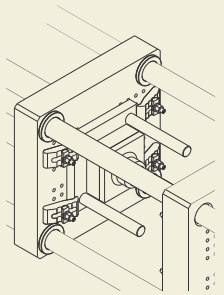
FOR PLASTIC INJECTION MOULDING & PRESSURE DIE CASTING MACHINES

'TOOLFAST' Mould Clamp is designed specially for low height applications only such as clamping of moulds on plastic injection moulding machines & pressure die casting machines. The compact front portion of the clamp enables it to penetrate into the limited clamping area of the mould and clamp it. The positioning of forged swival washer on required curved groove enables the operator to set the center distance between the clamping portion and the clamping bolt as per the nearest tapped hole available on platen (where there are no T-slots). No supports are required at the rear of the clamp as the rear portion rests on the platen and front holds the mould. Flanged nut is tightened on the swival washer which takes care of the positioning of clamp body. These clamps are equally useful on pressure die casting machines, hydraulic presses & power presses where low height clamping is done.

Clamps are supplied complete with swival washer, flanged nut & clamping stud or T-Bolt as shown in tables below.







MOULD CLAMP - WITH CLAMPING STUD

MODEL	dø x PITCH x L	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
MC-12	STUD M-12 x 1.75 x 100	0-35	110	50	90	2000 Kgs.	0.99
MC-16	STUD M-16 x 2.0 x 125	0-40	135	60	210	3200 Kgs.	1.67
MC-20	STUD M-20 x 2.5 x 175	0-50	160	70	410	5000 Kgs.	2.81
MC-24	STUD M-24 x 3.0 x 200	0-60	180	80	730	6000 Kgs.	4.19

MOULD CLAMP - WITH T- BOLT

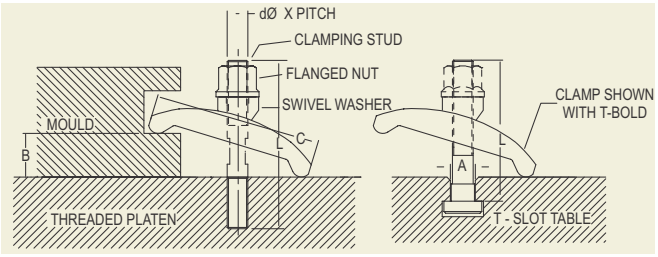
MODEL	dø x PITCH x L	T-SLOT SIZE A	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs
MC-12A	T-BOLT M-12 x 1.75 x 100	12	0-35	110	50	90	2000 Kgs.	1.15
MC-12B	T-BOLT M-12 x 1.75 x 100	14	0-35	110	50	90	2000 Kgs.	1.30
MC-16A	T-BOLT M-16 x 2.0 x 130	16	0-40	135	60	210	3200 Kgs.	1.76
MC-16B	T-BOLT M-16 x 2.0 x 130	18	0-40	135	60	210	3200 Kgs.	1.78
MC-20A	T-BOLT M-20 x 2.5 x 150	20	0-50	160	70	410	5000 Kgs.	2.89
MC-20B	T-BOLT M-20 x 2.5 x 150	22	0-50	160	70	410	5000 Kgs.	2.92
MC-24A	T-BOLT M-24 x 3.0 x 210	24	0-60	180	80	730	6000 Kgs.	4.40
MC-24B	T-BOLT M-24 x 3.0 x 210	28	0-60	180	80	730	6000 Kgs.	4.72

* Exceeding the maximum torque damages the clamp parts and warranty expires.

MOULD CLAMP - FORGED

FOR PLASTIC INJECTION MOULDING & PRESSURE DIE CASTING MACHINES

The Popular 'TOOLFAST' mould clamp is now available in forged steel body for extra strength. All models shown below are similar to the MC models on the previous page.



MOULD CLAMP - FORGED - WITH CLAMPING STUD

MODEL	dø x PITCH x L	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
MCF-16	STUD M-16 x 2.0 x 125	0-50	124	58	210	3200 Kgs.	0.98
MCF-20	STUD M-20 x 2.5 x 175	0-65	156	68	410	5000 Kgs.	2.0

MOULD CLAMP - FORGED - WITH T- BOLT

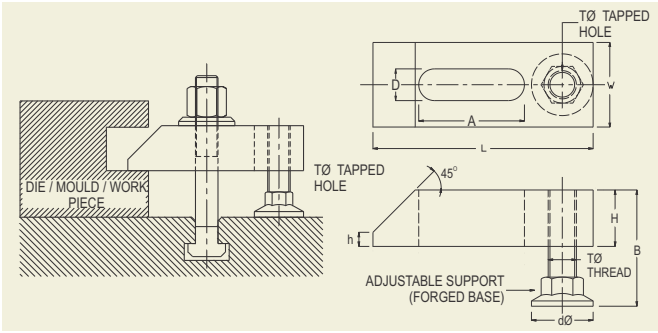
MODEL	dø x PITCH x L	T-SLOT SIZE A	CLAMPING RANGE B	LENGTH OF CLAMP C	BREADTH OF CLAMP	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs.
MCF-16A	T-BOLT M-16 x 2.0 x 130	16	0-50	124	58	210	3200 Kgs.	1.1
MCF-16B	T-BOLT M-16 x 2.0 x 130	18	0-50	124	58	210	3200 Kgs.	1.1
MCF-20A	T-BOLT M-20 x 2.5 x 150	20	0-65	156	68	410	5000 Kgs.	2.0
MCF-20B	T-BOLT M-20 x 2.5 x 150	22	0-65	156	68	410	5000 Kgs.	2.1

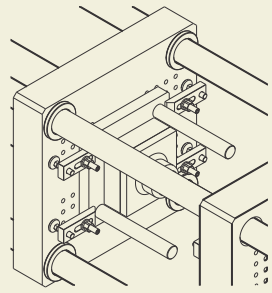
TAPPED END CLAMP - WITH ADJUSTABLE SUPPORT

FOR PLASTIC INJECTION MOULDING & PRESSURE DIE CASTING MACHINES

'TOOLFAST' Tapped End Clamps are Straps having special threaded adjustable support at the rear which can be adjusted to required height. Most useful clamp for plastic injection moulding or pressure die casting machines where mould / die is clamped in vertical position and these clamps with screwed in adjustable support are convenient to the operator as other loose supports tend to fall down while setting. Hardened adjustable support with large diameter forged base gives rigid clamping support and ensures machine bed safety. Extra thick body of the clamp accommodates more number of threads for rigidity of screwed support.

Supplied with adjustable threaded support only. T-Bolt or Stud with nut, washer etc. to be ordered separately.

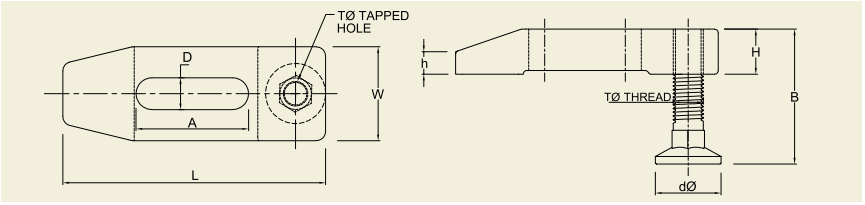




MODEL	D SUITABLE FOR BOLT	L	A	W	H	h	TØ THREAD	dØ	B Max	N. W. Kgs.
TTUC-12	M-12	110	55	38	18	6	M-12	30	60	0.54
TTUC-16	M-16	125	60	48	24	8	M-16	35	70	0.98
TTUC-20	M-20	160	80	62	30	10	M-20	40	80	2.45
TTUC-24	M-24	200	110	72	38	10	M-24	50	85	3.67

STRAP CLAMP - FORGED BODY - TAPPED END - WITH ADJUSTABLE SUPPORT

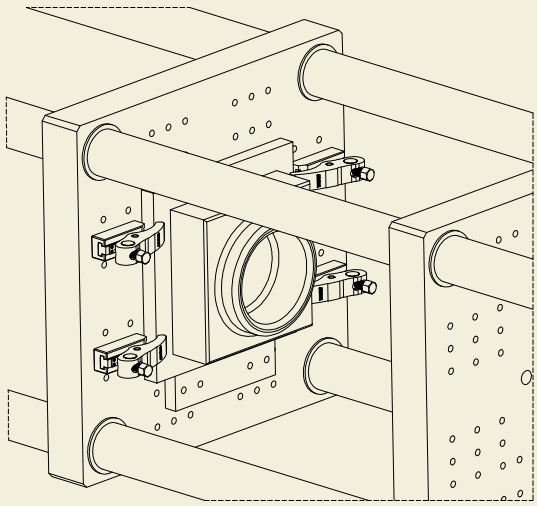
This clamp is a forged version of above TTUC clamps. Most suitable for mould clamping on plastic injection moulding machine & pressure die casting machines.



MODEL	D SUITABLE FOR BOLT	L	A	W	H	h	TØ THREAD	dØ	B	N. W. Kgs.
TSCF-16S	M-16	140	60	50	24	12	M-16	35	70	1.00 Kgs.
TSCF-20S	M-20	180	80	62	32	18	M-20	40	80	1.84 Kgs.
TSCF-24S	M-24	220	90	76	37	23	M-24	50	85	3.68 Kgs.

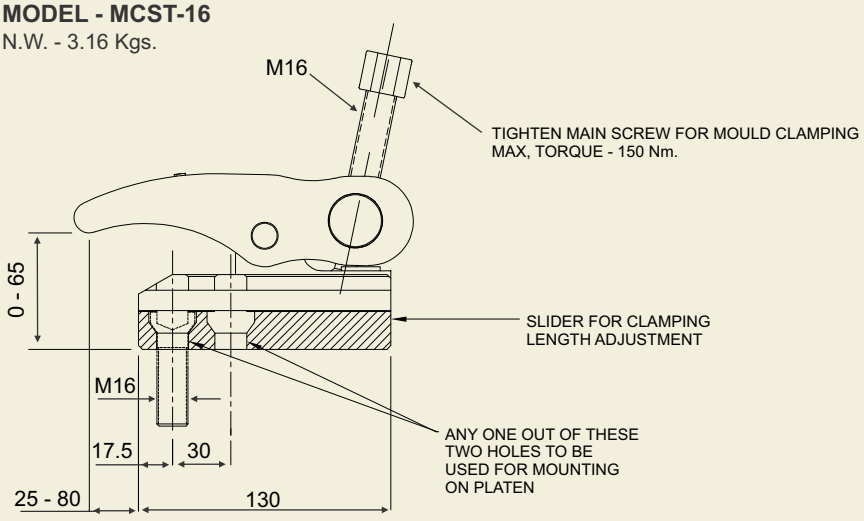
MCST SERIES MOULD CLAMP - SLIDER TYPE - MOST IDEAL FOR LIGHT AND MEDIUM DUTY MOULDS

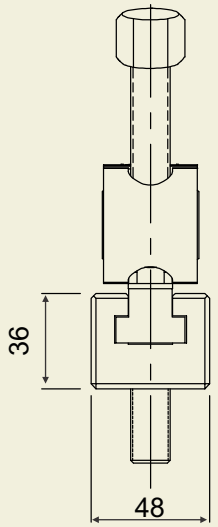
'TOOLFAST' new MCST series clamp solves the problem where forward and backward sliding of clamps is required but there are no T - slots on the platen. Clamp is mounted with one front screw on the sliding rail to be screwed on any one suitable threaded hole on the platen. Rear main screw is tightened for clamping after sliding the clamping arm to appropriate position and then can be slided back after declamping.



MODEL - MCST-16

N.W. - 3.16 Kgs.





Max. clamping force 2200 Kgs. at max. 150 Nm Tightening torque.
Most ideal for light and medium duty moulds.

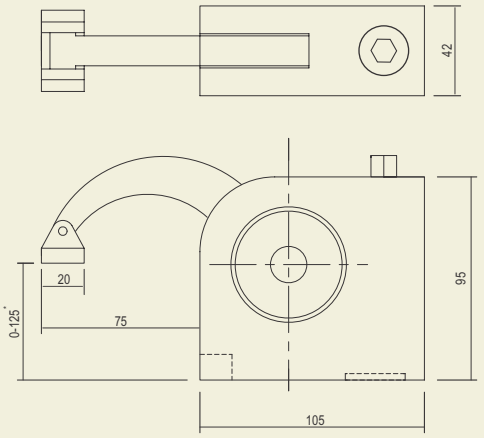
MCST SERIES MACHINE CLAMP - SLIDER TYPE

MCST series clamp with M16 T-nut provided can be used for clamping on T- slot table of Drilling. Milling or any other machine tool.

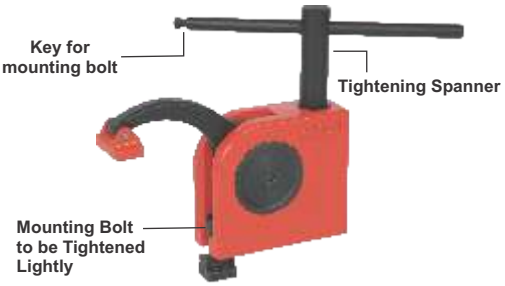
MODEL	SUITABLE FOR T-SLOT SIZE	N. W. Kgs.
MCST-16T-18	18	3.25
MCST-16T-20	20	3.30
MCST-16T-22	22	3.35
MCST-16T-24	24	3.42
MCST-16T-28	28	3.52

COMPACT MILLING CLAMP

'TOOLFAST' compact milling clamp is the most multipurpose, quick and easy to use down-hold milling clamp. It is equally suitable for clamping while all kinds of machining operation on Drilling, Milling, Machining Centre, EDM etc. This clamp does not require any support blocks or any kind of adjustment, clamping is done by simple turning of the removable spanner key.



*Arm can also clamp 55mm below 0 i.e. its base surface

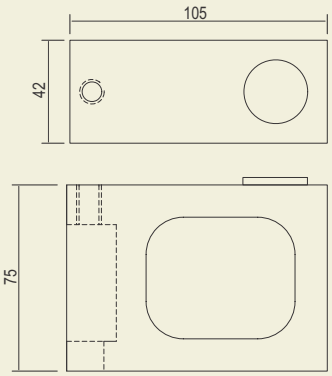


MODEL	CLAMPING HEIGHT RANGE	SUITABLE FOR T-SLOT SIZE	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Spanner)
CMC-12	0-125	12	70	1600 kgs.	2.0
CMC-14	0-125	14	70	1600 kgs.	2.0
CMC-16	0-125	16	70	1600 kgs.	2.0
CMC-18	0-125	18	70	1600 kgs.	2.1

* Required torque can be achieved manually by tightening spanner included with CMC clamp. Applying extra torque by using extension pipe or by hammering damages the clamp parts and warranty expires.

HEIGHT BLOCK FOR CMC CLAMP :

By stacking one Height block over another and a CMC clamp at the top can enable clamping of any height of workpiece. Each height block model HB-CMC-75 increases clamping height range by 75mm.



HB-CMC-75 stacked under CMC clamp to increase height by 75 mm. More height blocks can also be stacked over one another to increase height in multiples of 75mm.

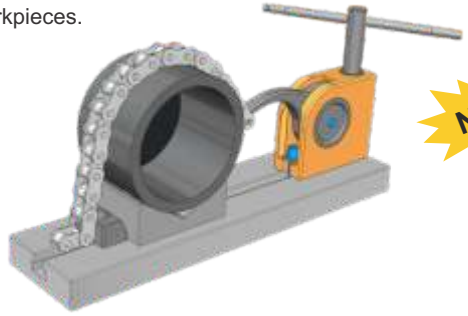
Height Block HB-CMC-75 N.W. 1.53 Kgs.

CMC CHAIN CLAMP

Our well known CMC clamp now available as a CHAIN CLAMP for large cylindrical workpieces.

One set of CHAIN CLAMP consists of :
* CMC clamp with wrench
* 1 mtr. chain fitted
* Anchor

Specify Model of CHAIN CLAMP as per your T-Slot size of machine for eg :
CMC-12 CHAIN CLAMP if your T-Slot size is 12



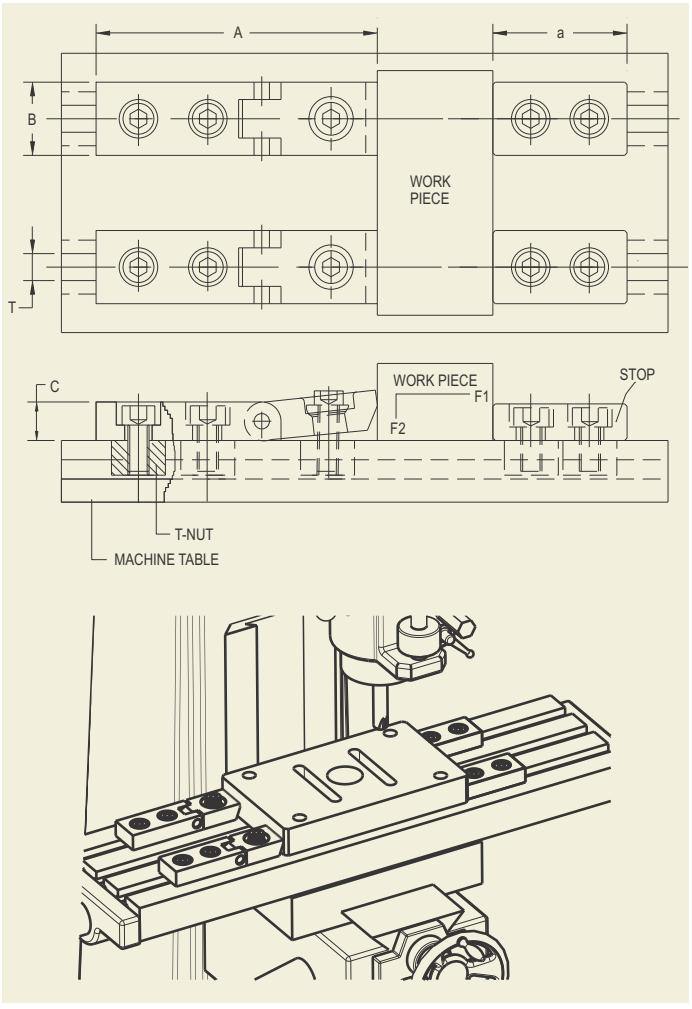
PINCH CLAMPS AND STOPS

FOR MACHINING CENTER, MILLING, SHAPING, PLANNING, JIG BORING ETC.

Low Height Pinch Clamp

'TOOLFAST' Low Height Pinch Clamp is useful for job clamping where complete top surface of the job is to be machined in one setting and hence can be clamped only from side faces. When serrated front portion is pressed against the job by tightening the front bolt, it gives a downward as well as forward clamping force. Body is made of hardened alloy steel. It is most useful on Milling, Shaping, Planning and Jig boring machines.

Supplied complete with hardened T-Nuts & Standard Bolts.



MODEL	SUITABLE FOR T-SLOT SIZE T	A	B	C	CLAMPING FORCE Max.		N. W. Kgs.
					F1	F2	
PC-1A	12	105	30	15	1600 Kgs.	60 Kgs.	0.44
PC-1B	14	105	30	15	1600 Kgs.	60 Kgs.	0.49
PC-2	16	130	38	18	2500 Kgs.	100 Kgs.	0.92
PC-3	18	130	38	18	2500 Kgs.	100 Kgs.	1.00
PC-4A	20	175	48	24	4000 Kgs.	250 Kgs.	1.65
PC-4B	22	175	48	24	4000 Kgs.	250 Kgs.	2.30
PC-5A	24	175	48	24	4000 Kgs.	250 Kgs.	2.31
PC-5B	28	175	48	24	4000 Kgs.	250 Kgs.	2.72

Heavy Duty Pinch Clamp

'TOOLFAST' Heavy Duty Pinch Clamp is a heavier version of Low Height Pinch Clamp. Basic function is same but this is used for clamping from sides of heavy blocks or thicker plates for facing of top face in one setting. Supplied complete with hardened T-Nuts & Standard Bolts

MODEL	SUITABLE FOR T-SLOT SIZE T	A	B	C	CLAMPING FORCE Max.		N. W. Kgs.
					F1	F2	
HDPC-1A	18	185	62	38	4000 Kgs.	250 Kgs.	3.35
HDPC-1B	20	185	62	38	4000 Kgs.	250 Kgs.	3.39
HDPC-2A	22	185	62	38	4000 Kgs.	250 Kgs.	3.36
HDPC-2B	24	185	62	38	4000 Kgs.	250 Kgs.	3.96
HDPC-3	28	185	62	38	4000 Kgs.	250 Kgs.	4.42

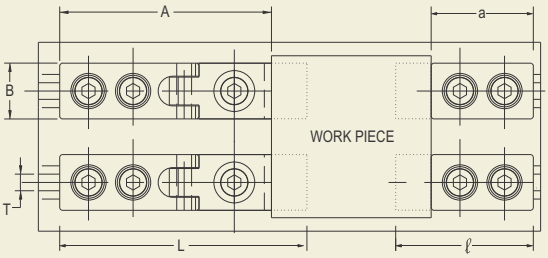
Stop For Pinch Clamps

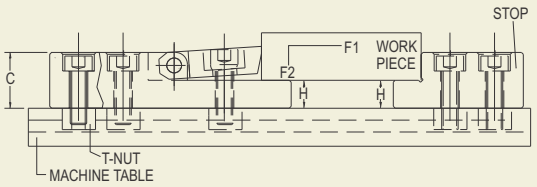
Stop or stopper blocks in different sizes as shown in table below are available to suit all above models of low height pinch clamps (PC Series) and Heavy Duty Pinch Clamps (HDPC Series). These stops are to be mounted on the opposite side of workpiece as shown in drawing above. All faces are ground for precise stopping of workpiece. Available separately in all below sizes.

MODEL	SUITABLE FOR PINCH CLAMP MODEL	SUITABLE FOR T-SLOT SIZE T	TOTAL LENGTH a	BREADTH B	HEIGHT C	N. W. Kgs.
ST-PC-1A	PC-1(a)	12	55	30	15	0.25
ST-PC-1B	PC-1(b)	14	55	30	15	0.27
ST-PC-2	PC-2	16	66	38	18	0.51
ST-PC-3	PC-3	18	66	38	18	0.55
ST-PC-4A	PC-4(a)	20	95	48	24	0.91
ST-PC-4B	PC-4(b)	22	95	48	24	1.26
ST-PC-5A	PC-5(a)	24	95	48	24	1.28
ST-PC-5B	PC-5(b)	28	95	48	24	1.50
ST-HDPC-1A	HDPC-1(a)	18	95	62	38	1.85
ST-HDPC-1B	HDPC-1(b)	20	95	62	38	1.86
ST-HDPC-2A	HDPC-2(a)	22	95	62	38	1.87
ST-HDPC-2B	HDPC-2(b)	24	95	62	38	2.18
ST-HDPC-3	HDPC-3	28	95	62	38	2.44

LOW HEIGHT PINCH CLAMP AND STOP WITH STEP

This is a new version of low height pinch clamp (PC Series) having step to support the workpiece above the machine table for through milling and drilling. Each PCS series clamp comes with a suitable size step (ST-PCS Series) as standard.





MODEL	SUITABLE FOR T-SLOT SIZE T	A	L	B	C	H ± 0.01	CLAMPING FORCE Max.		N. W. Kgs.
							F1	F2	
PCS-1A	12	110	125	30	30	14	1600 Kgs.	60 Kgs.	0.84
PCS-1B	14	110	125	30	30	14	1600 Kgs.	60 Kgs.	0.88
PCS-2	16	140	160	38	38	19	2500 Kgs.	100 Kgs.	1.75
PCS-3	18	140	160	38	38	19	2500 Kgs.	100 Kgs.	1.81

STOP FOR LOW HEIGHT PINCH CLAMP WITH STEP

These are stepped stops to suit clamping with low height pinch clamps with steps (PCS Series shown above). To be mounted on the opposite side of workpiece for stopping and supporting it on the machine table as shown in drawing. All faces are ground for precise stopping and supporting of workpiece. One stop (ST-PCS Series) comes as standard with each of above model PCS Series Clamps.

MODEL*	SUITABLE FOR PCS MODEL	SUITABLE FOR T-SLOT SIZE T	LENGTH a	OVERALL LENGTH ℓ	BREADTH B	HEIGHT C	HEIGHT H ± 0.01	N. W. Kgs.
ST-PCS-1A	PCS-1A	12	55	70	30	30	14	0.49
ST-PCS-1B	PCS-1B	14	55	70	30	30	14	0.53
ST-PCS-2	PCS-2	16	66	86	38	38	19	0,96
ST-PCS-3	PCS-3	18	66	86	38	38	19	1.02

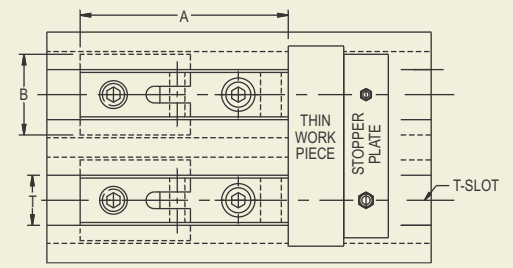
*Are supplied as standard with PCS Series Clamps. To be purchased separately only in case required extra stops.

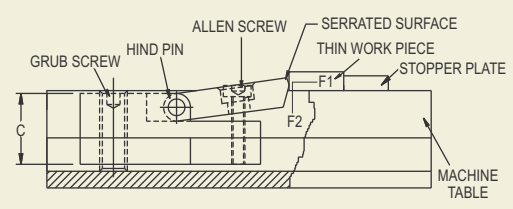
MINI PINCH CLAMP

FOR MILLING, SHAPING & PLANNING ETC.

'TOOLFAST' Mini Pinch Clamp is useful for clamping of thin plates form side faces. Body made of hardened alloy steel is in the form of a T-Nut which slides easily into the T-slot. When rear screw is tightened, the clamp is held tightly with the T-slot and then by tightening the front bolt, it gives a downward as well as forward clamping force to the job. Only a required small portion of the clamp comes above the surface of T-Slot table, rest of the body of clamp remains under the top surface of the T-Slot table. Hence, it can clamp thinnest plates positively and still remain under the top level of the job. This clamp is most suitable for top facing of thin plates on milling, shaping and planning machines.

Supplied complete with standard front & rear screws.



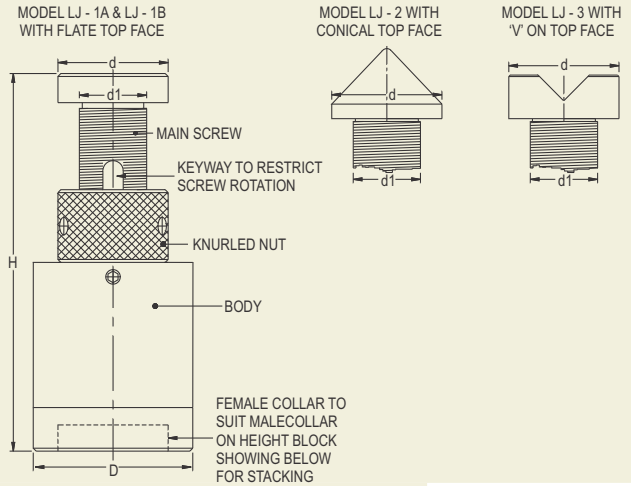


MODEL	SUITABLE FOR T-SLOT SIZE T	A	B	C	CLAMPING FORCE Max.		N. W. Kgs.
					F1	F2	
MPC-1	14	65	22	21	400 Kgs.	20 Kgs.	0.14
MPC-2	16	75	25	23	600 Kgs.	25 Kgs.	0.20
MPC-3	18	75	28	26	600 Kgs.	25 Kgs.	0.26

LEVELLING JACKS & HEIGHT BLOCKS

'TOOLFAST' Levelling Jack can be used as an adjustable support block for clamps and as a stopper or levelling block in fixtures or machines, as well as for levelling surface plates or other heavy duty work pieces. **Its unique design does not allow the levelling screw to rotate while adjustment, hence makes it suitable for fine level adjustment**. Also available in conical & V top for other applications such as inspection.

Picture (a) shows levelling jack model LJ-1(b) and picture (c) shows **HEIGHT BLOCK FOR LEVELLING JACK MODEL HBLJ-75** available separately for the purpose of stacking below levelling jack in order to increase its height. Picture (b) shows levelling jack model LJ-1(b) stacked on height block for levelling jack model HBLJ-75 to increase the height range of levelling jack by 75mm. Any required number of height blocks can be stacked one over another to achieve any required height and finally on top, any model of levelling jack can be kept for final height adjustment as shown in picture (b). Bottom female collar of any levelling jack and height block fits with top male collar of the height blocks to enable stacking.

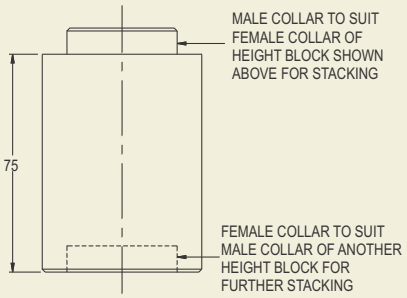



(a)


(b)

LEVELLING JACK

MODEL	H MIN. AT CLOSED POSITION	H MAX. AT OPEN POSITION	DIA AT BOTTOM D	DIA AT TOP d	DIA OF SCREW d_1	TYPE OF TOP FACE	MAX. LOAD TONS.	N. W. Kgs.
LJ-1A	75	100	48	38	M-24	FLAT	5.0	0.76
LJ-1B	100	150	48	38	M-24	FLAT	5.0	1.11
LJ-2	120	170	48	38	M-24	CONICAL	5.0	1.13
LJ-3	105	155	48	38	M-24	'V'	5.0	1.11



HEIGHT BLOCK FOR LEVELLING JACK

MODEL	EFFECTIVE HEIGHT INCREASE WITH ONE HEIGHT BLOCK	N. W. Kgs.
HBLJ-75	75	0.77


(c)

LEVELLING JACK - HEAVY DUTY

'TOOLFAST' levelling jack-heavy duty is a heavier version of levelling Jack with a heavy body and levelling screw & knurled nut. This jack is specially designed for heavy casting & machines. Available in flat head levelling screw only.

MODEL	H MIN. AT CLOSED POSITION	H MAX. AT OPEN POSITION	DIA AT BOTTOM D	DIA AT TOP d	DIA OF SCREW d_1	TYPE OF TOP FACE	MAX LOAD TONS.	N. W. Kgs.
LJ-HD	160	230	75	50	32Ø	FLAT	8.0	2.82

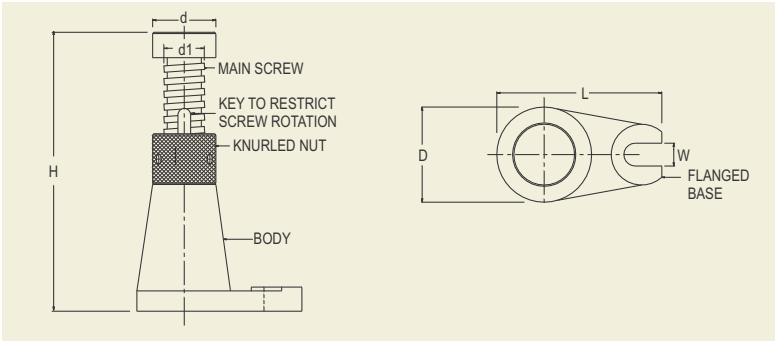
HEIGHT BLOCK FOR LEVELLING JACK - HEAVY DUTY

As in case of levelling jacks, height block for levelling jack-heavy duty model hblj-hd-75 is available for stacking with levelling jack-heavy duty.

MODEL	EFFECTIVE HEIGHT INCREASE WITH ONE HEIGHT BLOCK	N. W. Kgs.
HBLJ-HD-75	75	1.58

LEVELLING JACK - HEAVY DUTY - FLANGE MOUNTING

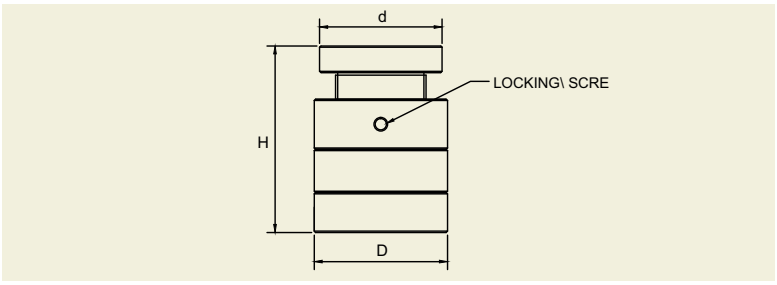
'TOOLFAST' Levelling Jack-Heavy Duty-Flange Mounting is same as LJ-HD but with flanged base for mounting on machine bed for additional rigidity.



MODEL	H MIN. AT CLOSED POSITION	H MAX. AT OPEN POSITION	DIA AT BOTTOM D	L	MOUNTING SLOT WIDTH W	DIA AT TOP d_1	DIA OF SCREW d	TYPE OF TOP FACE	MAX LOAD TONS.	N. W. Kgs.
LJ-HD-FB	160	230	75	130	18	50	32Ø	FLAT	8.0	3.32

SCREW JACK - SMALL

- Steel body screw jacks with heat treated main screw
- Black finish

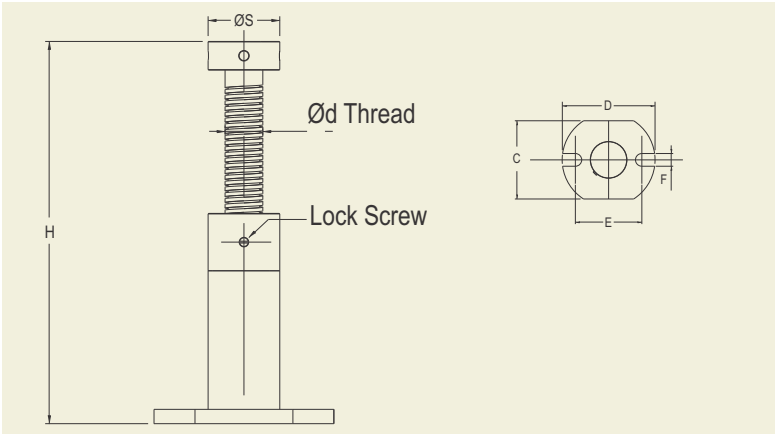


New

MODEL	H MIN. AT CLOSED POSITION	H MAX. AT OPEN POSITION	DIA AT BOTTOM D	DIA AT TOP d	DIA OF SCREW	TYPE OF TOP FACE	MAX. LODAD TONS.
SJ- 50 S	40	50	48	38	M24	FLAT	5
SJ- 70 S	50	70	48	38	M24	FLAT	5

SCREW JACK - HEAVY DUTY

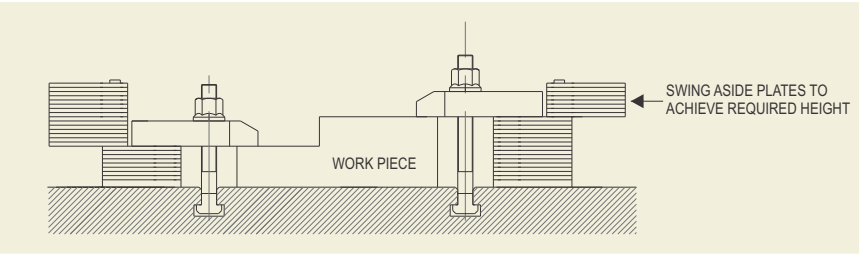
'TOOLFAST' Screw Jack-Heavy Duty is meant for heavy applications and with more height upto 655 mm. In this series of screw jacks the screw rotates while going up or down. Body is rigid, steel fabricated.



MODEL	H		C	D	E	F	ØS	Ød	CAPACITY	NET WEIGHT Kgs.
	Min.	Max.								
SJ-HD-1	250	395	160	190	136	26	75	40	25 Tons	9.4
SJ-HD-2	380	655	160	190	136	26	75	40	25 Tons	11.6

ADJUSTABLE SUPPORT PLATES

'TOOLFAST' Adjustable Support Plates are used as adjustable supports at the rear of the clamp. It comprises of a number of plates each 2mm thick hinged together. Desired height is achieved very easily by swinging aside the required number of plates and using the remaining as support block. Different models of support plates can be stacked on each other to achieve extra height.



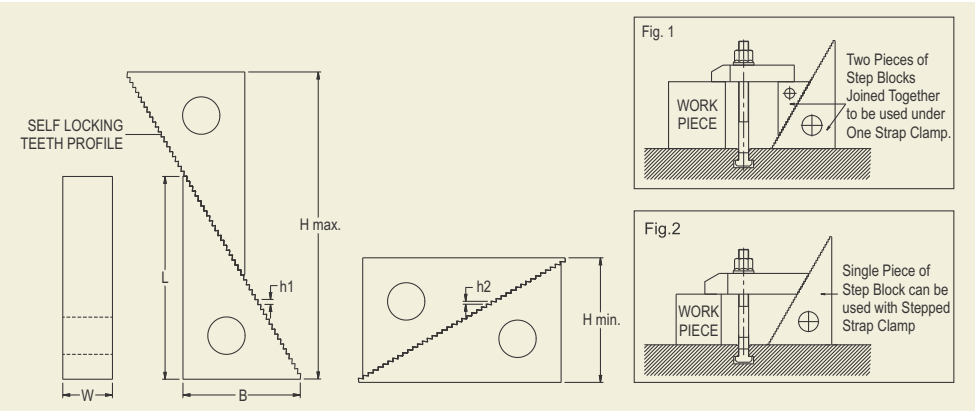
MODEL	HEIGHT ADJUSTMENT MIN.	MAX.	PLATES THICKNESS	PLATE OVERALL SIZE	SIZE OF CLAMP REST AREA	N. W. Kgs.
TASP-250	10	50	2	50 x 35	25 X 35	0.66
TASP-2100	10	100	2	50 x 35	25 X 35	1.33
TASP-2150	10	150	2	50 x 35	25 X 35	1.99
TASP-L-250	10	50	2	60 x 50	35 x 50	1.15
TASP-L-2100	10	100	2	60 x 50	35 x 50	2.30
TASP-L-2150	10	150	2	60 x 50	35 x 50	3.41

STEP BLOCKS

Machined Steel, hardened & tempered, Black finish

'TOOLFAST' Step Blocks are used as adjustable supporting Blocks at the rear of the clamp while clamping the workpiece. Different heights can be achieved by using combination of two different sizes of Step Blocks. Available in pairs. (Pair consists of 2 identical Step Blocks)

Combination of two Step Blocks of same or different sizes is kept as support under one Strap Clamp as shown in Fig.1 below. But in case of use of Step Blocks with Stepped Strap Clamp, as shown in Fig.2 below, only one Step Block of suitable size is kept as support under one stepped strap clamp.



STEP BLOCK

MODEL	L	B	W	HEIGHT ADJUSTMENT H MINIMUM	HEIGHT ADJUSTMENT H MAXIMUM	HEIGHT OF STEP h_1	HEIGHT OF STEP h_2	N. W. Kgs. (Pair)
TSB-1L	30	18	24	20	44	2.7	1.6	0.11
TSB-2L	66	38	24	40	100	2.7	1.6	0.31
TSB-3L	101	58	24	60	155	2.7	1.6	1.10
TSB-1	30	18	30	20	44	2.7	1.6	0.14
TSB-2	66	38	30	40	100	2.7	1.6	0.39
TSB-3	101	58	30	60	155	2.7	1.6	1.25

STEP BLOCK - HEAVY DUTY

'TOOLFAST' Step Block-Heavy Duty is different than step blocks above in width only. More width enables use on bigger T-slots and also with bigger sizes of stepped strap clamps.

MODEL	L	B	W	HEIGHT ADJUSTMENT H MINIMUM	HEIGHT ADJUSTMENT H MAXIMUM	HEIGHT OF STEP h_1	HEIGHT OF STEP h_2	N. W. Kgs. (Pair)
THSB-5	66	38	48	40	100	2.7	1.6	0.95
THSB-6	117	68	48	72	180	2.7	1.6	2.83

THREADED SUPPORT FOR TAPPED END CLAMPS

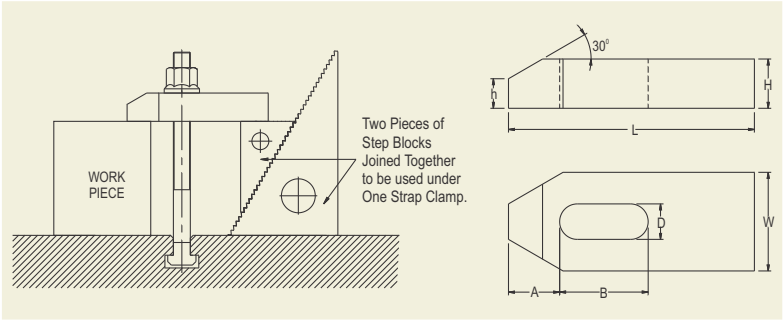
Forged Base, Hardened & Tempered , Black Finish

These have large resting base and hexagon at bottom for height adjustment.

MODEL	DIA AT BOTTOM	THREAD SIZE	OVERALL LENGTH	N. W. Kgs.
TS-12	30	M-12 x 1.75 P	60	0.07
TS-16	35	M-16 x 2.0 P	70	0.14
TS-20	40	M-20 x 2.5 P	80	0.23
TS-24	50	M-24 x 3.0 P	85	0.40

STRAP CLAMP Hardened & Tempered, Black Finish

based on IS : 4292



MODEL	D SUITABLE FOR BOLT	L	W	H	A	B	h	N. W. Kgs.
TSC-8-60	M-8	60	24	12	13	22	7	0.09
TSC-10-80	M-10	80	30	15	15	30	9	0.23
TSC-12-100	M-12	100	38	18	21	40	12	0.43
TSC-12-125	M-12	125	38	18	21	50	12	0.56
TSC-14-125	M-14	125	48	24	26	45	15	0.85
TSC-16-125	M-16	125	48	24	26	45	15	0.85
TSC-16-160	M-16	160	48	24	26	65	16	1.11
TSC-20-160	M-20	160	62	30	30	60	18	1.89
TSC-20-200	M-20	200	62	30	30	80	18	2.40
TSC-24-200	M-24	200	72	38	35	80	21	3.39
TSC-24-250	M-24	250	72	38	35	100	21	4.30
TSC-30-250	M-30	250	72	48	45	100	28	5.26

WEDM CLAMP

Material SS440, Hardened & Ground

MODEL	OVERALL SIZE	SUITABLE FOR CLAMPING SCREW
TWEC - 1	70 X 23 X 8	M-8
TWEC - 2	70 X 23 X 12	M-8

STRAP CLAMP - FORGED BODY Tapped End

The most popular sizes of strap clamps are now made in forged body with additional benefit of tapped end for threaded supports.

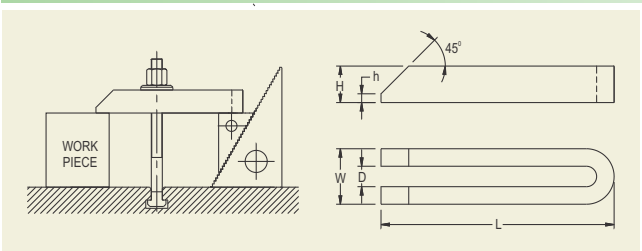
MODEL	SUITABLE FOR BOLT	LENGTH	WIDTH	THICKNESS	SLOT LENGTH	TAPPED END	N. W. Kgs.
TSCF-16	M-16	140	50	22	60	M-16	0.90
TSCF-20	M-20	180	62	30	80	M-20	2.03
TSCF-24	M-24	220	76	35	90	M-24	3.51

PLAIN CLAMP Hardened & Tempered

These are economy models of strap clamps. Can be used where simple shape of a plain strap can serve the purpose.

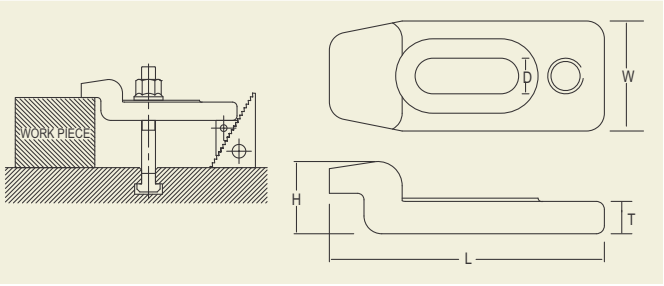
MODEL	SUITABLE FOR BOLT	LENGTH	WIDTH	THICKNESS	SLOT LENGTH	N. W. Kgs.
TES - 12	M-12	70	38	11	35	0.20
TES - 16	M-16	90	48	18	45	0.50

U - CLAMP Hardened & Tempered, Black Finish



MODEL	D SUITABLE FOR BOLT	L	W	H	h	N. W. Kgs.
TUC-12-160	M-12	160	38	24	6	0.68
TUC-16-200	M-16	200	50	30	8	1.44
TUC-20-250	M-20	250	62	38	10	2.72
TUC-24-250	M-24	250	66	38	10	2.72

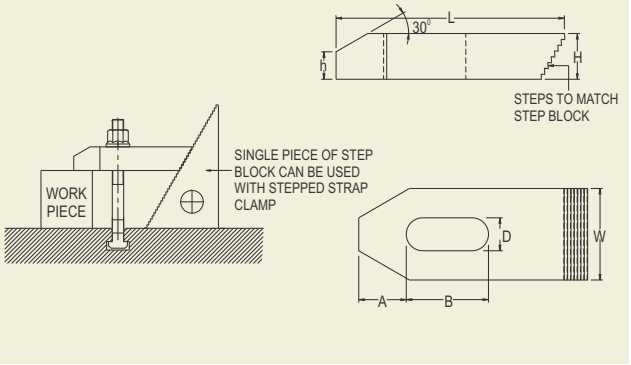
GOOSE NECK CLAMP - FORGED STEEL



MODEL	D SUITABLE FOR BOLT	L	H	W	T	N. W. Kgs.
TGNCF-16	M-16	125	33	50	18	0.65
TGNCF-20	M-20	165	47	68	24	1.75
TGNCF-24	M-24	200	52	76	28	2.30

STEPPED STRAP CLAMP Hardened & Tempered, Black Finish

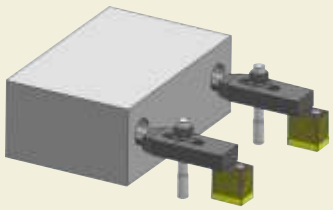
These Strap Clamps have teeth at rear matching to that of Step Blocks for the Step Blocks to be used as supports. Unlike other clamps, single piece of Step Block not a pair can be used as support with Stepped Strap Clamp.



MODEL	D SUITABLE FOR BOLT	L	W	H	A	B	h	N. W. Kgs.
TSSC-10-60	M-10	60	30	15	15	20	9	0.16
TSSC-10-80	M-10	80	30	15	15	30	9	0.22
TSSC-10-120	M-10	120	30	15	15	45	9	0.33
TSSC-12-65	M-12	65	30	15	15	25	9	0.16
TSSC-12-100	M-12	100	38	18	21	35	12	0.42
TSSC-12-125	M-12	125	38	18	21	45	12	0.55
TSSC-16-75	M-16	75	38	18	21	32	12	0.29
TSSC-16-125	M-16	125	48	24	26	45	15	0.75
TSSC-16-160	M-16	160	48	24	26	65	15	1.10
TSSC-20-160	M-20	160	62	30	30	60	18	1.64
TSSC-24-200	M-24	200	72	38	35	80	21	3.21

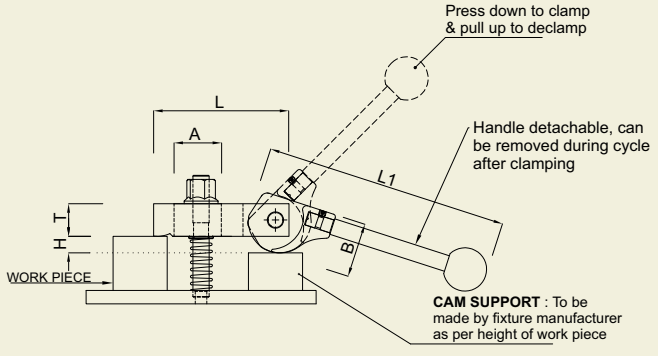
FINGER STRAP CLAMP

Finger clamp is specially designed for holding at curved surfaces or inside holes. Most useful for clamping of heavy blocks while machining where there are no steps for clamping and top surface has to be left clear for machining. In such cases holes are drilled on the side faces and finger clamps can be used for clamping on that holes.



MODEL	SUITABLE FOR BOLT	LENGTH	WIDTH	THICK NESS	SLOT LENGTH	FINGER DIA X LENGTH	N. W. Kgs.
TCF -16	M-16	152	48	24	66	18 DIA X 18	1.00

CAM CLAMP - HOLD DOWN TYPE - FOR QUICK CLAMPING ON MACHINING FIXTURES



Stud,Nut,Spring etc. not included with TCC clamp.

Most ideal for quick Hold Down Clamping in fixtures. Conventional Strap Clamps in fixtures can be replaced by these quick acting Cam clamps without much effort. These clamps have high clamping force suitable for machining fixtures.

NEW Improved Design with Detachable Handle

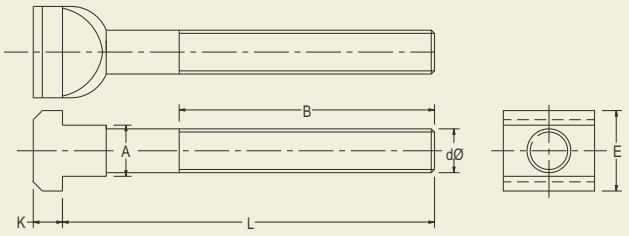
MODEL	SUITABLE FOR CLAMPING BOLT	L	T	WIDTH OF CLAMP	A	B	L1	H*	HOLDING CAPACITY	N. W. Kgs.
TCC-10	M10	90	19	30	30	38	162	14	1400 Kgs.	0.56
TCC-12	M12	100	24	38	35	38	180	12	2000 Kgs.	0.86

H* dimension to be taken care while designing your fixture

2D / 3D CAD FILES AVAILABLE

T-BOLT Forged Head, Hardened & Tempered, High Tensile Steel, Black Finish

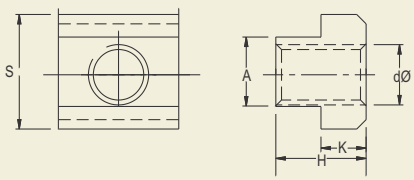
based on IS:2014



MODEL	A SUITABLE FOR T-SLOT SIZE	E	K	L	dØ THREAD SIZE	B	N. W. Kgs.
TTB-1212-80	12	18	7	80	M12	40	0.08
TTB-1212-100				100		60	0.10
TTB-1212-160				160		100	0.14
TTB-1214-60	14	22	8	60	M12	35	0.09
TTB-1214-80				80		55	0.10
TTB-1214-100				100		65	0.12
TTB-1214-125				125		80	0.14
TTB-1214-160				160		100	0.16
TTB-1214-200				200		125	0.19
TTB-1616-80	16	25	9	80	M16	40	0.17
TTB-1616-130				130		80	0.23
TTB-1616-200				200		125	0.33
TTB-1618-80	18	28	10	80	M16	55	0.19
TTB-1618-100				100		65	0.22
TTB-1618-130				130		80	0.25
TTB-1618-160				160		100	0.29
TTB-1618-200				200		125	0.35
TTB-1618-250				250		155	0.40
TTB-1618-290				290		175	0.47
TTB-2020-110	20	32	12	110	M20	70	0.35
TTB-2020-150				150		95	0.43
TTB-2020-210				210		130	0.55
TTB-2022-110	22	35	14	110	M20	70	0.40
TTB-2022-150				150		95	0.48
TTB-2022-210				210		130	0.60
TTB-2022-285				285		170	0.76
TTB-2424-150	24	40	16	150	M24	95	0.68
TTB-2424-210				210		130	0.87
TTB-2428-110	28	44	18	110	M24	65	0.67
TTB-2428-150				150		95	0.79
TTB-2428-210				210		130	0.96
TTB-2428-250				250		160	1.10
TTB-2428-300				300		190	1.23
TTB-3036-200	36	54	22	200	M30	130	1.52
TTB-3036-250				250		150	1.77
TTB-3036-300				300		190	2.02

T- NUT Hardened & Tempered, Black Finish

based on IS : 2015



MODEL	A SUITABLE FOR T-SLOT SIZE	dø THREAD SIZE	H	K	S	N. W. Kgs.
TTN-10-8	10	M-8	12	6	15	0.015
TTN-12-10*	12	M-10	14	7	18	0.02
TTN-14-10	14	M-10	16	8	22	0.04
TTN-14-12*	14	M-12	16	8	22	0.035
TTN-16-12	16	M-12	18	9	25	0.055
TTN-16-14*	16	M-14	18	9	25	0.05
TTN-18-12	18	M-12	20	10	28	0.085
TTN-18-16*	18	M-16	20	10	28	0.07

MODEL	A SUITABLE FOR T-SLOT SIZE	dø THREAD SIZE	H	K	S	N. W. Kgs.
TTN-20-16	20	M-16	24	12	32	0.12
TTN-22-16	22	M-16	28	14	35	0.18
TTN-22-20*	22	M-20	28	14	35	0.15
TTN-24-20	24	M-20	32	16	40	0.24
TTN-28-24	28	M-24	36	18	44	0.33
TTN-36-24	36	M-24	44	22	54	0.64
TTN-36-30	36	M-30	44	22	54	0.55

*** marked models are not recommended for heavy duty use because of less wall thickness outside the threading.**

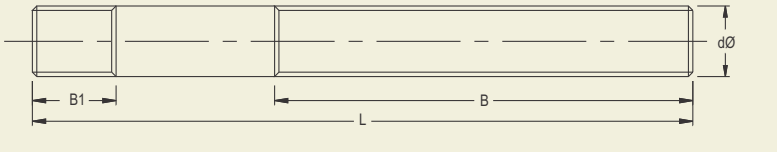
T-Slot size mentioned in these pages is size 'A' of the T-Slot as shown here.

CLAMPING STUD - FOR USE WITH T-NUTS

based on IS : 1862

Hardened & Tempered, High Tensile Steel, Black Finish.

These Studs are meant to be used with T-nuts to be tightened on smaller threaded length B1 shown in figure below and longer threaded length B shown in figure below is to accommodate Clamp / Nut / Washer etc.



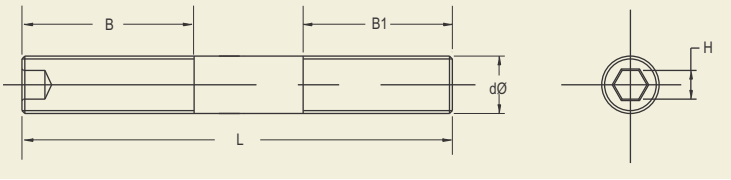
MODEL	dØ THREAD SIZE	L	B1	B	N. W. Kgs
TCS-8-75	M-8	75	11	48	0.025
TCS-8-100		100		63	0.03
TCS-8-150		150		95	0.05
TCS-10-75	M-10	75	13	48	0.04
TCS-10-100		100		63	0.05
TCS-10-125		125		75	0.065
TCS-10-150		150		95	0.075
TCS-10-175		175		110	0.09
TCS-10-200		200		125	0.10
TCS-12-75	M-12	75	15	48	0.055
TCS-12-100		100		63	0.075
TCS-12-125		125		75	0.09
TCS-12-150		150		95	0.11
TCS-12-175		175		110	0.13
TCS-12-200		200		125	0.15
TCS-12-250		250		160	0.19
TCS-12-300		300		190	0.23
TCS-14-100	M-14	100	17	63	0.10
TCS-14-150		150		95	0.15
TCS-14-200		200		125	0.21
TCS-14-250		250		160	0.26
TCS-16-75	M-16	75	19	50	0.10
TCS-16-100		100		63	0.13
TCS-16-125		125		75	0.17
TCS-16-150		150		95	0.20
TCS-16-175		175		110	0.24
TCS-16-200		200		125	0.27
TCS-16-250		250		160	0.34
TCS-16-300		300		190	0.41

MODEL	dØ THREAD SIZE	L	B1	B	N. W. Kgs.
TCS-20-100	M-20	100	27	60	0.21
TCS-20-150		150		95	0.31
TCS-20-200		200		125	0.42
TCS-20-250		250		160	0.53
TCS-20-300		300		190	0.63
TCS-20-400		400		250	0.86
TCS-20-500		500		250	1.11
TCS-24-150	M-24	150	35	95	0.41
TCS-24-200		200		120	0.61
TCS-24-250		250		160	0.76
TCS-24-300		300		190	0.92
TCS-24-400		400		250	1.23
TCS-24-500		500		250	1.58
TCS-30-150	M-30	150	43	95	0.69
TCS-30-200		200		120	0.95
TCS-30-250		250		160	1.18
TCS-30-300		300		190	1.40
TCS-30-400		400		250	1.93
TCS-30-500		500		250	2.47

CLAMPING STUD - FOR USE ON MACHINE BEDS HAVING TAPPED HOLES

Hardened & Tempered, High Tensile Steel, Black Finish.

These Studs having longer threaded length of side B1 shown in figure below which enables use on threaded platens of moulding machines or threaded beds of presses for longer insertion in the tapped holes. These studs also have a **hex key hole at top face for tightening** & loosening with a hex key.



MODEL	dØ THREAD SIZE	L	B1	B	H	N. W. Kgs.
TCSB-12-100	M-12	100	30	40	6	0.07
TCSB-12-125		125		50		0.09
TCSB-12-150		150		65		0.12
TCSB-12-175		175		80		0.13
TCSB-16-125	M-16	125	40	50	8	0.17
TCSB-16-150		150		65		0.20
TCSB-16-175		175		80		0.23
TCSB-16-200		200		100		0.27
TCSB-18-150	M-18	150	40	65	8	0.30
TCSB-18-175		175		80		0.35
TCSB-18-200		200		100		0.40

MODEL	dØ THREAD SIZE	L	B1	B	H	N. W. Kgs.
TCSB-20-150	M-20	150	50	60	10	0.31
TCSB-20-175		175		70		0.37
TCSB-20-200		200		80		0.43
TCSB-22-150	M-22	150	50	60	10	0.45
TCSB-22-175		175		70		0.53
TCSB-22-200		200		80		0.60
TCSB-24-175	M-24	175	60	70	12	0.52
TCSB-24-200		200		80		0.60
TCSB-24-225		225		90		0.68

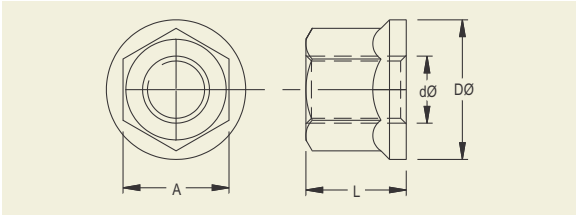
EXTRA LONG NUT Hardened & Tempered, Black Finish

These nuts have longer life as they have more number of threads than ordinary nuts.

MODEL	THREAD SIZE	TOTAL LENGTH	TIGHTENING TORQUE Nm Max.*	N. W. Kgs.
TELN-8	M-8	12	25	0.01
TELN-10	M-10	15	50	0.02
TELN-12	M-12	18	90	0.03
TELN-14	M-14	21	140	0.045
TELN-16	M-16	24	210	0.06
TELN-18	M-18	27	290	0.08
TELN-20	M-20	30	410	0.12
TELN-22	M-22	32	560	0.17
TELN-24	M-24	36	730	0.20
TELN-30	M-30	45	1450	0.41

FLANGED NUT Forged, Hardened & Tempered, Black Finish

These nuts have flanged face for larger face contact with the surface to be tightened on.



MODEL	dØ THREAD SIZE	DØ	A	L	TIGHTENING TORQUE Nm Max.*	N. W. Kgs.
TFN-10	M-10	22	17	15	50	0.02
TFN-12	M-12	25	19	18	90	0.035
TFN-14	M-14	29	22	22	135	0.055
TFN-16	M-16	32	24	24	210	0.07
TFN-20	M-20	40	30	30	410	0.14
TFN-24	M-24	47	36	36	730	0.23

* Exceeding maximum torque could damage threads.

EXTENSION NUT Hardened & Tempered, Black Finish

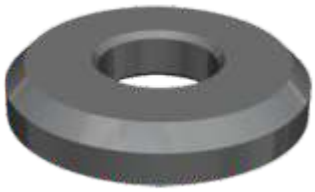
These nuts are used to couple the studs with studs or T- Bolts in order to increase their length.

MODEL	THREAD SIZE	TOTAL LENGTH	N. W. Kgs.
TEN-8	M-8	24	0.02
TEN-10	M-10	30	0.04
TEN-12	M-12	36	0.06
TEN-14	M-14	42	0.09
TEN-16	M-16	48	0.12
TEN-20	M-20	60	0.23
TEN-24	M-24	72	0.41
TEN-30	M-30	90	0.82

PLAIN WASHER Case Hardened, Black Finish

based on IS : 4291

MODEL	SUITABLE FOR BOLT	THICKNESS	OUTSIDE DIA.	N. W. Kgs.
TPW-8	M-8	4	23	0.01
TPW-10	M-10	4	28	0.015
TPW-12	M-12	5	35	0.03
TPW-14	M-14	6	40	0.05
TPW-16	M-16	7	45	0.07
TPW-18	M-18	7	48	0.07
TPW-20	M-20	7	48	0.07
TPW-22	M-22	8	48	0.07
TPW-24	M-24	9	60	0.15
TPW-30	M-30	11	70	0.25



C-WASHER Case Hardened, Ground Faces, Black Finish

based on IS : 4291

Knurled outside diameter for easy gripping while quick insertion or removal.

MODEL	SUITABLE FOR BOLT	THICKNESS	OUTSIDE DIA.	N. W. Kgs.
TCW-10	M-10	9	40	0.07
TCW-12	M-12	9	48	0.11
TCW-14	M-14	11	63	0.20
TCW-16	M-16	11	63	0.20
TCW-20	M-20	11	80	0.36
TCW-24	M-24	12	100	0.59
TCW-30	M-30	14	100	0.64

CLAMPING KIT - 58 PIECE (WITH STEP BLOCKS & STEPPED STRAP CLAMPS)

'TOOLFAST' Clamping Kit - 58 piece is available in an attractive powder coated metallic rack which can be hanged on machines or a wall or kept on a table. Each kit consists of all important clamping elements required to clamp a variety of work pieces. Following table shows the contents of each model of clamping kit suitable for different T-Slot sizes. All the items of clamping kit are taken from our range of products given in this catalogue.

Also Included T-Slot Cleaner FREE

MODEL / CONTENTS	TCK-58-1210 T-SLOT SIZE 12MM (M-10)	TCK-58-1410 T-SLOT SIZE 14MM (M-10)	TCK-58-1412L T-SLOT SIZE 14MM (M-12)	TCK-58-1412 T-SLOT SIZE 14MM (M-12)	TCK-58-1612L T-SLOT SIZE 16MM (M-12)	TCK-58-1612 T-SLOT SIZE 16MM (M-12)	TCK-58-1812 T-SLOT SIZE 18MM (M-12)	TCK-58-1816 T-SLOT SIZE 18MM (M-16)	TCK-58-2016 T-SLOT SIZE 20MM (M-16)	TCK-58-2216 T-SLOT SIZE 22MM (M-16)
 **T-NUTS (6 nos.)**	TTN-12-10	TTN-14-10	TTN-14-12	TTN-14-12	TTN-16-12	TTN-16-12	TTN-18-12	TTN-18-16	TTN-20-16	TTN-22-16
 **CLAMPING STUDS (4 nos. each size)**	TCS-10-75 TCS-10-100 TCS-10-125 TCS-10-150 TCS-10-175 TCS-10-200	TCS-10-75 TCS-10-100 TCS-10-125 TCS-10-150 TCS-10-175 TCS-10-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-12-75 TCS-12-100 TCS-12-125 TCS-12-150 TCS-12-175 TCS-12-200	TCS-16 -75 TCS-16 -100 TCS-16 -125 TCS-16 -150 TCS-16 -175 TCS-16 -200	TCS-16 -75 TCS-16 -100 TCS-16 -125 TCS-16 -150 TCS-16 -175 TCS-16 -200	TCS-16 -75 TCS-16 -100 TCS-16 -125 TCS-16 -150 TCS-16 -175 TCS-16 -200
 **FLANGED NUTS (6 nos.)**	TFN-10	TFN-10	TFN-12	TFN-12	TFN-12	TFN-12	TFN-12	TFN-16	TFN-16	TFN-16
 **EXTENSION NUTS (4 nos.)**	TEN-10	TEN-10	TEN-12	TEN-12	TEN-12	TEN-12	TEN-12	TEN-16	TEN-16	TEN-16
 **STEPPED STRAP CLAMPS (2 nos. each size)**	TSSC-10-60 TSSC-10-80 TSSC-10-120	TSSC-10-60 TSSC-10-80 TSSC-10-120	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-12-65 TSSC-12-100 TSSC-12-125	TSSC-16-75 TSSC-16-125 TSSC-16-160	TSSC-16-75 TSSC-16-125 TSSC-16-160	TSSC-16-75 TSSC-16-125 TSSC-16-160
 **STEP BLOCKS 2 pairs (4 nos. each size)**	TSB-1L TSB-2L TSB-3L	TSB-1L TSB-2L TSB-3L	TSB-1L TSB-2L TSB-3L	TSB-1 TSB-2 TSB-3	TSB-1L TSB-2L TSB-3L	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3	TSB-1 TSB-2 TSB-3
TOTAL NO. OF PIECES	**58**	**58**	**58**	**58**	**58**	**58**	**58**	**58**	**58**	**58**
N.W. Kgs.	**9**	**9**	**12**	**13**	**12**	**13**	**13**	**18**	**18.5**	**19**

CLAMPING KIT - 34 PIECE (WITH ADJUSTABLE SUPPORT PLATES & STRAP CLAMPS)

'TOOLFAST' Clamping Kit - 34 piece is an economical clamping kit housed in an attractive metal rack. Following table shows the contents of each model of clamping kit suitable for different T-Slot sizes. All the items of clamping kit are taken from our range of products given in this catalogue

Also Included T-Slot Cleaner FREE

MODEL / CONTENTS	TCK-34-1412 T-SLOT SIZE 14MM (M-12)	TCK-34-1612 T-SLOT SIZE 16MM (M-12)	TCK-34-1812 T-SLOT SIZE 18MM (M-12)
T-NUTS	TTN-14-12 - 4 nos.	TTN-16-12 - 4 nos.	TTN-18-12 - 4 nos.
CLAMPING STUDS	TCS-12-75 - 4 nos. TCS-12-100 - 4 nos. TCS-12-150 - 4 nos TCS-12-200 - 4 nos.	TCS-12-75 - 4 nos. TCS-12-100 - 4 nos. TCS-12-150 - 4 nos. TCS-12-200 - 4 nos.	TCS-12-75 - 4 nos. TCS-12-100 - 4 nos. TCS-12-150 - 4 nos. TCS-12-200 - 4 nos.
FLANGED NUTS	TFN-12 - 4 nos.	TFN-12 - 4 nos.	TFN-12 - 4 nos.
EXTENSION NUTS	TEN-12 - 2 nos.	TEN-12 - 2 nos.	TEN-12 - 2 nos.
STRAP CLAMPS	TSC-12-100 - 2 nos. TSC-12-125 - 2 nos.	TSC-12-100 - 2 nos. TSC-12-125 - 2 nos.	TSC-12-100 - 2 nos. TSC-12-125 - 2 nos.
ADJUSTABLE SUPPORT PLATES	TASP-250 - 2 nos. TASP-2100 - 2 nos.	TASP-250 - 2 nos. TASP-2100 - 2 nos.	TASP-250 - 2 nos. TASP-2100 - 2 nos.
TOTAL NO. OF PIECES	**34 PIECES**	**34 PIECES**	**34 PIECES**
N.W. Kgs.	**9.2**	**9.3**	**9.4**

CMM CLAMPING KIT - 62 PIECE (WITH ALUMINIUM / PLASTIC ELEMENTS) MODEL CMMCK - 62

'TOOLFAST' CMM clamping kit is especially designed for 3D coordinate measuring machine and other inspection and gauging applications. The weight construction of the aluminium clamps and aluminium / plastic elements prevent damage to granite plates and delicate workpieces.
M-8* elements with hand-tightening design allows the user to apply a limited hold down force most suitable for inspection clamping.
All pieces are suitably housed in an elegant wooden box N.W. 2.0 kgs.

Each Kit Contains :

- 28 nos. **Studs** of M-8 threads made out of suitable aluminium Alloy - 4nos. each of 50mm, 75mm, 100mm, 125mm, 150mm, 175mm and 200 mm length.

- 8nos. of M-8 **Flanged Nuts** made of suitable aluminium alloy designed for hand-tightening without spanner. These nuts can also be used as extension nuts for joining studs.

- 6nos. **Strap Clamps** suitable for M-8 studs made out of suitable aluminium alloy - 2nos. each of 60mm, 100mm and 140mm length.

- 8nos. Aluminium **Screw Jacks**
  Closed Height = 38 mm
  Max open Height = 56 mm
  Top = Flat face having M-8 female thread
  Bottom = M-8 screw-in type for thread mounting on the granite plate of CMM.

- 4nos. Aluminium **Top Rest Pads** for Screw Jacks
  2nos. with 'V' on top face and 2nos. having conical top face

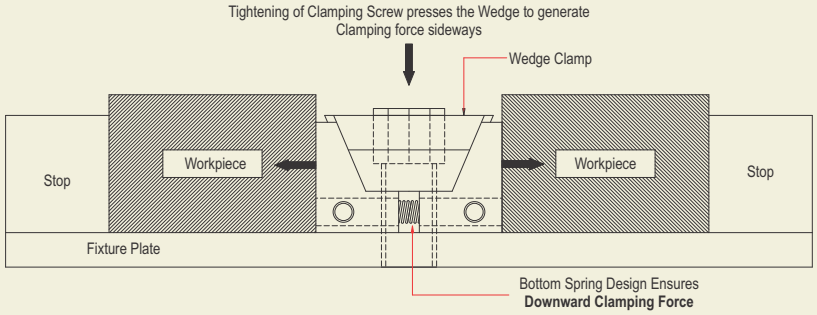
- 8nos. Plastic **Bottom Rest Pads** with M-8 blind hole for use as rest pads at the bottom of screw jacks when screw jacks have to be used directly on the granite surface as shown in picture (a) or for use as rest pads at the bottom of studs when the studs have to be used as threaded supports of strap clamps as shown in picture (b).

(a) (b)

* FOR CMM BEDS WITH M-10 OR M-12 THREAD, **ADAPTORS ARE AVAILABLE ON REQUEST** TO ENABLE USE OF ABOVE CLAMPING KIT.

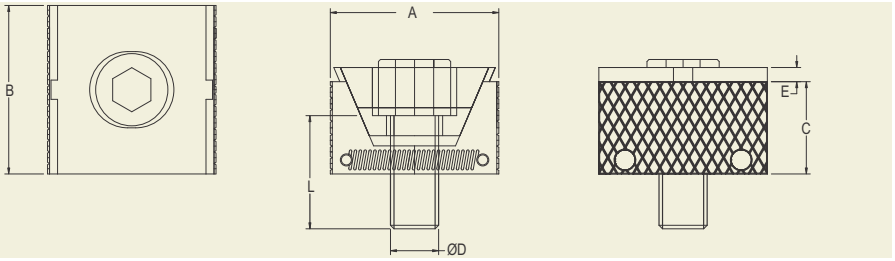
WEDGE CLAMP - RIGID BODY, HARDENED TOOL STEEL, DOWNWARD FORCE

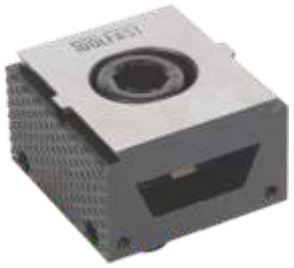
'TOOLFAST' manufactures all models of wedge clamps with new patented design now in India.



- Improved **PATENTED** design with bottom spring ensures downward Clamping force
- Hidden spring eliminates clogging of chips in spring coil

WEDGE CLAMP - TWC Series - Serrated Hardened Jaws





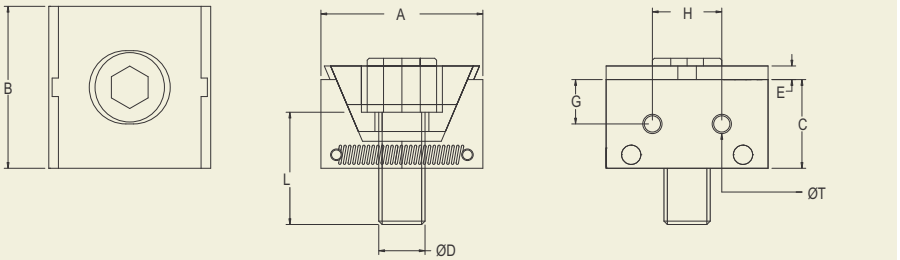
MODEL	A			B	C	ØD X L	E	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Clamping bolt)
	min.	optimum	max.							
TWC-8	27	29 ~ 30	32	31	16	M8 X 20	2	25	1500 Kgs.	0.09
TWC-12	42	45 ~ 46	49	42	23	M12 X 30	3.5	90	3000 Kgs.	0.26
TWC-16	57	61 ~ 63	66	58	30	M16 X 35	4	210	6000 Kgs.	0.66

Now Available TOOLFAST Hydraulic Pull Cylinders to automate these Clamps on your fixtures

See Page No.63

WEDGE CLAMP - TWC-P Series - Plain Hardened Jaws with Tapped holes

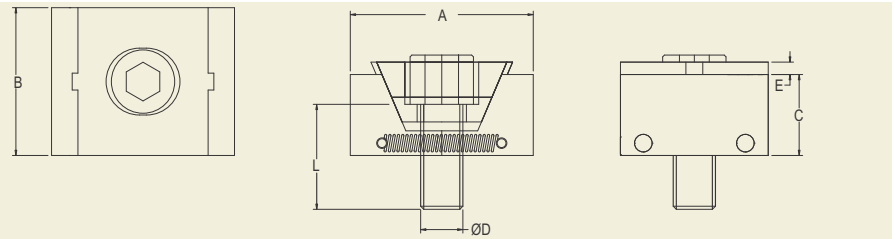
These have plain hardened jaws with added two tapped holes for attaching additional jaw inserts if need be.



MODEL	A			B	C	ØD X L	E	G	H	ØT	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Clamping bolt)
	min.	optimum	max.										
TWC-8P	27	29 ~ 30	32	31	16	M8 X 20	2	7.5	12	M-5	25	1500 Kgs.	0.09
TWC-12P	42	45 ~ 46	49	42	23	M12 X 30	3.5	11.5	18	M-5	90	3000 Kgs.	0.26
TWC-16P	57	61 ~ 63	66	58	30	M16 X 35	4	15	26	M-5	210	6000 Kgs.	0.66

WEDGE CLAMP - TWC-M Series - Machinable Jaws

These have extra material on jaws(soft) to machine as per the workpiece shape enabling fixturing of uneven or unusual shape workpieces.



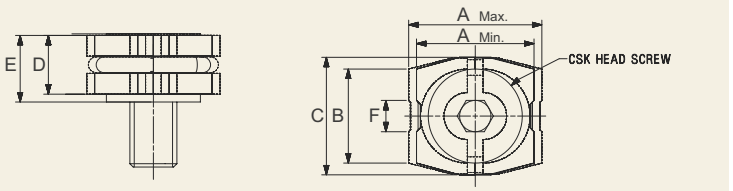
MODEL	A			B	C	ØD X L	E	TIGHTENING TORQUE Nm Max.*	CLAMPING FORCE Max.	N. W. Kgs. (Including Clamping bolt)
	min.	optimum	max.							
TWC-8M	33	35 ~ 36	38	31	16	M8 X 20	2	25	1500 Kgs.	0.12
TWC-12M	52	55 ~ 56	59	42	23	M12 X 30	3.5	90	3000 Kgs.	0.34
TWC-16M	67	71 ~ 73	76	58	30	M16 X 35	4	210	6000 Kgs.	0.86

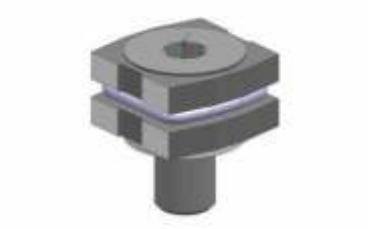
2D / 3D CAD FILES AVAILABLE ON REQUEST

*Exceeding the maximum Torque damages the clamp parts and warranty expires. Lesser Torque may be applied for achieving proportionate clamping force.

MINIATURE WEDGE CLAMP

This is a miniature version of wedge clamp for low height work pieces which need low clamping force. Clamping method is same as wedge clamp, just a tapped hole required on the fixture plate with stops.



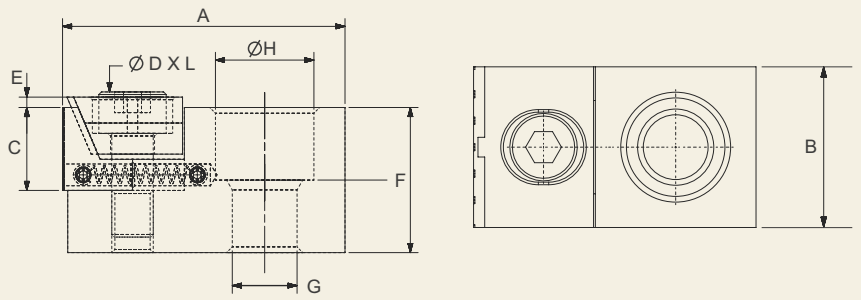


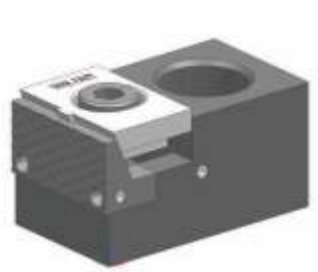
MODEL	A		B	C	CSK Head Screw	D	E	F	Tightening Torque Nm Max	Clamping Force Max	N.W. Kgs.
	Min	Max									
MWC-6	15	17	12	15	M-6 x 16	7.5	8.5	4	7	350 Kgs	0.015
MWC-8	18.5	21.5	16	18.5	M-8 x 20	10	11.5	5	18	500 Kgs	0.03

2D & 3D Files Available on Request

SIDE CLAMP - WEDGE TYPE

This version of wedge clamp enables wedge clamping on one side only for clamping one workpiece on a fixture or directly on a machine table. Models for machine clamping come with a suitable T-Nut.



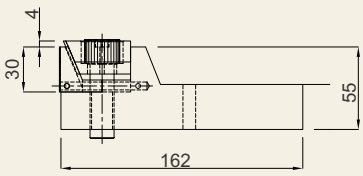


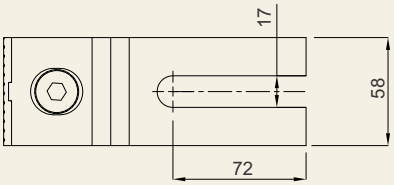
MODEL	Suitable for T-Slot Size	A		B	C	E	D x L	F	G	H	Clamping Force Max	N. W. Kgs
		Min	Max									
WITHOUT T-NUT MODELS												
SWC-8	-	54	57	31	16	2	M-8 x 20	28	12.5	19	1500 Kgs	0.30
SWC-12	-	77	81	42	23	3.5	M -12 x 30	38	16.5	24.5	3000 Kgs	0.80
WITH T-NUT MODELS												
SWC-814	14	54	57	31	16	2	M-8 x 20	28	12.5	19	1500 Kgs	0.38
SWC-816	16	54	57	31	16	2	M-8 x 20	28	12.5	19	1500 Kgs	0.40
SWC-818	18	54	57	31	16	2	M-8 x 20	28	12.5	19	1500 Kgs	0.43
SWC-1218	18	77	81	42	23	3.5	M-12 x 30	38	16.5	24.5	3000 Kgs	1.00
SWC-1220	20	77	81	42	23	3.5	M-12 x 30	38	16.5	24.5	3000 Kgs	1.04
SWC-1222	22	77	81	42	23	3.5	M-12 x 30	38	16.5	24.5	3000 Kgs	1.10

Standard models have serrated hardened jaws. Suffix ‘P’ or ‘M’ to the model number if you need jaw face to be hardened or soft machinable respectively. Prices available on request.
Height ‘F’ also available customized for high work pieces to be clamped near the top surface. Price available on request.

SIDE CLAMP - WEDGE TYPE - HEAVY DUTY - Model SWC-16-HD

This is a heavy duty version of side clamp with M-16 clamping screw. Can be mounted directly on machine table or fixture plate

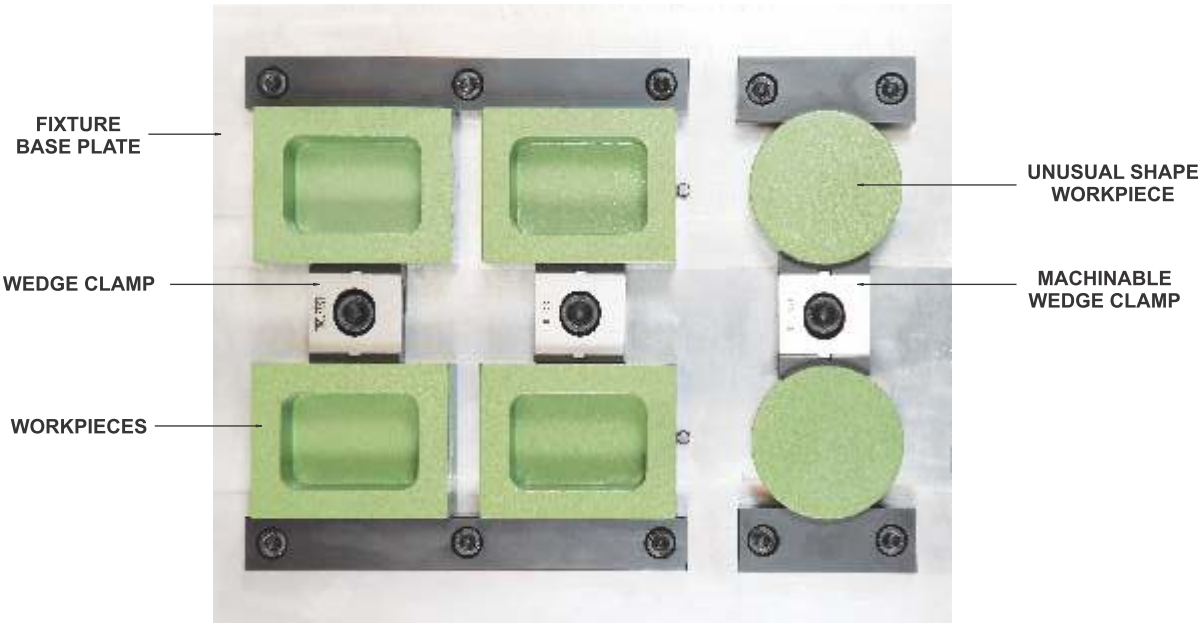




Clamping force : 6000 Kgs.
N. W. : 2.50 Kgs.

2D & 3D CAD FILES AVAILABLE ON REQUEST

MULTIPLE WORKPIECE CLAMPING FIXTURES WITH TWC SERIES WEDGE CLAMPS DESIGNED & MANUFACTURED BY TOOLFAST

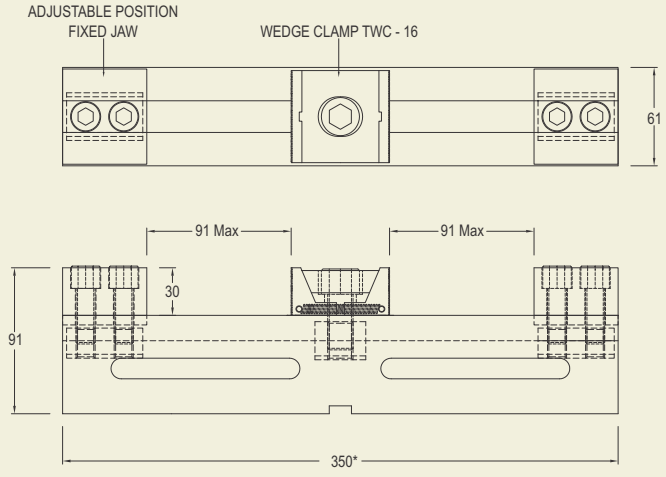


If your workpiece is suitable for clamping with 'TOOLFAST' Wedge clamps, our team can design and manufacture a multiple clamping fixture for you as the one shown in the picture.

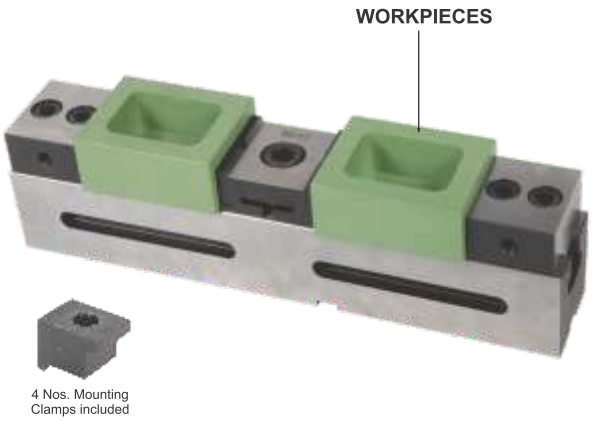
Please send in your enquiries with workpiece / machine table specifications of your Machining Center to enable us check suitability of our WEDGE CLAMPS and submit an offer to you.

MULTIPLE CLAMPING VICE WITH TWC-16 WEDGE CLAMPS

TOOLFAST offers a standard 60mm jaw width vice which is capable of clamping multiple workpieces. All parts such as TWC wedge clamp, fixed jaws and the main body are modular and interchangeable.



* Length can be custom built to achieve different Jaw opening or more number of workpieces



- Model VTWC-16-60-350 available as standard having overall length 350mm capable of jaw opening 91mm in case of two workpieces.
- This vice can also be supplied in custom built lengths to suit different sizes of workpieces. Send your enquiries to us if you feel that 60mm jaw width vice is suitable for your workpiece. Additional fixed jaws and TWC series clamps can be included in the vice if more than two workpieces to be clamped.
- For uneven or unusual shape workpieces, TWC-M and TWC-P series wedge clamps can also be used in above vice.

PRECISION STEEL PARALLELS

'TOOLFAST' Steel Parallels are used as precision packing supports under jobs or fixtures. Made from tool steel, hardened, tempered & precision ground in matched pairs. Matched pairs are marked with identical serial numbers. All sides are chamfered. Overall sizes are nominal.

- ❑ **Hardened & Tempered 52 - 56 HRC.**
- ❑ **Parallelism within 0.005mm upto 200mm length.**
- ❑ **Inspection certificate is furnished.**

MODEL	SIZE	N.W. Kgs. (Per Pair)
TSP-20	10 x 20 x 150	0.47
TSP-35	15 x 35 x 150	1.24
TSP-45	20 x 45 x 200	2.80
TSP-55	25 x 55 x 250	5.34
TSP-60	30 x 60 x 300	8.50
TSP-75	45 x 75 x 300	15.80
TSP-75-450	45 x 75 x 450	23.70

EDGE FINDER

TOOLFAST' Edge Finder is used for fast and accurate location of starting point of work pieces with respect to the machine spindle on milling or jig boring machine tables.

Application: Edge finder is used for location of edges, shoulders, grooves etc. of work pieces kept on machine table with respect to the machine spindle. Shank of the Edge Finder is held in the collet or chuck and work table is traversed to cause the rotating tip of the edge finder make contact with the edge of the work piece to be located. Once the rotating tip comes in contact with the work piece, work table is further traversed so that the rotating tip shifts to a concentric position with respect to the shank. Now any movement to "off centre" will cause a distinct 'wobble'. At this point, the distance from the work edge to the centre of machine spindle is equal to half the diameter of the tip of the edge finder. Available in single & double ended tip. In double ended tip, Edge Finder can be held from both ends and both the tips of two different sizes can be used for edge finding.

Shank and tip of the edge finder are coupled together with the help of an internal spring for independent rotation of both. It is hardened and accurately ground all over to ensure repeatability of work location within 0.01 mm.

MODEL	SHANK DIA	TIP DIA	TYPE	N. W. Kgs.
EF-S1	10	10	Edge Finder-single end	0.03
EF-D1	10	5 &10	Edge Finder-double end	0.03
EFR-10	10	10	Edge Finder-disc type	0.06
EFR-104	10	4 & 10	Disc Type - double end	0.06

EF-S1 EF-D1 EFR-10 EFR-104

GRINDING VICE - SCREW TYPE

'TOOLFAST' Grinding Vice - screw type is a precision machine vice. Body & jaw made of tool steel, hardened, tempered & precision ground.

- ❑**Hardened & Tempered to 52 - 56 HRC.**
- ❑ **All sides Parallelism & Squareness within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH	OVERALL HEIGHT	N. W. Kgs.
GV-65	63	32	85	190	65	4.4
GV-75	73	35	100	210	74	6.2
GV-90	88	40	125	250	88	10.0
GV-100	100	45	125	260	95	13.0
GV-125	125	50	158	300	110	20.0
GV-150	150	50	175	315	110	24.5

TOOL MAKER GRINDING VICE

Made of tool steel, precision ground.
All hardened and tempered 52-56 HRC having parallelism and squareness within 0.005 mm. Inspection Certificate furnished

MODEL	OVERALL WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH	N. W. Kgs.
TMGV-20	50	25	65	140	2.0
TMGV-30	73	35	100	190	4.1
TMGV-35	88	40	125	235	7.3
TMGV-40	100	45	125	245	10.0
TMGV-50	125	50	160	285	18.0

PRECISION SINE VICE

'TOOLFAST' Precision Sine Vice is used to obtain precise angles by means of gauge blocks. Apart from its use on milling and grinding machine, this Sine Vice can also be used as a reference for inspection.

- ❑ **All Hardened & Tempered to 52 - 56 HRC.**
- ❑ **All side Parallelism & Squareness within ± 0.005mm.**
- ❑ **Centre distance of rollers within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**

Chart for setting sine angles with the help of gauge blocks is provided.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH	OVERALL HEIGHT	N. W. Kgs.
PSV-2	50	25	65	140	80	3.2
PSV-3	73	35	100	190	104	7.2
PSV-4	100	45	125	245	134	16.5

PRECISION COMPOUND SINE VICE - SCREW TYPE

'TOOLFAST' Precision compound Sine Vice has compound sine angle setting on two sine plates. Both the tiltings are controlled by fine screws.

- ❑ **All Hardened & Tempered to 52 - 56 HRC.**
- ❑ **All side Parallelism & Squareness within ± 0.005mm.**
- ❑ **Centre distance of rollers within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**

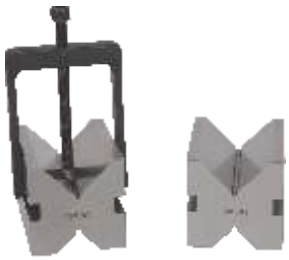
Charts for setting both sine angles with the help of gauge blocks is provided.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH	OVERALL HEIGHT	N. W. Kgs.
CSGV-3	75	30	76	160	124	9.0

STEEL V-BLOCK

'TOOLFAST' Steel V-Blocks are made of tool steel, hardened, tempered & precision ground on all sides. These are supplied in matched pairs having both sides 'V' with one clamp.

- ❑ **Unbreakable Steel Clamp.**
- ❑ **All Hardened & Tempered 52 - 56 HRC.**
- ❑ **Parallelism & Squareness of all faces & 'V' within ± 0.005mm.**
- ❑ **Inspection certificate is furnished.**



MODEL	LENGTH	HEIGHT	WIDTH	HOLDING CAPACITY ØMAX	N. W. Kgs. (Pair with one clamp)
SVB-50	50	37	37	35	1.1
SVB-80	80	60	60	60	3.8
SVB-100	100	75	75	75	7.6
SVB-125	125	95	95	90	14.3
SVB-150	150	98	98	95	19.0

MAGNETIC V-BLOCK

'TOOLFAST' Magnetic V-Blocks are precision ground V-Blocks with high power magnets. Accurately fitted magnet ensures easy movement of knob. Available in single as well as matched pairs.
These V-blocks have main holding 'V' and bottom face fitted with hardened steel plates having hardness 52-56 HRC.

- ❑ **Parallelism & Squareness of all faces & 'V' within ± 0.005mm.**
- ❑ **Most suitable for inspection and tool room applications.**
- ❑ **Inspection certificate is furnished.**

MODEL	LENGTH	HEIGHT	WIDTH	N. W. Kgs. (Pair)
MVB-4-H	100	95	75	9.0
MVB-6-H	150	95	75	13.5

C. I. ANGLE PLATE - SLOTTED

'TOOLFAST' C. I. Angle Plate-Slotted is made out of high quality seasoned casting having precision ground outside faces & ends. Machined slots for clamping on both faces.

- ❑ **Accuracy in parallelism & squareness within ± 0.01mm per 200 mm length.**
- ❑ **Inspection certificate is furnished.**

MODEL	SIZE	N. W. Kgs.
APS-110	110 x 85 x 75	2.9
APS-150	150 x 125 x 110	4.7
APS-175	175 x 135 x 110	5.5
APS-200	200 x 150 x 125	8.0
APS-225	225 x 175 x 150	13.0
APS-250	250 x 200 x 150	15.0
APS-300	300 x 225 x 200	25.0

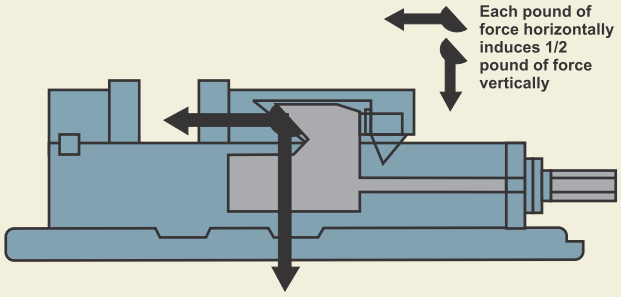
Sizes APS-110 to APS-200 are in open ends type as shown in picture.
Sizes APS-225 to APS-300 are in webbed ends type .

LOCK DOWN JAW MACHINE VICE

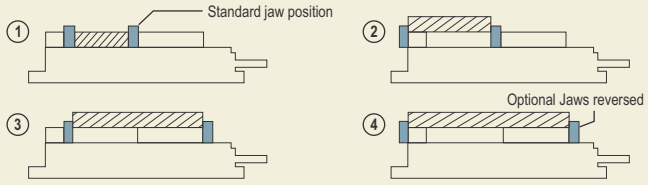
FOR MACHINING CENTRE AND MILLING MACHINE

- ❑ Flame hardened bed
- ❑ Accuracy in Parallelism & Squareness within 0.02 mm
- ❑ No work piece tilt after clamping
- ❑ All parts interchangeable and available as spares
- ❑ Tenons and tenon slots provided for effortless trueing of vice on machine table

Also Included
FREE



Down thrust "Semi Sphere Segment" mechanism eliminates jaw lift and work piece tilt. No need to hammer the workpiece as in other vices.



Examples②, ③ and④ shown above are possible only with optional THICK JAW PLATES. (22mm Thick)

MODEL	JAW WIDTH	MAX. JAW OPENING WITH STANDARD JAW POSITION	MAX. JAW OPENING WITH JAWS REVERSED	JAW DEPTH	OVERALL LENGTH	OVERALL HEIGHT WITH SWIVAL BASE	OVERALL HEIGHT WITHOUT SWIVAL BASE	CLAMPING FORCE MAX.*	N.W. WITH SWIVAL BASE Kgs.	N.W. WITHOUT SWIVAL BASE Kgs.
MMV-6-HXL	160	190	395	48	430	160	115	3500 Kgs.	49	38
MMV-8-H	210	210	480	60	550	190	145	4000 Kgs.	80	62

* Required force can be achieved by tightening handle included with vice. Applying extra torque by using extension pipe or by hammering damages the vice parts and warranty expires.

OPTIONAL ACCESSORIES

SWIVAL BASE:
Available separately for above vices.

OPTIONAL JAWS FOR MMV-6HXL

SERRATED JAW PLATE

Dimensions same as standard plain Jaw but having serrations for extra grip.

V-JAW PLATE

Total Thickness = 40mm

MACHINABLE JAW PLATE

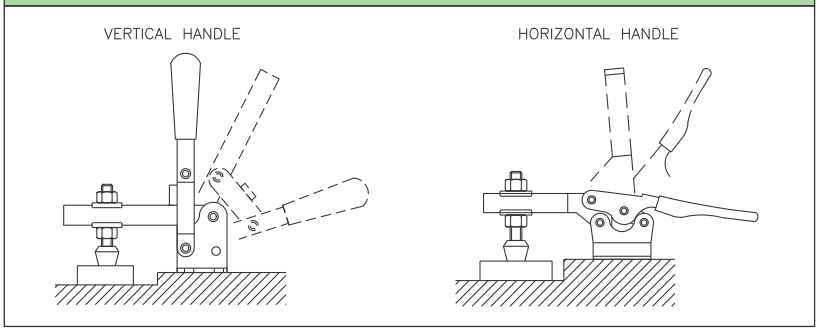
- Extra thick (48mm) for carving part shapes into jaw plate.
- Reversible top to bottom and front to back, (counter bore both sides) for customizing of four different applications.
- Available in **Aluminium** or **Steel**

TOGGLE CLAMPS

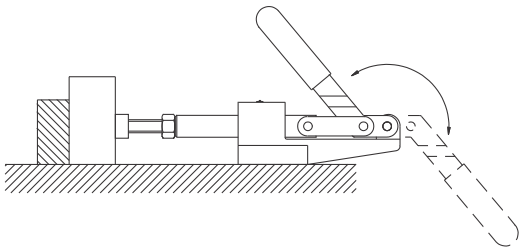
INTRODUCTION

There are four basic types of toggle actions as shown below:

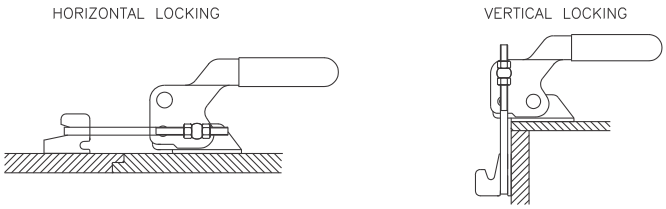
HOLD DOWN ACTION



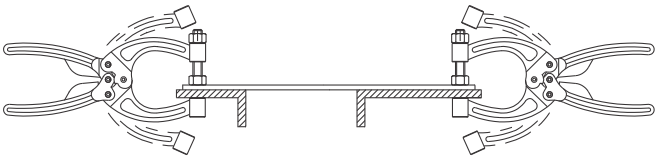
PUSH/PULL ACTION



LATCH TYPE PULL ACTION CLAMPS



SQUEEZE ACTION



Stainless Steel Rivets as Pivot Pins

Rivets Housed in Reamed Hole Bushes

Hardened & Ground Plungers

Red Vinyl Grip Handles

Features of TOOLFAST Toggle Clamps

- Most rivets as pivot pins are of stainless steel for long life of clamps.
- Rivets are housed in reamed hole bushes for accuracy and longer life in most of the models.
- Red Vinyl grip handles for easy identification and operator comfort.
- Pressings from low carbon-cold rolled sheet, zinc plated with blue-brite finish for longer rust prevention.
- Hardened & Ground Plungers & precision machined bearing surfaces in Push/Pull Action Clamps.
- **2D/3D cad files available on request.**

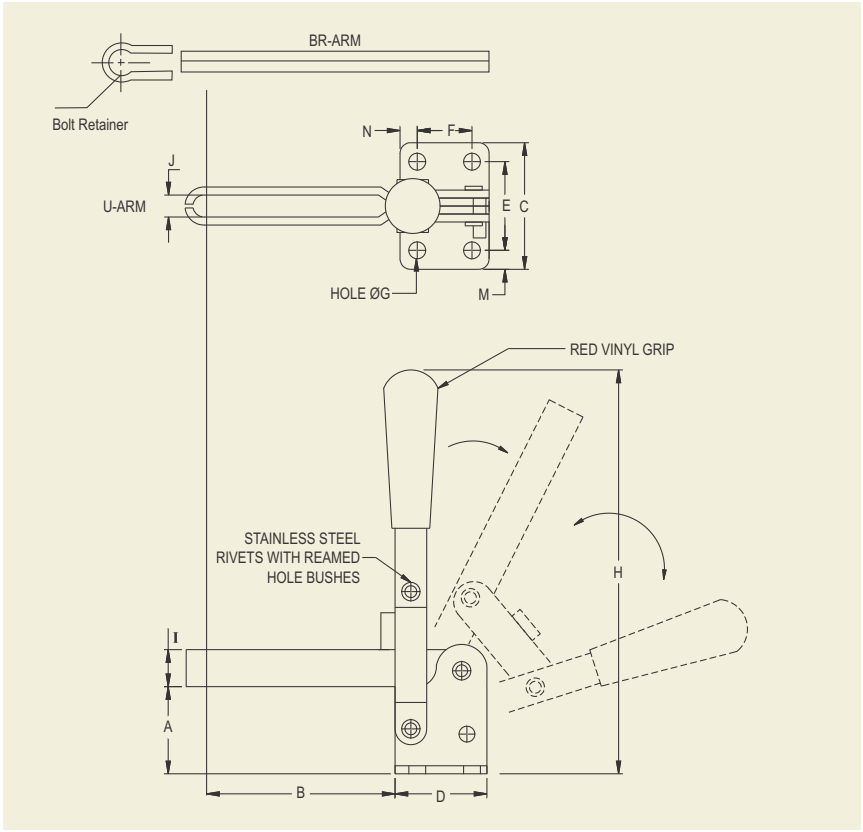
In the following pages of this catalogue different models of above types of toggle clamps manufactured by us to suit different applications are illustrated.

HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - FLANGED BASE

These toggle clamps have a flanged base with holes for mounting on the fixture plate. Handle remains in vertical position while clamping. Available in two types of clamping arms as shown below:

U - Arm : This is the most widely used type which permits to locate the clamping spindle anywhere along the length of the arm.

BR - Arm : This type of Arm has Strip Arm onto which the bolt retainer can be welded by the user at any desire angle. Bolt retainer is supplied loose with this model.



U-ARM MODEL

BR-ARM MODEL

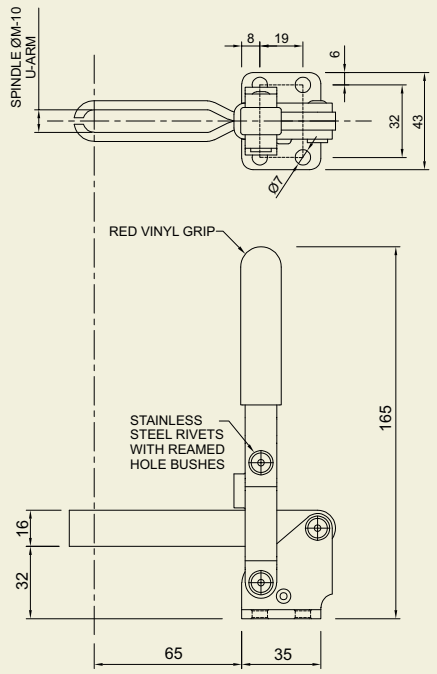
MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
VHDT-19-U **VHDT-19-BR**	U-ARM BR-ARM	19	35 50	32	26	24	15	4	5.5	4.5Ø	12	M-6	90	70 Kgs.	0.11 0.11
VHDT-25-U **VHDT-25-BR**	U-ARM BR-ARM	25	35 50	40	26	27	13	6.5	6.5	5.5Ø	10	M-6	100	100 Kgs.	0.18 0.19
VHDT-26-U **VHDT-26-BR**	U-ARM BR-ARM	25	43 60	38	30	27	16	5.5	7	5.5Ø	10	M-6	100	100 Kgs.	0.18 0.19
VHDT-32-U **VHDT-32-BR**	U-ARM BR-ARM	32	65 90	43	35	32	19	5.5	8	6.8Ø	16	M-8	145	200 Kgs.	0.34 0.35
VHDT-36-U **VHDT-36-BR**	U-ARM BR-ARM	36	65 90	58	35	38	19	10	8	6.8Ø	16	M-8	150	200 Kgs.	0.35 0.36
VHDT-45-U **VHDT-45-BR**	U-ARM BR-ARM	45	95 120	62	45	44	28	9	8.5	8.5Ø	18	M-10	210	400 Kgs.	0.74 0.75
VHDT-46-U **VHDT-46-BR**	U-ARM BR-ARM	46	95 120	82	45	55	25	13.5	10	8.5Ø	18	M-10	206	400 Kgs.	0.74 0.75
VHDT-50-U **VHDT-50-BR**	U-ARM BR-ARM	50	130 150	72	45	45	25	13.5	10	8.5Ø	18	M-10	210	350 Kgs.	0.79 0.81
VHDT-60-U **VHDT-60-BR**	U-ARM BR-ARM	60	120 140	70	55	53	36.5	8.5	9	8.5Ø	20	M-10	270	500 Kgs.	1.35 1.37
VHDT-80-U **VHDT-80-BR**	U-ARM BR-ARM	80	135 155	95	75	70	50	12.5	12.5	10.5Ø	32	M-16	340	700 Kgs.	2.28 2.31
VHDT-85-U **VHDT-85-BR**	U-ARM BR-ARM	85	150 170	90	76	60	45	15	15.5	8.5Ø	32	M-16	346	700 Kgs.	2.30 2.34

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps. U-Arm models are provided with 2 nos. U-Flanged Washers also along with clamping spindle assembly and BR-arm models are provided with bolt retainers along with clamping spindle assembly.

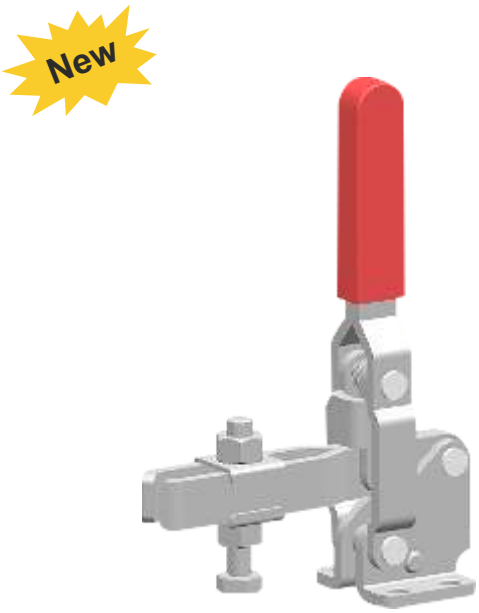
Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

HOLD DOWN TOGGLE CLAMP- VERTICAL HANDLE - FLANGED BASE- HEAVY DUTY MODEL VHDT-32-U-HD

VHDT-32-U-HD is the heavy duty version of the most popular vertical handle toggle clamp VHDT-32-U. This heavy duty version has a holding capacity of 350 KGS max. All working dimensions being same as VHDT-32-U. It can simply replace VHDT-32-U in a fixture if heavier clamp required.

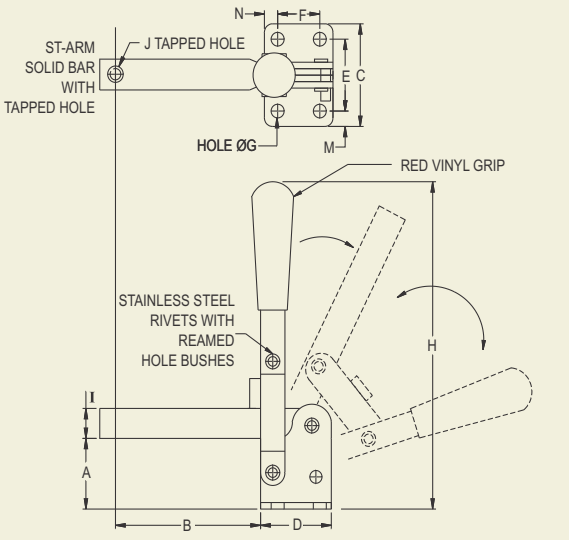


Holding Capacity - 350 Kgs Max
N. W. - 0.45 Kgs



HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - SOLID ARM

These toggle clamps have a Solid Arm with a tapped hole at the end. This arm can also be cut to any length and hole can be made at any desired position or a separate clamping assembly can be welded at any desired point as per the application.

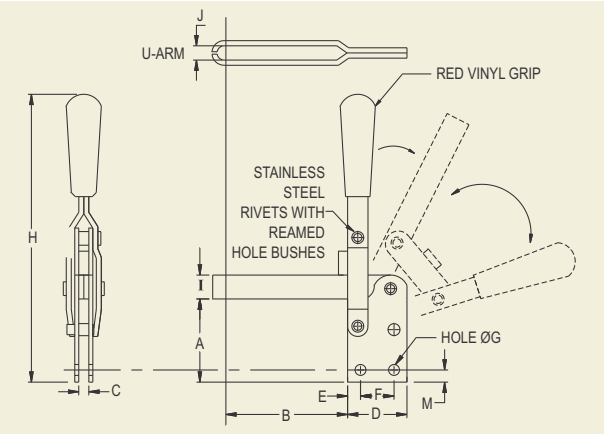


MODEL	ARM TYPE	A	B	MOUNTING BASE							I	J TAPPED HOLE	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
VHDT-25-ST	ST-ARM	25	35	40	26	27	13	6.5	6.5	5.5Ø	10	M-6	100	150 Kgs.	0.17
VHDT-32-ST	ST-ARM	32	65	43	35	32	19	5.5	8	6.8Ø	16	M-8	145	250 Kgs.	0.41
VHDT-45-ST	ST-ARM	45	95	62	45	44	28	9	8.5	8.5Ø	18	M-10	210	500 Kgs.	0.84
VHDT-60-ST	ST-ARM	60	120	70	55	53	36.5	8.5	9	8.5Ø	20	M-10	270	600 Kgs	1.60
VHDT-80-ST	ST-ARM	80	135	95	75	70	50	12.5	12.5	10.5Ø	28	M-16	340	800 Kgs.	2.71

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps.

HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - BASE STRAIGHT

These toggle clamps are similar to VHDT models but with Base Straight. Straight Base design enables mounting on a vertical surface.

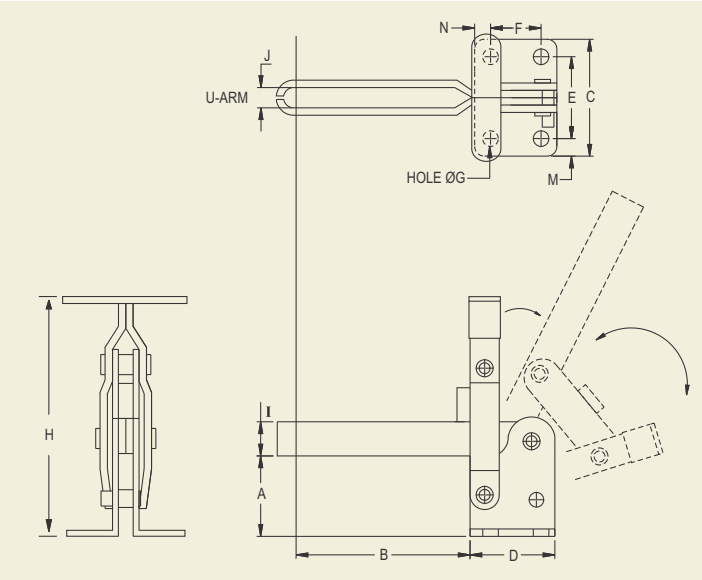


MODEL	ARM TYPE*	A	B MAX.	MOUNTING BASE						I	J SUITABLE FOR SPINDLE DIA	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	ØG					
VHDT-19-U-BS	U-ARM	29	35	4	26	5.5	15	4	4.5Ø	12	M-6	100	70 Kgs.	0.11
VHDT-25-U-BS	U-ARM	40	35	6	26	6.5	13	6.5	5.5Ø	10	M-6	115	100 Kgs.	0.18
VHDT-26-U-BS	U-ARM	36	43	6	30	7	16	5.5	5.5Ø	10	M-6	110	100 Kgs.	0.18
VHDT-32-U-BS	U-ARM	47	65	6	35	8	19	5.5	6.8Ø	16	M-8	160	200 Kgs.	0.34
VHDT-36-U-BS	U-ARM	57	65	6	35	8	19	10	6.8Ø	16	M-8	173	200 Kgs.	0.35
VHDT-45-U-BS	U-ARM	70	95	8	45	8.5	28	9	8.5Ø	18	M-10	235	400 Kgs.	0.74
VHDT-46-U-BS	U-ARM	77	95	8	45	10	25	13.5	8.5Ø	18	M-10	235	400 Kgs.	0.74
VHDT-50-U-BS	U-ARM	76	130	8	45	10	25	13.5	8.5Ø	18	M-10	235	350 Kgs.	0.79
VHDT-60-U-BS	U-ARM	88	120	8	55	9	36.5	8.5	8.5Ø	20	M-10	298	500 Kgs.	1.35
VHDT-80-U-BS	U-ARM	125	135	10	75	12.5	50	12.5	10.5Ø	32	M-16	385	700 Kgs.	2.28
VHDT-85-U-BS	U-ARM	119	150	10	76	15.5	45	15	8.5Ø	32	M-16	380	700 Kgs.	2.31

*** All above base straight models are available with BR ARM or ST ARM also on request.**

HOLD DOWN TOGGLE CLAMP - T HANDLE - FLANGED BASE

Smaller sizes of VHDT models are also available in T-Handles.These are available in U-arm models only as shown in table below.

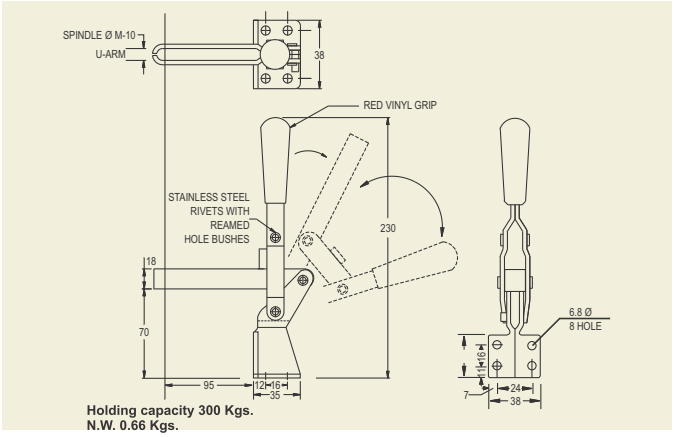


MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	H	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
VHDT-25-TU	U-ARM	25	35	40	26	27	13	6.5	6.5	5.5Ø	10	M-6	80	100 Kgs.	0.18
VHDT-32-TU	U-ARM	32	65	43	35	32	19	5.5	8	6.8Ø	16	M-8	115	200 Kgs.	0.34

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps.

HOLD DOWN TOGGLE CLAMP - VERTICAL HANDLE - RIGHT ANGLE BASE - Model RATC-70

This model has vertical handle with a right angled dual mounting base which can be base flange mounted as well as front mounted on side wall of a fixture.

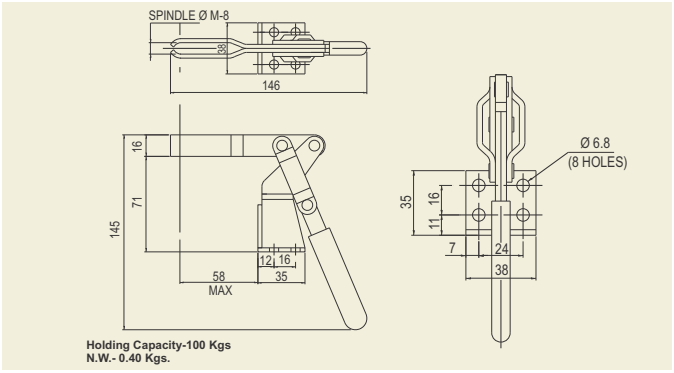


Holding capacity 300 Kgs.
N.W. 0.66 Kgs.

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps.

HOLD DOWN TOGGLE CLAMP - DROP HANDLE - Model DTC-70

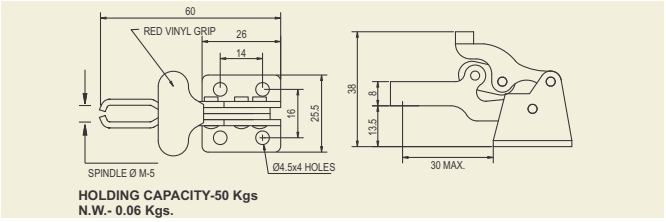
These are low silhouette clamps with mounting flexibility of front as well as base mounting. Its unique design keeps the arm and handle clear for easy loading and unloading of parts.



Holding Capacity-100 Kgs
N.W.- 0.40 Kgs.

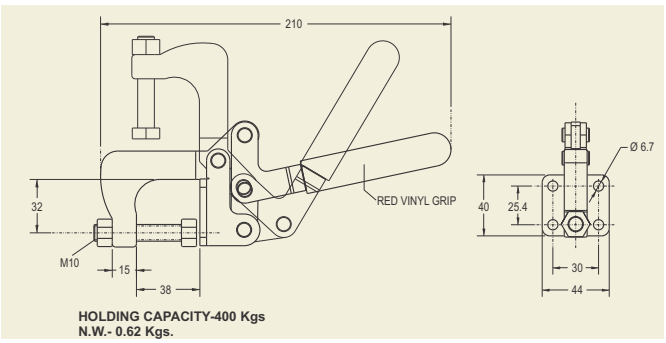
Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps.

HOLD DOWN TOGGLE CLAMP - FORWARD HANDLE - Model FHTC-13



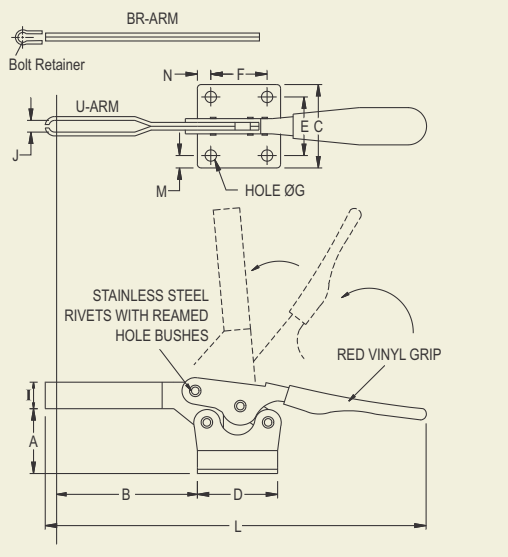
HOLDING CAPACITY-50 Kgs
N.W.- 0.06 Kgs.

PULL BACK CLAMP - Model PBC-38



HOLDING CAPACITY-400 Kgs
N.W.- 0.62 Kgs.

HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - THUMB TYPE



Low height design of these hold down toggle clamps requires less overhead clearance as the handle remains in horizontal position while clamping.

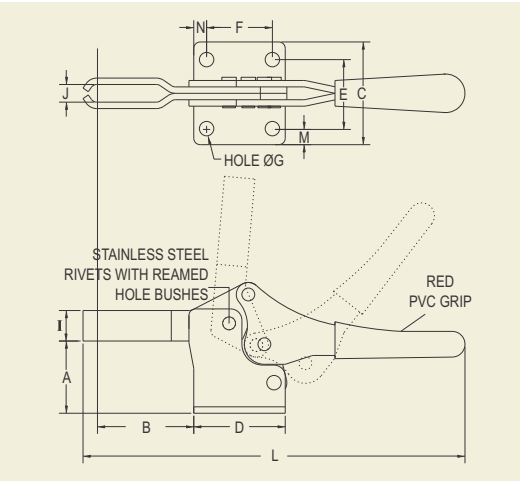
U-ARM MODEL

BR-ARM MODEL

MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
HDTC-25 **HDTC-25-BR**	U-ARM BR-ARM	27	59 68	33	35	21	21	6	7	5.5Ø	12	M-6	150	150 Kgs.	0.15 0.16
HDTC-27 **HDTC-27-BR**	U-ARM BR-ARM	27	59 70	33	35	22	24	5.5	5.5	4.5Ø	12	M-6	150	150 Kgs.	0.15 0.16
HDTC-35 **HDTC-35-BR**	U-ARM BR-ARM	37	63 75	37	38	23	25	7	6.5	6.8Ø	13	M-8	172	250 Kgs.	0.26 0.27
HDTC-35-HA (High Arm Model)	U-ARM	54	75	36	38	22.2	22.2	7	8	6.8Ø	13	M-8	172	250 Kgs.	0.30
HDTC-36 **HDTC-36-BR**	U-ARM BR-ARM	36	63 75	40	44	26	29	7	7.5	6.8Ø	13	M-8	173	250 Kgs.	0.27 0.28

Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly complete with U-Flanged washers and lock nuts is provided as standard accessory with above clamps. Br-arm models are provided with bolt retainers along with clamping spindle assembly.

HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - LONG TYPE



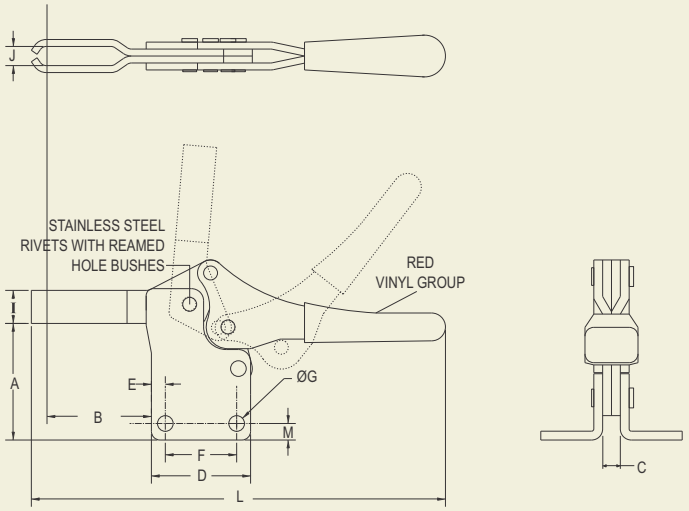
Low height design of these hold down toggle clamps requires less overhead clearance as the handle remains in horizontal position while clamping. BR Arm models are also available.

U-ARM MODEL

BR-ARM MODEL

MODEL	ARM TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
HDTC-45 **HDTC-45-BR**	U-ARM BR-ARM	45	60 80	64	57	44	41	9.5	8	9Ø	19	M-10	238	500 Kgs.	0.74 0.75
HDTC-46 **HDTC-46-BR**	U-ARM BR-ARM	46	106 120	55	57	38	40	8.5	8.5	8.3Ø	19	M-10	302	500 Kgs.	0.76 0.78
HDTC-50 **HDTC-50-BR**	U-ARM BR-ARM	50	105 125	56	57	37	41	9.5	8	9Ø	19	M-10	285	500 Kgs.	0.80 0.81
HDTC-57 **HDTC-57-BR**	U-ARM BR-ARM	61	142 160	62	65	40	45	11	10	8.3Ø	19	M-10	322	500 Kgs.	0.91 0.93

HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - BASE STRAIGHT



MODEL	ARM TYPE*	A	B MAX.	MOUNTING BASE						I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	ØG					
HDTC-45-BS	U-ARM	67	60	8	57	8	41	9.5	9	19	M-10	238	500 Kgs.	0.74
HDTC-50-BS	U-ARM	67	105	8	57	8	41	9.5	9	19	M-10	285	500 Kgs.	0.80

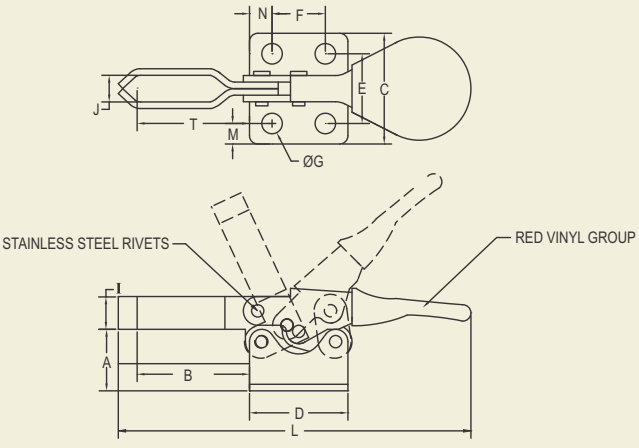
Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps. U-Arm models are provided with 2 nos. U-Flanged Washers also along with clamping spindle assembly and BR-arm models are provided with bolt retainers along with clamping spindle assembly.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

*** ABOVE BASE STRAIGHT MODELS ARE AVAILABLE WITH BR ARM ALSO ON REQUEST**

HOLD DOWN TOGGLE CLAMP - HORIZONTAL HANDLE - MINIATURE SERIES

These two models are miniature versions of horizontal handle clamps useful for light and miniature applications.

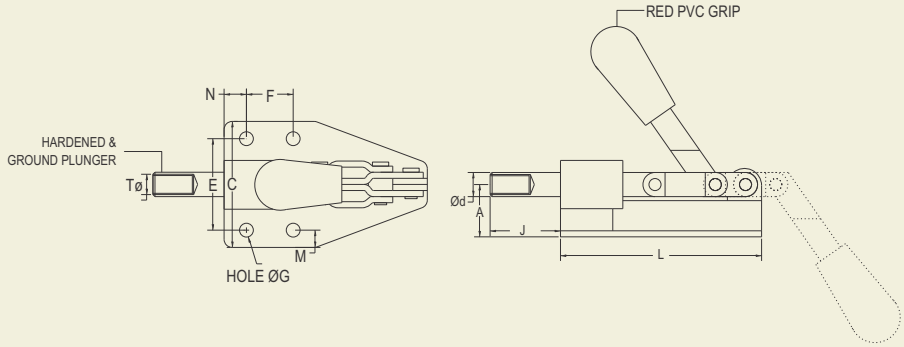


MODEL	ARM * TYPE	A	B MAX.	MOUNTING BASE							I	J SUITABLE FOR SPINDLE DIA	L	HOLDING CAPACITY	N. W. Kgs.
				C	D	E	F	M	N	ØG					
HDTC-8	U-ARM	8	16	24	24	16	14	4	5	Slot 7x4.5	6	M-4	68	25 Kgs.	0.03
HDTC-15	U-ARM	15	27	27	24	17	13	5	5.5	5Ø	8	M-6	86	50 Kgs.	0.055

PUSH / PULL ACTION TOGGLE CLAMP - FRONT BASE - STEEL FABRICATED BODY

'TOOLFAST' Push/Pull Action Toggle Clamps have a straight line action as the plunger moves in straight line forward & backward with easy to operate handle. The plunger moves forward and locks as the handle is moved forward and plunger also locks in retracted position when handle is moved backward. Hence these clamps can be used as push as well as pull action clamps. Hardened & ground plunger moves in precision machined bore.

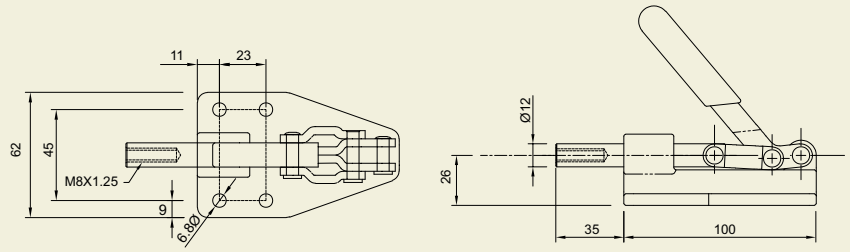
This model with front base is most popular because of its rigidity due to mounting base just under the load bearing surface of plunger movement.



MODEL	PLUNGER Ø dØ	TØ	A	PLUNGER TRAVEL	MOUNTING BASE						J MAX.	L	HOLDING CAPACITY	N. W. Kgs.
					C	E	F	M	N	ØG				
PATC-9-FB	9Ø	M-5x0.8	15	28	50	36	20	7	8	5Ø	32	80	150 Kgs	0.18
PATC-12-FB	12Ø	M-8x1.25	26	30	62	45	23	8.5	11	6.8Ø	35	100	300 Kgs	0.47
PATC-16-FB	16Ø	M-10x1.5	30	36	80	60	28	10	14	8.5Ø	42	125	500 Kgs	0.92

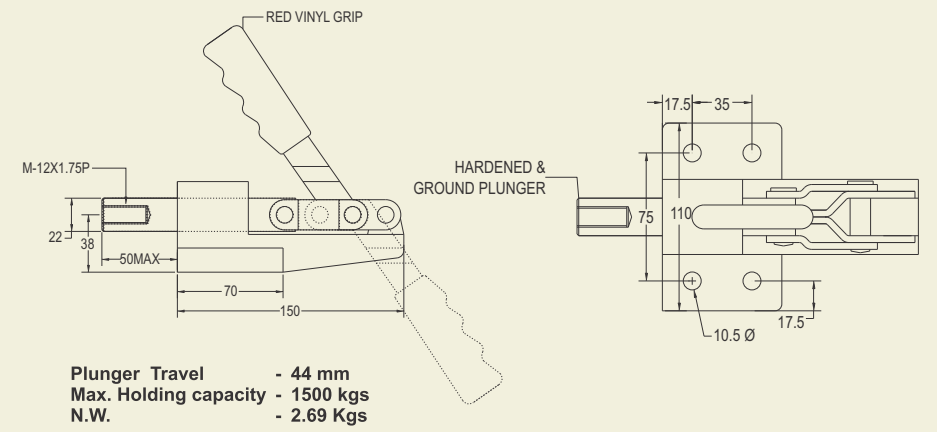
PUSH / PULL ACTION TOGGLE CLAMP- FRONT BASE - HEAVY DUTY MODEL PATC-12-FB-HD

PATC-12-FB-HD is the heavy duty version of the most popular push / pull action toggle clamp PATC-12-FB. This heavy duty version has a holding capacity of 500 kgs max. All working dimensions being same as PATC-12-FB, it can simply replace it in a fixture if higher clamping force required



Plunger Travel - 30 mm.
Holding capacity - 500 Kgs. Max
N. W. - 0.62 Kgs

PUSH / PULL ACTION TOGGLE CLAMP - FRONT BASE - C.I. BODY - PATC-22-FB

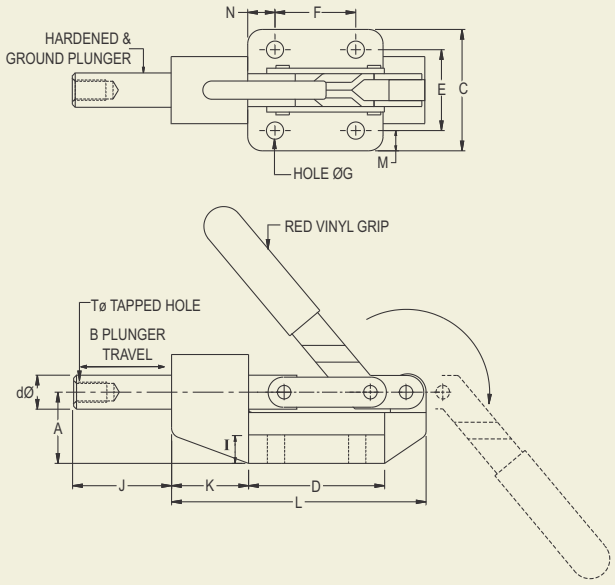


Plunger Travel - 44 mm
Max. Holding capacity - 1500 kgs
N.W. - 2.69 Kgs

Standard Accessories provided with Clamp:
Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

Optional Accessories:
User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

PUSH / PULL ACTION TOGGLE CLAMP - CENTRE BASE



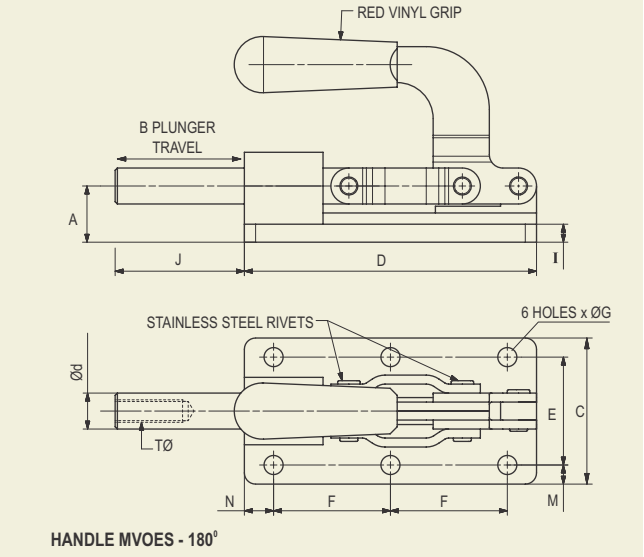
'TOOLFAST' Push/Pull Action Toggle Clamp - Centre Base has its base at the centre and the bigger sizes have more centre height than the front base model to accommodate larger work pieces. Width of the mounting base is also less in this case which makes this type of push action clamp more compact. Other features of this clamp are same as in case of front base model.

MODEL	PLUNGER DIA dØ	TØ	A	PLUNGER TRAVEL B	MOUNTING BASE							I	J MAX.	K	L	HOLDING CAPACITY	N. W. Kgs.
					C	D	E	F	M	N	ØG						
New PATC-9-CB	9Ø	M-5x0.8	18	27	40	40	28	28	6	6	5.5Ø	5	27	22	79	100 Kgs.	0.21
PATC-12-CB	12Ø	M-8x1.25	26	30	55	55	35	35	10	10	6.8Ø	6	35	28	100	400 Kgs.	0.51
PATC-1238-CB	12Ø	M-8x1.25	26	30	55	55	38	38	8.5	8.5	6.8Ø	6	35	28	100	400 Kgs.	0.51
PATC-16-CB	16Ø	M-10x1.5	35	36	60	67	40	40	10	13.5	8.5Ø	7	43	38	125	600 Kgs.	1.00
PATC-1642-CB	16Ø	M-10x1.5	35	36	60	67	42	42	9	12.5	6.8Ø	7	43	38	125	600 Kgs.	1.00
PATC-22-CB	22Ø	M-12x1.75	45	60	75	75	50	50	12.5	12.5	10.5Ø	16	62	46	162	900 Kgs.	2.80

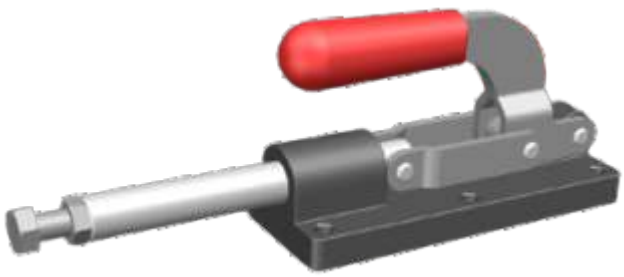
Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

PUSH / PULL ACTION TOGGLE CLAMP - LONG TRAVEL

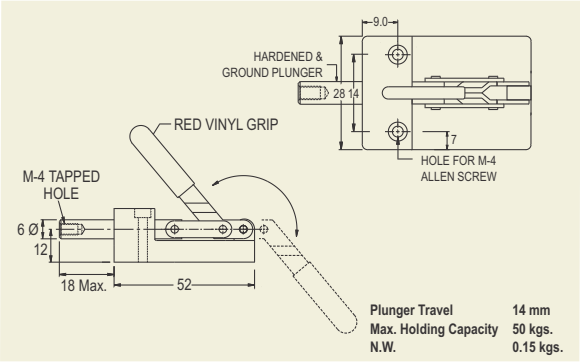


HANDLE MVOES - 180°



MODEL	PLUNGER DIA dØ	TØ	A	PLUNGER TRAVEL B	MOUNTING BASE							I	J MAX.	HOLDING CAPACITY	BODY	N. W. Kgs.
					C	D	E	F	M	N	ØG					
PATC-12-LT	12Ø	M-8	20	40	60	110	45	47	7.5	8	6.5Ø	6	41	600 Kgs.	STEEL	0.74
PATC-16-LT	16Ø	M-10	25	50	65	130	48	52	8.5	13	8.5Ø	8	58	800 Kgs.	STEEL	1.23
PATC-20-LT	20Ø	M-12	30	75	75	185	55	82.5	10	10	8.5Ø	10	92	1300 Kgs.	C.I.	2.81

PUSH / PULL ACTION TOGGLE CLAMP - MINIATURE MODEL - PATC - 6

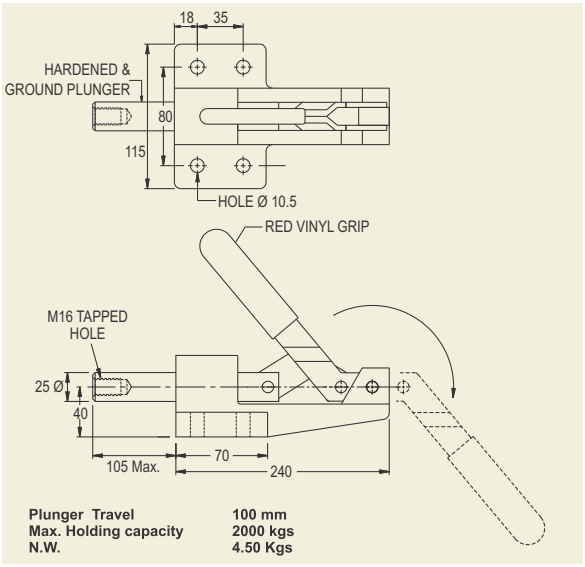


This is a Miniature Model of Push/Pull Action Toggle Clamp useful for light clamping where less space is available.

Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

PUSH / PULL ACTION TOGGLE CLAMP - HEAVY DUTY - Model PATC-25

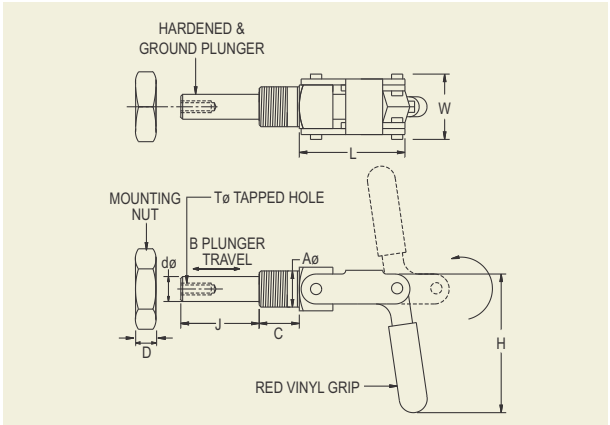
This is a Heavy Duty version of Push/Pull Action Toggle Clamp useful where high clamping force or long plunger travel is required.



Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

PUSH / PULL ACTION TOGGLE CLAMP - FRONT MOUNTING TYPE

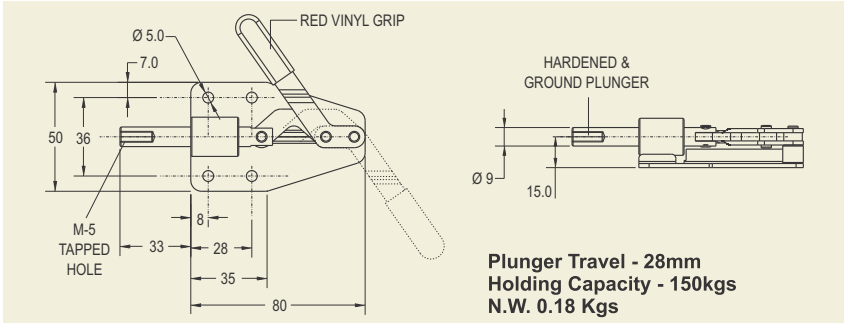
'TOOLFAST' Push/Pull Action Toggle Clamps - Front Mounting Type are simply flush mounted through a panel or plate by a hexagonal lock nut on the work piece side. Can also be mounted directly into a tapped hole without using the nut. Plunger is hardened & ground. These clamps can also be used as push as well as pull action clamps.



MODEL	PLUNGER DIA dØ	TØ TAPPED HOLE	MOUNTING THREAD SIZE AØ	PLUNGER TRAVEL B	C	D	J	L	W	H	HOLDING CAPACITY	N. W. Kgs.
PAFM-9	9	M-5 x 0.8 P	M-16 x 1.5 P	25	11	6	36	35	26	75	50 Kgs.	0.13
PAFM-12	12	M-8 x 1.25 P	M-20 x 1.5 P	36	16	8	41	50	31	103	100 Kgs.	0.32
PAFM-16	16	M-10 x 1.5 P	M-24 x 2.0 P	65	25	10	65	84	43	143	350 kgs.	0.86

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.
Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

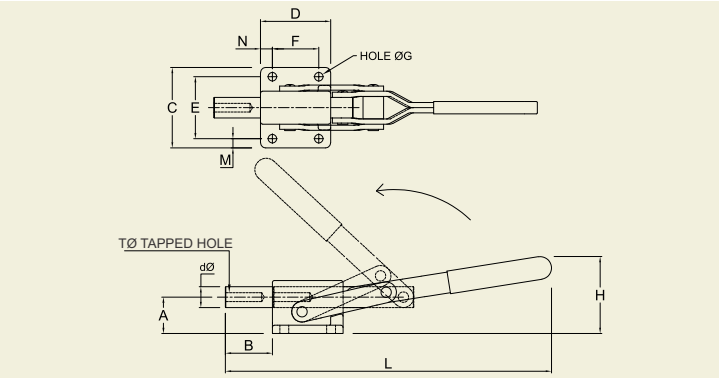
PUSH / PULL ACTION TOGGLE CLAMP - SIDE HANDLE-PATC-9-FB-SH



Plunger Travel - 28mm
Holding Capacity - 150kgs
N.W. 0.18 Kgs

PUSH / PULL ACTION TOGGLE CLAMP - REVERSE HANDLE

These Push / Pull Action Toggle clamps have reverse handle action as the plunger moves in pushing position when the handle is moved back towards the operator. Hence, these clamps are most suitable for operations where the operator has to keep hand away from the workpiece while locking the clamp.

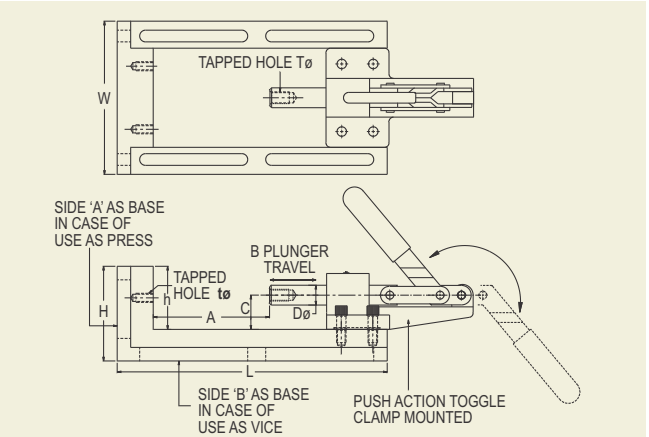


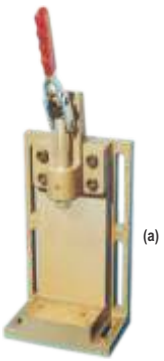
MODEL	PLUNGER DIA dØ	TØ	A	PLUNGER TRAVEL B	MOUNTING BASE							L	H	HOLDING CAPACITY	WEIGHT Kgs.
					C	D	E	F	M	N	ØG				
PAR-14	14Ø	M10 X 1.5	27	28	65	58	45	38	10	10	Ø8.5	221	70	1200 Kgs.	0.66
New **PAR-20**	20Ø	M12 X 1.75	35	45	78	68	60	45	9	11.5	Ø8.5	315	72	2600 Kgs.	1.71

TOGGLE VICE CUM PRESS

'TOOLFAST' Toggle vice cum press is a multifunction quick action vice cum press having a unique design with precision machined body on which Push Action Toggle Clamp of suitable model is mounted to make it a very versatile tool.

Toggle Vice: When side 'B' is used as base, it can be used as a quick action vice as shown in picture (b) or your can make your own drill Jig on it
Toggle Press : When side 'A' is used as base, it can be used as a toggle press for light press operations as shown in picture (a)



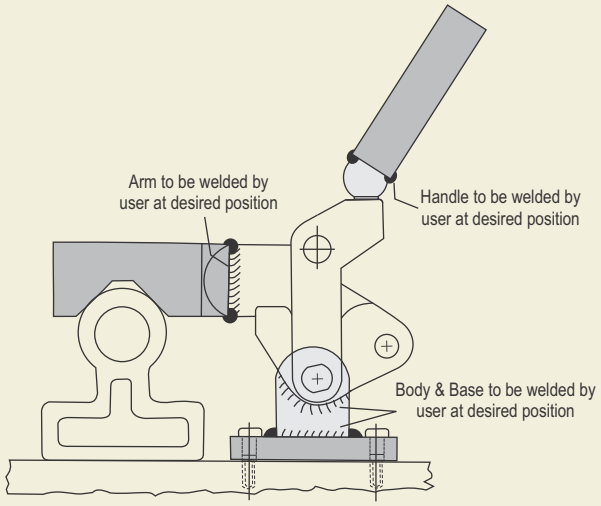

(a)


(b)

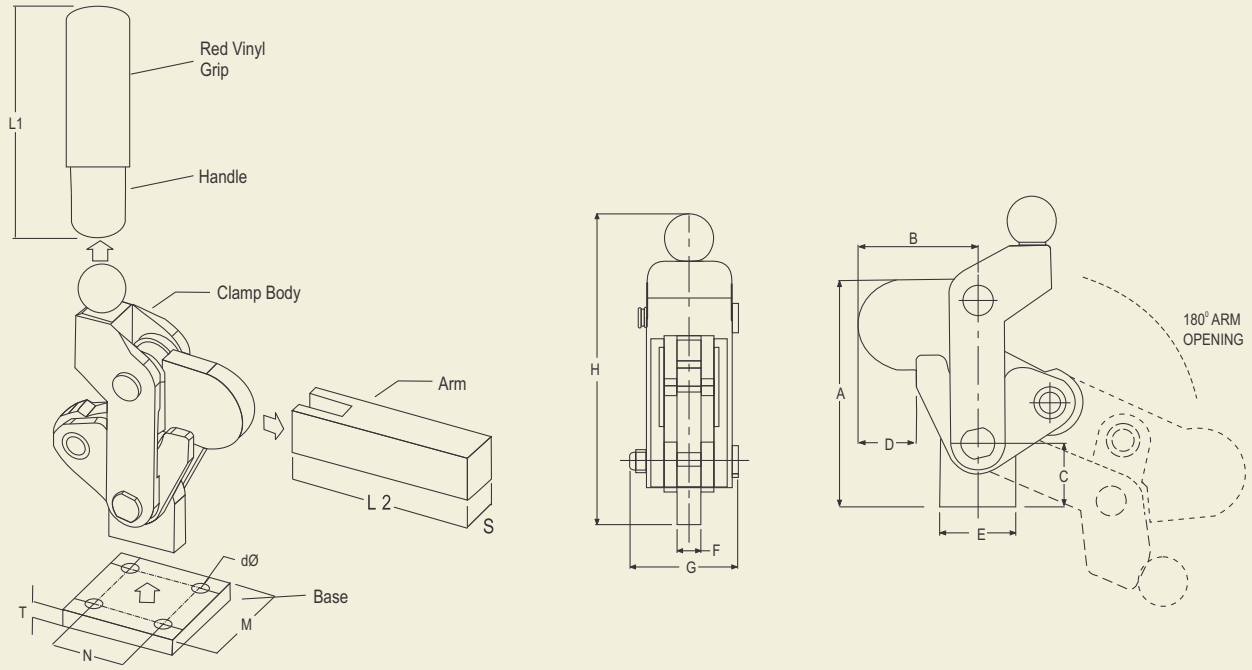
MODEL	A	PLUNGER TRAVEL B	C	DØ	TØ	tØ	h	L	W	H	PUSH ACTION TOGGLE CLAMP MOUNTED	CAPACITY	N. W. Kgs.
TVP-12	100	30	26	12Ø	M-8	M-6	50	205	110	70	MODEL PATC-12-FB	600 Kgs.	3.7
TVP-16	120	36	30	16Ø	M-10	M-8	60	250	138	90	MODEL PATC-16-FB	1000 Kgs.	7.6
TVP-22	140	44	38	22Ø	M-12	M-10	70	300	170	105	MODEL PATC-22-FB	1500 Kgs.	15.0

HEAVY DUTY WELDABLE TOGGLE CLAMP - MODULAR DESIGN

These are modular weldable clamps which allow the designer complete flexibility to position the base, clamp arm and handle and weld them in any desired position to suit the application. The base, arm and the pipe handle are supplied alongwith the clamp separately, to be welded by the user before use. The main body is made of accurately machined components having hardened and ground pivot pins and bushes.



Example of Application

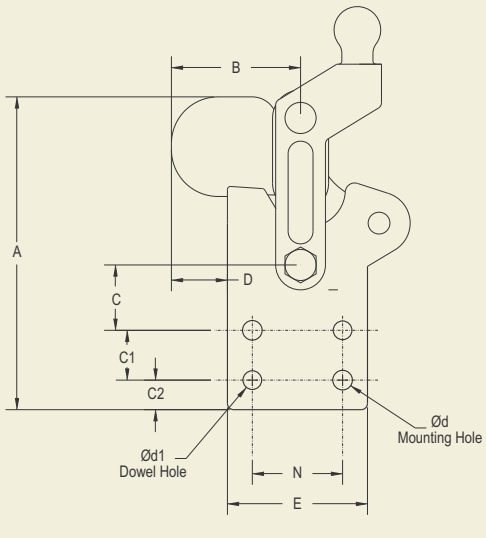


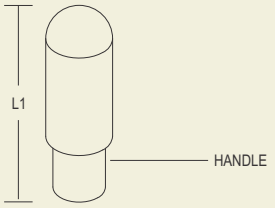
Base, Arm and Handle shown above are standard parts included in supply (loose) along with clamp body

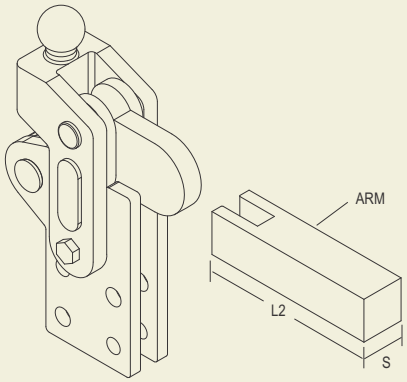
MODEL	A	B	C	D	E	F	G	H	L1	M Sq.	N Sq.	T	dØ	L2	S Sq.	HOLDING CAPACITY	N. W. Kgs.
New WTC-100	59	30	19	15	20	6	29	84	50	35	20	6	5.5	50	12	200 Kgs	0.33
WTC-200	75	42	21	18	24	8	39	104	82	45	29	6	7	75	20	500 Kgs.	0.81
WTC-300	91	53	26	26	30	10	47	127	90	50	30	8	7	90	22	700 Kgs.	1.38
WTC-500	106	59	32	30	36	12	55	152	114	63	40	9	9	100	25	1100 Kgs.	2.23
New WTC-1000	136	77	37	42	58	15	61	178	125	80	55	10	10.5	125	30	2500 Kgs	3.70

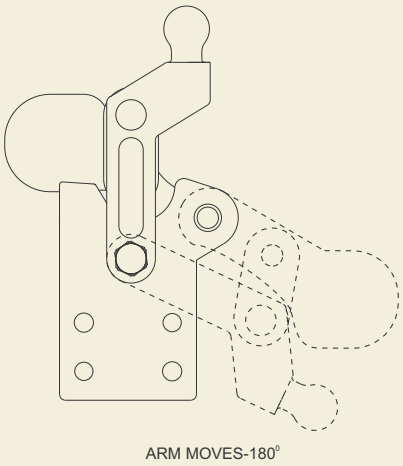
HEAVY DUTY WELDABLE TOGGLE CLAMP - MODULAR DESIGN - BASE STRAIGHT

These are straight base version of WTC series. All other features are same. Arm and handle are supplied loose alongwith the clamp which will be welded at desired position before use.









Arm and Handle shown above are standard parts included in supply (loose) along with clamp body.

MODEL	A	B	C	D	E	F	G	H	dØ	d1Ø	C1	C2	N	L1	L2	S Sq.	HOLDING CAPACITY	N. W. Kgs.
New WTC-100 BS	70	30	10	15	30	6	29	96	5.5	5	12	8.5	15	50	50	12	200 Kgs	0.30
WTC-200 BS	101	42	21	18	45	8	39	130	6.3	6	16	9.5	26	82	75	20	500 Kgs.	0.82
WTC-300 BS	122	53	20	26	50	10	47	158	9	8	25	12	30	90	90	22	700 Kgs.	1.40
WTC-500 BS	132	59	23	30	53	12	55	178	9	8	25	10	35	114	100	25	1100 Kgs.	2.24
New WTC-1000 BS	174	77	30	42	66	15	61	216	10.5	10	30	15	35	125	125	30	2500 Kgs	3.50

PULL ACTION CLAMP- LATCH TYPE - HORIZONTAL CUM VERTICAL

Pull Action Clamps are Latch type clamps used for sealing chambers, lids, doors of moulds, drums, containers or other vessels etc. Also suitable for clamping moulds in industries such as resin, fibre glass, chemical & food.

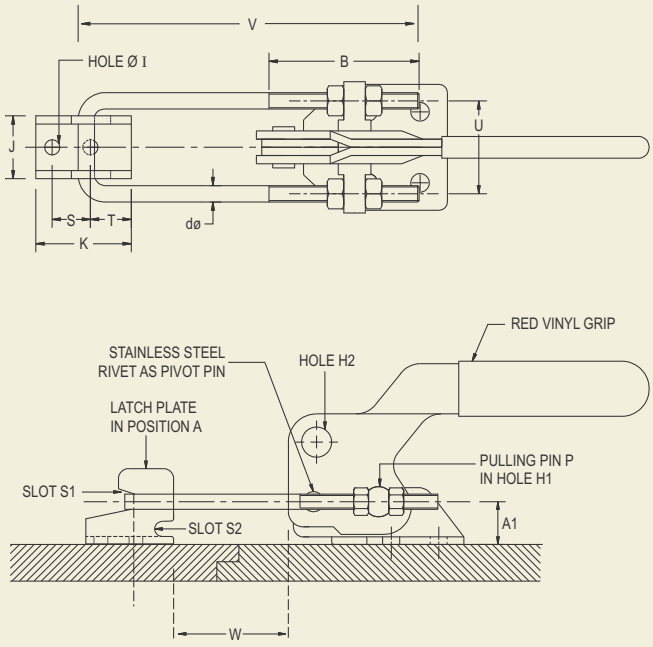
'TOOLFAST' Pull Action Clamp has a unique design which enables use of the same clamp as a horizontal pull action clamp as shown in figure (A) as well as a vertical pull action clamp as shown in figure (B) below by using two different holes H1 and H2 for pulling pin P to be located in.

Clamp is supplied complete with U-bolt & Latch Plate.

Same Clamp Can Be Used For Horizontal As well As Vertical Locking

Figure (A): PAC being used as Horizontal Pull Action Clamp

The pulling PIN P alongwith the U-Bolt is assembled using Hole H1 so that the Clamp is used for Horizontal Locking as shown below

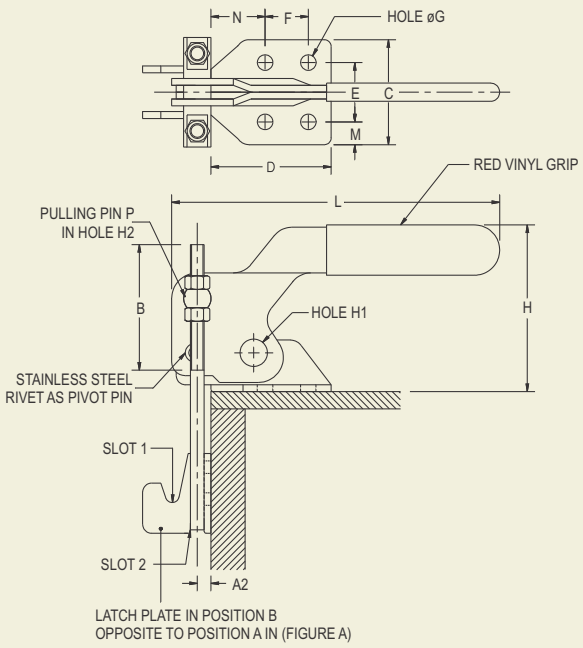


Locking is done when Adjustable U-Bolt is placed around the Slot S1 of Latch Plate in position A and the Handle is pulled down to reach the Lock Position

To ensure that the Clamp Locks positively, it is important that the Base of clamp and the Base of Latch Plate are properly aligned as shown above.

Figure (B): PAC being used as Vertical Pull Action Clamp

The pulling PIN P alongwith the U-Bolt is assembled using Hole H2 so that the Clamp is used for Vertical Locking as shown below.



Locking is done when Adjustable U-Bolt is placed around the Slot S2 of Latch Plate in position B and the Handle is pulled down to reach the Lock Position.

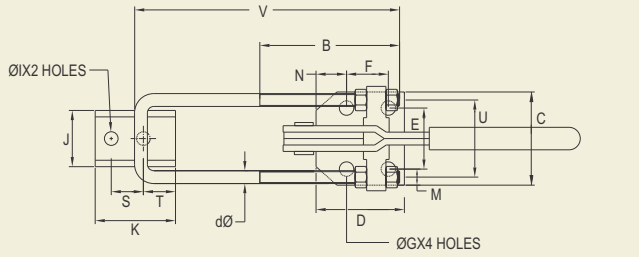
To ensure that the Clamp Locks positively, it is important that the Base of the Latch Plate is aligned with the Front Edge of the Clamp Base in perpendicular position as shown above.

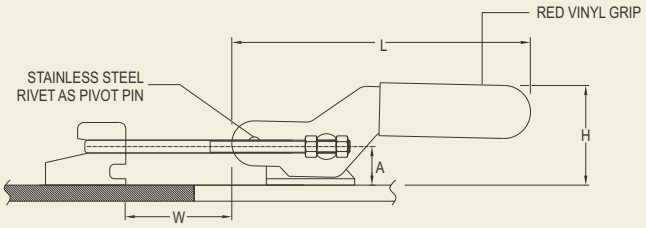
MODEL	A1	A2	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP							MOUNTING BASE OF LATCH PLATE					H	L	HOLDING CAPICITY	N. W. Kgs.
							Min.	Max.	C	D	E	F	M	N	GØ	J	K	S	T	IØ				
PAC-4-HV	13	4	4Ø	22	90	52	5	42	32	35	20	15	6	14	5Ø	15	30	12	12	5Ø	53	100	150 Kgs.	0.16
PAC-6-HV	17	6	6Ø	34	128	68	5	55	46	54	26	19	10	19	6.8Ø	23	36	15	15	5.5Ø	75	152	400 Kgs.	0.49
PAC-8-HV	24	8	8Ø	48	165	87	5	67	58	55	38	26	10	20	8.5Ø	35	50	20	20	8.5Ø	96	185	900 Kgs.	1.06

PAC-4-HV and PAC-6-HV are also available in stainless steel as model PAC-4-HV-S.S. and PAC-6-HV-S.S. respectively.

PULL ACTION CLAMP - LATCH TYPE - HORIZONATAL

These are newly introduced models having same dimensions of mounting etc. as PAC-HV series given on previous page but with a modified low height handle suitable for only horizontal locking.

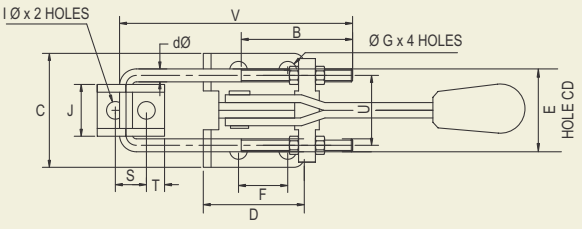


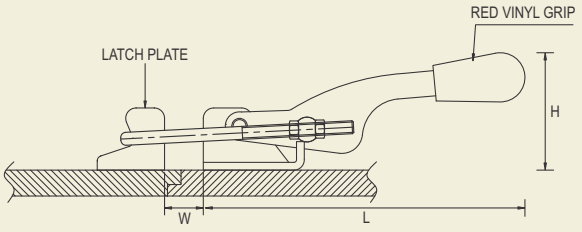


MODEL	A	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP							MOUNTING BASE OF LATCH PLATE					H	L	HOLDING CAPICITY	N. W. Kgs.
						Min.	Max.	C	D	E	F	M	N	GØ	J	K	S	T	IØ				
PAC-4-H	13	4Ø	22	90	52	5	42	32	35	20	15	6	14	5Ø	15	30	12	12	5Ø	29	100	150 Kgs.	0.14
PAC-6-H	17	6Ø	34	128	68	5	55	46	54	26	19	10	19	6.8Ø	23	36	15	15	5.5Ø	50	152	400 Kgs.	0.44
PAC-8-H	24	8Ø	48	165	87	5	66	58	55	38	26	10	20	8.5Ø	35	50	20	20	8.5Ø	61	185	900 Kgs.	0.88

PAC-4-H and PAC-6-H are also available in stainless steel as model PAC-4-H-S.S. and PAC-6-H-S.S. respectively.

HORIZONTAL LATCH CLAMP - MEDIUM DUTY

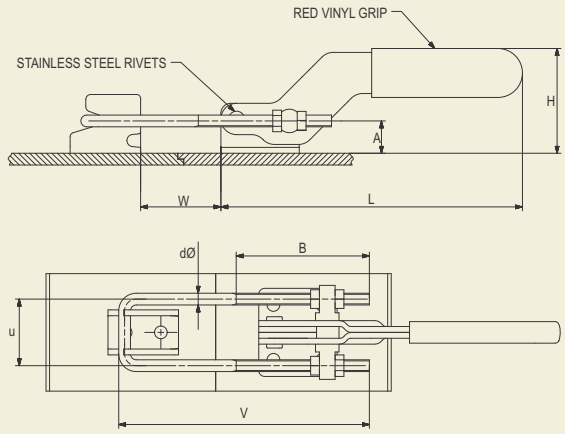




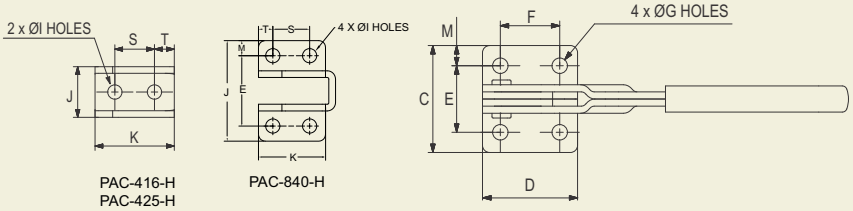
Also available in stainless steel

MODEL	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP					MOUNTING BASE OF LATCH PLATE				H	L	HOLDING CAPICITY	N. W. Kgs.
					Min.	Max.	C	D	E	F	GØ	J	S	T	IØ				
PAC-5-H	5Ø	27	115	68	5	50	44	39	31	19	6.8Ø	20	12	7	6.8Ø	35	100	250 Kgs.	0.22
PAC-520-H	5Ø	27	115	68	5	50	44	39	32	20	6.5Ø	20	11	7.5	6.5Ø	35	100	250 Kgs.	0.22

PULL ACTION CLAMP LATCH TYPE - HORIZONTAL - NEW SERIES

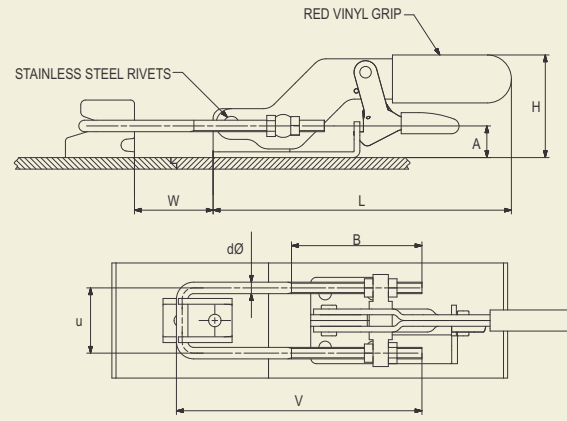


MOUNTING DIMENSIONS

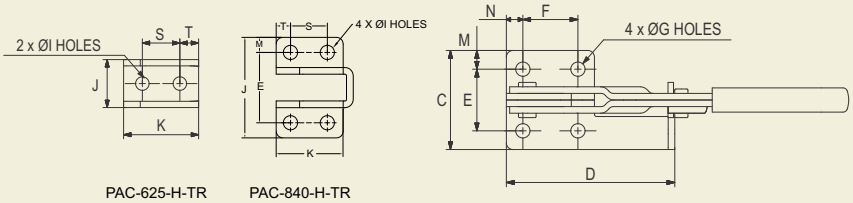


MODEL	A	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP							MOUNTING BASE OF LATCH PLATE					H	L	HOLDING CAPICITY	N. W. Kgs.
						Min.	Max.	C	D	E	F	M	N	GØ	J	K	S	T	IØ				
PAC-416-H	15	4Ø	22	88	52	5	42	30	26	20	16	5	5	4.5Ø	15	30	11	9.5	4.5Ø	35	100	100 Kgs.	0.13
PAC-625-H	17	6Ø	34	128	68	5	55	45	40	28	25	8.5	7.5	6.5Ø	23	36	18	9	6.5Ø	54	156	400 Kgs.	0.42
PAC-840-H	26	8Ø	48	165	87	5	66	60	60	42	40	10	10	8.5Ø	60	40	22	8.5	8.5Ø	66	185	900 Kgs.	0.90

PULL ACTION CLAMP LATCH TYPE - HORIZONTAL WITH TRIGGER LOCK



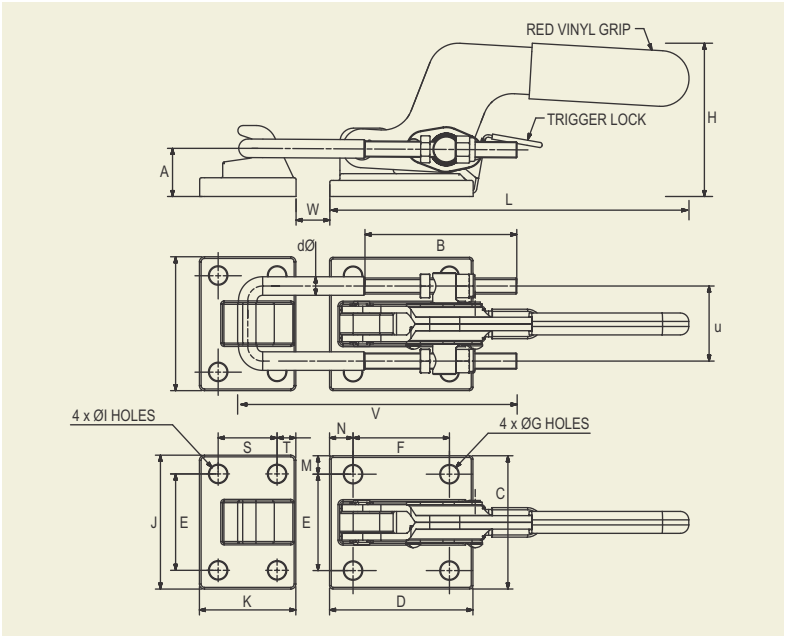
MOUNTING DIMENSIONS



MODEL	A	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP							MOUNTING BASE OF LATCH PLATE					H	L	HOLDING CAPICITY	N. W. Kgs.
						Min.	Max.	C	D	E	F	M	N	GØ	J	K	S	T	IØ				
PAC-625-H-TR	17	6Ø	34	128	68	5	55	45	76	28	25	8.5	7.5	6.5Ø	23	36	18	9	6.5Ø	54	156	400 Kgs.	0.43
PAC-840-H-TR	26	8Ø	48	165	87	5	66	60	94	42	40	10	10	8.5Ø	60	40	22	8.5	8.5Ø	66	185	900 Kgs.	0.92

HORIZONTAL LATCH CLAMP - HEAVY DUTY MODEL PAC-10-H & PAC-10-H-TR with TRIGGER LOCK

This model is for applications where heavy duty Latch type clamping is required. Clamp base and Latch plate are made of solid steel. Pulling pin is housed in carbon steel bush for extra rigidity. Also available TR model with an added advantage of trigger lock which enables the clamp to remain locked even in conditions of high vibration unless the trigger is pulled.



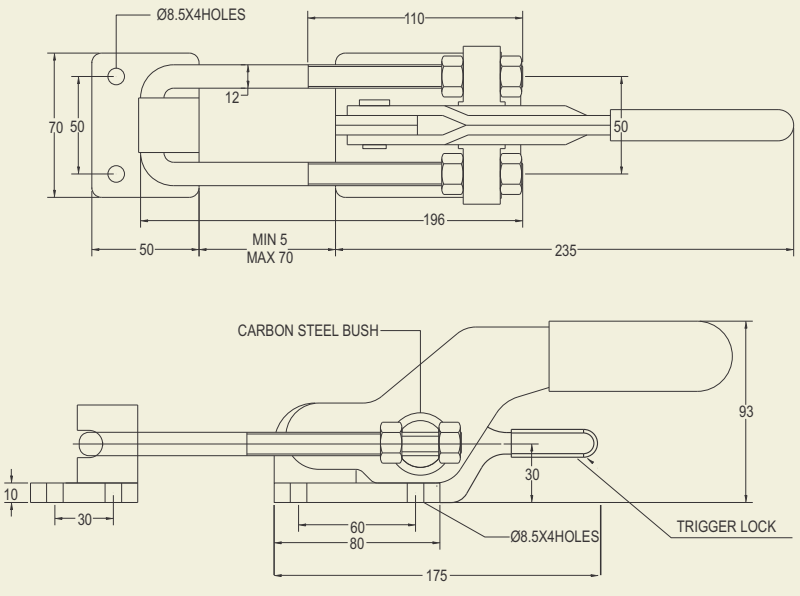
WITHOUT TRIGGER LOCK

WITH TRIGGER LOCK

MODEL	A	dØ	U	V	B THREAD LENGTH	W		MOUNTING BASE OF CLAMP							MOUNTING BASE OF LATCH PLATE					H	L	HOLDING CAPICITY	N. W. Kgs.
						Min.	Max.	C	D	E	F	M	N	GØ	J	K	S	T	IØ				
PAC-10-H Without Trigger Lock	28.5	9.5Ø	44.5	146	54	5	25	79	85	57.2	57.2	10.9	13.9	10.5Ø	79	57	35	11	10.5Ø	91	213	2000 Kgs.	1.80
PAC-10-H-TR With Trigger Lock	28.5	9.5Ø	44.5	146	54	5	25	79	85	57.2	57.2	10.9	13.9	10.5Ø	79	57	35	11	10.5Ø	91	213	2000 Kgs.	1.80
PAC-11-H Without Trigger Lock	28.5	11Ø	44.5	165	90	5	45	79	85	57.2	57.2	10.9	13.9	10.5Ø	79	57	35	11	10.5Ø	91	213	3000 Kgs.	2.10
PAC-11-H-TR With Trigger Lock	28.5	11Ø	44.5	165	90	5	45	79	85	57.2	57.2	10.9	13.9	10.5Ø	79	57	35	11	10.5Ø	91	213	3000 Kgs.	2.10

HORIZONTAL LATCH CLAMP - HEAVY DUTY MODEL PAC-12-H & PAC-12-H-TR with TRIGGER LOCK

This model is for applications where heavy duty Latch type clamping is required. Clamp base and Latch plate are made of solid steel. Pulling pin is housed in carbon steel bush for extra rigidity. Also available TR model with an added advantage of trigger lock which enables the clamp to remain locked even in conditions of high vibration unless the trigger is pulled.

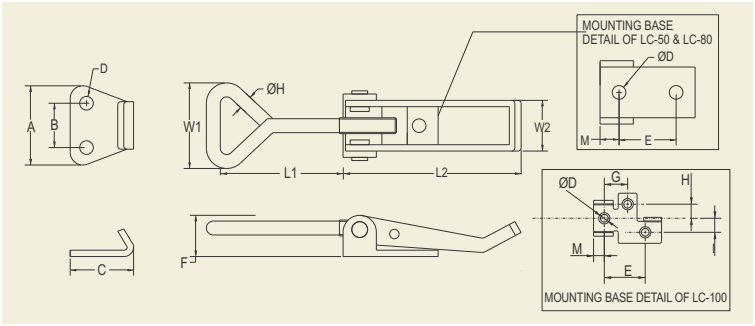


Holding Capacity 3500 Kgs
N.W. 2.2 Kgs.

PAC-12-H
WITHOUT TRIGGER LOCK

PAC-12-H-TR
WITH TRIGGER LOCK

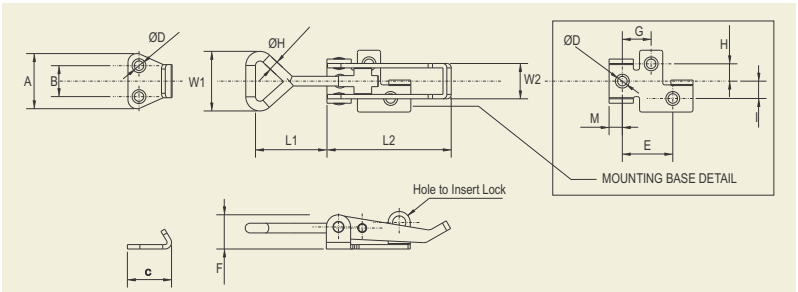
HORIZONTAL LATCH CLAMP - LIGHT DUTY



MODEL	L1	L2	F	W1	W2	A	B	C	ØD	ØH	E	M	G	H	I	HOLDING CAPACITY	N. W. Kgs.
LC-50	18~38	55	14	27	16	25	14	20	4.3	4.4	18	6	-	-	-	70 Kgs.	0.045
LC-80	20~54	67	18	32	20	30	17	22	5.3	5.3	17	14	-	-	-	80 Kgs.	0.09
LC-100	30~60	98	23	48	30	45	22	29	5.3	7.0	36	12	19	11	11	100 Kgs.	0.21

Above models are also available in Stainless Steel as model LC-50-S.S., LC-80-S.S and LC-100-S.S.

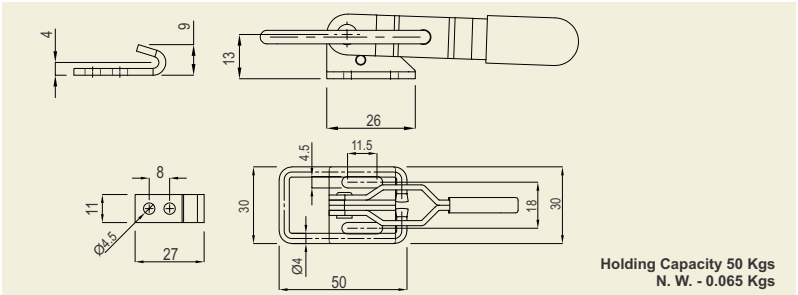
HORIZONTAL LATCH CLAMP - LIGHT DUTY - LOCKABLE TYPE



MODEL	L1	L2	F	W1	W2	A	B	C	ØD	ØH	E	M	G	H	I	HOLDING CAPACITY	N. W. Kgs.
LC-50-L	18~38	55	14	27	16	25	14	20	4.3	4.4	23	6	13	8	8	70 Kgs.	0.05
LC-80-L	20~54	67	18	32	20	30	17	22	5.3	5.3	27	14	10	8	9	80 Kgs.	0.095

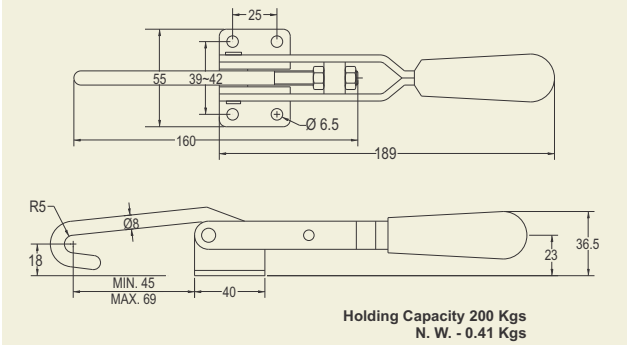
Above models are also available in Stainless Steel as model LC-50-L-S.S. and LC-80-L-S.S.

HORIZONTAL LATCH CLAMP - ECONOMY SERIES MODEL ELC- 40



Holding Capacity 50 Kgs
N. W. - 0.065 Kgs

PULL ACTION CLAMP - HOOK TYPE MODEL HPA-8



Holding Capacity 200 Kgs
N. W. - 0.41 Kgs

INTRODUCTION

Toggle Clamps with Pneumatic Operation have a Pneumatic cylinder mounted for operation only, the clamping force exerted comes from the toggle mechanism. Pneumatic operation has following advantages :

- **High speed operation**
- **Any number of clamps can be operated simultaneously with the help of a switch.**
- **Clamps can be operated in any desired sequence automatically by controlling the cycle electrically.**
- **Clamps can be mounted at normally inaccessible position which are not in operator's reach for manual operation.**
- **Reed switch mounted pneumatic cylinders can be used if position sensoring is required.**

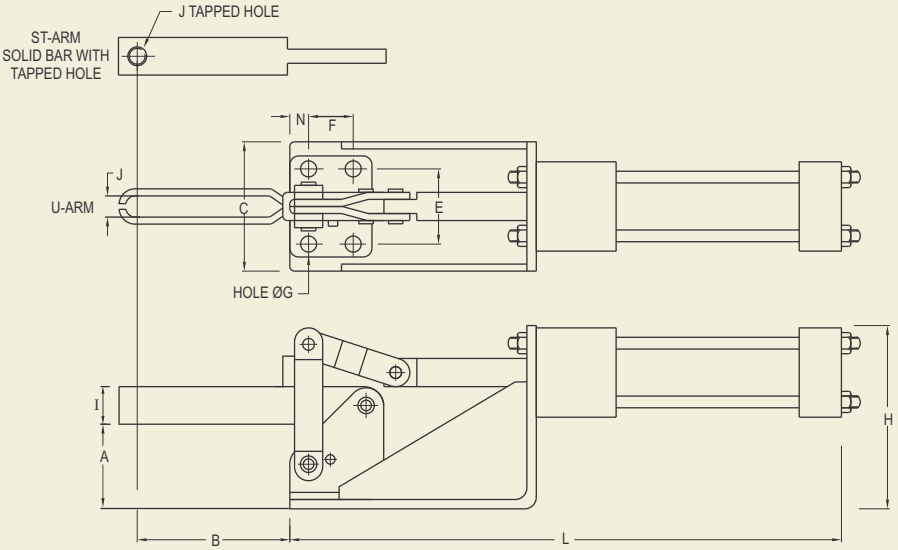
'TOOLFAST' Toggle Clamps with Pneumatic Operation are available in different sizes in both Hold Down Action and Push Action as given below.

HOLD DOWN TOGGLE CLAMP - PNEUMATIC OPERATION

'TOOLFAST' Hold Down Toggle Clamps with Pneumatic Operation are available in following sizes and following two types of arms :

U- Arm :- This is the most widely used type which permits to locate the clamping spindle anywhere along the length of the arm.

ST- Arm :- This is a solid bar with a tapped hole at the end. This arm can also be cut to any required length and hole can be made at any desired position or a separate clamping assembly can be welded at any desired point as per the application.



MODEL	ARM TYPE*	A	B MAX.	MOUNTING BASE					I	J SUITABLE FOR SPINDLE DIA	L	H	HOLDING CAPACITY	N. W. Kgs.
				C	E	F	N	ØG						
POHD-35-U	U-ARM	36	65	60	32	19	8	6.8Ø	16	M-8	276	81	200 Kgs.	1.52
POHD-35-ST	ST-ARM													1.60
POHD-50-U	U-ARM	49	95	75	44	28	8.5	8.5Ø	18	M-10	345	104	400 Kgs.	2.57
POHD-50-ST	ST-ARM													2.67
POHD-85-U	U-ARM	85	135	110	70	50	12.5	10.5Ø	32	M-16	499	167	700 Kgs.	7.40
POHD-85-ST	ST-ARM													7.83

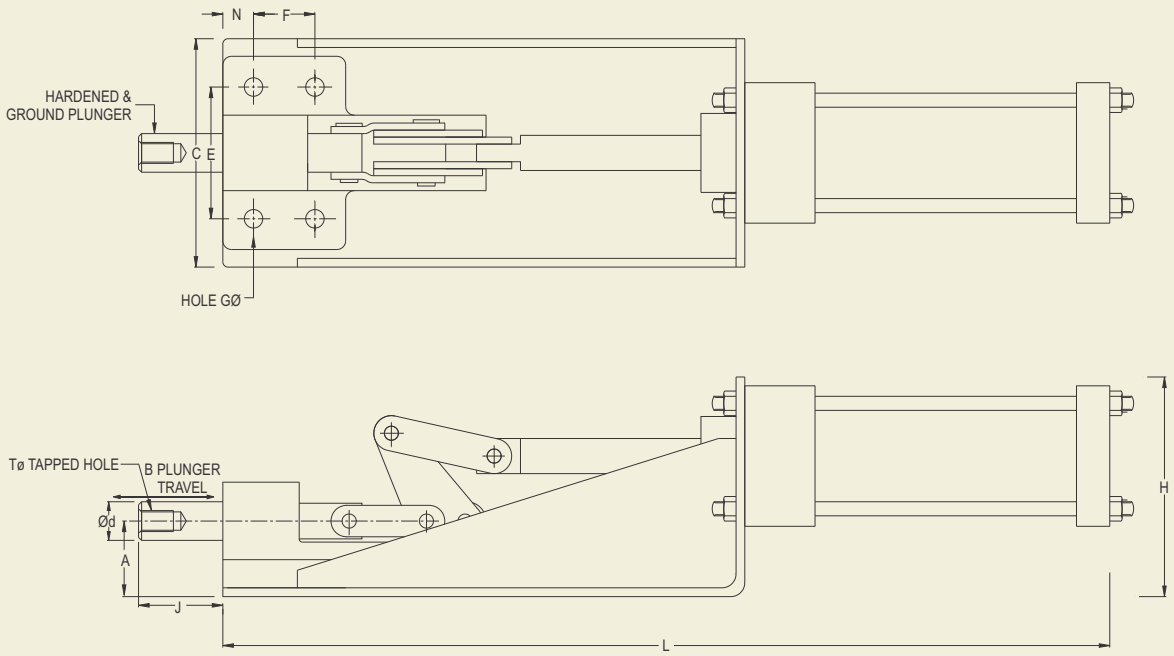
***Above models are also available in BR ARM.**

Standard Accessories provided with Clamp : Standard Hex. Head Clamping Spindle assembly is provided as standard accessory with all above clamps. U-Arm models are provided with 2 nos. U-Flanged Washers also along with clamping spindle assembly.

Optional Accessories : User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

PUSH ACTION TOGGLE CLAMP - PNEUMATIC OPERATION

'TOOLFAST' Push Action Toggle Clamps with Pneumatic Operation are available in following sizes.



MODEL	PLUNGER Ø dØ	TØ	A	PLUNGER TRAVEL B	MOUNTING BASE					J MAX.	L	H	HOLDING CAPACITY	N. W. Kgs.
					C	E	F	N	ØG					
POPA-12	12Ø	M-8x1.25	30	20	80	45	23	11	6.8Ø	34	400	72	600 Kgs.	2.41
POPA-16	16Ø	M-10x1.5	34	25	95	60	28	14	8.5Ø	40	427	82	1000 Kgs.	3.15
POPA-22	22Ø	M-12x1.75	43	30	130	75	35	17.5	10.5Ø	48	549	121	1500 Kgs	8.30

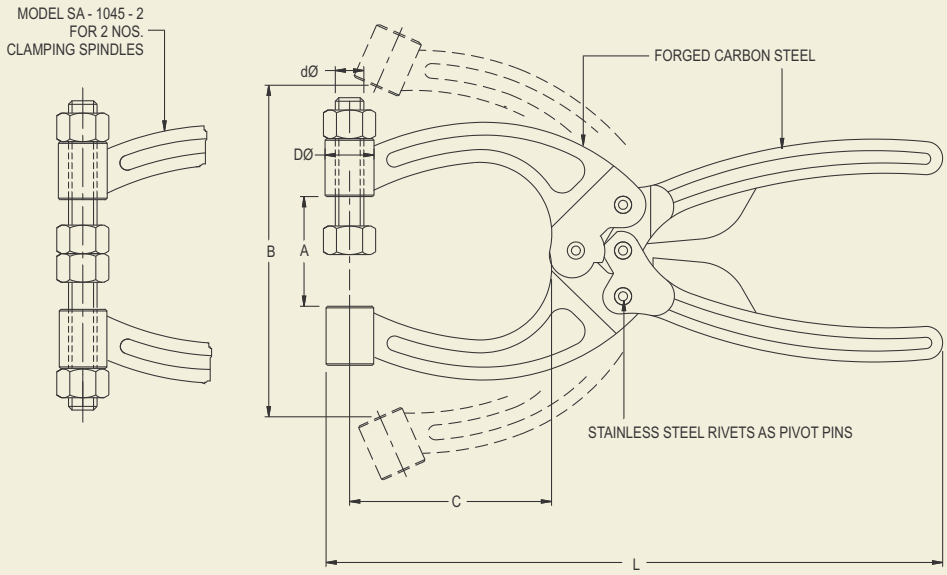
Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory.

Optional Accessories: User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

2D / 3D CAD FILES AVAILABLE FOR ALL TOGGLE CLAMP MODELS ON REQUEST

SQUEEZE ACTION TOGGLE CLAMP

'TOOLFAST' Squeeze Action Toggle Clamps hold the work piece between two clamping jaws like a plier and lock in that position like a toggle clamp and stay locked until the handles are pulled apart. These clamps are precision machined carbon steel forgings which withstand the heat of welding temperature without distortion.
These are available in two different types, one allowing use of single clamping spindle and other allowing use of two clamping spindles.



MODEL	dØ CLAMPING SPINDLE	A	MAX. JAW OPENING B	C	DØ	L	HOLDING CAPACITY	N. W. Kgs.
SA-1045	M10 (1 No.)	45	85	70	19	220	400 Kgs.	0.70
SA-1045-2	M10 (2 Nos)	45	85	70	19	220	400 Kgs.	0.71

Standard Accessories provided with Clamp: Standard Hex. Head Clamping Spindle assembly is provided as standard accessory. 2nos. Spindle assemblies are provided with 2 spindle model.

Optional Accessories: User can select an optional clamping spindle assembly as per the application from the different types of clamping spindle assemblies shown on one of the following pages and order these separately.

CLAMPING SPINDLE ASSEMBLIES FOR TOGGLE CLAMPS

STANDARD ACCESSORIES

STANDARD HEX. HEAD SPINDLE ASSEMBLY : Suitable sizes of these spindle assemblies are provided as standard accessory with all toggle clamps.

U-FLANGED WASHERS : Set of U-Flanged Washers is provided as standard accessory with all U models of toggle clamps.

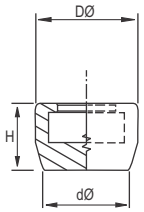
OPTIONAL ACCESSORIES

User can select an optional spindle accessories from following types and if required can order these separately.

RUBBER CAPS FOR STANDARD HEX. HEAD SPINDLE

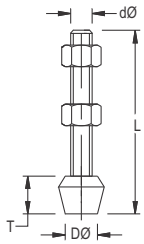
MODEL	DØ	dØ	H
RC-5	12	9	10
RC-6	15	12	10
RC-8	18	15	12
RC-10	23	19	15
RC-12	25	21	17
RC-16	32	27.5	21.5

Most convenient to convert the standard hex head spindle into rubber tip spindle by simply manually inserting the rubber cap onto the spindle hex.



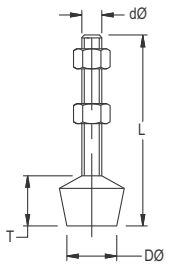
NYLON TIPPED SPINDLE ASSEMBLY

MODEL	THREAD SIZE dØ	L	T	DØ	N. W. Kgs.
NT-5-25	M-5	25	7	7Ø	0.01
NT-6-25	M-6	25	7	7Ø	0.01
NT-6-40	M-6	40	7	7Ø	0.01
NT-8-50	M-8	50	14	11Ø	0.03
NT-8-100	M-8	100	14	11Ø	0.04
NT-10-75	M-10	75	14	11Ø	0.06
NT-12-50	M-12	50	22	19Ø	0.07
NT-16-60	M-16	60	22	19Ø	0.17
NT-16-125	M-16	125	22	19Ø	0.23



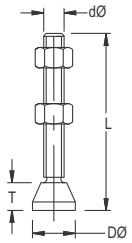
NEOPRENE TIPPED SPINDLE ASSEMBLY

MODEL	THREAD SIZE dØ	L	T	DØ	N. W. Kgs.
NRT-5-45	M-5	45	12	12	0.02
NRT-6-50	M-6	50	15	15	0.02
NRT-8-60	M-8	60	20	20	0.04
NRT-10-90	M-10	90	22	22	0.08



SWIVAL FOOT SPINDLE ASSEMBLY

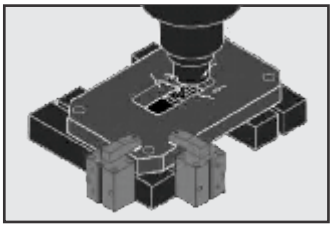
MODEL	THREAD SIZE dØ	L	T	DØ	N. W. Kgs.
SF-8-60	M-8	60	10	16	0.04
SF-10-80	M-10	80	13	20	0.08

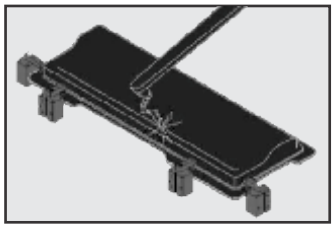


PNEUMATIC AND HYDRAULIC WORKHOLDERS

INTRODUCTION

Power clamping whether Pneumatic or Hydraulic is most widely used in the form of **swing clamps**, which allow unobstructed part fixturing and placement. The plunger rod and the attached clamping arm swings in either a clockwise or counter clockwise direction, then travels down an additional distance to clamp down the fixtured part. Upon release of clamping pressure, the clamping arm travels up to unclamp and swings back in the opposite direction to allow for part removal and new part placement.



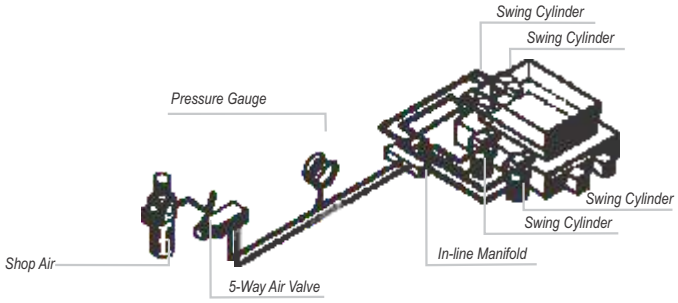


Different types of Pneumatic and Hydraulic Swing Clamps offered by us are illustrated in the following pages of this catalogue.

1. **PNEUMATIC SWING CLAMPS** are used where low clamping forces are needed such as in drilling, tapping or light machining operations of aluminum components. Also widely used in welding fixtures. These clamps are most economical to use as can be operated on in-house air line.

'TOOLFAST' Pneumatic swing clamps are double acting swing cylinders available in different models, shapes and mountings as illustrated in following pages.

Schematic Diagram of Air Line



2. **HYDRAULIC SWING CLAMPS** are used where medium to high clamping force is required such as in machining of components on conventional or CNC Machines.

Selection of type of Hydraulic Cylinder

Single Acting spring return Cylinders are chosen when there are few system restrictions and there are not many cylinders (less than 5 cylinders) retracting simultaneously. These are widely used on conventional machines where a hydraulic power unit is not available on the machine. Single Acting, Spring return cylinders can also be used with hydropneumatic Intensifier.

Double Acting Cylinders are normally used with Hydraulic power units or with Air drive hydraulic pump which gives required hydraulic pressure at its outlet by using in-house air at its input. Double acting Cylinders are used when timing sequences are critical. They are advantageous, as they are less sensitive to system back pressures resulting from long tube lengths or numerous cylinders being retracted at the same time. Unclamp cycle can also be controlled in double acting cylinders.

Selection of Cylinder in terms of Clamping force : Suitable size of Cylinder should be selected depending upon the clamping force required to clamp the work piece. For determination of clamping force required, apart from clamping force calculation, the best clue can be had from the bolt size being used in the mechanical clamp of the existing fixture.

'TOOLFAST' Hydraulic Clamps are available in single as well as double acting cylinders in different models, shapes and mountings as illustrated in following pages.

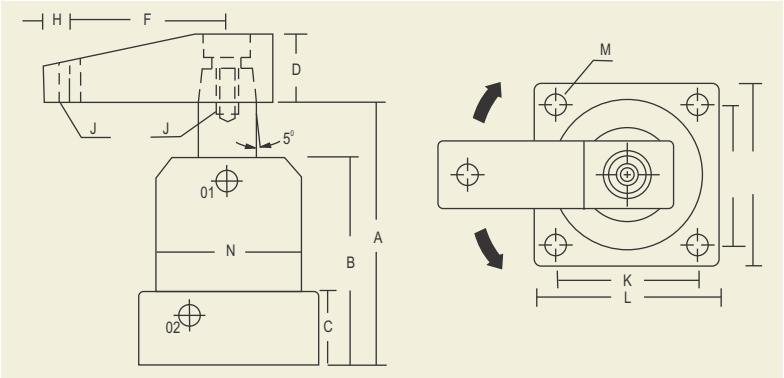
2D / 3D CAD FILES AVAILABLE ON REQUEST

PSF SERIES : PNEUMATIC LOWER FLANGE VERSION SWING CLAMP - DOUBLE ACTING, 4-7 KG/CM^2 INLET AIR PRESSURE

Widely used for low clamping forces such as in light machining of aluminium parts or in welding fixtures.
Stainless steel piston rod, black aluminium body with wear resistant anodised finish. Flange version has flanged lower face for easy mounting

Features

- ❑ **Ideal for use on fixtures for mass production on all types of conventional or CNC Machine tools.**
- ❑ **Operates on in-house air line.**
- ❑ **Arm travels vertically straight up and then swings 90 degree for easy job loading / unloading from above.**



MODEL	Unclamp Position A	B	C	D □	F	H	O1,O2 INLETS	J	K	L	MØ	NØ	Piston RodØ	Piston Ø	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 5kg/cm2	Air Consumption (cc.)		N. W. Kgs.
																			Extend	Retract	
PSF 25 R/L	95.5	66.5	23	16	30	8	M 5	M6x1	30	40	4.5	35	14	25	12	14	26	16kg	12.75	8.76	0.40
PSF 32 R/L	102.5	71	23	19	50	9	1/8 BSP	M8x1.25	44	54	6.5	50	16	32	12	14	26	30kg	20.90	15.67	0.70
PSF 40 R/L	106	75	26	19	50	9	1/8 BSP	M8x1.25	48	58	6.5	55	16	40	12	15	27	50kg	33.91	28.49	0.85
PSF 50 R/L	113	80	26	25	70	10	1/8 BSP	M10x1.5	55	68	8.5	60	20	50	14	15	29	85kg	56.91	47.80	1.30
PSF 63 R/L	119	86	30	25	70	10	1/8 BSP	M10x1.5	64	80	8.5	75	20	63	14	15	29	140kg	90.35	81.25	1.80

R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.

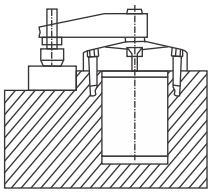
In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

NPSU SERIES : PNEUMATIC UPPER FLANGE VERSION THREADED BODY SWING CLAMP - DOUBLE ACTING, 4-7KG/CM2 INLET AIR PRESSURE

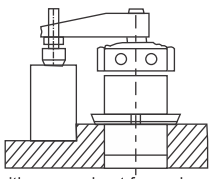
Features

- ❑ Easiest mounting preparation in the swing clamp line.
- ❑ Material Aluminum Alloy Body
- ❑ Swivel Angle 90° ± 2°

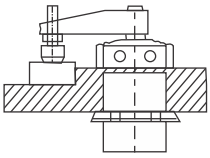
MOUNTING EXAMPLES



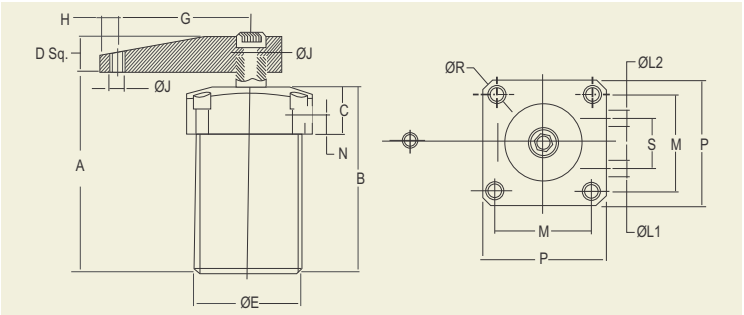
with 4 cap screws from above



with grooved nut from above



with grooved nut from below



MODEL	A Unclamp Position	B	C	D □	E*	G	H	J	Inlets L1 & L2	M	N	P	R	S	Bore Dia.	Swing Stroke	Clamping Stroke	Force in Kgs at (5 kg/cm^2)	N. W. Kgs.
NPSU-25-R/L	119	87	25	16	M40 x 1.5	50	6	M6	M5	37	11.5	50	5.5	23	25	13	14	16	0.70
NPSU-32-R/L	135	98	25	19	M50 x 1.5	60	9	M8	G1/8	45	10.5	60	6.5	23	32	16	14	30	0.80
NPSU-40-R/L	135	98	25	19	M55 x 1.5	70	9	M8	G1/8	50	10.5	65	6.5	26	40	15	15	50	0.85
NPSU-50-R/L	143	105	25	25	M65 x 1.5	80	10	M12	G1/8	58	10.5	75	8.5	32	50	17	15	85	1.00
NPSU-63-R/L	144	106	25	25	M80 x 1.5	90	10	M12	G1/8	70	10.5	90	8.5	35	63	15	15	140	1.20

* GROOVED NUT SUPPLIED AS STANDARD.

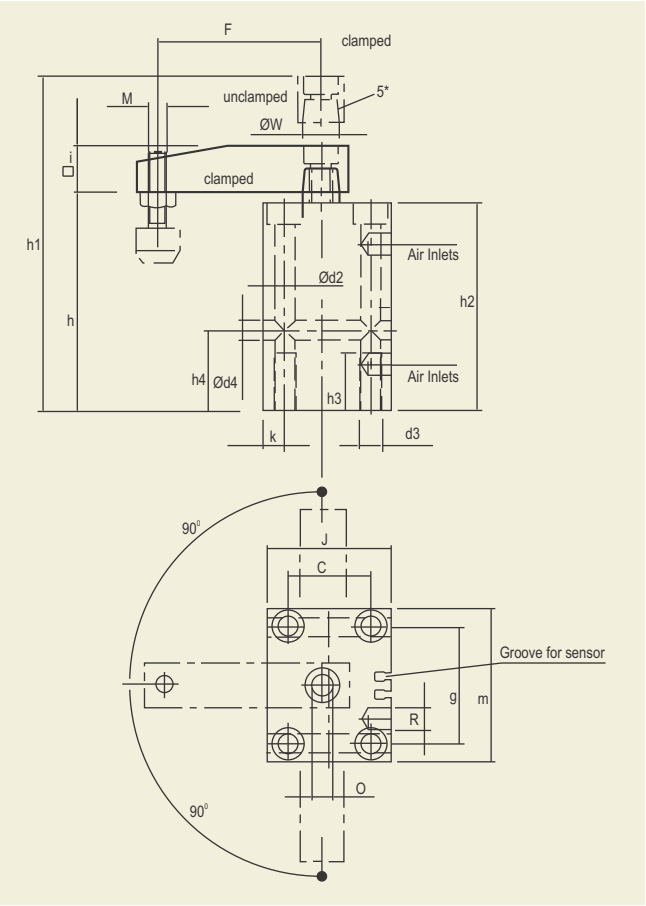
PSB SERIES : PNEUMATIC, SWING CLAMP, BLOCK VERSION - DOUBLE ACTING, 4-7 KG/CM^2 INLET AIR PRESSURE

Widely used for low clamping forces such as in light machining of aluminium parts or in welding fixtures. Cylinder body is made of light weight aluminium alloy having stainless steel piston rod.

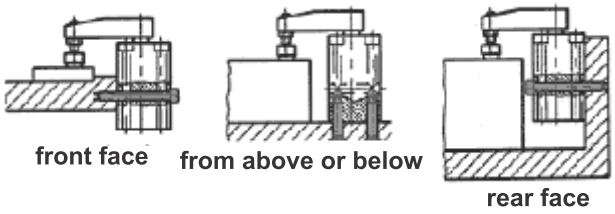
Block version can be mounted directly to side of fixture plate on front or rear faces using through holes or from above with long socket screws or from below using tapped holes in base as shown below. It has magnetic piston to signal end positions. End-position sensors are also available. Details can be given on request.

Features

- ❑ **Ideal for use on fixtures for mass production on all types of conventional or CNC Machine tools.**
- ❑ **Operates on in-house air line.**
- ❑ **Arm travels vertically straight up and then swings 90 degree for easy job loading / unloading from above.**



Examples of Mountings



Model	C	dia. d4	dia. d2	d3	F	g	Clamp Position h	h1	h2	h3	h4	i □
PSB 25 R/L	20	8.5	6.5	M 8	50	40	82	125	78	20	32	16
PSB 32 R/L	30	8.5	6.5	M 8	60	45	95	145	90	20	43	19
PSB 40 R/L	37	8.5	8.5	M 10	70	52	95	145	90	25	40	19
PSB 50 R/L	46	10.5	8.5	M 10	80	66	105	162	100	30	45	25
PSB 63 R/L	60	10.5	10.5	M 12	90	80	105	162	100	30	36	25

Model	k	J	M	m	o	Air Inlets R 2 Nos.	w dia	Piston dia	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 5kg/cm2	N. W. Kgs
PSB 25 R/L	7.5	35	M 6	55	M 8	M 5	14	25	13	14	27	16 kg	0.70
PSB 32 R/L	7.5	45	M 8	60	M 8	1/8 BSP	16	32	16	14	30	30 kg	0.90
PSB 40 R/L	9	55	M 8	70	M 8	1/8 BSP	16	40	15	15	30	50 kg	1.10
PSB 50 R/L	9.5	65	M12	85	M 10	1/8 BSP	20	50	17	15	32	85 kg	1.20
PSB 63 R/L	10	80	M 12	100	M 10	1/8 BSP	20	63	15	15	30	140 kg	1.40

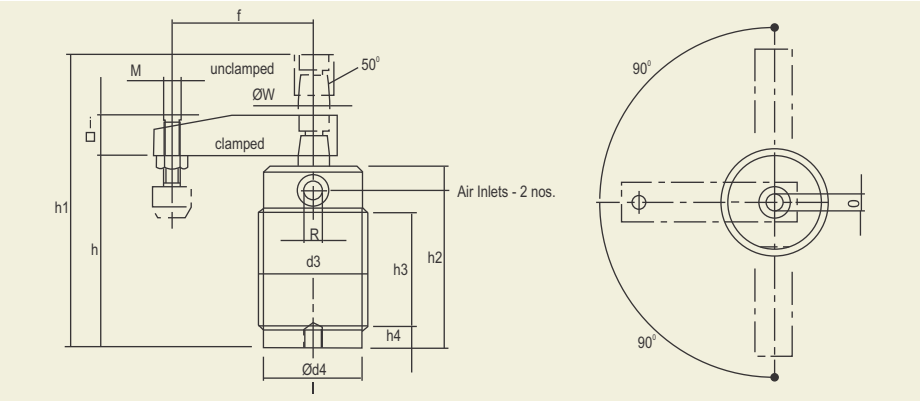
R/L signifies right hand swing / Left hand swing. Please indicate while ordering.
Standard Swing angle is 90°. Other Swing angles are also available on request.

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

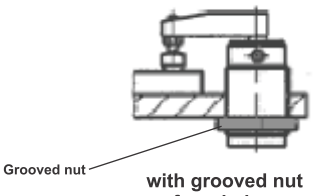
PST SERIES : PNEUMATIC, THREADED VERSION, SWING CLAMP, DOUBLE ACTING, 4-7 KG/CM^2 INLET AIR PRESSURE

Widely used for low clamping forces such as in light machining of aluminum parts or in welding fixtures.

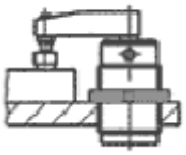
Screw-in version can be mounted inside a hole provided in the fixture plate by locking the cylinder at desired height with the help of grooved nuts supplied as standard accessory, as shown below. These cylinders are also light weight aluminium cylinders having stainless steel piston rod.



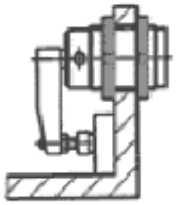
Examples of Mountings



with grooved nut from below



with grooved nut from above



with two grooved nuts

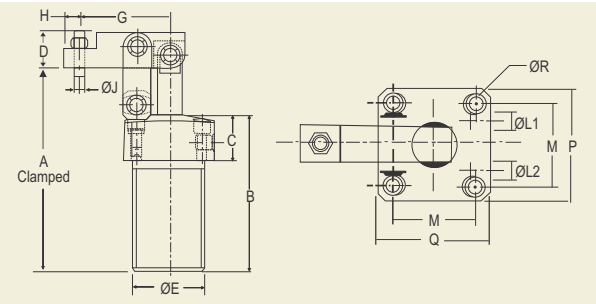
MODEL	d3	dia. d4	f	Clamp Position h	h1	h2	h3	h4	i □	M	O	Air Inlets R 2 nos.	dia. w	Piston dia	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 5kg/cm2	N. W. Kgs
PST 25 R/L	M40x1.5	38	30	74	118	70	35	10	16	M6	M8	M5	14	25	14	14	28	16 kg	0.80
PST 32 R/L	M50x1.5	48	50	83	132	79	40	15	19	M8	M8	1/8 BSP	16	32	16	14	30	30 kg	1.10
PST 40 R/L	M55x1.5	53	50	87	135	83	45	15	19	M8	M8	1/8 BSP	16	40	15	14	29	50 kg	1.25
PST 50 R/L	M65x1.5	62	70	92	145	87	50	15	25	M12	M10	1/8 BSP	20	50	14	14	28	85 kg	1.70
PST 63 R/L	M80x1.5	77	70	97	152	92	56	15	25	M12	M10	1/8 BSP	20	63	15	15	30	140 kg	2.20

R/L signifies right hand swing / Left hand swing. Please indicate while ordering.
Standard Swing angle is 90°. Other Swing angles are also available on request.
2 nos. Grooved nuts are supplied as standard accessory with above clamps

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

PLCU SERIES: PNEUMATIC, UPPER FLANGED VERSION, THREADED BODY LEVER CLAMPS, DOUBLE ACTING, 4-7KG/CM^2 INLET AIR PRESSURE

❑ Unlike swing clamps, in link clamps Arm swings straight up to declamp and down to clamp.

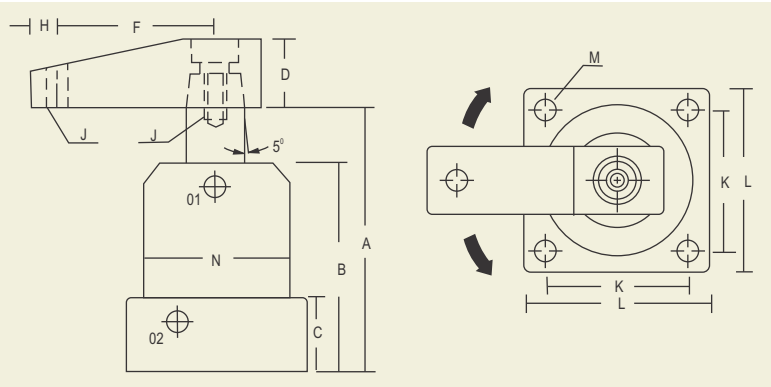


MODEL	A clamped Position	B	C	D □	E*	G	H	J	INLETS L1 & L2	M	P	Q	R	Bore Dia.	Stroke	Force in Kgs. at (7 kg/cm^2)	N. W. Kgs.
PLCU-25	111.5	86.5	25	17	M40 x 1.5	41	7	M6x1.0	M5	37	50	60	5.5	25	22	34	0.60
PLCU-32	129.5	97.5	25	20	M50 x 1.5	52	8	M8x1.25	G1/8	45	60	70	6.5	32	28	56	1.00
PLCU-40	132.5	97.5	25	25	M55 x 1.5	56	10	M8x1.25	G1/8	50	65	75	6.5	40	30	88	1.20
PLCU-50	144	104	25	30	M65 x 1.5	63.5	14	M12x1.75	G1/8	58	75	88	8.5	50	30	137	2.00
PLCU-63	149	105	25	30	M80 x 1.5	74	14	M12x1.75	G1/8	70	90	108	8.5	63	30	218	2.70

*** GROOVED NUT SUPPLIED AS STANDARD.**

HSF SERIES : LOW OIL PRESSURE, HYDRAULIC, FLANGE VERSION SWING CLAMP - DOUBLE ACTING, 20-70 kg/cm^2 INLET OIL PRESSURE.

These are light duty hydraulic swing clamps for medium clamping force having flanged lower face for easy mounting.



Model	Unclamp Position A	B	C	D	F	H	O1, O2	J	K	L	MØ	NØ	Piston Rod Ø	Piston Ø	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 25kg/cm2	Max. Oil Flow Rate (cm2/s)	N. W. Kgs.
HSF 25 R/L	100.5	70	23	25	50	10	M5	M10 x 1.5	40	50	6.5	45	18	25	12	14	26	59 kg	4.7	0.80
HSF 32 R/L	111.0	76	25	25	55	10	1/8 BSP	M10 x 1.5	44	55	6.5	50	20	32	14	15	29	125 kg	11.8	1.00
HSF 40 R/L	113.6	80	27	25	55	10	1/8 BSP	M10 x 1.5	48	62	8.5	54	20	40	14	15	29	200 kg	22.6	1.10
HSF 50 R/L	114.5	80	27	25	55	10	1/8 BSP	M10 x 1.5	57	74	8.5	65	20	50	14	15	29	400 kg	39.6	1.40
HSF 63 R/L	118.0	85	32	32	75	12	1/8 BSP	M12 x 1.75	70	88	10.5	80	25	63	14	15	29	600 kg	63.0	2.30

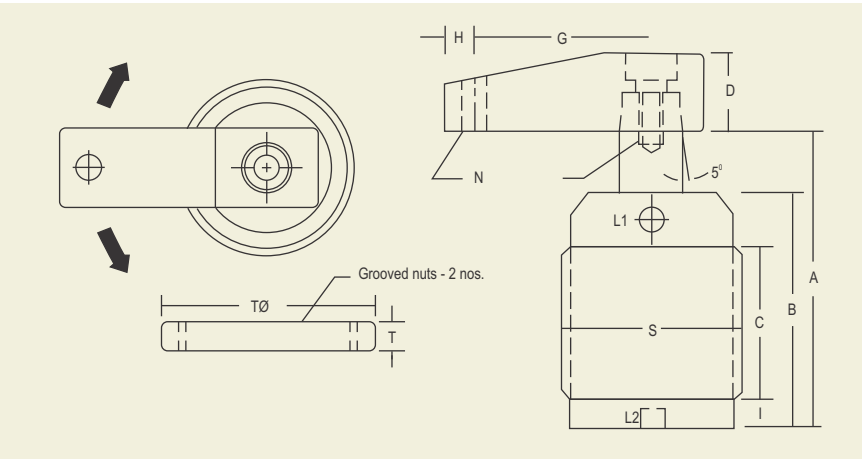
R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

Also available in manifold type mounting.

HST SERIES : LOW OIL PRESSURE, HYDRAULIC, THREADED VERSION SWING CLAMP - DOUBLE ACTING, 20-70 kg/cm^2 INLET OIL PRESSURE.

These are light duty Hydraulic Swing Clamps for medium clamping force having threading on outside of cylinder as in PST Series.

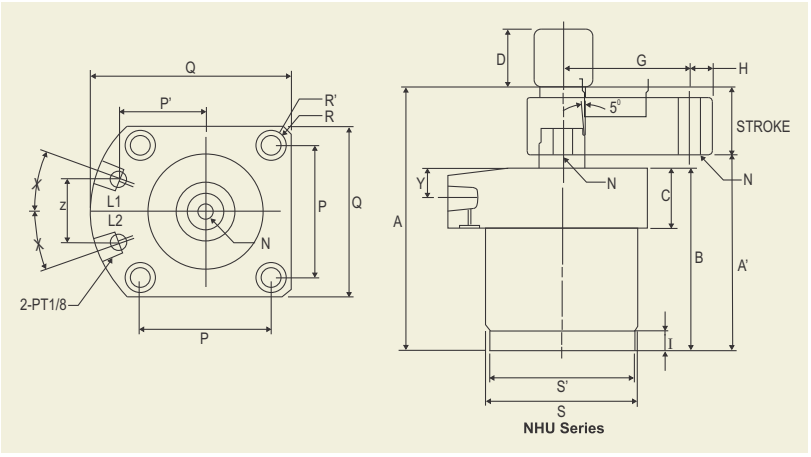


Model	Unclamp Position A	B	C	D	G	H	L1, L2	N	S	T (x 2 pieces)	TØ	Piston Rod Ø	Piston Ø	Stroke During Swing	Straight Clamping Stroke	Total Stroke	Clamping Force at 25kg/cm2	Max. Oil Flow Rate (cm2/s)	N. W. Kgs.
HST 25 R/L	100.5	70	35	25	50	10	M5	M10 x 1.5	M45 x 1.5	10	65	18	25	12	14	26	59 kg	4.7	0.80
HST 32 R/L	111.0	76	45	25	55	10	1/8 BSP	M10 x 1.5	M50 x 1.5	11	70	20	32	14	15	29	125 kg	11.8	1.00
HST 40 R/L	113.6	80	45	25	55	10	1/8 BSP	M10 x 1.5	M55 x 1.5	11	75	20	40	14	15	29	200 kg	22.6	1.25
HST 50 R/L	114.5	80	45	25	55	10	1/8 BSP	M10 x 1.5	M65 x 1.5	12	85	20	50	14	15	29	400 kg	39.6	1.70

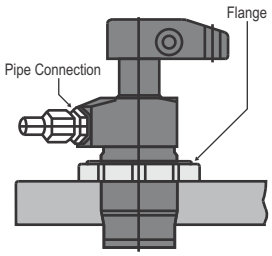
R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.
2 nos. grooved nuts supplied as standard accessory.

In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

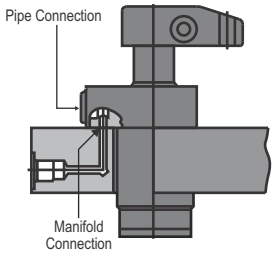
NHU SERIES : LOW OIL PRESSURE, HYDRAULIC, UPPER FLANGE PIPE MOUNTING / MANIFOLD MOUNTING SWING CLAMP - DOUBLE ACTING, 20-70 Kg/cm^2 INLET OIL PRESSURE



NHU Series



Threaded



Manifold Mount

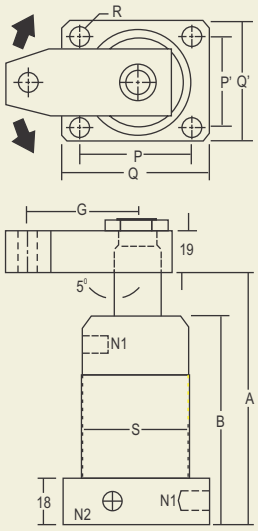
	NHU-32 R/L	NHU-40 R/L	NHU-50 R/L	NHU-63 R/L
Normal Pressure	20-45 kg/cm^2			
Swivel Stroke	14	14	14	14
Clamping Stoke (mm)	15	15	15	15
Bore Diameter Ø (mm)	32	40	50	63
Piston Rod Ø (mm)	20	20	20	25
Clamp Force (25 kg/cm^2)	125kg	200kg	400kg	600kg
A (mm) *unclamp	111	114	114.5	118
A' (mm) *clamp	82	85	85.5	89
B (mm)	76	80	80	85
C (mm)	25	27	27	32
D (mm)	☐25.4	☐25.4	☐25.4	☐32
G (mm)	55	55	55	75
H (mm)	10	10	10	11
I (mm)	9	9	9	9
L1 (clamp)/ L2 (unclamp)	1/8 PT	1/8 PT	1/8 PT	1/8 PT
Manifold Mounting O-ring	P7	P7	P7	P7
N (mm)	M10 x 1.5	M10 x 1.5	M10 x 1.5	M12 x 1.75
P/P' (mm)	44 / 30	48 / 31.4	57 / 37.6	70 / 46
Q/Q' (mm)	55 / 68.5	62 / 71.5	74 / 87	88 / 105.5
R/R' (mm)	Ø6.5 /Ø11	Ø6.5 /Ø11	Ø8.5 /Ø14	Ø8.5 /Ø14
S (mm)	M50 x 1.5	M55 x 1.5	M65 x 1.5	M80 x 1.5
S' (mm)	49	53	63	77
X	22.5°	22.5°	20°	22.5°
Y (mm)	12.5	14	14	19
Z (mm)	24.9	26	27.4	38
Net Weight Kgs	1.00	1.10	1.30	2.30

R/L Signifies right hand swing / Left hand swing. Please indicate while ordering. Standard swing angle is 90°. Other Swing angles are also available on request.

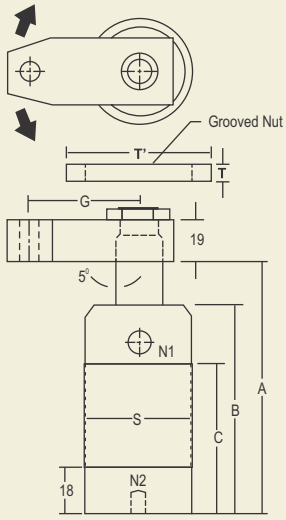
NFS, NFT SERIES : HIGH OIL PRESSURE, HYDRAULIC SWING CLAMPS, INLET OIL PRESSURE 50-350kg/cm²

These are heavy duty Hydraulic Swing Clamps having cylinder made of medium Carbon steel and are used where high clamping force is required.

Available in different types as given below:
NFS Series : Flange Type
NFT Series : Threaded Version



NFS



NFT

FLANGE TYPE	NFS-25A	NFS-32A	NFS-40A	NFS-25B	NFS-32B	NFS-40B
THREADED TYPE	NFT-25A	NFT-32A	NFT-40A	NFT-25B	NFT-32B	NFT-40B
MAX. OPERATING RESSURE	350kg/cm²					
NORMAL OPERATING PRESSURE	50-210kg/cm²					
CYLINDER OPERATION	SINGLE - ACTING			DOUBLE-ACTING		
STROKE DURING SWING (mm)	12			15		
STRAIGHT CLAMPING STROKE (mm)	11			18		
SWIVEL ANGLE	90°(60°45°0°)±2°					
PISTON-Ø (mm)	25	32	40	25	32	40
PISTON ROD-Ø (mm)	18	22	25	18	22	25
THEORETICAL CLAMPING FORCE at 210kg/cm²	495kg	890kg	1600kg	495kg	890kg	1600kg
A (UNCLAMP POSITION) (mm)	127	127	127	134	134	134
B (mm)	98	97	98	98	97	98
C (mm)	66	70	72	66	70	72
G (mm)	45	50	50	45	50	50
K (mm)	9	10	12	9	10	12
N1 (clamp) (mm)	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP	1/8 BSP
N2 (unclamp) (mm)				1/8 BSP	1/8 BSP	1/8 BSP
P (mm)	50	54	66	50	54	66
P' (mm)	30	34	40	30	34	40
Q (mm)	64	68	84	64	68	84
Q' (mm)	46	54	64	46	54	64
R (mm)	6.5Ø	8.5Ø	8.5Ø	6.5Ø	8.5Ø	8.5Ø
S (mm)	45x1.5	50x1.5	60x1.5	45x1.5	50x1.5	60x1.5
T (x2 pcs) (mm)	10	11	11	10	11	11
T' (mm)	65Ø	70Ø	80Ø	65Ø	70Ø	80Ø
N.W. Kgs NFS	1.60	1.80	2.80.	1.40	1.70	2.70
NFT	1.80	2.10	3.20	1.80	2.10	3.20

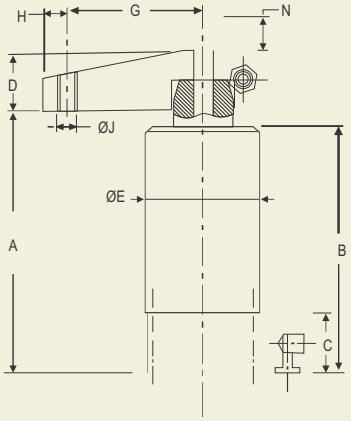
Please indicate while ordering whether required Right Hand Swing or Left Hand Swing (R/L). Standard swing angle is 90°. Other swing angles (60°, 45°, 0°) are also available on request. 2 nos. grooved nuts are supplied as standard accessory with NFT series.

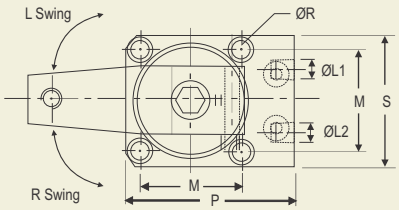
In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.

030 SERIES: HIGH OIL PRESSURE HYDRAULIC, BOTTOM FLANGE VERSION SWING CLAMP, DOUBLE ACTING, INLET OIL PRESSURE 35-350 kg/cm^2

Features

- ❑ Flexible design allows for manifold or threaded port connection in one cylinder body.
- ❑ Material Medium Carbon steel Body
- ❑ Swivel Angle 90° ± 2°





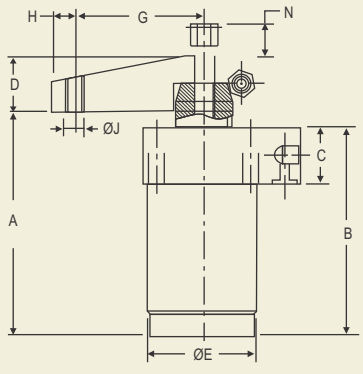
MODEL	A Unclamp Position	B	C	D □	E	G	H	J	INLETS L1 & L2	M	N	P	R	S	Bore Dia.	Swing Stroke	Clamping Stroke	Clamping Force in Kgs (210 kg/cm^2)	N. W. Kgs.
030 - 92 - R/L	126	102	25	25	47.8	45	11	M10	G1/4	42	14.5	70.1	6.9	54	32	10	12	550	2.2
030 - 202 - R/L	143	110	25	30	63.8	55	15	M12	G1/4	55	16	85.1	8.5	70	44	14	14	1100	4.0
030 - 352 - R/L	155	115	25	40	80	68	15	M16	G1/4	70	24	100.1	10.8	89	55	14	16	2100	5.95

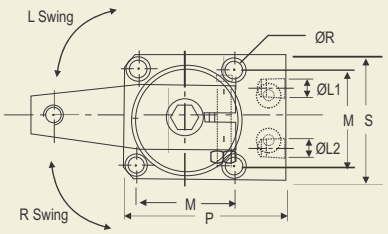
ABOVE CLAMPS ALSO AVAILABLE IN SINGLE ACTING CYLINDERS

050 SERIES: HYDRAULIC HIGH OIL PRESSURE, UPPER FLANGE VERSION SWING CLAMP, DOUBLE ACTING, INLET OIL PRESSURE 35-350 kg/cm^2

Features

- ❑ Flexible design allows for manifold or threaded port connection in one cylinder body.
- ❑ Material : Medium Carbon steel Body
- ❑ Swivel Angle : 90° ± 2°

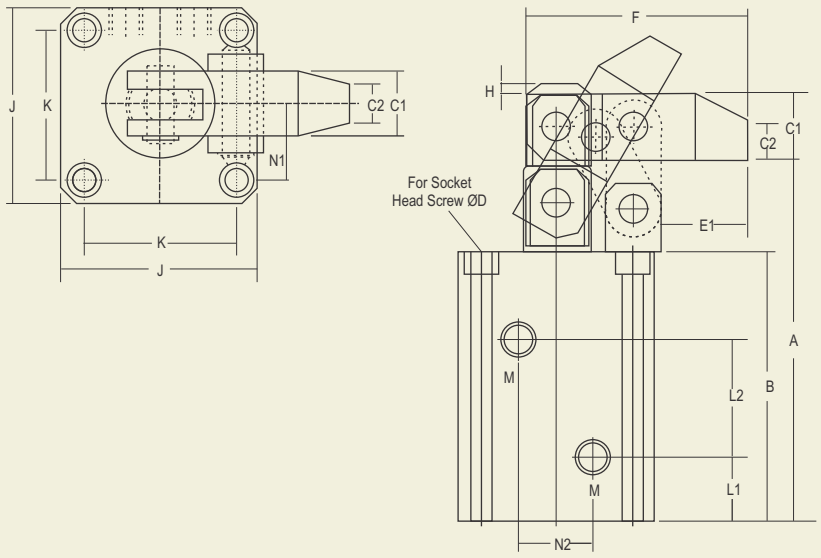




MODEL	A Unclamp Position	B	C	D	E	G	H	J	INLETS L1 & L2	M	N	P	R	S	Bore Dia.	Swing Stroke	Clamping Stroke	Clamping Force in Kgs at(210 kg/cm^2)	N. W. Kgs.
050 - 92 - R/L	118	93.5	25.4	25	47.8	45	11	M10	G1/4	42	14.5	70.1	6.9	54	32	10	12	550	2.2
050 - 202-R/L	135	104.4	25.4	30	63.0	55	15	M12	G1/4	55	16	85.1	8.5	70	44	14	14	1100	4.0
050 - 352-R/L	147	113.8	25.4	40	77.0	68	15	M16	G1/4	70	24	100.1	10.8	89	55	14	16	2100	5.95

ABOVE CLAMPS ALSO AVAILABLE IN SINGLE ACTING CYLINDERS

HLC SERIES : DOUBLE ACTING, 5 - 50 kg/cm² INLET OIL PRESSURE HYDRAULIC LEVER CLAMP



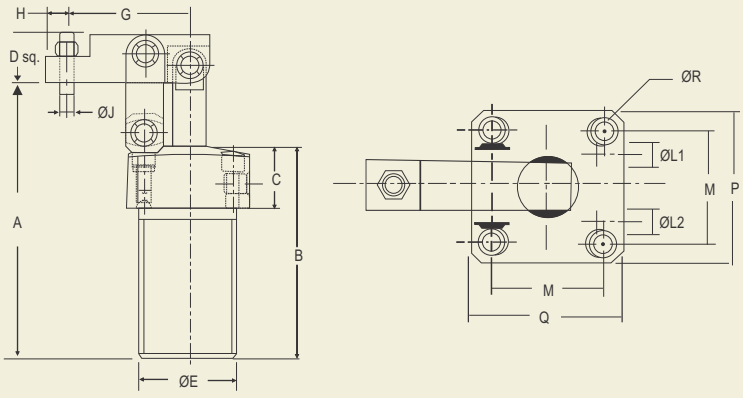
Model	Bore mm	Total Stroke mm	Max. Pressure	Operating Range of Pressure	Clamping Force at 25kg./cm²	A	B	C1	C2	E1	F	H	J	K	L1	L2	M	N1	N2	DØ	N. W. Kgs.
HLC-25	25	25	70kg./cm²	5~50kg./cm²	123Kg.	103	76	19	11	25	64	3	55	42	17	33	1/8PT	20	18	M-6	1.84
HLC-32	32	25			200Kg.	112	85	19	11	25	64	3	57	44	19	38	1/8PT	22	22	M-6	2.11
HLC-40	40	30			315Kg.	122	90	22.2	13	30	77	4	69	52	19	40	1/4PT	26	26	M-8	3.30
HLC-50	50	35			490Kg.	137	100	25.4	15	35.5	90	5	75	58	21.5	45	1/4PT	30	32	M-8	4.33

HLC SERIES ALSO AVAILABLE IN MANIFOLD TYPE MOUNTING

LHC01D SERIES: HYDRAULIC - UPPER FLANGE VERSION, THREADED BODY, DOUBLE ACTING LEVER CLAMP, 20-70 kg/cm² INLET OIL PRESSURE

Features

- ❑ Arm swings straight up to declamp and down to clamp.
- ❑ Material : S45C Body



MODEL	A clamp Position	B	C	D □	E*	G	H	J	Inlets L1 & L2	M	P	Q	R	Bore Dia.	Stroke	Force in Kgs at(25 kg/cm²)	N. W. Kgs.
LHC01D-25	111.5	86.5	25	17	M40 x 1.5	41	7	M6x1.0	1/8 PT	37	50	60	5.5	25	22	123	1.20
LHC01D-32	129	97	25	20	M50 x 1.5	52	8	M8x1.25	1/8 PT	45	60	70	6.5	32	28	200	1.80
LHC01D-40	132	97	25	25	M55 x 1.5	56	10	M8x1.25	1/8 PT	50	65	75	6.5	40	30	315	2.50
LHC01D-50	144	104	25	30	M65 x 1.5	63.5	14	M12x1.75	1/8 PT	58	75	88	8.5	50	30	490	4.00
LHC01D-63	149	105	25	30	M80 x 1.5	74	14	M12x1.75	1/8 PT	70	90	108	8.5	63	30	780	6.50

*** GROOVED NUT SUPPLIED AS STANDARD.**
ALSO AVAILABLE IN SINGLE ACTING CYLINDERS

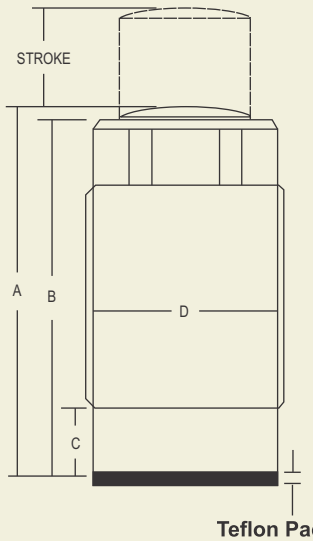
TC SERIES : THREADED BODY CYLINDER, HYDRAULIC, SINGLE ACTING, SPRING RETURN 20 - 350 kg/cm^2 INLET OIL PRESSURE

This is a most simple hydraulic cylinder whose force can be directly used within its stroke for clamping as a push clamp or as a hydraulic support at the rear of a strap clamp. The mounting method of this cylinder is shown in the mounting diagram below illustrating suggested dimensions of the cavity to be made in the fixture. Teflon packing is provided for mounting to avoid oil leakage.

Solid Plunger
A Series

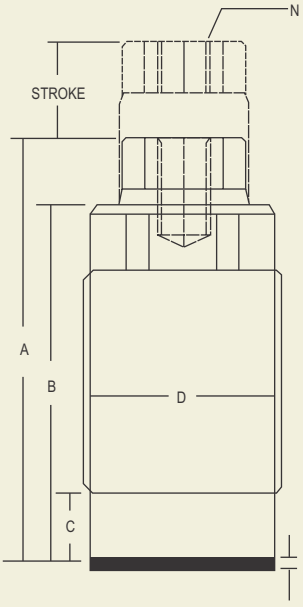
Tapped Plunger
B Series

Solid Plunger

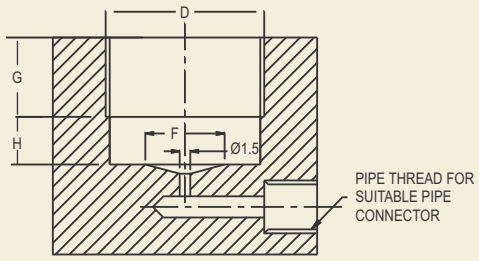


Teflon Packing
1.25 mm thick

Tapped Plunger



Teflon Packing
1.25 mm thick



Suggested Diagram of cavity to be made in the fixture for mounting of threaded body cylinders

MODEL	A	B	C	D	F	G (min)	H (max)	N	Piston dia	Stroke	Force at 200 kg/cm2	N. W. Kgs
TC 12A	38	36	7	M22x1.5	12	12	6	-	12	10	200kg	0.07
TC 16A	46.5	44.5	8	M26x1.5	16	16	7	-	16	12	400kg	0.14
TC 20A	56	54	8	M30x1.5	20	20	7	-	20	15	620kg	0.22
TC 25A	58	55	11	M38x1.5	25	20	10	-	25	16	980kg	0.37
TC 12B	45	36	7	M22x1.5	12	12	6	M6x1.0	12	10	200kg	0.08
TC 16B	52	44.5	8	M26x1.5	16	16	7	M6x1.0	16	12	400kg	0.15
TC 20B	64.5	54	8	M30x1.5	20	20	7	M8x1.25	20	15	620kg	0.24
TC 25B	67	55	11	M38x1.5	25	20	10	M8x1.25	25	16	980kg	0.40

HYDRAULIC WORK SUPPORT

Hydraulic work support is a hydraulic version of a mechanical screw Jack used as a work support element for positively supporting the workpiece to avoid deformation and minimize distortion and vibration of work piece due to cutting and clamping forces.

The Hydraulic work support automatically adjusts to the contour of the workpiece, and then locks in position. This support then adds rigidity to the fixtured component to avoid machining vibrations. They provide either unrested location points to the clamps or support to larger or thin section area of workpiece.

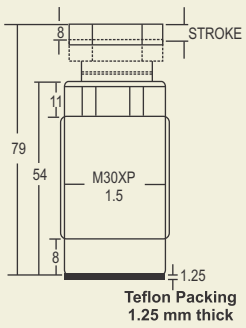
A Type : Spring advance : The spring is used to control a contact force when the knocking out rod (piston rod) extends to a highest knocking-out position and contacts the workpiece.

B Type : Hydraulic advance : When the knocking out rod is at a lowest position, it is operated by means of oil pressure and is knocked out when being filled with oil and uses a spring to control the contact force with the workpiece.

Mounting method of the threaded type Hydraulic Work supports is shown in the mounting diagram below illustrating suggested dimensions of the cavity to be made in the fixture. Teflon packing is provided for mounting to avoid oil leakage.

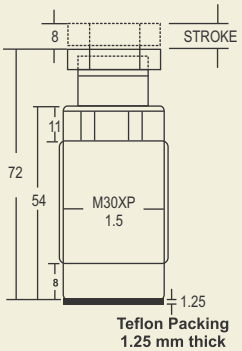
SP SERIES : Hydraulic Work Support - high inlet oil pressure 100- 350 Kg/cm^2

Spring Advance Threaded Body Type SP-16A

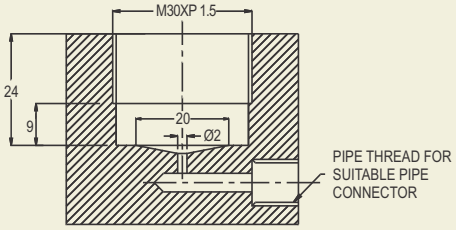


Teflon Packing
1.25 mm thick

Hydraulic Advance Threaded Body Type SP-16B



Teflon Packing
1.25 mm thick

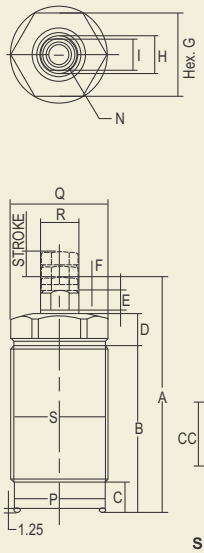


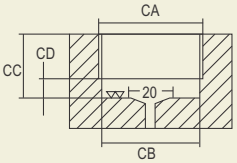
Suggested Diagram of cavity to be made in the fixture for mounting of threaded body work support

MODEL	SP-16A / SP-16B
Normal Operating Pressure	100-350kg/cm^2
Cylinder Operation	Single Acting
Piston Diameter (mm)	16
Stroke (mm)	8
Supporting Force at 200 kg/cm^2	210kg
Net Weight Kgs	0.30

WS-BL SERIES : HYDRAULIC WORK SUPPORT - LOW OIL WORKING PRESSURE - 25-70 Kg/cm^2

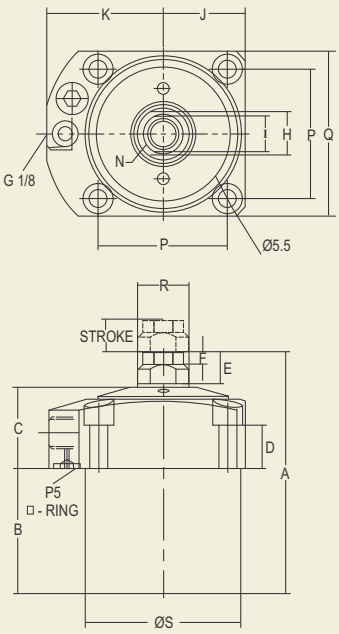
Smaller three sizes are manifold mounting type threaded body and larger sizes are piping type upper flange mounting. All below models are **hydraulic advance.**





Suggested Diagram of cavity to be made in the fixture for mounting of threaded body work support (WS-T-BL Series)

WS-T-BL SERIES



WS-U-BL SERIES

Manifold Type
WS-T-BL

Upper Flange Type
WS-U-BL

Model	WS-T30BL	WS-T36BL	WS-U40BL	WS-U48BL	WS-U55BL
Supporting Force (70kg/cm2) kg	300	400	550	720	1100
Stroke	8	8	8	10	12
Max Pressure	105 kg/cm				
Normal Pressure	25-70 kg/cm				
A	73	69	67	75	85
B	51.8	50	31	39	45
C	9.5	8.4	25	25	25
D	10.2	8	14.5	13.5	11.5
E	7	7	10	10	14
F	4	4	4	4	6
G	27	32	-	-	-
H	8	11	11	12	15
I	10.5	10.5	11	11	14
J	-	-	22.5	25.5	30
K	-	-	31.5	31.5	39
N	M6X12D	M8X11D	M10X11D	M10X11D	M12X13D
P	Ø 28.2	Ø 34.2	34	40	47
Q	Ø 30	Ø 36	45	51	60
Ø R	10	13	13	14	18
S	M30X1.5	M36X1.5	Ø 40	Ø 48	Ø 55
CA	M30X1.5	M36X1.5	-	-	-
CB	28.5	34.5	-	-	-
CC	20-50	20-48	-	-	-
CD	9	8	-	-	-
N. W. Kgs.	0.25	0.35	0.6	0.8	1.4

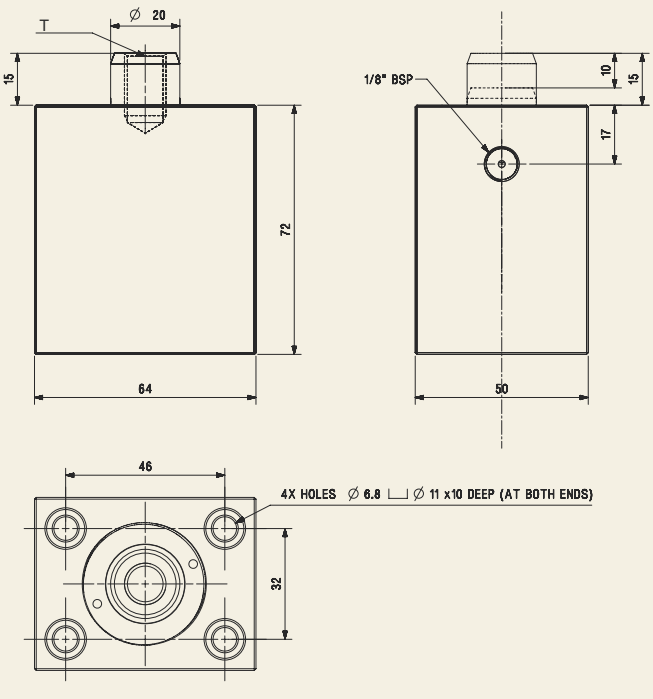
2D / 3D CAD FILES AVAILABLE ON REQUEST FOR ALL MODELS

HPNR SERIES: HYDRAULIC PULL CYLINDER, SHORT STROKE WITH NON-ROTATING PISTON ROD, INLET OIL PRESSURE 50-350 Kg/cm^2, SINGLE ACTING

NOW !! AUTOMATE YOUR WEDGE CLAMPS AND OTHER BOLT-DOWN CLAMPS ON NEW OR EXISTING FIXTURES !

- These pull cylinders can be mounted under the fixture plate to pull down clamping screws of fixture clamps instead of tightening by spanner.
- Unique feature of this cylinder is that the piston rod does not rotate while fixing or removing the clamping screw or during operation which makes it very convenient to adopt.
- Available in M-8, M-10 and M-12 threaded piston rods to suit the most popular sizes of TOOLFAST Wedge clamps and MITEEBITE Pitbull, Uniforce and ID Xpansion clamps.

AUTOMATE THESE MANUAL CLAMPS ON YOUR FIXTURES

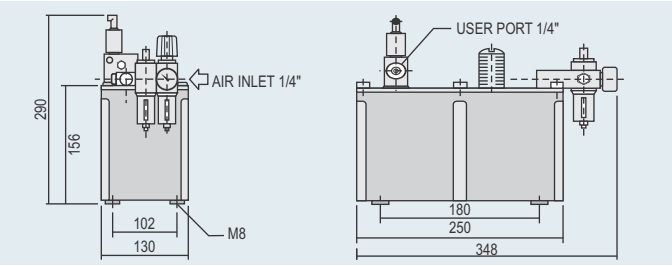


MODEL	THREAD T	PULLING FORCE AT 200Kg/cm^2 INLET OIL PRESSURE	MAX. STROKE mm	PISTON DIA mm	N. W. kgs.
HPNR-1032-8	M - 8	900 Kgs	10	32	1.55
HPNR-1032-10	M - 10	900 Kgs	10	32	1.55
HPNR-1032-12	M - 12	900 Kgs	10	32	1.55

2D & 3D CAD FILES AVAILABLE ON REQUEST

HYDROPNEUMATIC POWER UNIT

GERARDI Hydropneumatic Power Unit for hydraulic clamping devices and its bi-products is designed to meet all needs regarding the powering of hydraulic cylinders where low flow rates and high pressures are required. It is driven by air at its inlet to produce hydraulic pressure at its outlet. The special design shape of the power unit is such that a high performance system can be implemented taking up very little space. Thanks to the special design principles, the pump section adopted allows the hydropneumatic power unit to be installed in very hostile environments, such as the work area of machine tools, etc. The unique modular hydraulic flow control system allows controlling up to 6 separate users from just one power unit.



SPECIFICATION	
MAX. PERMISSIBLE INLET AIR PRESSURE:	7 bar
RECOMMENDED INLET AIR PRESSURE:	5,5 bar
OIL DELIVERIES: 1.2-1.4-2.2-2.7-4.3	Liters/min
MAX. OIL OUTLET PRESSURE AT 5 BAR AIR INLET PRESSURE:	400 bar
MAX. NO. OF USERS RECOMMENDED:	6

Outlet pressure can be regulated and set to desired pressure.

Art. 393 - Power unit with Manual control, Art. 394 - Power unit with Pneumatic control, Art. 395 - Power unit with Electrical control

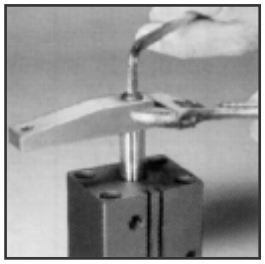
The pump in its basic version is supplied complete with teflon tank, fill plug, silencer, quick acting air connector fitting and hydraulic control box.
Very suitable for operating Single Acting Swing Clamps.

POINTS TO REMEMBER

- If user wants to change the length of the single arm of a clamping cylinder, it should be noted that the length must be less than 1.2 times the standard length in order to avoid serious slanting of the piston rod. If the length in design needs to be larger than the aforesaid limit value, it is better to use double arms in order to extend the life of the cylinder. Double arms are arms extended equally on the other side of piston rod with a support of same height as the workpiece.
- Workpiece should not be clamped within the swing stroke during the downward movement of the clamping arm, and should be clamped within the vertical stroke only.
- During the loading and unloading of a workpiece, it is necessary to use an air gun to clean the cylinder for removing the iron slag or foreign objects attached thereon in order to prevent the foreign objects from entering the seal to cause oil / air leakage.
- It is necessary to use device having F.R.L. (Filters / Regulators / Lubricators) function in the pneumatic line in order to effectively remove the moisture, lubricate the cylinder and avoid the damage of the swing mechanism due to inertia impact of the clamping arm.
- If the direction of the single arm needs to be changed due to the problem of piping, it should be done with a wrench by holding the clamping arm first, and then unscrewing the screw and knocking the clamping arm upward to change its direction as shown in figure below. One should not apply lateral force to the clamping arm or laterally impact the clamping arm to change its direction in assembled position. This can cause damage of the swing mechanism due to improper force applied on it.

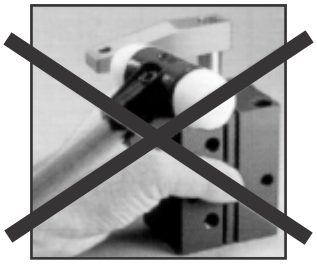
Fitting and removing clamping arm:

Hold clamping arm with spanner. Tighten/loosen screw.



Knock out clamping arm from piston rod.

Caution! Do not strike sides of clamping arm.

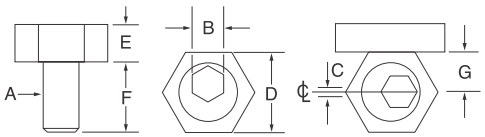


- R/L signifies right hand swing / Left hand swing. Please indicate while ordering. **In right hand swing, when seen from above while clamping down, the arm first swings 90 degrees* clockwise and then clamps down whereas in left hand swing it rotates 90 degrees counterclockwise and then clamps down.**
- *Clamps with swing angle other than 90 degrees are also available. Other swing angles available are 60° and 45°.
- The power source should not exceed the rated maximum pressure and the highest flow value.

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



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

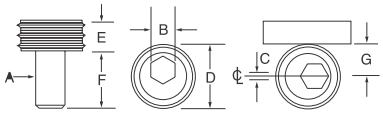
NOTE: Clockwise rotation is recommended. Locating pin should be on the right of workpiece.

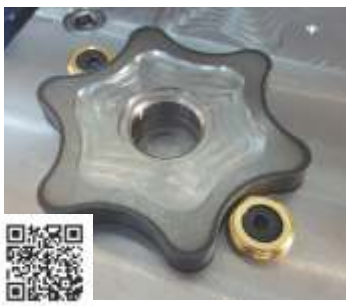
Part Number	A	B	C	D	E	F	G*	Torque (Ft/Lbs)	Holding Force	Clamps Per Pack*	——Replacement—— Cam Screw	Hex Washer
								Torque (N.m.)				
50204	M4	3	.76	7.93	2.80	9.6	3.80	2.0	910 N	10	50363	10580
50206	M6	4	1.01	15.86	4.75	11.2	7.80	8.5	3,558 N	10	50365	10582
50208	M8	5	1.01	20.61	4.55	15.0	10.15	11.3	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	4	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	4	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
								(N.m.)	(N.)			
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 Numbers	use Screw Size	Max. Torque/ Holding Force	Replacement Cam Screw
95110 - 95145	M12	88 N.m. / 17,800 N.	50371

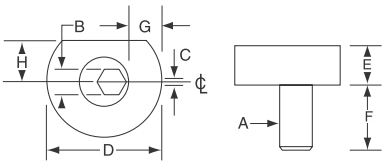
Part Number	Description	Face Number	Distance from ℄ (metric)
95110	1-6 Smooth	1	12mm
95115	1-6 Serrated	2	13mm
		3	14mm
		4	15mm
		5	16mm
		6	17mm
95120	7-12 Smooth	7	18mm
95125	7-12 Serrated	8	19mm
		9	20mm
		10	21mm
		11	22mm
		12	23mm

Part Number	Description	Face Number	Distance from ℄ (metric)
90130	13-18 Smooth	13	24mm
90135	13-18 Serrated	14	25mm
		15	26mm
		16	27mm
		17	28mm
		18	29mm
90140	19-24 Smooth	19	30mm
90145	19-24 Serrated	20	31mm
		21	32mm
		22	33mm
		23	34mm
		24	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) (N.m.)	Holding Force (Lbs) (N.)	Number of Clamps Per Pack	Replacement Cam Screw	Replacement Washer
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

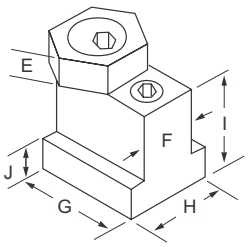
T-SLOT AND ADVANT - EDGE CLAMPS

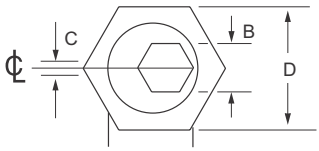
Mitee-Bite T-Slot Kits (Contents: 4 Mitee-Bite T-Nuts, 6 Mitee-Bite Fixture Clamps, 2 Hex Keys)

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

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	Replacement Hex Washer	Replacement T-Nut
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 Toe Clamps

Part Number	T-Slot Size	Number of Clamps Per Pack	Holding Force (N)
50422	8mm	2	3,558
50424	10mm	2	3,558
50426	12mm	2	3,355
50428	14mm	2	8,895
50430	16mm	2	13,340
50432	18mm	2	13,340
50434	20mm	2	26,680
50436	22mm	2	26,680

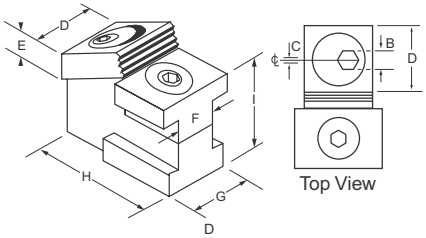
Advant - Edge Clamps

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

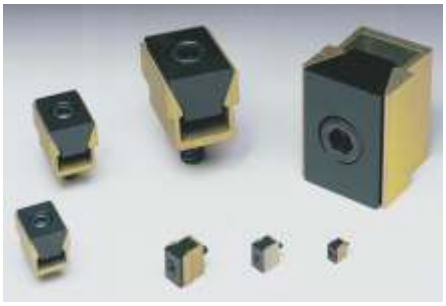
- Tilted clamping element creates a positive downward force and 4,000 lbs. holding force
- Hardened clamping element has both a smooth surface for machined workpieces and a serrated clamping surface for rougher work
- Improved locking mechanism secures clamp to machine table
- Packaged individually (52224)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

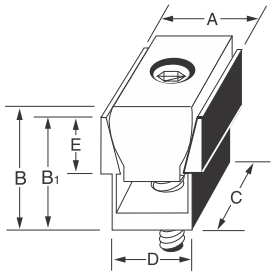
Part Number	Cam Screw	T-Slot Size	B	C	D	E	F	G	H	I	Max. Torque/ Holding Force (Ft Lb/Lbs) (N.m./N.)	Replacement Square Washer
52224 52424 (kit)	50372	16	8	2	25.4	9.5	16	28.5	48	28	88.00/17800	51016

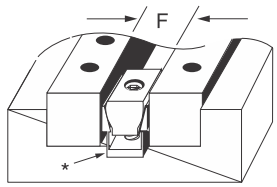
Torque mounting bolt to 70 Ft/Lbs (150N.m.).



UNIFORCE® CLAMPS







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 and is one of the best solutions for high density applications.

- 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
- Easily mated to hydraulic pull cylinders
- Ideal for pallet changers

Part Number	Model	A	B	B1	C	D*	E	F†	Thread Size	Maximum Spread	Max. Torque (Ft/Lbs) (N.m.)	Holding Force (Lbs) (N.)	Number of Clamps Per Pack	Key Size	–Replacement– Channel	Steel Wedge
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	1,350	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	2,225	8	3	60210	60310
80750	750	18.6	19.0	19.05	23.8	16.1	9.5	19.0	M6	20.3	13.50	6,675	6	5	60220	60320
81000	1000	24.8	25.9	25.40	31.7	20.8	12.7	25.4	M8	26.9	25.00	11,125	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	15,575	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	26,700	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.

Now Available TOOLFAST Hydraulic Pull Cylinders to automate these Clamps on your fixtures
See Page No.63

LONG LENGTH UNIFORCE® CHANNEL & STEEL WEDGE

This material is available in 20" (508mm) lengths so clamps can be fabricated in different lengths to suit any requirement. Channel and steel wedge are not drilled or plated.

Part Number	Model
62010	250 Channel
63010	250 Steel Wedge
62020	375 Channel
63020	375 Steel Wedge
62120	500 Channel
63120	500 Steel Wedge
62220	750 Channel
63220	750 Steel Wedge

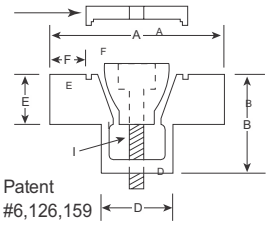
Part Number	Model
62320	1000 Channel
63320	1000 Steel Wedge
62420	1500 Channel
63420	1500 Steel Wedge
62520	2000 Channel
63520	2000 Steel Wedge

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.

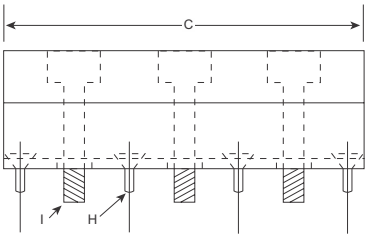
Note: When clamp is used to hold flat stock, use locking plate to machine faces parallel.



--Replacement-- Locking Plates	
Model	**Part No.**
500	60143
750	60145
1000	60155
1500	60165
2000	60185

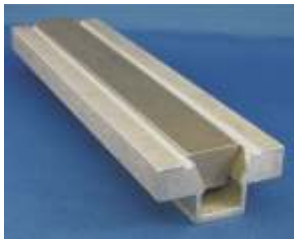
Model	Part No. with Locking Plate	Part No. Without Locking Plate	A*	B	C	D	E	F†	G	H**	I	Max. Torque (Ft/Lbs) (N.m.)	Holding Force (Lbs) (N.)	–Replacement– Channel	Steel Wedge
500	80050	80055	28.6	12.7	15.7	10.67	6.3	4.6	10.16	M2	M4	3.40	2,225	60140	60310
750	80075	80080	38.1	19.1	23.9	16.05	9.4	6.6	15.87	M4	M6	13.50	6,675	60125	60320
1000	80100	80105	50.8	25.4	31.8	20.83	12.7	9.9	20.62	M4	M8	25.00	11,125	60135	60330
1500	80150	80155	76.2	38.1	47.5	30.86	19.1	15.7	30.48	M5	M12	38.40	15,575	60160	60340
2000	80200	80205	101.6	50.8	63.5	41.28	25.4	20.3	41.28	M6	M16	74.60	26,700	60180	60350

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. Custom clamps can be fabricated in different lengths to fit specific requirements. Channel and steel wedge are not drilled or plated.

Part Number	Model	A*	B	C	D	E	F†	H	I	Max. Torque (Ft/Lbs)	Holding Force (Lbs)
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.

PITBULL® CLAMPS

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

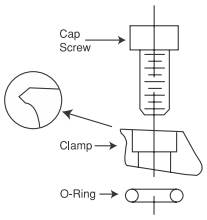
See Locating Rails, Page 40 and TalonGrip™

UNIQUE FEATURES:

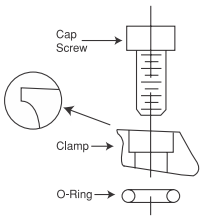
- Extremely low bite
- Positive down force
- High strength A2 Tool Steel virtually eliminates rip-out
- Simple, sturdy, high quality design and components
- Gain maximum tool access to your work
- Virtually eliminate lost work
- Great option with hydraulic cylinders

PITBULL® INSTALLATION

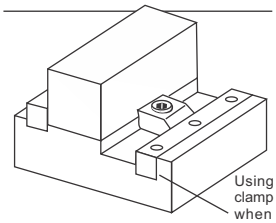
KNIFE EDGE



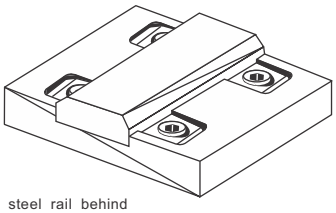
BLUNT EDGE



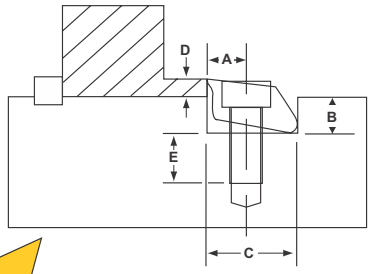
FIXTURE EXAMPLES



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.

The Knife Edge clamp has a black oxide finish. Both the Knife Edge and Blunt Edge clamps areheat treated 43-45Rc.

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

Part Number	Description	A	B	C	Clamp Width D*	E	SHCS Screw Size	Max. Torque (Ft/Lbs) (N.m.)	Holding Force (Lbs) (N.)	Total Throw	No. Clamps Per Package
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 *If gripping below recommended height, ensure clamp does not contact slot wall under load.

ID XPANSION™ CLAMP

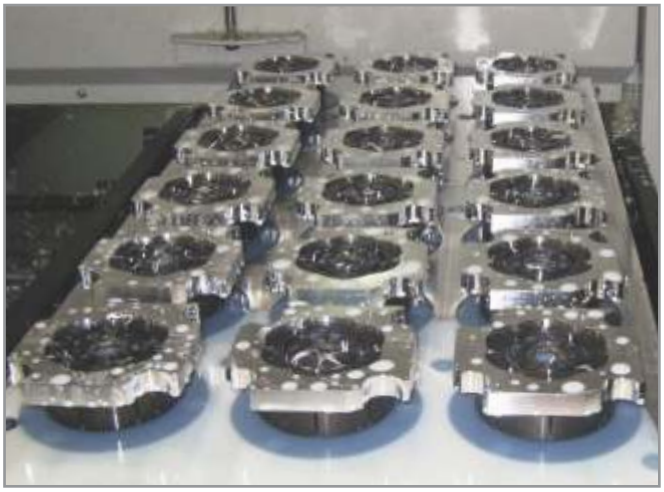
The ID Xpansion™ clamp is the ideal solution to hold parts on an inside diameter for high density machining on vertical or horizontal machining centers. It can also be used as an expanding mandrel on a lathe.

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.

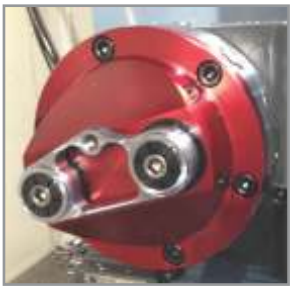
The customer machines the mild steel clamp to match the bore of the part ensuring a proper fit. Often times the clamps can be remachined for different size jobs.

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.



- 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

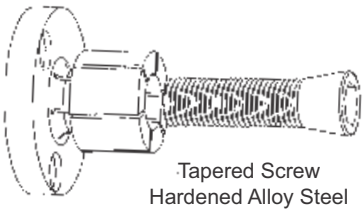

Hard Milling


Innovative 4th axis solution

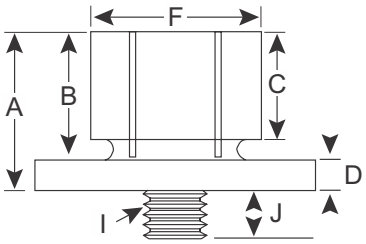
ID XPANSION™ CLAMP MACHINING AND INSTALLATION

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.
- Custom screws available for blind hole applications.
- Range of expansion .005 to .025 (.13 to .64mm) depending upon size. *See MiteeBite.com for individual clamp expansion range.*



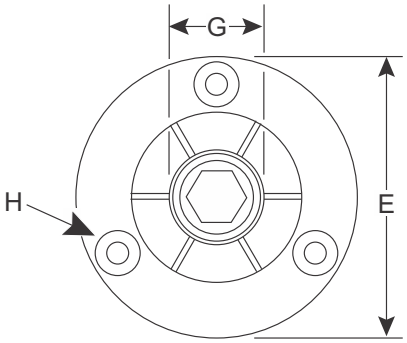
Tapered Screw
Hardened Alloy Steel
39-45RC



Now Available TOOLFAST Hydraulic Pull Cylinders to automate these Clamps on your fixtures
See Page No.63

Model #7 - #10 ID Xpansion™ Clamps

- Locking ring provided to ensure segments remain rigid while machining clamps to size. #10 ID ships 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.



Longer tapered screws are available for each ID size.

Part No.	Model No.	A	B	C	D	E +.000 −.050	F	G†	H*	I	J	Max. Torque (N.m.)	Holding Force (N)	Replacement Tapered Screw
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

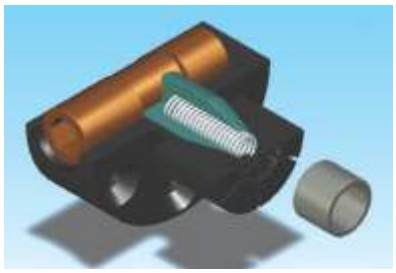
G† - Minimum diameter the “F” dimension can be machined or turned down to. H* - (3) Mounting Screws included - (4) for model numbers #9 and #10.

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

SIDE-LOC XPANSION CLAMP

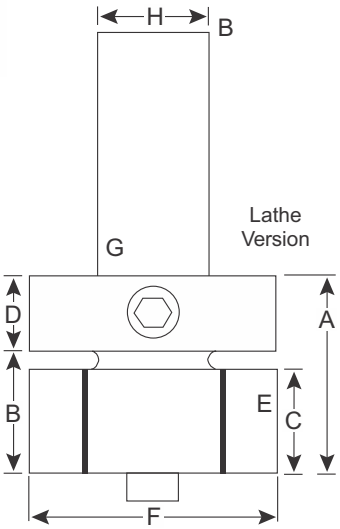
The Side-Loc Xpansion Clamp is actuated from the side, making it perfect for blind hole applications.

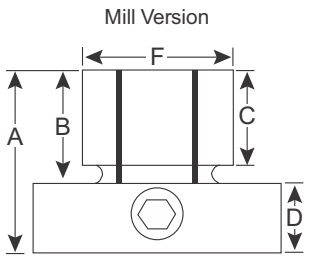
It's produced for both mill and lathe applications. The cam shaft and plunger expands the clamp from the side. Same mounting dimensions as our original ID clamp.

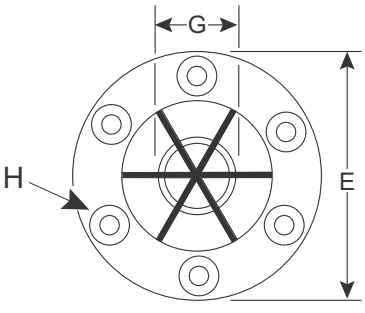


The Side-Loc Xpansion Clamp is actuated by turning a socket head cam shaft on the side, which moves a tapered plunger to expand the clamp. The locking ring provides an accurate preset diameter and rigidity for machining. Maximum torque on locking ring 10 ft. lbs. (13 N.m.). Like our original ID Xpansion™ 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 No.	Model	A	B	C	D	E +.000 -.050	F	G†	H*	Hex Key	Max, Torque (Ft/Lbs) (N.m.)	Holding Force (Lbs) (N.)	Cam Shaft (M12x30MM)	—Replacement— Spring	Ring
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

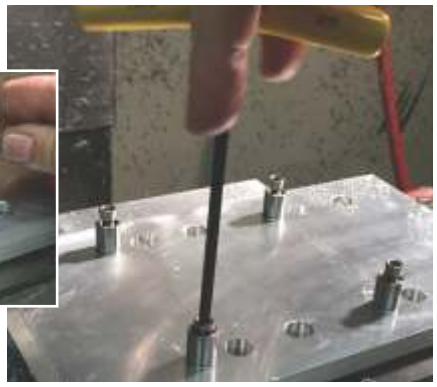
G† - Minimum diameter the "F" dimension can be machined down to. H* - (6) mounting screws included. ** - If high cycles, run max. torque 40 Ft/Lbs or 62 N.m.

MODULAR XYZ XPANSION™ PINS

PRESS FIT NOW AVAILABLE IN 12L14

Mitee -Bite Products releases the new Modular XYZ Xpansion™ Pins for Tombstone, Grid Plate and Fixture Plate applications. The unique, patent pending design provides accurate location, repeatability and high holding forces for securing parts on the inside diameter. The XYZ Pin provides "out of the way workholding" and accessibility to all work surfaces with absolutely no external clamping interference. The Threaded Pin is available in standard sizes of 1/2, 5/8, M12 and M16 for tombstones and grid plates. The Press Fit Pins are available in 1/4, 3/8, 1/2, 5/8, M6, M10, M12 and M16 diameters for custom applications. Both styles of the pins are manufactured from "heat treatable" 17-4PH stainless steel. The Press Fit Pins are now also available in 12L14 mild steel. The Pins expand up to 0.030" (0.7mm) and the diameter can be machined for specific applications. The top of the Pins have a slight taper creating maximum line contact in bore and provides clearance during load/unload. Designed for quick set-ups on secondary operations, material coming off prep stations, water-jets or even applications outside of your machining centers

Install pin body



Install tapered drive screw

Raw stock on pins

Op 1

Continuous Improvement Programs = Innovation!

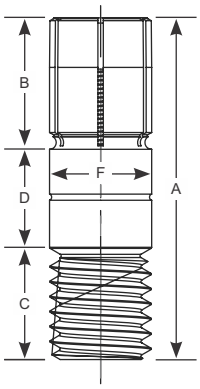
Op 2 including c'bore on same fixture

MODULAR XYZ XPANSION™ PINS

THREADED PINS in 17 - 4PH

Threaded XYZ Pins incorporate an internal rotary broached hex for simple installation and removal from a tombstone, grid plate or fixture plate. Threaded Pins may be installed in a drilled and reamed hole for precise location or set in a hardened drill bushing for additional strength and wear resistance

To install a Threaded XYZ Pin in a precision bore, drill/tap accordingly and ream the hole over the nominal diameter minimum of +0.0001 to +0.0005". (+.003 to +0.013mm)



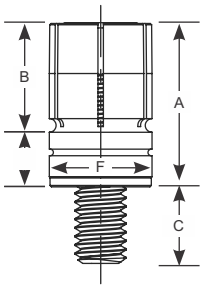
Part Number	External Thread	A	B	C	D	F (+/-) .000/.001 (.000/.025mm)	G*	Replacement Tapered Screw	Tapered Screw Thread x Length
38850	M12-1.75	40mm	15mm	13mm	12.00mm	12.00mm	10.5mm	38010	M6-1 x 30mm
38860	M16 -2	45mm	16mm	13mm	16.00mm	16.00mm	12mm	38020	M8-1.25 x 30mm

*G minimum diameter pin can be machined or turned down to Tapered screw included with pin. **Torque of Pin body needs to exceed torque of Tapered screw

PRESS FIT PINS *All sizes available in both 17-4PH and 12L14*

Pins are intended for press fit or close tolerance removable slide fit applications. Install in a precision bore or a bushing with the center threaded for the Tapered screw. If precise location is not necessary, pin can be used on top of fixture plate. An accessory kit is available to make Installation and Removal (I/R) of the XYZ Pins quick and easy.

Note: If recessing pin into fixture beyond slits be sure to provide clearance for expanding segments.



17-4PH Part Number	12L14 Part Number	Description	A	B	C	D	F (+/-) .000/.001" (.000/.025mm)	G*	Replacement Tapered Screw	Tapered Screw Thread x Length	Installation/ Removal (I/R) Kit**
38730	38630	Press Fit 6 mm	13mm	7mm	7.3mm	5.8mm	6.00mm	5.5mm	38731S	M3-0.5 x 16mm	38720
38740	38640	Press Fit 10 mm	19mm	12.7mm	8.4mm	6.35mm	10.00mm	7.5mm	38002S	M4-0.7 x 22mm	38721
38750	38650	Press Fit 12 mm	19mm	12.7mm	11.1mm	6.35mm	12.00mm	10.5mm	38010S	M6-1 x 22mm	38722
38760	38660	Press Fit 16 mm	19mm	12.7mm	13mm	6.35mm	16.00mm	12mm	38020S	M8-1.25 x 22mm	38723

*G minimum diameter pin can be machined or turned down to Tapered screw included with pin. **Kit includes screws (2) SHCS

SPECIFIC FEATURES / INSTALLATION

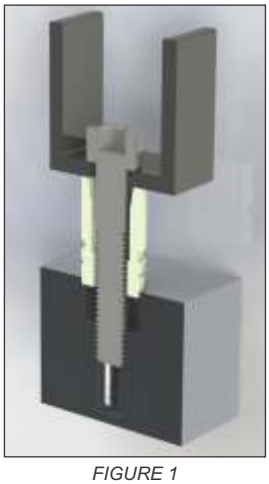


FIGURE 1

PRESS FIT INSTALLATION:

Place Pin in prepared bore, place I/R Tool over pin as shown in figure 1. Using the smaller socket head cap screw (SHCS) provided, thread into fixture to evenly draw down pin. Remove SHCS and replace with Tapered screw when ready to use.

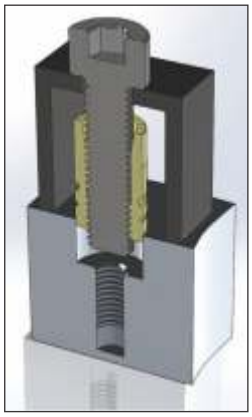


FIGURE 2

PRESS FIT REMOVAL:

Place the I/R Tool over the clamp as shown in figure 2, thread the larger SHCS into the “internal threads” of the Pin and tighten the screw to extract the Pin.

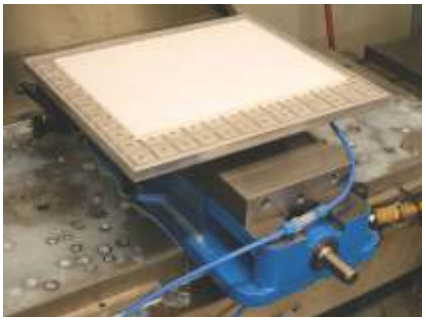
Note: It is recommended to fit Pin with a drill bushing when the Pin must be frequently removed. Or drill and ream the bore hole over the nominal diameter minimum of +0.0001 to +0.0005" (+0.003 to +0.013mm)

VACMAGIC® VM100

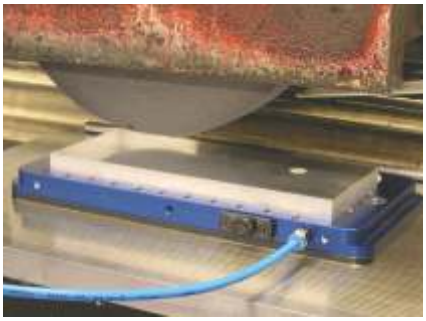
VM100 Base Unit (45375) in Vise

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)

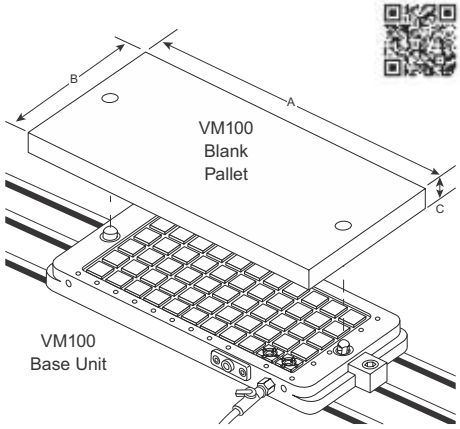


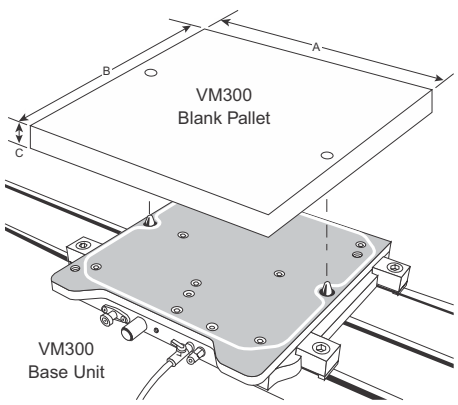
VM100 Base Unit (45375) on a Magnetic Chuck

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

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	¶ 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)

See our website, MiteeBite.com, for installation tips

		Part No.	Desciption	(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

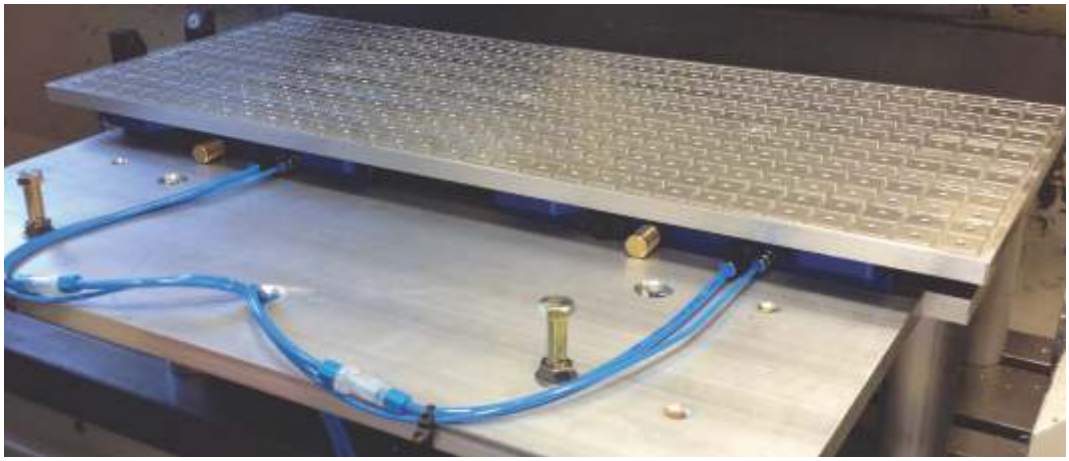
*Replacement size for base units and vacuum pallets. Other sizes listed for custom made pallets.
†Tolerance on all gasket diameter is +/- 10%.

VACMAGIC® VM300

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

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.

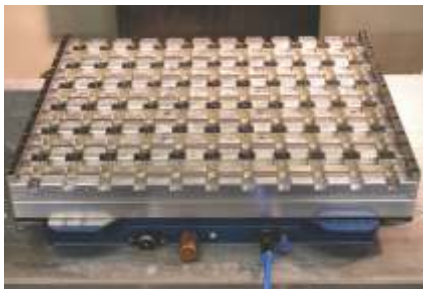
Our Small Investment = Huge Profits!



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

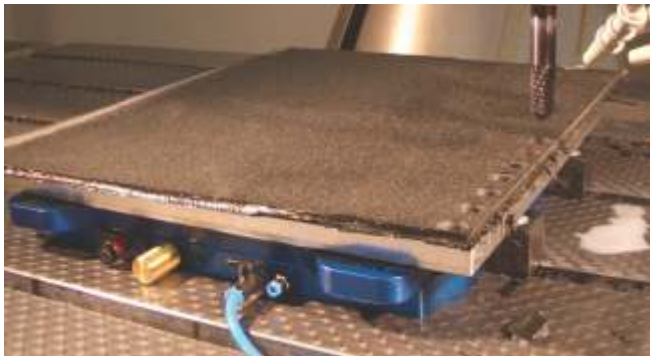
MWP AWARDS 06 WINNER

Best Workholding Product at MACH Exhibition 2006



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

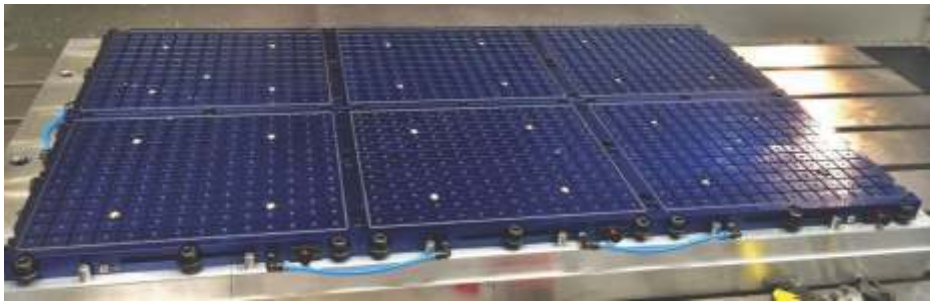
- Simple design keeps cost low
- Productivity maximized - load pallets while machining
- Quick-change - swap pallets in 30 seconds or less with precise repeatability
- Easy to install and set-up
- Vacuum pallets with M6 threaded holes and textured finish to increase friction
- Reliable and easy to use - 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
- If additional vacuum chambers are needed, drill tap through with M8 thread and plug when not required.



Custom application with graphite.

Never indicate your vise again!

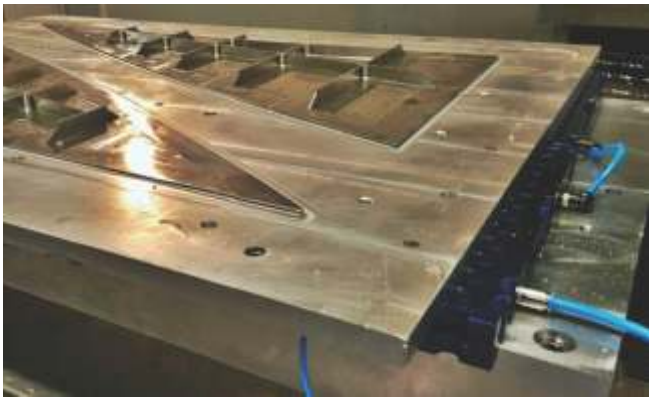
MULTI-POWER VAC



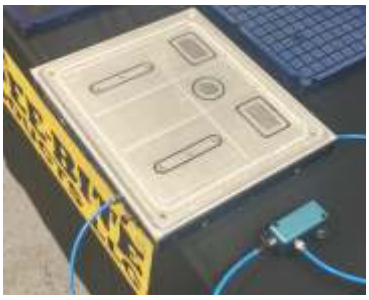
Designed to be easily linked together creating larger platforms

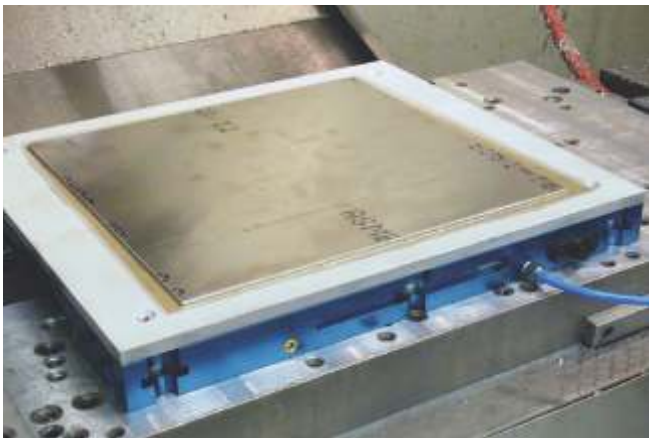
Mitee-Bite is proud to introduce possibly the most universal multifunctional vacuum system in today's market. This system has several unique features to meet your vacuum workholding needs.

- Can be powered with our Vacuum Generator (Shop Air) or Vacuum Pumps
- 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)

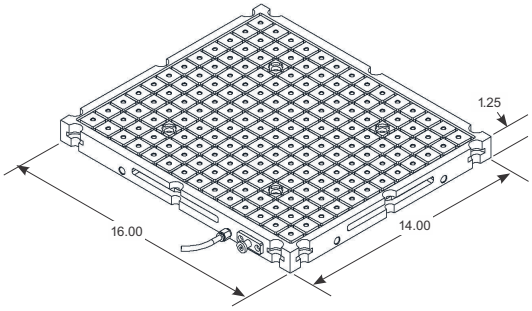


Multiple MPV's shown with large vacuum pallet.





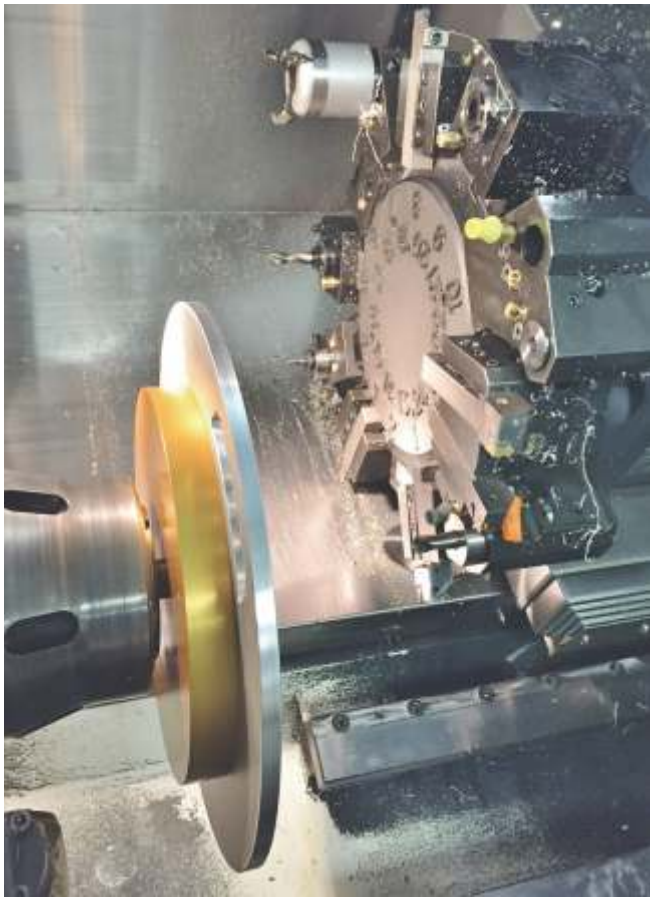
Application using Mitee-Grip™ with sacrificial top plate



Part No.	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 mounting hardware and tubing
46250	Sacrificial Top Plate with mounting screws
46050	Coolant Trap with hose and fittings

ROTARY VACUUM CHUCK

Yes, *it's true!* A vacuum system for your lathe or rotary table which provides on option for those applications that cannot be held by traditional methods. Although initially designed for thin materials and composites, we discovered we could machine more aggressively than anticipated with use of our newly designed vacuum grippers. These grippers will leave indentation on backside of workpiece, however increase the lateral load in some cases by more than 400%! Grippers can be raised/lowered/relocated as needed in the 32 M6 threaded holes on the face to include the ability to easily change the size of vacuum chamber by removing/reinstalling the gasket material from one of the 9 grooves. Always selecting the largest diameter possible for your application.



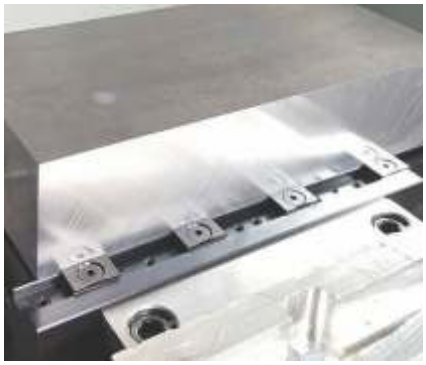
Manufactured from a solid billet ensures concentricity between the shaft and vacuum chambers, increased rigidity and the extra material needed if custom modification is required. For example: reducing the size of face plate or shaft diameter as well as machining mirror image of workpiece into faceplate for custom applications.

Rotary push to connect fitting designed for 1,100 RPM, however general machining practices and common sense must be considered when using this product. Recommended for light duty machining application - please contact us with any questions. Fittings are for 5/16 or 8mm tubing. If using on lathe, steel tubing is necessary with a coolant trap placed between vacuum pump and vacuum chuck. Flex tubing may be used on rotary table although steel tubing is always the preferred method.

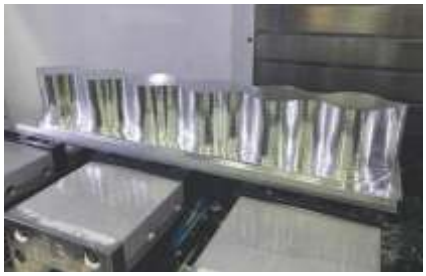
Part No.	Description	Diameter	Thickness
46400	Rotary Vacuum Plate with M6 tapped holes	9.85"	1.0"
46450	Rotary Sacrificial Plate	9.85"	0.375"
46455	8mm Rotary fitting		
45155	M6 Vacuum Grippers (2/pk)		
45111	Vacuum Gasket (black) sold by foot	.170"	
46401	Rotary Vacuum Kit (includes Vacuum Plate, Rotary Fitting, 4 Vacuum Grippers, Tubing and Gasket)		

TALONGRIP® VISE JAWS

Multiple parts

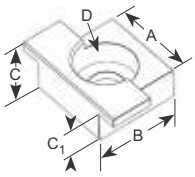


Large Part

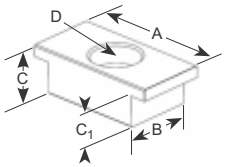


Fixture application with Pitbull® Clamps

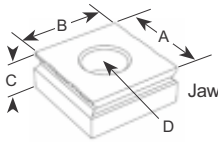
Soft jaws



T-Style Stop
Part no. 33020



Large Jaw Stop
Part no. 33030

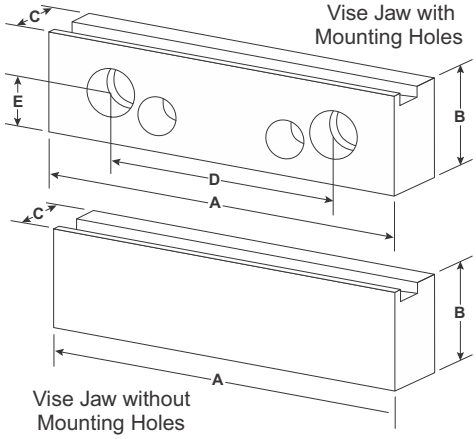


Jaw Grip - A2 Steel
Part no. 33075

Mitee-Bite Products introduces a new and innovative product that will increase the functionality of your standard 4, 6, and 8 inch (100mm, 150mm and 200mm) 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.

For more versatility, all Jaw Sets are tapped with 2 additional holes to accept our M4 Pitbull® Clamps (M6 for 32088). This is an effective solution when downforce or additional holding force is necessary.

Jaws are not heat-treated to allow for custom modifications. All grips and stops are heat-treated A2 steel.



Vise Jaw with Mounting Holes

Vise Jaw without Mounting Holes

GRIPS & STOPS

Part No.	Description	A	B	C	C_1	D	Recommended Gripping Height	No. Per Pack
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	12.7	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

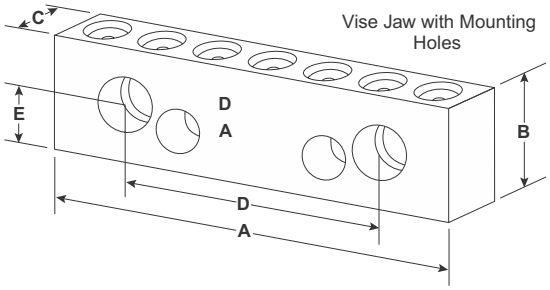
STEEL VISE SET (Set includes 4 TalonGrips™, 1 stop with M5 screws)

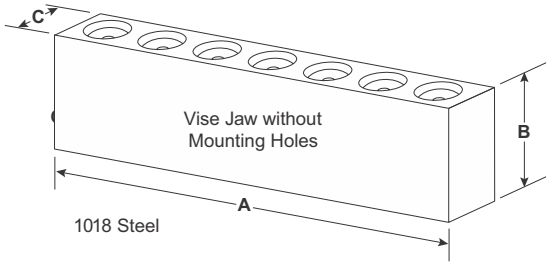
Part Number	Vise (metric)	A (metric)	B (metric)	C (metric)	D (metric)	E (metric)	----------Replacement---------- Grips	Stops
WITH MOUNTING HOLES								
32044	4" (100mm)	4.0 (100)	1.48 (37.59)	1.0 (25.4)	2.5 (63.5)	.688 (17.47)	33050 (2/pk)	33020 (1 ea.)
32066	4"/6" (100mm/150mm)	6.0 (150)	1.73 (43.94)	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"/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® VISE JAWS

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 softjaws. 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 (51-53 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!





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

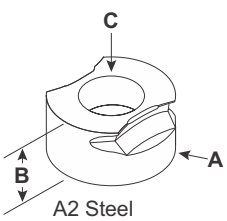
NOTE: All jaws designed to fit on a 4" or 6" vise.

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

Part Number	Vise (metric)	A (metric)	B (metric)	C (metric)	D (metric)	E (metric)	Holes
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)	7
32168	6" (150mm)	8.00 (200)	1.88 (47.75)	1.0 (25.4)	3.88 (98.55)	.94 (23.87)	9
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
32175	19.05	9.52	M5	1.55mm-3.5mm	2

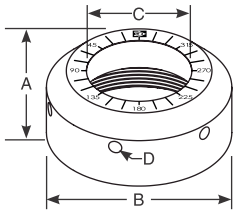


CONCENTRIC O.D. CLAMP

NEW STYLE OD CLAMP MAKING INNOVATION EASY

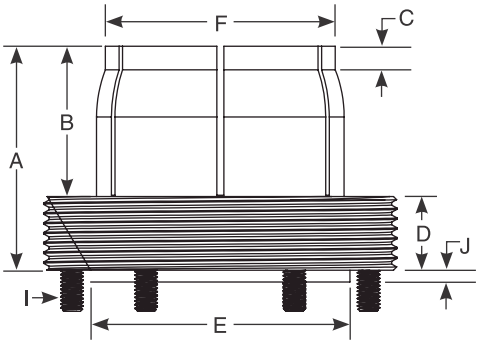
Mitee-Bite Products just completed the design and development of a new style Concentric Outside Diameter (OD) clamping tool. Repeats within tenths, compact for high density application and tough enough to limit yourself to tooling capabilities.

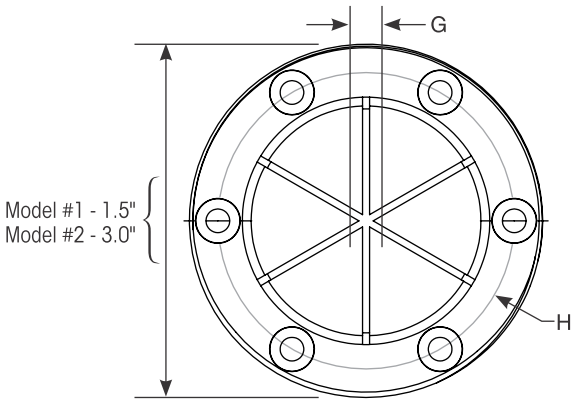
This Patent Pending design can be machined, to hold any shape, completely through clamp (F) and fixture plate as well as gripping workpiece above compression nut. 15° incremental laser engraved indicators on large cap (22.5° on small cap) for applying repeatable torque without torque wrench and for applying preload (15°- 45°) when machining clamps to actual workpiece dimensions.



Cap

Model #	A	B	C	D
#1	1.000	2.000	.790	.250
#2	1.425	3.500	1.990	.250





Torque = 0° Rotation = Force

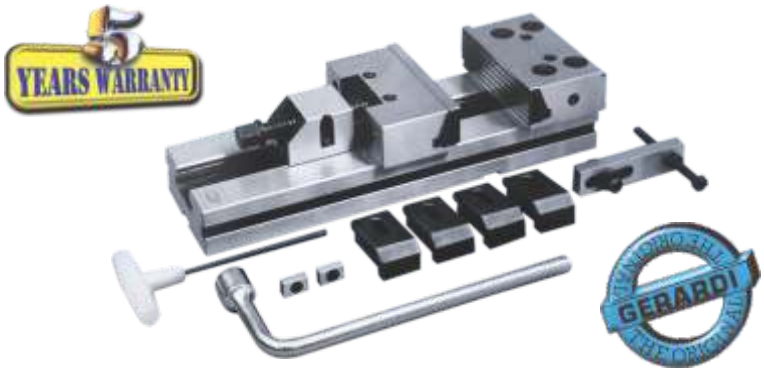
Torque ft/Lbs	Model #1 (PN 37100) Degree of Rotation*	Force lbf	Model #2 (PN 37200) Degree of Rotation*	Force lbf
10	43°	650	20°	400
20	66°	1,300	31°	800
30	88°	1,950	37°	1,200
40	111°	2,600	44°	1,600
50	133°	3,250	49°	2,000
60	165°	3,900	53°	2,400
70	-	-	56°	2,800
80	-	-	60°	3,200
90	-	-	65°	3,600
100	-	-	67°	4,000

*Beginning with clamp touching part. Every 15° of rotation compresses large clamp .002" (small clamp .001") without workpiece installed.

Part No.	Model No.	A	B	C	D	E +.000 -.002	F	G†	H	I*	J	Maximum Holding Diameter	- Replacement - Base	Cap
37100	#1	1.400	.900	.183	.500	.940	.750	.100	6-32 (M3) on 1.140" (28.95mm) BHC	.275" (7mm) Deep	.100	.625	37125	37150
37200	#2	1.900	1.275	.200	.625	2.200	1.95	.200	10-32 (M5) on 2.515" (63.88mm) BHC	.475" (12mm) Deep	.100	1.800	37225	37250

NOTE: (12) Mounting Screws included (inch and metric) **G†** - Minimum holding diameter **I*** - Minimum tap depth

PRECISION MODULAR VISE 'STANDARD SERIES' WITH GUIDED MOVABLE JAW (ART. 1)



VISE WITH STANDARD ACCESSORIES

- ❑ High precision and gang operation
- ❑ Pull down easy to change jaws
- ❑ Unlimited longevity
- ❑ Space saving design
- ❑ No "wear" construction
- ❑ Unlimited clamping range
- ❑ All steel construction hardened and ground HRc60

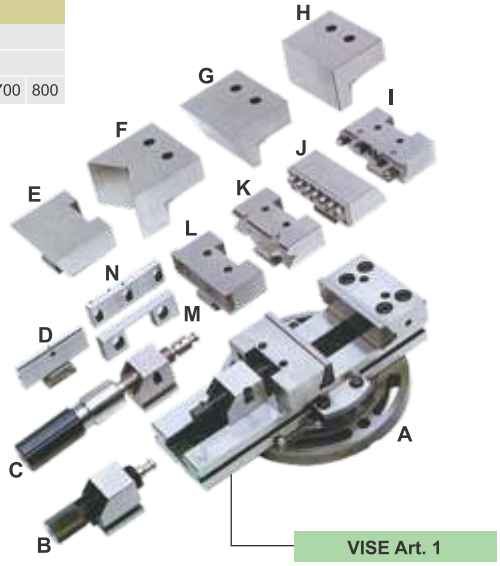
ART. 1	VISE SIZE																		
	1	2	3	4		5						6							
JAW WIDTH	100	125	150	175		200						300							
JAW DEPTH	30	40	50	60		65						80							
MAX. JAW OPENING	100	150	200	300	200	300	400	500	200	300	400	500	600	200	300	400	500	600	700	800

Mention vise size (jaw width) and max. jaw opening for ordering

List of Optional Accessories

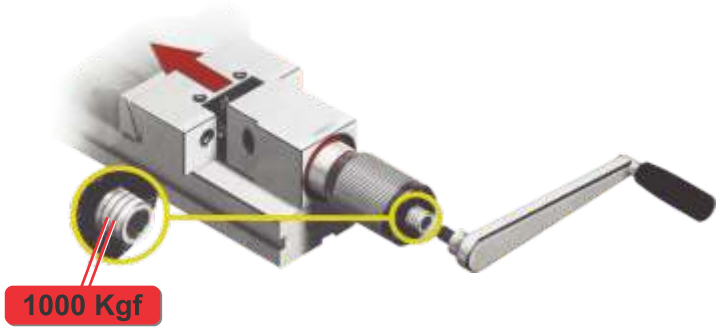
A Swivel base - **ART. 105**
B Blocking support with hydraulic cylinder - **ART. 271**
C Hydraulic hand screw blocking device - **ART. 257**
D Intermediate movable jaw with double step - **ART. 212**
E Floating movable jaw for round parts - **ART. 210**
F Fixed stack type prismatic jaw - **ART. 150**
G Fixed and movable stack-type jaws for round parts - **ART.131**
H Square stack-type jaws - **ART. 138**
I Movable jaw with 2 floating segments - **ART. 190**
J Floating movable jaw - hydraulic control - **ART. 188**
K Step-prismatic guided movable jaw - **ART. 217**
L Guided movable jaw - straight plate - **ART. 146**
M/N Extension for fixed and movable jaw with screws - **ART. 132/133**

Optional Accessories



HYDRAULIC CLAMPING OPTION

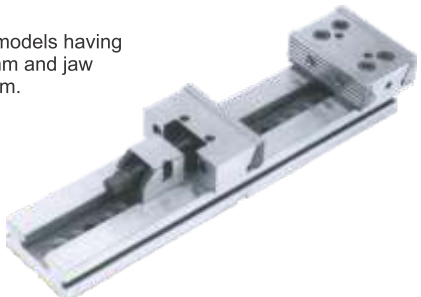
Art. 257



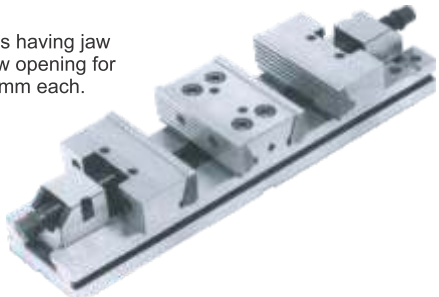
The hand hydraulic clamping group Art. 257 is an optional manual power multiplier alternative to the mechanical clamping of above vices. This device allows to reach the same clamping power reachable with the mechanical screw through a minimum effort. The hand hydraulic screw of Art. 257 is manually operated by the wrench included. All above Art. 1 vices can be purchased with Art. 257 fitted.

MODULAR VISES "XL" SERIES

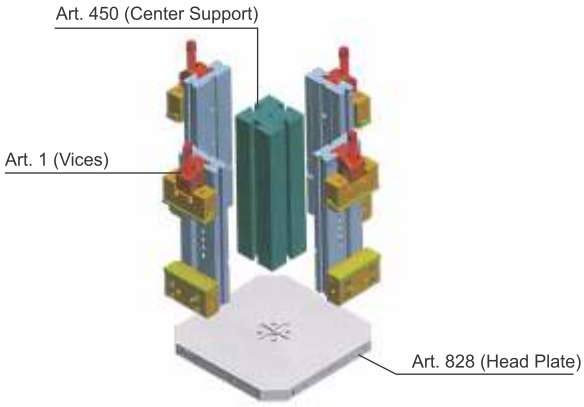
Art. 20
Available in different models having jaw width up to 300 mm and jaw opening up to 1100 mm.



Art. 30
Available in different models having jaw width up to 300 mm and jaw opening for two work pieces up to 460 mm each.



STANDARD VICE TOWERS ART. 750 for Horizontal Machining Center



MODULAR ELEMENTS

Art. 102
Movable section

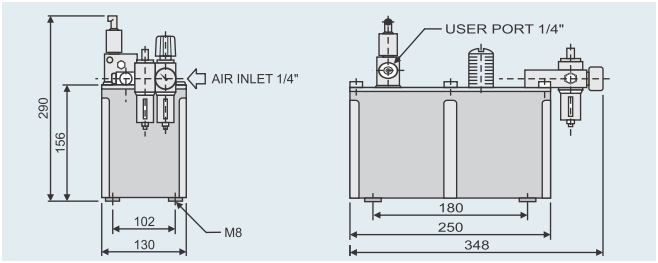
Art. 104
Double fixed section

Available in different models having jaw width upto 300 mm with unlimited opening. Suitable for large size workpieces (single or double clamping).

Art. 103
Fixed section

HYDROPNEUMATIC POWER UNIT

Gerardi hydropneumatic power unit for hydraulic clamping devices and its bi-products is designed to meet all needs regarding the powering of hydraulic cylinders where low flow rates and high pressures are required. It is driven by air at its inlet to produce hydraulic pressure at its outlet. The special design shape of the power unit is such that a high performance system can be implemented taking up very little space. Thanks to the special design principles, the pump section adopted allows the hydropneumatic power unit to be installed in very hostile environments, such as the work area of machine tools, etc. The unique modular hydraulic flow control system allows controlling up to 6 separate users from just one power unit.



SPECIFICATION	
MAX. PERMISSIBLE INLET AIR PRESSURE:	7 bar
RECOMMENDED INLET AIR PRESSURE:	5,5 bar
OIL DELIVERIES: 1.2-1.4-2.2-2.7-4.3	Liters/min
MAX. OIL OUTLET PRESSURE AT 5 BAR AIR INLET PRESSURE:	400 bar
MAX. NO. OF USERS RECOMMENDED:	6

Outlet pressure can be regulated and set to desired pressure.

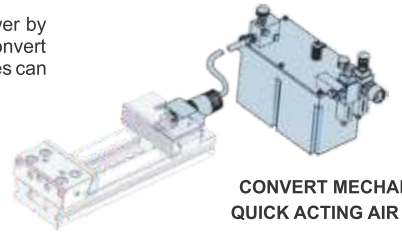
Art. 393 - Power unit with Manual control, Art. 394 - Power unit with Pneumatic control, Art. 395 - Power unit with Electrical control

The pump in its basic version is supplied complete with teflon tank, fill plug, silencer, quick acting air connector fitting and hydraulic control box. Also very suitable for operating swing Clamps (Single acting).

PNEUMO - HYDRAULIC BLOCKING DEVICE

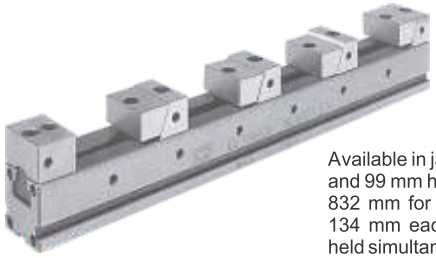
Above power unit can be used to operate Mechanical Modular Vices by Air-Hydraulic power by replacing the mechanical screw by Pneumatic-Hydraulic Blocking device as shown here to convert the mechanical modular vice into quick action air hydraulic vice for production setups. Six vices can be operated simultaneously with one power unit.

Art. 390 with Manual control valve
Art. 391 with Electrical control valve
Art. 392 with Air control valve

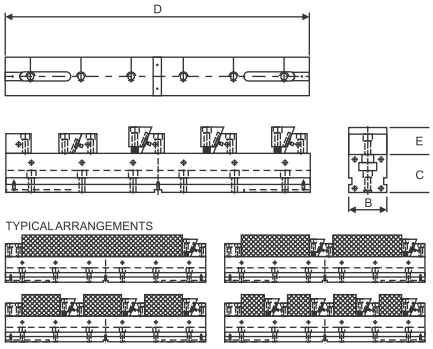


CONVERT MECHANICAL VICE INTO QUICK ACTING AIR HYDRAULIC VICE

"MULTIFLEX" VICES ART. 600



Available in jaw width 49 mm, 74 mm and 99 mm having jaw opening up to 832 mm for single piece and up to 134 mm each for four work pieces held simultaneously.



The "MULTIFLEX" series vises are a total new concept of modular clamping system able to maximize the machine table capacity and increase its productivity. The comb system even between the fixed and movable jaw, increases and improves the clamping capacity. Each vice is supplied with 1 fixed jaw and 4 fixed-movable jaws, One "T" wrench, 1 pair of positioning key nuts and 4 workstops.

SIZE	D	B	C	E	Max opening according to pieces to be clamped								
					1	2	3	4	5	6	7	8	9
1	300	50	50	32/25	208	75	30	8	\	\	\	\	\
	400	50	50	32/25	308	125	64	33	15	3	\	\	\
	500	50	50	32/25	408	175	96	58	35	19	8	\	\
	600	50	50	32/25	508	225	129	83	55	36	22	12	5
	700	50	50	32/25	608	275	161	108	75	52	36	24	16
2	400	75	75	40	275	100	41	12	\	\	\	\	\
	500	75	75	40	375	150	75	37	15	\	\	\	\
	600	75	75	40	475	200	108	62	35	16	3	\	\
	700	75	75	40	575	250	141	87	55	33	17	6	\
	800	75	75	40	675	300	175	112	75	50	32	18	8
3	700	100	100	60	532	217	112	59	28	7	\	\	\
	800	100	100	60	632	267	145	84	48	23	6	\	\
	900	100	100	60	732	317	178	109	68	39	20	5	\
	1000	100	100	60	832	367	211	134	88	55	34	18	5

CompactGRIP

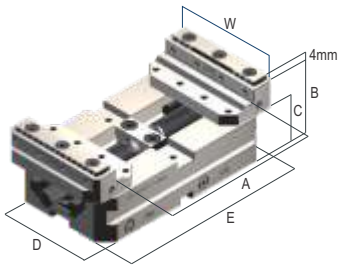
SELF CENTERING VISES WITH REVERSIBLE JAWS
IDEAL FOR 5 AXIS MACHINING CENTRES

Standard equipment: 1 Box wrench, 1 Calibrated centering or pull-stud for Z.P. 2 positioning key-nuts and 2 self-centering key-nuts +

Free: pair of top jaws iserts G11 + Workstop Art. 370EM

5 YEARS WARRANTY

Art.650



Type	1 - 12kN			2 - 22kN				3 - 32kN				
Jaw width W	50			88				123				
Max opening A	54	94	134	96	136	176	216	133	183	233	283	333
Vise height B	65			65				89				
Base body height C	45			38				57				
Base body D	80			90				125				
Base lenght E	80	120	160	120	160	200	240	160	210	260	310	360
Kg	1,9	2,7	3,4	3,6	4,4	5,2	5,8	9,1	10,9	12,8	14,8	17
Code	7.65.01080	7.65.01120	7.65.01160	7.65.02120	7.65.02160	7.65.02200	7.65.02240	7.65.03160	7.65.03210	7.65.03260	7.65.03310	7.65.03360

Art.650S Smooth+ Rough

Art.650T G01 Grip (pitch 1,5mm)

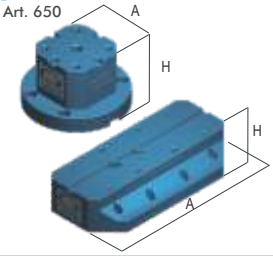
Art.650T G02 Grip (pitch 2mm)

Art.650T G11 Grip (pitch 11mm)

Art.650R Dove Tail

Art.651H

RISER for Art. 650



H	Type		1			2				3			
	Base lenght A	Ø80	Ø120	Ø160	120	160	200	240	160	210	260	310	360
50	Code	7.65.1H108 /50	7.65.1H112 /50	7.65.1H116 /50	7.65.1H212 /50	7.65.1H216 /50	7.65.1H220 /50	7.65.1H224 /50	7.65.1H316 /50	7.65.1H321 /50	7.65.1H326 /50	7.65.1H331 /50	7.65.1H336 /50
75	Code	7.65.1H108 /75	7.65.1H112 /75	7.65.1H116 /75	7.65.1H212 /75	7.65.1H216 /75	7.65.1H220 /75	7.65.1H224 /75	7.65.1H316 /75	7.65.1H321 /75	7.65.1H326 /75	7.65.1H331 /75	7.65.1H336 /75
100	Code	7.65.1H108 /100	7.65.1H112 /100	7.65.1H116 /100	7.65.1H212 /100	7.65.1H216 /100	7.65.1H220 /100	7.65.1H224 /100	7.65.1H316 /100	7.65.1H321 /100	7.65.1H326 /100	7.65.1H331 /100	7.65.1H336 /100

Zero Point

Set up times reduced of 90%

Clamping force 5 ÷ 40 kN / Holding force more than 60 kN / Pneumatic release 6 ÷ 14 bar / Positioning shank with axial compensation / Double pull-stud centering for Max rigidity / Air cleaning / 4 antirotation keyways / Double effect

Standard Equipment:
1 pull-stud Art.10
1 Teflon cup with O-Ring Art.9

2 YEARS WARRANTY

PNEUMATIC FOR MULTIPLE USE

Standard 10kN
Option 18kN by increase springs

Repeatability within 0,005 mm

Art. 664

Art. 665

MOUNTING WITH FLANGE

Type	1	2	3
Code	9.66.41000	9.66.42000	9.66.43000
kN	5,4	10	16

BUILT-IN MOUNTING

Type	1	2	3
Code	9.66.51000	9.66.52000	9.66.53000
kN	5,4	10	16

PNEUMATIC FOR SINGLE USE

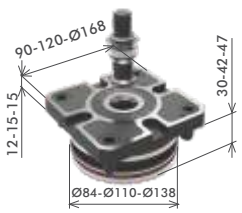
WITH ANTIROTATION KEYWAY

Standard 10kN
Option 25kN by increase springs

Repeatability within 0,005 mm

Art. 664S

Art. 665S



MOUNTING WITH FLANGE

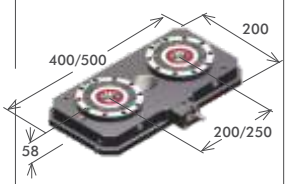
Type	1	2	3
Code	9.66.4S100	9.66.4S200	9.66.4S300
kN	5,4	10	16

BUILT-IN MOUNTING

Type	1	2	3
Code	9.66.5S100	9.66.5S200	9.66.5S300
kN	5,4	10	16

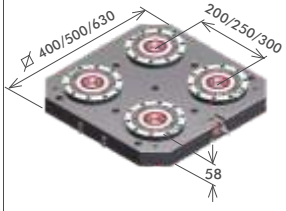
Pneumatic Zero Point kit interfaced base plates

KIT#1
FOR VERTICAL CENTER



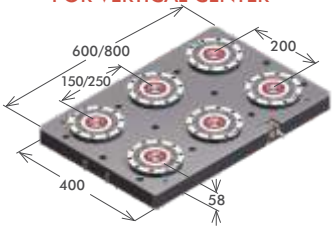
Art. 81P	BASE PLATE	
	200x400	200x500

KIT#2
FOR HORIZONTAL CENTER



Art. 80P	BASE PLATE		
	400x400	500x500	630x630

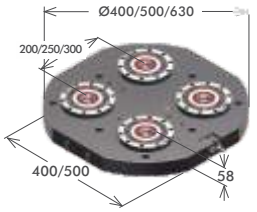
KIT#3
FOR VERTICAL CENTER



Art. 81P	BASE PLATE	
	400x600	400x800

KIT#4
FOR 5 AXIS CENTER

NEW



Art. 82P	ROUNDED BASE PLATE		
	Ø400	Ø500	Ø630

ANGLE HEADS

ATC models for Automatic Tool Change and
MTC models for Manual Tool Change machines

Case hardened and ground Shank and Shaft

Positioning Pin with Automatic Release

Modular antirotation group

Standard 10BAR Coolant Through the Pin

Graduated Ring

Treated Steel Head Body with 360° Position

Output:
- ER Collet (Standard)
- Weldon
- Shell Mill Holder
- Special

Bearings
Angular contact preloaded ball bearings of precision class ABEC7/9

Gears
Gleason ground spiral bevel gears maximum performances and minimum vibration

Stop Block
With case hardened bushing and gasket

SPINDLE SPEEDERS

Case hardened and ground shank and shaft

Speed increase up to 1÷8 through two planetary gears

Standard 10Bar coolant through the pin

Output:
- ER Collet (Standard)
- Weldon
- Shell Mill Holder
- Special

OTHER PRODUCTS FROM GERARDI

The most versatile

MULTIFLEX Vises and Vise Towers for multi-clamping

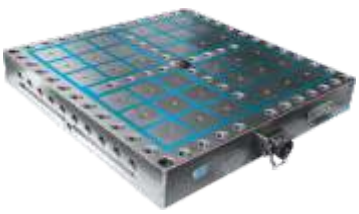
Tombstone for Horizontal Machining Center with Zero point or Grid type

Gerardi Driven tools

- Mazak
- Biglia
- Daewoo
- Mori seiki
- Nakamura
- HAAS
- Okuma
- Takisawa
- VDI

Manual self-centering scroll chucks

Platform



Grid magnetic **plates** for milling

DOVETAIL CLAMPING FIXTURES - MOST SUITABLE FOR 5-AXIS MACHINING

Raptor' s patented dovetail design quickly locks the part in place for extreme clamping strength and rigidity without wasting much material on the part base. Dovetail fixtures are available in the following dovetail sizes: 2.25", 1.5", 0.75", 0.50",0.375",0.281"

1 - SIMPLE DOVETAIL

A simple workpiece prep creates a dovetail that locks into the Raptor spring-loaded clamp.

2 - SPRING-LOADED CLAMP

The Raptor spring-loaded clamp strongly holds the part and makes releasing easy.

3 - Hand tightened

Use a T-wrench to hand-tighten the clamp and you're done. It's quick, simple and strong.

4 - Strong by design

Solid, super-strong stainless-steel or lightweight aluminum ensures that Raptor will hold up to repeated use.

RAPTOR MULTI-FIXTURES FOR EVEN GREATER PRODUCTIVITY

Raptor multi-fixtures provide a foundation to attach more than one Raptor dovetail fixture, which allows machinists to manufacture longer part runs or program for multiple parts in one setup. Providing a method to hold parts at different angles and in different dovetail sizes, multi-fixtures reduce changeover time and allow for increased productivity.

Dovetail Cutters

Raptor dovetail cutters machine the flat on the dovetail edge on a workpiece in one pass, preventing a sharp edge on the dovetail from pressing into the corner of the fixture. Cutters are available in various heights and diameters.

Raptor Provides a variety of adapters and risers to fit on many CNC machine models, which are designed to accept multiple dovetail fixtures, making it easy to tool up your CNC machine.

HYDRAULIC MACHINE VICE

'GIN' Hydraulic Machine Vice is a suitable hydraulic vice for Milling machine. Can also be used on a machining centre.

- ❑ **Operates on handle movement as in mechanical vices.**
- ❑ **High clamping force can be achieved by effortless handle movement which eliminates hammering on handle.**

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING
GIN-HVA-100-01	100	36	170
GIN-HVA-125-01	125	46	220
GIN-HVA-150-01	150	51	300
GIN-HVA-200-01	200	62	300

LOCK DOWN JAW HYDRAULIC MACHINE VICE

Lock Down Jaw Design eliminates jaw lift and work piece tilt.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH
GPHV-125	130	55	220	570
GPHV-160	160	58	310	625
GPHV-200	200	63	310	725

MC COMPACT HYDRAULIC VICE

Compact version of GPHV model above.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH
GCHV-100 V	101	48	125	470
GCHV-130 V	131	55	180	535
GCHV-160 V	161	58	240	625
GCHV-200 V	201	63	280	700

UNIVERSAL 3-WAY ANGLE VICE

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING
GIN-VW3	80	30	90
GIN-VW4	106	38	105
GIN-VW5	132	40	140

UNIVERSAL DIVIDING HEAD-Model GIN-BS-2

Model GIN-BS-2 dividing head comes with complete set of gears and dividing plates. Centre height is 132mm and ratio of worm to gear is 1:40.

Smaller Models GIN-BS0 and GIN-BS1 are available without gear set.

PRECISION KEYLESS DRILL CHUCK

High quality Keyless Drill Chuck is most suitable for CNC and Milling machines.

MODEL	CAPACITY	TAPER
APU08-J 1	0-8	J 1
APU10-J 2	0-10	J 2S
APU13-J 6	1-13	J 6
APU16-J 6	3-16	J 6

Different types of shanks are also available separately.

NC DRILL CHUCK - INTEGRATED TYPE

The compact designed drill chuck provides higher accuracy, improved rigidity, and shorter overhang for holding drills.

Preventing from slip-out during machining, absolutely eliminating the disadvantage of connecting by taper. A dedicated Spanner is provided for powerful clamping.

Available in BT 30/40/50 and HSK shank having holding capacities 0-8 mm, 1-13 mm and 3-16 mm.

BT TYPE TAPER WIPER

MODEL	FOR SPINDLE TAPER
GIN-W30	BT-30
GIN-W40	BT-40
GIN-W50	BT-50

CERAMIC EDGE FINDER

Tips are made of Ceramic having 10 dia.

TSEP10

TSEP 1020

TSEP 1020B

ELECTRONIC (OPTICAL) EDGE FINDER

'GIN' Electronic edge finder with LED is most convenient to use as the tip of the Touch Probe is brought near the edge of the job, red light powered by enclosed battery glows as the ball probe comes in contact with the edge.

- ❑ **Concentricity of ball-probe and shank within 0.005 mm.**
- ❑ **Repeatability of work location within 0.01mm.**
- ❑ **Spring loaded Ball-probe to prevent damage of probe.**

MODEL	SHANK DIA	BALL DIA	TOTAL LENGTH	TYPE
GIN TSOE 20S	20	10	120	WITH LED ONLY
GIN TSOE 20L	20	10	158	WITH LED ONLY
GIN TSOE 20LB	20	10	158	WITH LED AND BEEPER

Z-AXIS PRESET GAUGE - OPTICAL TYPE Model GIN-ZOP-50

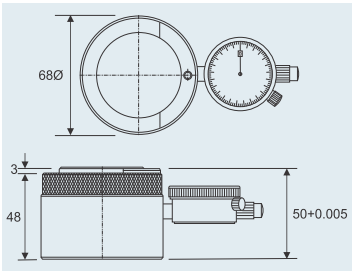
Used for setting tool height 50mm. Its base has a built-in magnet hence can be used vertically as well as horizontally. The red lamp lights up when touched. Height can be micro adjusted by gauge block.

Z-AXIS ZERO SETTER - Model Z-50

Z-Axis Zero Setter is used for zero setting of tool height from the machine table on machining centres. Setting height : 50.00±0.01mm

Features:

- ❑ **Large measuring surface to assure high measuring accuracy.**
- ❑ **Low Spring force to avoid breakage of small end mill and drill.**
- ❑ **Easy to calibrate by a ground parallel or gauge block.**



Z-AXIS ZERO SETTER - ZPM Series - Ceramic

- ❑ **Least measuring diameter of cutting tool : 0.1mm**
- ❑ **Scratch proof ceramic measuring face**

MODEL	BASE TYPE
ZPM-50	Plain
ZPM-50 P	Magnetic
ZPM-100 P	Magnetic ON/OFF

ZPM-50/50P

ZPM-100P

BORING HEAD - BHC Series

'GIN' BHC Series Boring Heads have wide base bearing surface that assures maximum rigidity even when the bar holder is in an offset position. The adjustment screw is ground after hardening. Shanks of different types and boring tools available seperately.

MODEL	OUTER DIA	BORING BAR HOLE SIZE	CROSS HOLE DIA	OFFSET	LEAST COUNT
GIN-BHC2	50	12	12	15	0.01
GIN-BHC3	75	18	18	25	0.01
GIN-BHC4	100	25	25	25	0.01

Different types of shanks are also available separately.

BORING HEAD - HIGH PRECISION FOR SMALL DIAMETER

GIN-BHW02 Series Boring head is high precision boring head most suitable for small diameters ranging from 3Ø to 50Ø. Different boring tools for different sizes of bores are available separately. All types of shanks are also available separately. Standard sets with boring tools also available. Ask for details

MODEL	OUTER DIA.	BORING BAR HOLE SIZE	OFFSET	LEAST COUNT
GIN-BHW02-50CK6	64	16	4.5	0.001

BORING HEAD SETS AND BORING TOOLS

MODEL GIN-BHC2 (SET) WITH THREE NOS. INDEXABLE INSERTS TYPE BORING BARS.

Sets available with different interchangeable shanks such as R8, NT30, NT40, NT50, MT2, MT3, MT4, MT5, BT40 & BT50.

MIN. BORING DIA	MAX. BORING DIA	MAX. BORING DEPTH	BORING BAR HOLE SIZE	BORING HEAD OUTER DIA	LEAST COUNT
8 mm	90 mm*	45 mm	12 mm	50	0.01 mm

*Larger boring dia upto 150mm can be achieved by optional cross hole boring tool (GIN Model 59982-1236) available separately.

MODEL GIN-BHC3 (SET) WITH THREE NOS. INDEXABLE INSERTS TYPE BORING BARS.

Sets available with different interchangeable shanks such as R8, NT30, NT40, NT50, MT2, MT3, MT4, MT5, BT40 & BT50.

MIN. BORING DIA	MAX. BORING DIA	MAX. BORING DEPTH	BORING BAR HOLE SIZE	BORING HEAD OUTER DIA	LEAST COUNT
12 mm	140 mm*	110 mm	18 mm	75	0.01 mm

* Larger boring dia upto 250mm can be achieved by optional cross hole boring tool (GIN Model 59990-BH18-36) available separately.

PRECISION BORING TOOLS - WITH INDEXABLE CARBIDE INSERTS

Boring tools available in shank dia 12mm to shank dia 25mm for all models of GIN boring heads. These boring tools are available in different sizes and lengths to achieve different sizes of bores. Side type boring tools to be used in cross hole of boring head for large diameter boring are also available.

MODEL GIN-BH2084 SETS

Complete with boring tools available with different interchangeable shanks such as R8, NT30, NT40, NT50, MT3, MT4, MT5, BT40 & BT50.

GIN MODEL	BH 2084 SET	MIN. BORING DIA	MAX. BORING DIA	MAX. BORING DEPTH	BORING BAR HOLE SIZE	BORING HEAD OUTER DIA	LEAST COUNT
59490C	With 3 boring tools	12 mm	115 mm	110 mm	20 mm	84 mm	0.005 mm
59490D	With 8 boring tools	8 mm	270 mm	110 mm	20 mm	84 mm	0.005 mm

UNIVERSAL BORING AND FACING MASTER HEAD SET

Model GIN-BHAM (SET)

Universal Boring and Facing Head model GIN-BHAM has very precise construction with auto feed and stop. Working range is 5 mm to 250 mm.

Available complete with boring bars, boring tools etc. with different shanks such as BT40, BT50, R8, NT30, NT40, NT50, MT3, MT4,MT5.

BORING BAR HOLE SIZE	CROSS HOLE DIAMETER	OFFSET
18	18	15

Standard sets are with indexable inserts type carbide boring tools.

TOOL MAKER VICE GIN VB

All hardened and tempered 56-60 HRC having parallelism and squareness within 0.005 mm. It has improved design where the pin is not required to change position for changing jaw opening.

MODEL	OVERALL WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH
GIN - VB 15	36	20	40	100
GIN - VB 20	50	25	80	150
GIN - VB 25	63	32	90	175
GIN - VB 30	73	35	100	190
GIN - VB 35	88	40	130	235
GIN - VB 40	100	45	130	245
GIN - VB 50	125	50	160	285

PRECISION UNIVERSAL VICE

Model GIN-CHM has horizontal swivel 360° and tilts 45° vertically. Most suitable for precision grinding, milling, EDM etc. having micro adjustment of tilt angle.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING
CHM-80	70	30	80
CHM-125	125	43	150

PRECISION STEEL PARALLELS SET Model GIN-P100

'GIN' Precision steel parallels set consists of 8 pairs (16 pieces) of flat steel parallels as per sizes given below and one pair (2 pieces) of thin edged parallels for use where minimum contact area with the job is required.

MODEL GIN-P100 HAVING TOTAL 18 PCS.

SIZES OF FLAT STEEL PARALLELS	PCS
5 X 16 X 100	2
6 X 18 X 100	2
8 X 24 X 100	2
10 X 30 X 100	2
12 X 36 X 150	2
14 X 48 X 150	2
18 X 60 X 150	2
22 X 62 X 150	2
15 X 31 X 2.5 X 200 (THIN EDGE TYPE)	2

MAGNETIC INDUCTION BLOCKS

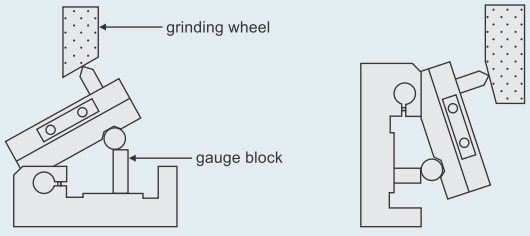
Nonmagnetic GT1, GT2 can be magnetic after being inducted on any magnetic chuck.

MODEL	A x B x L x Pcs.	TYPE
GIN-GT 1	25 x 50 x 100 x 2 pcs.	Plain
GIN-GT 2	46 x 49 x 58 x 2 pcs.	V-Type

ANGLE SINE DRESSER

Angle Sine Dresser is a precision grinding wheel dresser on any type of surface grinding machine to dress the grinding wheel at any angle from 0 to 60 degree with smoothness and accuracy. Desired angle is set with the help of gauge blocks. Diamond dresser is fitted on a moveable slide and wheel is dressed by moving the slide to and fro manually.

MODEL	OVERALL LENGTH
GIN-AP50	87



PUNCH FORMER WITH RADIUS DRESSING ATTACHMENT

MODEL GIN - PFB

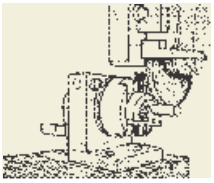
'GIN' Precision Punch Former is a precision grinding instrument for precision grinding of round and angular shaped parts to form punches, EDM electrodes etc. on surface grinding machine or universal grinding machine. Besides round, radius and multi angle punches, any special form can be ground precisely as shown below. Punch holding capacity is 4ø to 30ø and centre height is 80mm.

Shapes of punches formed by holding a punch on GIN - PFB and by Grinding on surface grinder.

Radius Dressing Attachment is a standard accessory of GIN - PFB which can be held on the V-Block of the Punch Former for radius dressing of grinding wheel upto 200ø

Front view

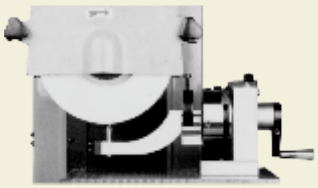
Punch to be formed is held in the V-Block & V-Block can be slided vertically to bring the punch at concentric position



Punch Forming on surface grinding machine

Rear view

24 position index plate for quick, auto index every 15 degrees. Any other angle can also be set and locked manually



Radius dressing of grinding wheel.

Optional Accessories for Punch Former

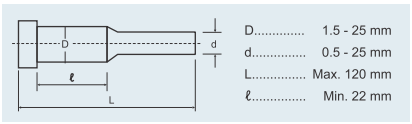
Angular dressing attachment Model PFB-1 for Punch Former for angular dressing of grinding wheel. PFB-1 is held in the V-Block of Punch Former and required angle is set. Then angular dressing of the wheel is done manually by moving the slide of PFB-1 to and fro on which dresser is mounted.

Sine Plate Model SPF-50 for forming taper punches on Punch Former. Punch Former is mounted on Sine plate SPF-50 and required precise angle is set by keeping gauge blocks under the roller.

Both of the above accessories are adaptable to Punch Former model GIN-PFB and can be ordered separately.

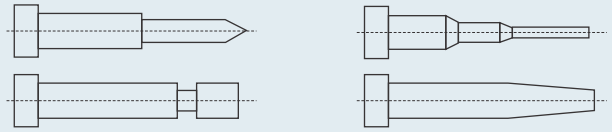
PUNCH GRINDER - Model GIN-PGA

'GIN' Punch grinder is a tool which can be put on the table of surface grinding machine for grinding punches. It can do cylindrical grinding of punches precisely on a surface grinding machine.



D..... 1.5 - 25 mm
d..... 0.5 - 25 mm
L..... Max. 120 mm
ℓ..... Min. 22 mm

Examples of shapes of punches which can be made



PUNCH GRINDER - Model GIN-PGAS

'GIN' Punch grinder Model GIN-PGAS is a smaller precise version of above Punch Grinder which can grind punches from dia 0.5mm to 10mm. If the diameter of the punch to be ground is above 6 mm then Model GIN-PGA shown above is recommended.

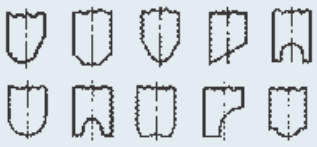
MOTOR PUNCH GRINDER - Model GIN-PGAM

'GIN' Motor Punch grinder is a motorized version of Punch Grinder Model GIN-PGA which eliminates manual handle rotation. It is a single hand portable machine which can be easily kept on grinding machine. With rollers being motor driven, operator can concentrate on machine feeds. Can be used with sine table to grind punches in angle. Radius on punches can be obtained by dressing the grinding wheel in radius.

RADIUS AND ANGLE DRESSER

'GIN' Radius And Angle Dresser is a precision grinding wheel dresser on any type of surface or Tool & Cutter grinding machine to dress the grinding wheel to any desired form - any combination of tangents and radius - either convex or concave as shown below. Radius is set very precisely with the help of slip gauges.

Shapes of grinding wheels achieved by dressing with Radius And Angle Dresser



Model GIN RDB for wheel dia up to 8"
Model GIN RDC for wheel dia up to 11"

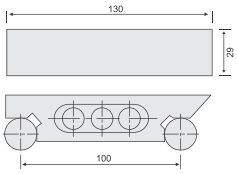
RADIUS AND ANGLE DRESSER Model GIN-RDA

Same as above model with an added feature of built-in gauge for zero setting.

Max convex R 45mm, Max concave R 100mm, Max horizontal movement is 65mm.

SINE BAR Model GIN-S100

Accuracy 0.005mm in parallelism and center distance of rollers.



SINE PLATE WITH MAGNETIC CHUCK

Accuracy 0.005mm in parallelism, squareness and center distance of rollers.

MODEL	MAGNETIC TOP SIZE	OVERALL HEIGHT IN CLOSED POSITION
SP47M	175 x 100	87
SP66M	150 x 150	87
SP510M	250 x 125	87
SP612M	300 x 150	87

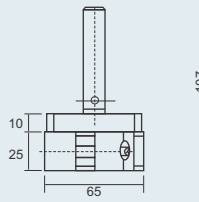
COMPOUND SINE PLATE WITH MAGNETIC CHUCK

MODEL	MAGNETIC TOP SIZE	OVERALL HEIGHT IN CLOSED POSITION
CSP 47M	175 x 100	122
CSP 66M	150 x 150	122
CSP 510M	250 x 125	122
CSP 612M	300 x 150	122

ELECTRODE HOLDER (STAINLESS STEEL)

Model GIN-VH20 is used for holding electrodes on EDM.

MATERIAL	PARALLELISM	SQUARENESS	HARDNESS
SUS440	Within 0.003 mm / 100 mm	Within 0.005 mm / 100 mm	HRC 54 - 58



PRECISION VISES FOR WIRE CUT MACHINE

Model GIN-WPV50

PARALLELISM	SQUARENESS
Within ± 0.002 mm	Within ± 0.002 mm

JAW OPENING	WIDTH	JAW HEIGHT	MATERIAL	HARDNESS
50 mm	28 mm	25 mm	Stainless Steel	HRC 50 - 55

Model GIN-WPV100

PARALLELISM	SQUARENESS
Within ± 0.002 mm	Within ± 0.002 mm

JAW OPENING	WIDTH	JAW HEIGHT	MATERIAL	HARDNESS
100 mm	22 mm	45 mm	Stainless Steel	HRC 50 - 55

Model GIN-WPV150

PARALLELISM	SQUARENESS
Within ± 0.002 mm	Within ± 0.002 mm

JAW OPENING	WIDTH	JAW HEIGHT	MATERIAL	HARDNESS
150 mm	22 mm	50 mm	Stainless Steel	HRC 50 - 55

Model GIN-WPV320
With level & parallel adjustment feature

PARALLELISM	SQUARENESS
Within ± 0.003 mm	Within ± 0.005 mm

JAW OPENING	WIDTH	JAW HEIGHT	MATERIAL	HARDNESS
160 mm	24 mm	60 mm	Stainless Steel	HRC 50 - 55

PUNCH FORMER (BIG)

3 JAWS PUNCH FORMER

ER COLLET PUNCH FORMER

MOTOR PUNCH FORMER

UNIVERSAL WHEEL DRESSER

DIAMOND CBN FLAT WHEEL TRUER

FLANGES FOR GRINDING MACHINES

WHEEL BALANCING STAND

PERMANENT MAGNETIC CHUCK

PERMANENT MAGNETIC CHUCK (VERTICAL TYPE)

ROTARY PERMANENT MAGNETIC CHUCK

ELECTRICALLY CONTROLLED PERMANENT MAGNETIC CHUCK

GAUGE BLOCKS

PIN GAUGE SET

DEMAGNETIZER - HANDY TYPE & STANDARD TYPE

SUPER THIN CHUCKS FOR MILLING

SUPER INDEX SPACER

UNIVERSAL TILTING ROTARY TABLE

CHAMFERING MACHINES

UNIVERSAL CUTTER GRINDER

ADJUSTABLE FIXTURES AND VICES FOR WIRE EDM

WIRE EDM DIVIDING DEVICE

ELECTRODE VICE

SELF-CENTERING VICE

CENTER PUNCH FORMER

THREAD GRINDING SLIDER

PRECISION UNIVERSAL THIN CHUCK PAEDESTAL

FIXTURES AND ELEMENTS FOR CMM

3D TASTER

CENTERING INDICATOR

CONCENTRICITY MEASURING INSTRUMENT

TOOL PRE-SETTER

SMALL DIA FINE BORING HEAD

LARGE DIA BORING HEAD

MICRO BORING HEAD

QUICK CHANGE TAPPING CHUCKS

CUTTING-OFF MACHINE

BALL ENDMILL GRINDER

SCREW TAP GRINDER

AIR TAPPING MACHINE

DRILL GRINDING MACHINE

- Quick re-sharpening of HSS or Carbide drills of taper or straight shank.
- Two separate stations for point angle grinding and relieving
- Very easy to learn operation by instruction sheet.
- CBN grinding wheel for HSS drills and all size collets included as standard equipment. SDC grinding wheel for carbide drill and additional collets are optional.

MODEL	DRILL DIA CAPACITY	NO. OF COLLETS INCLUDED	DIA CAPACITY WITH OPTIONAL COLLETS	POINT ANGLE ADJUSTMENT	POWER	N.W. KGS.
SDG - 13	3 - 13	11	-	90° - 140°	AC-220V / 120W	10
SDG - 20	3 - 20	18	-	90° - 140°	AC-220V / 120W	11
SDG - 26	13 - 26	14	8 - 30	90° - 140°	AC-220V / 250W	29

END MILL GRINDING MACHINE

- Quick re-sharpening of HSS or Carbide end mills.
- Very easy to learn operation by instruction sheet.
- SDC grinding wheel for carbide end mills and all sizes collets included as standard equipment. CBN grinding wheel for HSS end mills and additional collets are optional.
- Grinds 2-Flute, 3-Flute, 4-Flute end mills and bigger than 12 dia 6-Flute end mills

MODEL	END MILL DIA CAPACITY	NO. OF COLLETS INCLUDED	POINT ANGLE	POWER	N.W. KGS.
SEM - 14	4 - 14	6	0° - 5°	AC-220V / 180W	12
SEM - 20	4 - 20	9	0° - 5°	AC-220V / 180W	20
SEM - 30	12 - 30	10	0° - 5°	AC-220V / 250W	25

New

ER SPRING COLLETS as per DIN 6499

All below given sizes of ER Collets are available in single piece packing.

Collet Type	Size - Diameter Range (mm)
ER16	1-0.5, 1.5-1, 2-1.5, 3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9
ER 20	1-0.5, 1.5-1, 2-1.5, 3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9, 11-10, 12-11, 13-12
ER 25	1-0.5, 1.5-1, 2-1.5, 3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9, 11-10, 12-11, 13-12, 14-13, 15-14, 16-15
ER 32	1-0.5, 1.5-1, 2-1.5, 3-2, 3.5-2.5, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9, 11-10, 12-11, 13-12, 14-13, 15-14, 16-15, 17-16, 18-17, 19-18, 20-19
ER 40	3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9, 11-10, 12-11, 13-12, 14-13, 15-14, 16-15, 17-16, 18-17, 19-18, 20-19, 21-20, 22-21, 23-22, 24-23, 25-24, 26-25, 27-26, 28-27, 29-28, 30-29

ER COLLETS AND COLLET CHUCK SETS

Following sizes of ER Collet & Collet Chuck sets with spanner in an attractive plastic carry box are available.

Collet Chuck Set With Spanner	15 Pieces Collet Sizes Included In Set
ER 32 - BT - 30	3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9, 12-11, 14-13, 15-14, 16-15, 17-16, 18-17, 20-19
ER 32 - BT - 40	3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9, 12-11, 14-13, 15-14, 16-15, 17-16, 18-17, 20-19
ER 32 - BT - 50	3-2, 4-3, 5-4, 6-5, 7-6, 8-7, 9-8, 10-9, 12-11, 14-13, 15-14, 16-15, 17-16, 18-17, 20-19
ER 40 - BT - 40	3-2, 4-3, 5-4, 6-5, 8-7, 10-9, 12-11, 14-13, 15-14, 16-15, 18-17, 20-19, 22-21, 24-23, 26-25
ER 40 - BT - 50	3-2, 4-3, 5-4, 6-5, 8-7, 10-9, 12-11, 14-13, 15-14, 16-15, 18-17, 20-19, 22-21, 24-23, 26-25

ER SPANNER

Following spanners are available for tightening and loosening collet chucks of respective sizes.

Sizes
ER25 - Star Type
ER32 - Star Type
ER40 - Star Type

Star Type

PULL STUDS - MAS 403

Following sizes of Pull Studs are available:

Sizes	Sizes
PS - BT30 - 30°	PS - BT40 - 45°
PS - BT30 - 45°	PS - BT50 - 30°
PS - BT40 - 30°	PS - BT50 - 45°

ER COLLECT CHUCKS

Hardened high grade steel, precision ground.

Sizes	Sizes
BT30 - ER16 x 60	BT40 - ER32 x 70
BT30 - ER20 x 60	BT40 - ER32 x 100
BT30 - ER25 x 60	BT40 - ER40 x 80
BT30 - ER32 x 60	BT50 - ER16 x 70
BT30 - ER40 x 70	BT50 - ER20 x 70
BT40 - ER16 x 70	BT50 - ER25 x 80
BT40 - ER20 x 70	BT50 - ER32 x 80
BT40 - ER25 x 70	BT50 - ER40 x 80

SIDE LOCK ADAPTOR (End Mill Holder)

Hardened high grade steel, precision ground.

Sizes	Sizes
BT40 - SLA 8 dia x 65	BT40 - SLA 32 dia x 90
BT40 - SLA 10 dia x 65	BT40 - SLA 40 dia x 90
BT40 - SLA 12 dia x 65	BT50 - SLA 20 dia x 105
BT40 - SLA 16 dia x 65	BT50 - SLA 25 dia x 105
BT40 - SLA 20 dia x 90	BT50 - SLA 32 dia x 105
BT40 - SLA 25 dia x 90	BT50 - SLA 40 dia x 105

SHELL MILL ARBOR

Hardened high grade steel, precision ground.

Sizes	Sizes
BT40 - 22 dia x 60	BT40 - 32 dia x 60
BT40 - 22 dia x 90	BT50 - 27 dia x 90
BT40 - 27 dia x 60	BT50 - 32 dia x 75
BT40 - 27 dia x 105	

HORIZONTAL / VERTICAL CNC TOOL TIGHTENING FIXTURE

Used for tightening the tool in the tool holder outside the machine.

Model	Taper
TTF-BT-30	BT-30
TTF-BT-40	BT-40
TTF-BT-50	BT-50

UNIVERSAL ARM MAGNETIC STAND : Model MS-80

- ❑ **Rigid locking of the stand by one central knob.**
- ❑ **Magnetic Base with ON / OFF Switch size : H55 x W50 x L63.**
- ❑ **Magnetic Pull : 80 Kgs.**
- ❑ **Dial Holder hole ID = 8mm with micro adjustment.**
- ❑ **Main stem height = 290 mm.**

HORIZONTAL AND VERTICAL ROTARY TABLE

Available in different sizes from 110Ø to 400Ø. Can be mounted horizontally as well as vertically.

Model	Table Dia
SHV-4	110
SHV-6	150
SHV-8	200
SHV-10	250
SHV-12	300
SHV-14	350
SHV-16	400

PERMANENT MAGNETIC LIFTER

'SOGGO' High power permanent magnets ensure steady power for an unlimited period. All lifting magnets are tested as per safety factor of 1:3.5.

Model	Lifting Capacity
SPML-100	100 kgs
SPML-300	300 kgs
SPML-600	600 kgs
SMPL-1000	1000 kgs
SPML-2000	2000 kgs
SPML-3000	3000 kgs

SINE PLATE WITH MAGNETIC CHUCK

Accuracy 0.005mm in parallelism, squareness and center distance of rollers.

MODEL	MAGNETIC TOP SIZE	OVERALL HEIGHT IN CLOSED POSITION
SSP47M	175 x 100	87
SSP66M	150 x 150	87
SSP510M	250 x 125	87
SSP612M	300 x 150	87

TWO-WAY ANGLE MILLING VICE

- Made of high grade cast iron.
- The vice can be adjusted and locked at any angle from the horizontal position to the vertical position and also has swivelling base with rotation of 360°.

Model	Jaw Width	Jaw Depth	Max. Jaw Opening
STW-4	100	41	80
STW-5	125	45	95
STW-6	160	50	125

ANGLOCK MILLING VICE

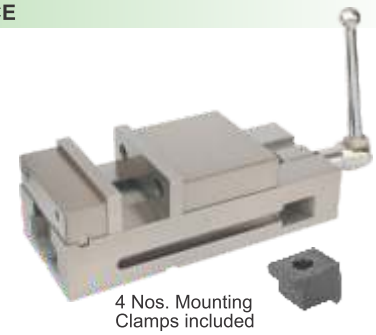
- Parallelism and square within 0.025mm/100mm.
- Special segment mechanism minimizes jaw lift and Workpiece tilt.
- Ductile iron construction for high durability.

Model	Jaw Width	Jaw Depth	Max. Jaw Opening	Overall Length
SLV-4	100	32	100	310
SLV-6	160	45	150	412
SLV-6L	160	45	200	425
SLV-8	200	50	190	500

All above models available with or without swivel base.

COMPACT ANGLOCK VICE

This is a compact version of Anglock Milling Vice.



4 Nos. Mounting Clamps included

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH
SCLV-6	160	47	160	390

QUICK ACTION DRILL VICE

Most suitable for production setups on Drilling or Light milling operations. Rapid Clamping / Locking and quick release of workpiece saves cycle time.

Model	Jaw Width	Jaw Depth	Max. Jaw Opening
SQV-100	100	38	100

DRILL MACHINE VICE - HEAVY DUTY

Heavy cast iron construction for rigid clamping.

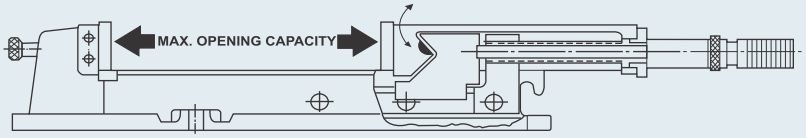
Model	Jaw Width	Jaw Depth	Max. Jaw Opening
SDV-100	100	46	102
SDV-150	160	52	152

LOCK DOWN JAW HYDRAULIC MACHINE VICE

'SAFEWAY' Lock Down Jaw Hydraulic Machine Vice has 'Down thrust semi-sphere segment' mechanism which eliminates jaw lift and work piece tilt. These vices have in-built hydraulic system hence do not require any external hydraulic line. Vice is operated by handle movement as in mechanical vices. Most suitable for Milling machine or Machining centre.

- **High clamping force in forward as well as downward direction is achieved by effortless handle movement.**
- **Extra large jaw opening.**
- **Rigid Material-vice body made of ductile iron having 80,000 psi tensile strength.**
- **Vice bed is flame hardened to HRC 45 which does not wear and maintains accuracy for long.**

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	OVERALL LENGTH
PHV-130	130	55	220	505
PHV-160	160	58	300	625
PHV-200	200	63	300	700
PHV-250	250	80	340	810



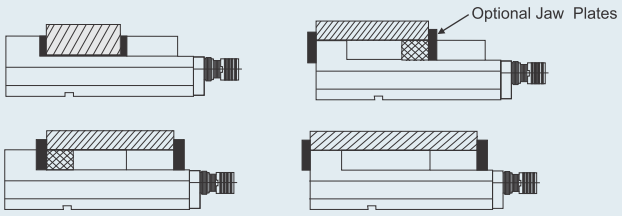
2 KGS of power in this direction
Produce 1 KG of downward.
Down thrust "semi-sphere segment"
Mechanism-eliminates jaw lift and work-piece tilt.

MC COMPACT HYDRAULIC VICE

This vise has all features of above PHV model including Lock down jaw mechanism. These vices have in-built hydraulic system hence do not require any external hydraulic line. Vice is operated by handle movement as in mechanical vices. Due to its compact design and accuracy, it is more suitable for machining centre for multiple vice setups.

MODEL	JAW WIDTH	JAW DEPTH	MAX. JAW OPENING	MAX. JAW OPENING WITH OPTIONAL JAW PLATES	OVERALL LENGTH
CHV-100 V	101	48	125	320	475
CHV-130 V	131	55	180	380	540
CHV-160 V	161	58	240	470	630
CHV-200 V	201	63	280	540	705

Examples of Clamping



Above vise is also available in one more model with **90° handle driving mechanism** as shown below.

CHV-VD Model
with 90° handle driving mechanism

DRILL GRINDING MACHINE

'SAFEWAY' Drill Grinding Machine is a portable machine used for Quick & Accurate grinding of Drill point.

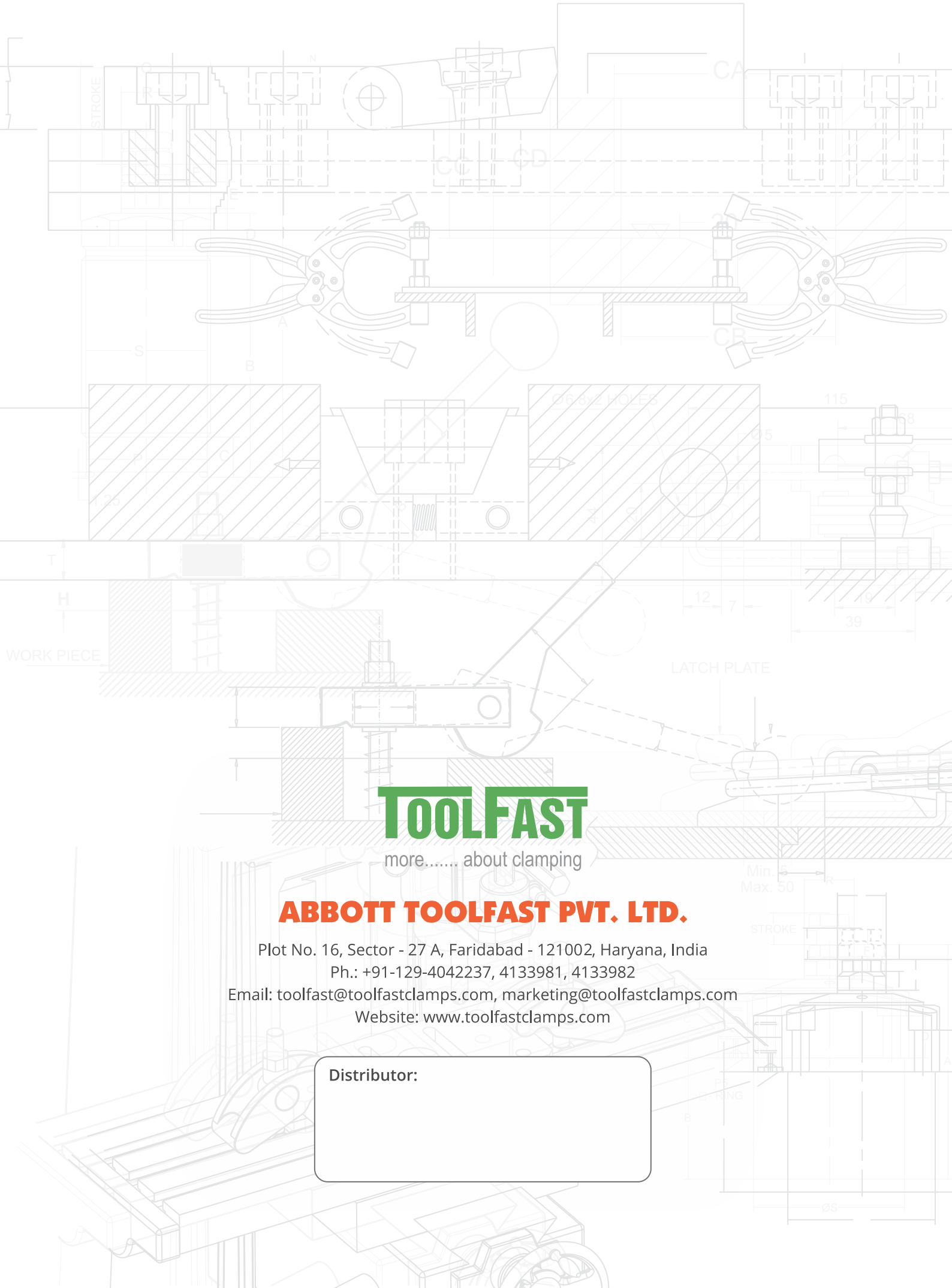
- **Easy operation, precision grinding by unskilled operator.**
- **Diamond Wheel for long lasting service life and precise grinding angle.**
- **Built-in collet bracket for easy management of collets (All sizes collets supplied with the machine).**
- **Grinds point angle as well as chisel edge angle of a drill.**
- **Can also grind solid carbide drills with optional Grinding Wheel.**

MODEL	DIA. CAPACITY	ANGLE CAPACITY	POWER
SA-1300	3Ø - 13Ø	90° - 144°	Single Phase AC -220 V
SA-2000	3Ø - 20Ø	90° - 144°	Single Phase AC -220 V
SA-2500	13Ø - 26Ø	90° - 144°	Single Phase AC -220 V

Front View

Point Angle grinding & chisel edge angle grinding in two operations

Rear View



TOOLFAST

more..... about clamping

ABBOTT TOOLFAST PVT. LTD.

Plot No. 16, Sector - 27 A, Faridabad - 121002, Haryana, India
Ph.: +91-129-4042237, 4133981, 4133982
Email: toolfast@toolfastclamps.com, marketing@toolfastclamps.com
Website: www.toolfastclamps.com

Distributor: